



# **Cultivating Learning Throughout Life: The Promise of Public Online Learning Communities**

Philosophiae Doctor (PhD) Thesis

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∞ *To my husband Hendrik, for his love and support durch dick und dünn*

*To my son Richard, luz de mi vida* ∞

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## Cultivating Learning Throughout Life: The Promise of Public Online Learning Communities

### *Abstract*

Online learning communities (OLCs) come across as propitious collaborative learning environments useful for undertaking learning in diverse fields, stages of life and settings, this is, to embrace and cultivate Lifelong Learning. While these communities target a myriad of topics and are actively used worldwide, in terms of access, we can classify them in two general types. Private OLCs are usually of institutional or organizational nature, used for formal education purposes and with a closed membership model. Public OLCs are hosted in platforms accessible to all persons interested, used as sources for non-formal and informal learning and free to access upon registration.

Most academic studies concerning OLCs focus on the use of private communities for formal learning. OLCs of a public nature are therefore underrepresented, despite them having an important learning potential for the personal, educational, and professional development of people. Thus, our purpose through this dissertation was to analyze the influence that public OLCs have in terms of Lifelong Learning by investigating the research question: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its members?

We framed our study based on a Case Study Research perspective, following Robert K. Yin's methodological principles. The six case studies selected were based on the OLC concept, typology and rationale developed by Urban Carlén & Ove Jobring. From their perspective, OLCs are categorized according to their learning purpose (educational, professional or interest oriented) and their modality (100% virtual online or blended).

We considered that the users' opinions and experiences were essential to provide us with evidence about the lifelong learning significance of this type of communities. Thus, in terms of data collection, we used a facilitative mix-method approach which included the conduction of a netnography, an online survey and online interviews in the chosen case studies. The qualitative and quantitative collected data was analyzed case per case through a mix-method perspective that considered a Thematic Analysis and a Descriptive Statistics Analysis.

Our results showed, firstly, that features such as the instructional design, the community's tools and learning resources, as well as conditions such as the user's profile, the freedom of expression, the cooperation, the sense of belonging, the practices that facilitated learning either through participation or interaction, the community management, the netiquette and, the informational and digital competences were the specific attributes that played a role in the way virtual and blended public OLCs fostered non-formal and informal learning, as illustrated through the in-depth case study reports of two of our selected communities. Second, and through the conduction of a Cross-Case Analysis for comparing these attributes among the six communities considered, our research demonstrated that (1) lurking as a mean for conducting self-determined learning; (2) interacting with users and/or participating through content as a way for exercising collaborative learning; and (3) the existence of a series of asynchronous and synchronous tools, together with a growing content-curated collection of resources targeted to fulfill the information, knowledge and learning needs of the membership were the three underlying factors that, when converging, contributed to create a significant lifelong learning experience. The features, conditions and factors identified through our study were portrayed through a model adapted from Randy G. Garrison's Community of Inquiry Framework, which resulted useful for explaining how these assets, in combination, can facilitate lifelong learning experiences in public OLCs. In this regard, the findings of this study contribute to provide a more holistic understanding of public OLCs as subjects of research, as learning environments in the practice and as valuable sources of non-formal and informal learning. We anticipate that these perspectives can have interesting implications for the fields of OLCs and Lifelong Learning, in terms of research, design, implementation and evaluation.

**Keywords:** Online learning communities, Lifelong Learning, Non-Formal Learning, Informal Learning, Case Study Research, Facilitative Mix-Method Study

## **Conreant l'Aprentatge al Llarg de la Vida: La Promesa de Comunitats d'Aprentatge En línia Públiques**

### *Resum*

Les comunitats d'aprenentatge en línia (Online Learning Communities o OLCs, pel seu acrònim en anglès) han resultat ser entorns d'aprenentatge col·laboratiu útils per dur a terme l'aprenentatge en diversos camps, etapes de la vida i entorns, és a dir, per adoptar i conrear l'aprenentatge permanent. Tot i que aquestes comunitats s'orienten a una infinitat de temes i s'utilitzen activament a tot el món, pel que fa a l'accés, les podem classificar en dos tipus generals. Les OLCs privades solen ser de caràcter institucional o organitzatiu, utilitzades amb finalitats educatives formals i amb un model de pertinença tancat. Les OLCs públiques s'allotgen en plataformes accessibles per a totes les persones interessades, s'utilitzen com a fonts d'aprenentatge no formal i informal i d'accés gratuït per a tothom registrat a la plataforma.

La majoria dels estudis acadèmics sobre les OLCs se centren en l'ús de comunitats privades per a l'aprenentatge formal. Les OLCs de caràcter públic estan, per tant, poc representades, malgrat que tenen un important potencial d'aprenentatge per al desenvolupament personal, educatiu i professional de les persones. Així, el nostre propòsit a través d'aquesta tesi va ser analitzar la influència que tenen les OLCs públiques en termes d'aprenentatge al llarg de la vida investigant la pregunta de recerca: Com i en quines condicions les OLCs públiques esdevenen entorns útils per facilitar l'assoliment dels objectius individuals d'aprenentatge permanent dels seus membres?

Hem emmarcat el nostre estudi a partir d'una perspectiva d'estudi de cas, seguint els principis metodològics de Robert K. Yin. Els sis estudis de cas seleccionats es van basar en el concepte, la tipologia i la lògica de les OLC desenvolupats per Urban Carlén & Ove Jobring. Des de la seva perspectiva, les OLCs es classifiquen segons la seva finalitat d'aprenentatge (educatiu, professional o orientat a interessos) i la seva modalitat (100% virtual en línia o mixt).

Vam considerar que les opinions i experiències dels usuaris eren essencials per aportar-nos evidències sobre la importància de l'aprenentatge al llarg de la vida d'aquest tipus de comunitats. Així, pel que fa a la recollida de dades, hem utilitzat un enfocament de mètodes mixtos coadjuvants que incloïa la realització d'una netnografia, una enquesta en línia i entrevistes en línia en els casos pràctics escollits. Les dades qualitatives i quantitatives recollides es van analitzar cas per cas mitjançant una perspectiva de mètode mixt que considerava una anàlisi temàtica i una anàlisi estadística descriptiva.

Els nostres resultats mostren, en primer lloc, que característiques com el disseny instruccional, les eines i recursos d'aprenentatge de la comunitat, així com condicions com el perfil de l'usuari, la llibertat d'expressió, la cooperació, el sentit de pertinença, les pràctiques que facilitaven l'aprenentatge a través de la participació o la interacció, la gestió de la comunitat, la netiqueta i les competències informatives i digitals van ser els atributs específics que van tenir un paper en la manera com les OLCs públiques virtuals i mixtes fomentaven l'aprenentatge no formal i informal, tal com s'il·lustra a través dels informes d'estudi dels casos en profunditat de dues de les nostres comunitats seleccionades. En segon lloc, i mitjançant la realització d'una anàlisi de casos creuats per comparar aquests atributs entre les sis comunitats considerades, la nostra investigació demostrar que (1) limitar-se a observar com a mitjà per dur a terme un aprenentatge autodeterminat; (2) interactuar amb els usuaris i/o participar a través del contingut com a forma d'exercir l'aprenentatge col·laboratiu; i (3) l'existència d'una sèrie d'eines asíncrones i síncrones, juntament amb una col·lecció creixent de recursos curats per continguts dirigits a satisfer les necessitats d'informació, coneixement i aprenentatge dels membres van ser els tres factors subjacents que, en convergir, van contribuir a crear una experiència significativa d'aprenentatge al llarg de la vida. Les característiques, les condicions i els factors identificats a través del nostre estudi s'han modelitzat mitjançant una adaptació del marc analític per a la comunitat d'indagació de Randy G. Garrison, que va resultar útil per explicar com aquests actius, en combinació, poden facilitar experiències d'aprenentatge permanent a les OLCs públiques. En aquest sentit, els resultats d'aquest estudi contribueixen a proporcionar una comprensió més holística de les OLCs públiques com a subjectes d'investigació, com a entorns d'aprenentatge a la pràctica i com a fonts valuoses d'aprenentatge no formal i informal. Preveiem que aquestes perspectives poden tenir implicacions interessants per als camps de les OLCs i l'aprenentatge permanent, en termes de recerca, disseny, implementació i avaluació.

**Paraules clau:** Comunitats d'aprenentatge en línia, Aprentatge al llarg de la vida, Aprentatge no formal, Aprentatge informal, Investigació d'estudis de casos, Estudi basat en mètodes mixtos coadjuvants



## Cultivar el aprendizaje a lo largo de la vida: La promesa de las comunidades de aprendizaje en línea públicas

### *Resumen*

Las comunidades de aprendizaje en línea (Online Learning Communities u OLCs, por su acrónimo en inglés) se presentan como entornos de aprendizaje colaborativo propicios y útiles para emprender el aprendizaje en diversos campos, etapas de la vida y entornos, es decir, para adoptar y cultivar el Aprendizaje a lo largo de la Vida. Aunque estas comunidades abarcan una gran variedad de temas y se utilizan activamente en todo el mundo, en términos de acceso, podemos clasificarlas en dos tipos generales. Las OLCs privadas suelen ser de carácter institucional u organizativo, se utilizan con fines de educación formal y tienen un modelo de afiliación cerrado. Las OLCs públicas se alojan en plataformas accesibles a todas las personas interesadas, se utilizan como fuentes para el aprendizaje no formal e informal y son de acceso gratuito con previo registro.

La mayoría de los estudios académicos relativos a las OLCs se centran en el uso de las comunidades privadas para el aprendizaje formal. Las OLCs de carácter público están, por tanto, poco representadas, a pesar de que tienen un importante potencial de aprendizaje para el desarrollo personal, educativo y profesional de las personas. Por lo tanto, nuestro propósito a través de esta disertación fue analizar la influencia que tienen las OLCs públicas en términos de Aprendizaje a lo largo de la vida centrándonos en la pregunta de investigación: ¿Cómo y en qué condiciones son las OLCs públicas entornos útiles para facilitar la consecución de los objetivos individuales de aprendizaje a lo largo de la vida de sus miembros?

Enmarcamos nuestro estudio desde la perspectiva de la Investigación de Estudio de Casos, siguiendo los principios metodológicos de Robert K. Yin. Los seis casos seleccionados se basaron en el concepto, la tipología y los fundamentos operativos de las comunidades de aprendizaje en línea desarrollados por Urban Carlén y Ove Jobring. Desde su perspectiva, las OLCs se clasifican en función de su finalidad de aprendizaje (educativo, profesional u orientado a intereses) y su modalidad (100% virtual en línea o mixto).

Consideramos que las opiniones y experiencias de los usuarios eran esenciales para proporcionarnos pruebas sobre la importancia del aprendizaje a lo largo de la vida de este tipo de comunidades. Así pues, para la recopilación de datos, utilizamos una perspectiva de métodos mixtos coadyuvantes que incluía la realización de una netnografía, una encuesta en línea y entrevistas en línea en los casos elegidos. Los datos cualitativos y cuantitativos recogidos se analizaron caso por caso mediante una perspectiva de método analítico mixto que consideró un análisis temático y un análisis estadístico descriptivo.

Nuestros resultados mostraron, en primer lugar, que características tales como el diseño instruccional, las herramientas y los recursos de aprendizaje de la comunidad, así como condiciones tales como el perfil del usuario, la libertad de expresión, la cooperación, el sentido de pertenencia, las prácticas que facilitaron el aprendizaje a través de la participación o la interacción, la gestión de la comunidad, la netiqueta y las competencias informativas y digitales fueron los atributos específicos que desempeñaron un papel relevante en la forma en que las OLCs públicas virtuales y mixtas fomentaron el aprendizaje no formal e informal, tal como se ilustra en profundidad a través de los informes de estudio de caso de dos comunidades seleccionadas como ejemplos. En segundo lugar, y a través de la realización de un Análisis de Casos Cruzados para comparar estos atributos entre las seis comunidades consideradas, nuestra investigación demostró que (1) el observar sin participar como medio para llevar a cabo el autoaprendizaje determinado; (2) la interacción con los usuarios y/o la participación a través de los contenidos como forma de ejercer el aprendizaje colaborativo; y (3) la existencia de una serie de herramientas asíncronas y síncronas, junto con una creciente colección de recursos de contenido curados y dirigidos a satisfacer las necesidades de información, conocimiento y aprendizaje de los miembros fueron los tres factores subyacentes que, al converger, contribuyeron a crear una experiencia significativa de aprendizaje permanente. Las características, las condiciones y los factores identificados en nuestro estudio se retrataron a través de un modelo adaptado del Marco Analítico para la Comunidad de Indagación de Randy G. Garrison, que resultó útil para explicar cómo estos aspectos, en combinación, pueden facilitar las experiencias de aprendizaje permanente en las OLCs públicas. En este sentido, los resultados de este estudio contribuyen a proporcionar una comprensión más holística de las OLCs públicas como sujetos de investigación, como entornos de aprendizaje en la práctica y como fuentes valiosas de aprendizaje no formal e informal. Anticipamos que estas perspectivas pueden tener implicaciones interesantes para los campos de las OLCs y del Aprendizaje a lo largo de la Vida, en términos de investigación, diseño, implementación y evaluación.

**Palabras clave:** Comunidades de aprendizaje en línea, Aprendizaje a lo largo de la vida, Aprendizaje no formal, Aprendizaje informal, Investigación de Estudio de Casos, Estudio basado en métodos mixtos coadyuvantes.

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## List of Abbreviations

BEC: Blended educational community  
BIC: Blended interest community  
BPC: Blended professional community  
CMC: Computer-mediated communication  
CoI: Community of Inquiry  
CSN: Case Study Narrative  
CSR: Case Study Research  
ICTs: Information and communication technologies  
MOOC: Massive Open Online Course  
OEC: Online educational community  
OIC: Online interest community  
OLC: Online learning community  
OPC: Online professional community  
PLE: Personal learning environment  
VCoP: Virtual community of practice

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# **Cultivating Learning Throughout Life: The Promise of Public Online Learning Communities**

## **Introduction**

Our increasingly complex and rapidly changing world demands for individuals to increase their adaptation skills accordingly. To adapt, people need to develop and use different kinds of knowledge. Within this context, the notion of Lifelong Learning takes a more relevant meaning than ever. Learning is not only an essential asset to transform information into knowledge but has become a warrant to adapt to all type of conditions. However, learning cannot longer be seen as early education or an occasional refresher course. It must be adopted in multidimensional terms as Lifelong Learning so to meet the incidental needs and challenges experienced by individuals during their life course.

Online learning communities (OLCs) are learning environments that through their instructional and technological design provide a context where learning processes can be fostered through dialogue and a collaborative approach with regards to the construction and dissemination of knowledge. In these communities, members share and access a repertoire of resources, experiences, stories, methods, recommendations and even tools for answering their doubts, solving problems, and deepening their knowledge of a given topic. The discussion of ideas and information, together with the assistance that the members provide to each other through know-how and solutions related to their interests, life circumstances and practices are two of the main advantages that OLCs have over other learning initiatives.

Furthermore, the instructional and technological design of OLCs, together with their learner-centered perspective makes these communities flexible enough for targeting countless topics through formal, non-formal and informal learning configurations. Thus, the information and experiences available through this type of communities provides interested users not only with an alternative to learn, but also to self-determine their learning process according to their own pace and time, in particular when other learning options are not available within their physical reach. In this regard, OLC have the potential to motivate individuals to learn in three important ways: (a) through the access to formal, non-formal and informal learning possibilities, (b) through the topic-specific information and knowledge that can be obtained from the community itself, and (c) through the co-construction of knowledge through the collaboration with other members. Thus, OLCs come off as an interesting option for embracing and fostering Lifelong Learning.

Academic research on the topic focuses in greater proportion on the study of the value and use that these learning initiatives have for formal learning and higher education settings. Notwithstanding, further research is needed to better understand if this type of communities can also effectively foster non-formal and informal learning, in particular through OLCs that are accessible to the general public.

In this regard, our study focuses on the research question: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning

objectives of its members? We start from the hypothesis that if members engage in a public OLC through active levels of participation and interaction, then they leverage the collaborative learning approach fostered by this type of online communities, which in turn contributes to the follow-up of their particular lifelong learning aims. With the purpose to inform our research question and verify our hypothesis, we will analyze the influence that six selected public OLCs have on the learning objective of its' members through theoretical and empirical evidence. Following this line of thought our dissertation is organized in seven chapters.

In Chapter 1, “Lifelong Learning in the Context of Learning Ecologies”, we elaborate on the meaning of the term Lifelong Learning, its scope, and its practical exercise through the learning ecologies we create and use habitually. For this purpose, firstly, we consider a historical and theoretical discussion of the notion of Lifelong Learning. On a second instance, we reflect upon the dimensions and learning possibilities that Lifelong Learning covers. Finally, we discuss the ways learning takes place in modern times through the perspective of learning ecologies and how they can help to embrace and cultivate Lifelong Learning actively.

In Chapter 2, “Performing Lifelong Learning through Online Learning Communities” we trace the roots of the notion online learning community and its evolution through its' relation to three main concepts, namely community, virtual community and learning community. On a second instance, we present our working definition of the term and distinguish it from other online tools, platforms and learning initiatives that tend to be confused with OLCs such as forums, social networks, massive open online courses, and virtual communities of practice. On a third instance and for rounding up our conceptualization of OLCs we discuss the most common functional and technological features present in their instructional design, as well as their organic aspects in terms of community development and membership structure. We close the chapter by reflecting about the relevance of OLCs as a research field and by presenting the reasons that led us to investigate this type of communities and their influence on Lifelong Learning.

In Chapter 3, “Online Learning Communities and Lifelong Learning: Proposing a Framework of Analysis”, we present our research problem, its significance, and the main purpose of our study in greater detail, highlighting how OLCs represent an online learning option that can contribute to foster Lifelong Learning in formal, non-formal and informal ways. Furthermore, we explain why the specific focus of our study are public OLCs. We include the general criteria we used to select the six categories of learning communities that we analyzed as case studies. This categorization is based on the OLC concept, typology and rationale proposed by Urban Carlén and Ove Jobring, which considers three types of learning purposes (educational, professional and interest) and two modalities (100% virtual and blended). Momzilla, Cambridge in Colour, edWeb.net, NovaGob, Deutsch für Dich and Rare Connect were our chosen communities. We offer a brief overview of these six cases selected for the current study, together with the research questions, objectives, and hypotheses that we established to conduct our investigation about OLCs and their influence on Lifelong Learning. Finally, yet importantly, we explain our analytical stance towards our research problem by depicting in detail the elements that compose our framework of analysis and why we built it using the Community of Inquiry (CoI) Framework developed by Randy G. Garrison as our main frame of reference.

In Chapter 4 “Research Design, Methodology and Methods” we provide an overview of the research and methodological perspective that we used to collect and analyze the empirical data for the present study. In this regard, we describe how and why we framed the study under a Case Study Research (CSR) approach following the methodological principles of Robert K. Yin. To investigate our selected OLCs and obtain relevant information for the purposes of our research, we used a combination of qualitative and quantitative methods through a facilitative method perspective in terms of data collection. Thus, we explain how we conducted our netnography, online survey and online interviews in each of the six OLCs and we also describe how we approached the topic of Ethics and Online Research in our study. For the data analysis and the interpretation of results, we used a mixed method analytical approach composed, on a first instance, by the combination of Thematic Analysis and Descriptive Statistics for the individual case studies’ analysis, and on a second instance, by the conduction of Cross-Case Analysis for the overall comparison among the communities as well as to report the results. In this chapter we also reflect on the strengths of our research approach as well as on the limitations we encountered along the research process and how we faced it.

In Chapters 5 and 6, we present the results of the research endeavours conducted by portraying them through two in-depth case studies following Yin’s CSR perspective. The choice to include two in-depth case studies obeys the fact that we wanted to characterize thoroughly the two modalities through which OLC’s function according to Carlén and Jobring, this is, 100% virtual or hybrid of online and virtual presence (blended). Therefore, we developed a common Case Study Narrative (CSN) to provide a useful structure for integrating and illustrating the results obtained from the three different data collection sets made per community and their correspondent quantitative and qualitative analyses. This narrative allowed us to approach the research questions that guided our study and to organize the case study reports covering three main categories, namely, (1) Contextual information; (2) Relevant themes for the community; and (3) Learning in community. Through these categories we could delve into detail in the contextual, thematic, learning dynamics and lifelong learning significance facets that distinguished each community, based on the experience and voice of their memberships. Hereof, Chapter 5 entitled, “Case Study 1: Cambridge in Colour” exemplifies the characteristics of a 100% virtual OLC, while Chapter 6, entitled “Case Study 2: Momzilla”, focuses on depicting in detail the peculiarities of a blended OLC.

In Chapter 7, “Cross-Case Comparison & Discussion of Results”, we present a comparison among online and blended interest, educational and professional learning communities, so to recognize and discuss the characteristics that fostered learning found in the six OLCs selected as cases, independently of their modality or category. We followed Matthew B. Miles and A. Michael Huberman’s Cross-Case Analysis process to pinpoint the generalities shared among the OLCs, as well as to contrast their particularities regarding context, relevant thematic of discussion, learning dynamics and lifelong learning significance detected during the data collection periods. Lastly, with the purpose to integrate the discussion of the overall findings obtained through this comparative exercise and thus, provide an answer to our original research question, we incorporated them on a model devoted to evaluating lifelong learning experiences through public OLCs, which we elaborated based on the CoI Framework.

We finalize our study by bringing forward our results regarding the potential that public OLC have or not for integrating Lifelong Learning as an idea and in the practice. Hence, we provide a summary of the main findings by structuring our conclusions according to the main research question and the verification or rejection of the hypotheses stated. Moreover, we explain the contributions made by our research with respect to the academic fields of both OLCs and Lifelong Learning. We also discuss the limitations of the study. Finally, we reflect upon the future questions and lines of research that remain open based upon the findings and contributions of the present dissertation.

## **Chapter 1. Lifelong Learning in the Context of Learning Ecologies**

Lifelong Learning has become a way and a warrant to keep up with the societal and technological incessant developmental pace, while also for facing uncertainties. Nevertheless, the act of learning nowadays entails a complexity of its own. Not only do formal educational backgrounds require continuous upgrades but learning overall considers more than ever the acquisition of relevant competences to meet people's needs, interests and even demands in terms of information, applied knowledge and skills tailored to their life contexts. How to enhance the ability of the individual to embrace lifelong learning? is, in this regard, both a question and a challenge to answer and face not only now, but also for the years to come.

In this chapter we will present our understanding regarding the topic by elaborating on the meaning of the term Lifelong Learning, its scope, and its practical exercise through the learning ecologies we inhabit. For this purpose, the chapter is divided into three sections. The first one considers a historical and theoretical discussion of the notion of Lifelong Learning. In the second section we reflect upon the dimensions and learning possibilities that Lifelong Learning covers. In the third section we bring forward the idea of how nowadays learning takes place through learning ecologies and how we can embrace Lifelong Learning actively in this context.

### ***1.1. What is meant by the term Lifelong Learning?***

Lifelong Learning is a widely used term both in governmental and academic arenas since at least the last three decades, given the fact that it has become a growing and recurrent public policy concern. It is often portrayed as a response to fundamental modifications of the working and social life catalyzed by (a) financial, employment, skill trends and labor market transformations due to the globalization; (b) cultural changes in lifestyles with its corresponding challenges and demands and (c) the rapid pace of change in digital technology (European Training Foundation, 2002) (Clain, 2016). This socio-economic and technological context has made evident that formal education is no longer enough to satisfy the complex requirements in terms of the learning and digital competencies required.

Following this line of thought, it seems that nowadays it is a must for everyone to keep learning in every possible learning environment. Nevertheless, to learn throughout life is no trivial venture nor a savvy expression of modern times. Lifelong Learning, as a notion, is rooted in a longer historical background that requires theoretical clarification (Aspin & Chapman, 2000) given the ways it has been problematized for the Education field from different political and academic stances (Centeno, 2011). The examination of such standpoints of a rather complex concept that embraces different challenges, dimensions and possibilities will allow us to present our own understanding of the term Lifelong Learning.



### *1.1.1. Historical Overview*

The underlying principle behind the notion of Lifelong Learning can be traced back to the philosophical axioms regarding education proposed by Plato and Aristotle (cf. Abukari, 2005; Khatibi & Fouladchang, 2016; Vidmar, 2014). Both philosophers believed that the engagement in a lifetime of study in different fields would not only develop the intellectual skills of the human mind but would also propel the person toward a happiness ideal.

A more forceful enforcement of the importance of Lifelong Learning for the individual and the society was instilled by the work of the philosopher, pedagogue, and theologian John Amos Comenius (cf. Abukari, 2005; Vidmar, 2014). During the XVII century, Comenius advocated for establishing universal access to education throughout the human lifespan. He considered learning as a pathway to wisdom, essential for understanding right and acting rightly. Three centuries later, the educator Basil Yeaxlee presented his perspective on the concept of learning in his book “Lifelong Education” (1929). Likewise, Comenius, he also conceived education as a lifelong process. Moreover, for Yeaxlee, education embodied formal, informal, and non-formal settings (London, 2021) (Centeno, 2011).

Based on the principles of Comenius’ educational theory and methods, as well as on Yeaxlee’s approach, the term Lifelong Learning started to be actively used as part of the educational public policy discourse since the 1960s. The United Nations Educational, Scientific, and Cultural Organization’s (UNESCO) report chaired by Edgar Faure, “Learning to Be” (1972) was pivotal for acknowledging Lifelong Learning internationally as “a life-span endeavor, whether in the formal, non-formal or informal mode, that enriches the quality of life of the learner as an individual and of the general community as a whole” (Abukari, 2005, p.143). The report set out an early philosophical vision of an ideal future learning society for all.

Nevertheless, despite this recognition and the advancement in terms of implementation through different initiatives and policy documents over the next decades such as the Delors Report (1996) and the European Commission Lifelong Learning Memorandum (2000) (Khatibi & Fouladchang, 2016), the term Lifelong Learning was still employed by the international policy agencies and several national governments in attachment to other concepts such as Lifelong Education, Recurrent Education, Education Permanente, Continuing Education and Adult Education. Such a mixture of notions and their lack of clarity often led to the overlapping and the confusion among terms (cf. London, 2021).

However, from the mid-1990s and onwards, there started to be a common discernment of the terminology surrounding the Lifelong Learning concept. This obeyed the fact of an increase in the number of governments across the world that wanted to establish in practice formally the approach of learning throughout life. Such urgency obeyed the necessity to foster and maintain economic competitiveness through the creation and application of knowledge, so to adapt to the globalizing trends regarding the mobility of capital and industry (cf. London, 2021). Moreover, there was a shift of attention from the notion of “education” towards that of “learning”. This change represented the establishment of a much wider scope that put the learner at the center of attention, going beyond the previous focus on the teachers, the curriculum writers, and the course providers (Aspin et al., 2012).

In this regard, we can distinguish two different institutional perspectives concerning the ultimate purpose of Lifelong Learning. The first perspective addresses Lifelong Learning as an experience aimed to attain knowledge from ‘cradle to grave’, this is, “covering all activities at all stages of life; planned or unplanned learning activities and experiences, or in a restricted sense; all organized learning experiences, formal or informal, from preschool through compulsory schooling to post-compulsory stages, including work experiences” (Abukari, 2005, p.144). UNESCO is the principal promoter of this perspective, where the provision of various opportunities in terms of Lifelong Learning is conceived as a strategic goal to be achieved for 2030 for the overall contribution to peace and sustainable development at a worldwide level (Vargas, 2017).

The second perspective contemplates Lifelong Learning as a means “directed towards achieving economic competitiveness, personal development, leisure and/or social inclusiveness for democratic understanding and for public good” (Abukari, 2005, p.144). Such consideration is based upon the realization that the traditional initial education and occupational preparation is not sufficient for the economic, social, and political challenges of the modern context, in particular for those in terms of employability hurdles, which have been mostly driven and increased through the major technological advances of the last decades. The Organization for Economic Cooperation and Development (OECD) is the main advocate for the implementation of Lifelong Learning through this point of view, which is strongly influenced by the need to guarantee an effective labor market and a well-performing economy (London, 2021).

### ***1.1.2. Conceptual Disambiguation***

As we established through our historical overview of the term Lifelong Learning, this is a term with a rich history that has slowly elevated to an urgent public policy concern of modern times. Bearing in mind that the intention of our research is to demonstrate how and in which conditions do online learning communities contribute to lifelong learning, we consider important to state explicitly the definition of Lifelong Learning that we will use to guide our investigations. In this manner, we will proceed to do so by distinguishing Lifelong Learning from other associated terms that allow us to describe its nature, scope and meaning, as well as to unravel its dimensions and possibilities.

The brief historical overview of the Lifelong Learning approach that we provided in the previous section shows its’ development towards the establishment of a public policy standpoint regarding learning throughout life. In the academic arena, while Lifelong Learning has become a popular research subject, there is not a common definition with regards to the term. Given the diversity of conceptualizations of the notion in question, we thought it pertinent to present a summary of the six prevalent general characteristics of the concept Lifelong Learning. This account was obtained from the literature review conducted by Aylin Kaplan (2016), who compared various studies ranging from 1988 to 2014 devoted to defining the term Lifelong Learning:

1. “Lifelong Learning contains all life processes from birth to death.
2. Lifelong learning is based on the personal and occupational needs, interests and learning requirements of individuals.

3. Lifelong Learning contributes to the development of skills and talents of individuals.
4. Lifelong Learning is an approach which includes comprehensive components.
5. Lifelong Learning has become a compulsory aspect of individuals' lives as a result of changing world conditions and developing technology.
6. Lifelong learning provides equal opportunities to individuals and removes restrictions such as learning, age, socio-economic status, and educational level" (Kaplan, 2016, p. p.45).

Lifelong Learning is a notion that is commonly confused or used interchangeably with associated concepts such as Lifelong Education and Adult Education (Jinna & Maikano, 2014). Nevertheless, it is important to emphasize that Lifelong Learning is not the same as Adult Education nor as Lifelong Education. The distinction among terms starts from the notion of education. Education is, in a primary sense, planned learning. In this regard, while all education is learning, not all learning is education (Rogers, 2014).

The first concept, Lifelong Education, is "an institutional fact arising from and enacted by the social world, usually in the form of the provision of particular kinds of (learning) experiences" (Billett, 2018, p.401). Thus, the accent of Lifelong Education pertains to the education provision (Tong et al., 2015). In this regard, instructional designers, educators, and public servants involved in the process of the conceptualization, the allocation, and the selection of the appropriateness of resources, as well as in the implementation of such norms, programs, and practices, intentionally design them in a way that they can lead the end-users to a desired learning/educational outcome. Such an aim aligns to a current economic and/or societal need, which can take place at macro and micro levels (e.g., work readiness, certifications, completion of courses, etc.) or both, and in turn helps to achieve socially and economically derived goals.

The second concept, Adult Education, examines how fully grown-up individuals learn, usually within working contexts. It distinguishes itself from Lifelong Learning insofar Adult Education's aim is to "remedy early education inadequacies of mature people or to equip them with the knowledge and cultural elements required for their self-fulfillment and active participation in the social, economic and political life of their societies" (Jinna & Maikano, 2014, p.36). In this sense, the field focuses on understanding how this sector of society can develop their abilities better, enrich their knowledge, and improve or transform their technical and/or professional qualifications (Lafta & Salih, 2016). Adult Education's implementation encompasses basic, continuing, and vocational education, as well as the professional development programs (Torres, 2004) that are usually offered through a variety of modalities by universities, training centers, community learning centers, folk schools, evening classes, on-the-job seminars, etc.

This elucidation among concepts is useful for clarifying not only the definition, but also the scope of the idea of learning throughout life. Lifelong Learning "comprises a personal fact and practice: it is initiated and enacted by individuals, quite likely in personal-particular ways, as shaped by individuals' ontogenic development of legacies of life histories" (Billett, 2018, p.402). Thus, a Lifelong Learning trajectory is transformed constantly by subjectivity, interest, and agency, this is, what each person knows, can do, his/her interests, what they value, their objectives, and the direction they wish to follow so to obtain further learning input and experiences. Therefore, no two Lifelong Learning journeys would ever be the same.

Given the fact that Lifelong Learning is a personal process and “something that occurs all of the time as individuals think and act” (Billett, 2018, p.401), it is foreseeable that, based on their needs and desires, a person will likely be prone to engage in Lifelong Long Education and/or Adult Education programs and initiatives at a given point and/or through different moments in their life span. Therefore, Lifelong Learning concerns children, youth, and adults equally. Moreover, while formal educational institutions still play an important role in providing various learning experiences, work, family, community, and the cultural context also sum up to the knowledge repertoire that an individual can acquire and deepen during his/her lifetime.

Hence, both Lifelong and Adult Education are institutional byproducts of the implementation of the Lifelong Learning approach regarding the generation and provision of distinct kinds of learning. Nevertheless, as seen throughout this section, the actual enactment of Lifelong Learning in our perspective is, first and foremost, a personal practice with a clear development goal shaped by each individual’s capacities, interests, and intentions, which broadly considers a range of learning contributions and experiences within and across their lives. Lifelong and Adult Education are, in turn, the institutional provision of a set learning and/or educational offers for people, often directed to improve their working facet and guarantee employability.

### ***1.2. Lifelong Learning, more than just a Public Policy Concern***

Based upon the historical and theoretical background presented, it results evident that the principles behind the idea of learning throughout life, in practice, go beyond their sole discussion for the academic and public policy arenas. David Aspin and Judith Chapman pinpointed this situation by arguing that the conceptualization and implementation of Lifelong Learning contemplates, at least, five areas of concern:

- “1) The ways in which Lifelong Learning is defined, characterized, and understood.
- 2) The kinds of knowledge, understanding and skill people want and/or need.
- 3) The ways in which Lifelong Learning can be brought about.
- 4) The ways in which people might be able to learn, understand and progress in their Lifelong Learning endeavors.
- 5) The grounds upon which Lifelong Learning programs can be justified and adopted” (Jones & McLean, 2018, p.72).

This perspective serves well to the purpose of our research, which focuses on a more pragmatic approach that contemplates the individual level. Moreover, it reflects upon the different relevant aspects that make “Lifelong Learning an essential challenge for inventing the future of our societies; (being it) (...) a necessity rather than a possibility or a luxury to be considered” (London, 2021, p. p.4). We consider that Lifelong Learning is, in this regard, first and foremost, about the need of the person to take hold of their own learning journey. From this point of view, Lifelong Learning should also be seen as “a process of conscious, continuous learning that caters for both the personal needs and those of the relevant community(ies) across the sociocultural, economic and democratic constituents that will not only help individuals to become responsible to themselves and their communities, but to understand and become involved in the (..) distribution of (diverse) learning opportunities for all throughout their lifespan” (Abukari, 2005, p. 145).

In this sense, Lifelong Learning functions as a guiding principle, at different levels, for allowing the provision of opportunities and guaranteeing the participation of the individuals across the full continuum of the learning context, nurturing a sense of personal development and growth through the constant acquisition and construction of knowledge and skills via several experiences and possibilities (Tong et al., 2015). John Dewey considers that an overarching concept such as Lifelong Learning must ideally include in its implementation at a personal and societal levels several offers such as:

- “Diversity of itineraries in time, in content and in learning styles.
- Continuing learning opportunities.
- Community participation, decentralization, diversification of finance and delivery, democratic consultations about the aims and practices of education.
- Antidotes to un-learning and to de-skilling trends in vast segments of our societies.
- New social dimensions to knowledge production and competence acquisition; and
- Action and remedies designed both to prevent and to minimize the inequitable distribution of knowledge” (UNESCO, 2011, p. 23).

On the grounds that Lifelong Learning acknowledges different ways and forms of learning that can take place during a person’s life, it gives individuals the chance to also construct their identities as lifelong learners. To understand how the Lifelong Learning concept works in practice at an individual level, we will present in the next lines the dimensions and learning possibilities comprised within the notion.

### ***1.2.1. Lifelong Learning Dimensions***

The ways in which people acquire, interpret, organize, change, and assimilate information and skills allow them to construct meaning applicable to different aspects in their personal and collective lives. Furthermore, these endeavors, combined overtime, also suppose a continuous process from womb to tomb, as “Lifelong Learning builds on prior learning as it expands knowledge and skill in depth and breadth” (London, 2021, p. 3). Hence, taking into consideration this perspective, we can identify two main dimensions ingrained within the Lifelong Learning concept: the length and the width.

The length dimension refers to the fact that learning is not confined to a particular period in life, but that it is rather *life-long* (Torres, 2004). In this regard, we speak about the temporal component of the notion Lifelong Learning and the idea of the transitions from, into and between educational/learning possibilities that occur from cradle to grave. Thus, the life-long dimension represents what the individual learns throughout the whole lifespan, as knowledge rapidly becomes obsolete, and it is necessary for him/her to build upon it or to update both his/her knowledge and competences through a continuous process of learning (Jackson, 2012c).

The width dimension depicts the idea that learning is not exclusive to schooling, but that it is rather *life-wide* (Torres, 2004), thus the individual can learn at any time and any context, environment, or situation. In this sense, “Life-wide learning includes everything from reading a book to seeing

a film. An individual can grow in understanding from visiting a museum or traveling. The distinction between (life-long) learning and life-wide learning is (precisely) where the learning took place” (Reyes-Fournier, 2017, p. 7). Hence, the life-wide dimension covers formal, non-formal and informal learning possibilities (Jackson, 2012c).

The combination in action of these two dimensions can have a transformational impact: if learning changes along the different stages of life (life-long) and can be built up in different contexts (life-wide), it has the potential to affect the person at greater emotional and cognitive levels (Jarvis, 2007). This process of identification, construction, and development of the personal identity through the values obtained by the integration of both dimensions in the everyday life configures as a result a new category within the general notion of Lifelong Learning (Aleandri et al., 2021). Hereby, Lifelong Learning’s third dimension is the so-called *life-deep* learning. The series of beliefs, ideologies and orientations to life contained within this dimension enable us to guide our actions, judge ourselves and others, and express to ourselves and to others how we feel and what we think (Jackson, 2012c).

In a person’s lifelong learning journey, the time frames of the life-long dimension, the spaces of the life-wide dimension and the values from the life-deep dimension will intermingle and change as his/her learning moves forward through his/her lifetime. In this sense, an individual is likely to be involved in many learning spaces, at times consecutively and at times simultaneously, prompting the individual to experience several forms of learning. As means of clarification, in the next section, we will explain in detail these different learning possibilities that coexist within the Lifelong Learning spectrum.

### ***1.2.2. Different Learning Possibilities within Lifelong Learning***

The analysis of the concept of Lifelong Learning in the practice provides the chance to understand and value the extensive range of possibilities present in the process of learning and attaining knowledge. In this regard, Lifelong Learning can be seen as holistic life-related framework, flexible enough to meet the needs of the individuals or groups through different pathways. Given the multiplicity of types and contexts proposed by the prospect of learning throughout life, it results obvious how much of a broader notion it is with respect to the concept of education. This obeys the fact that Lifelong Learning through its extended spectrum considers relevant and valid, within its wider dimension, all formal, non-formal and informal learning possibilities.

Notwithstanding, education, understood as the process of receiving systematic instruction through schooling systems, universities, and other official institutions, is still dominated by the formal learning approach. The prevalence of formal learning in the political and academic discourses is directly associated to its’ acknowledgment in comparison to other ways of learning. Formal learning occurs in an organized and structured context that is intentionally designed for such an aim and that is formally recognized by a diploma, license, degree, or certificate upon completion (Colardyn & Bjornavold, 2004). The learning activities are pre-designed, structured according to objectives and sequentially organized through a program of study provided by a teacher, instructor, or trainer (Myers et al., 2014) (Czerkawski, 2016).

By contrast, the non-formal and informal learning options are often “defined by what they are perceived to lack in relation to the formal sector: formal assessment of learning and/or the awarding of formal credentials...which are (highly) valued in the formal education system” (Aspin et al., 2012, p. 775). Notwithstanding, both non-formal and informal learning cover a huge diversity of learning settings and opportunities.

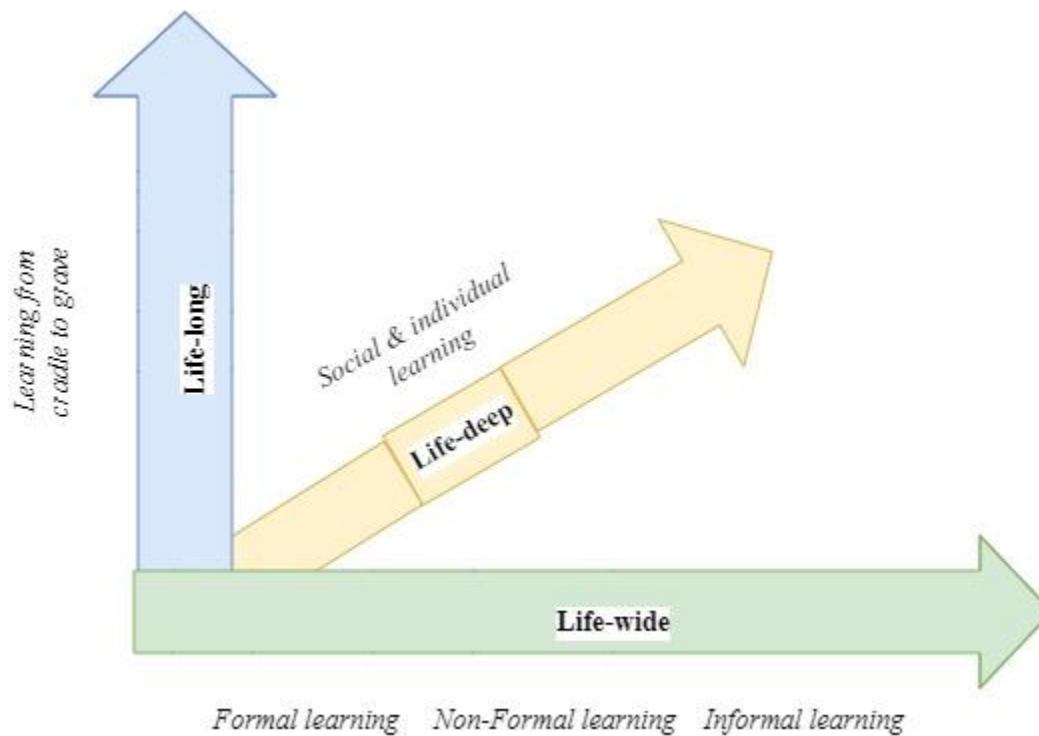
On the one hand, “non-formal learning consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. (...) (Such) learning is intentional from the learner’s point of view” (Colardyn & Bjornavold, 2004, p. 71). While non-formal learning might be provided in the form of a seminar, workshop, class or even a series of them, it does not include any examinations nor certifications. This type of learning can be acquired in addition or alternatively to formal learning (Miyake, 2017). Non-formal learning may take place both within and outside formal educational institutions and can cover, for example, adult basic education, life-skills, work-skills, and general culture topics (Myers et al., 2014).

On the other hand, informal learning is in most cases inadvertent because it results often from daily life activities and experiences related to work, family, and leisure. While it is not structured by objectives, time, or instructional support, nor leads to certification, informal learning does help the individual to acquire knowledge (Colardyn & Bjornavold, 2004). While less organized and structured than formal and non-formal learning, informal learning is often undertaken with the clear intention to develop skills or knowledge (Myers et al., 2014). This type of learning results pivotal for Lifelong Learning due to its’ following seven distinctive characteristics (cf. Aspin et al., 2012, pp. 775–776):

- 1) *Contingent and opportunistic learning*: the demand to learn is based on the learner’s need to tackle the questions, challenges and/or problems within his/her circumstances.
- 2) *Emergent*: informal learning is typically unplanned and often even unexpected as it is dependent on the kind of events that unfold around the individual and/or groups.
- 3) *Tacit*: the extent of the quality of the informal learning experiences is commonly unaware, as it is not evaluated.
- 4) *Focus on learning and the learner*: the individual has control over what and how he/she wants to learn.
- 5) *Focus on both groups and individuals*: the learning can be autonomous or collaborative.
- 6) *Contextualized learning*: the learning takes place only in particular settings, times, and circumstances.
- 7) *Seamless know-how*: given the fact that the learning demand is highly contextualized and contingent, the focus of informal learning tends to be more holistic and thoroughgoing, rather than theoretical.

An ideal vision of Lifelong Learning is based upon a deeper understanding and recognition of the act of learning, “one that envisages a better balance of formal, (non-formal) and informal learning” (London, 2021, p. p.22). Thus, as depicted in Figure 1, Lifelong Learning should be understood as a comprehensive, integrated, and holistic system that makes visible and validates formal, non-formal and informal learning possibilities within and across the entire learning continuum.





**Figure 1: Lifelong Learning umbrella (Egetenmeyer, 2014).**

### ***1.3. Learning Ecologies for Lifelong Learning***

The fulfillment of the aim to embrace Lifelong Learning is often contested by the complexities posed by the information overload, the advent of high-functioning systems and the rapid technological change. Moreover, there is a clear perception with regard to the fact that the exercise of learning nowadays is occurring more often in non-formal and informal contexts, a trend that seems to be increasing in a larger proportion in the near future.

Learning ecologies can become a platform to develop what Deniz Saribas describes as active lifelong learners (Jones & McLean, 2018). Through them people can plan and assess their own learning, both in formal, non-formal and informal settings. Furthermore, through these ecologies people can also learn at their pace and/or from peers, teachers and/or mentors. In the next lines we will provide a definition of the term learning ecologies and explain in more detail how lifelong learning can take place through them.

#### ***1.3.1. What is a Learning Ecology?***

The term learning ecology draws originally from the biological concept of ecology but adapted for studying learning contexts. This perspective is based on the ecological systems theory proposed by Urie Bronfenbrenner and Rudolph Moos which analyzes human development in relation to

multiple societal environments (Jessup-Anger, 2015) (Nygren et al., 2019). While an ecology, from the biological perspective, refers to the relationships and interactions between living and non-living organisms and their environment, a learning ecology alludes to “the set of contexts found in physical or virtual spaces that provide opportunities for learning, which may include formal, informal and non-formal settings” (Esposito et al., 2015, p. 333).

A learning ecology comprises the integration and interdependence of conditions, relationships (in form of networks and interactions) and resources (in form of tools, technologies, materials, and activities) that provide the individuals with opportunities and assets for their learning, development, and achievement (Jackson, 2014). Learning ecologies, like their biological counterparts, are not immutable, but rather dynamic, adaptive, and responsive. They are living systems containing a diversity of factors that interact with each other (Jackson, 2012b) and are subjected to a particular learning purpose or task within a time, space, and action frame. Therefore, we build and move through our own past, present and future learning ecologies, drawing upon what we have learned and carrying it with us when creating new ecologies based upon our learning objectives, motivations and expectations at a given moment.

The concept of learning ecology is often confused with the term Personal Learning Environment (PLE) (Esposito et al., 2015). The latter constitutes “a mixture of web-based tools materials and human resources that a person is aware of and uses (...) for personalizing their learning experiences, having full control over what they learn and how they connect with other peers and experts” (Czerkawski, 2016, p.3). A PLE belongs to the individual from birth to death and therefore can be seen as a holistic representation of the individual’s formal, non-formal and informal educational trajectory (Reyes-Fournier, 2017) and his/her appropriation of tools and resources for his/her learning purposes. Furthermore, because PLEs include an online archive of a life’s collection of personal and professional artefacts and memorabilia, they “can be used to develop personal histories and reflective narratives to preserve such stories for future generations” (Jackson, 2012a, p.19). Therefore, a PLE functions as an individual digital space where all past and present learning resources are accessible anywhere, at any time and in any way, without losing track of what the person has learned before. In this regard, PLEs can also be considered as knowledge management systems (Boonrasamee et al., 2019) and learning strategies (Peña-López, 2013) which can perfectly be used for aggregating and organizing the assets present in our personal learning ecologies and actively engaging in our lifelong learning journey.

In sum, “our learning ecologies are the means by which we connect and integrate our past and current (lifelong learning) experiences (and processes). They embrace all the physical and virtual spaces we inhabit and the learning and the meaning we gain from the contexts and situations that constitute our lives” (Jackson, 2014, p.3). In this sense, we can create and develop various learning ecologies over time but also simultaneously, each one with a particular learning purpose (Jackson, 2012b). Therefore, the learning ecology we have for work will be different to that we have for pursuing a hobby or a study, although there may well be connections across all our ecologies. While the transitions of the learners across a varied range of formal, non-formal and informal learning settings provide indeed rich and diverse learning opportunities, it is the ability to learn how to create and develop our own learning ecologies for our purposes what we need to sustain our own Lifelong Learning process. On this basis, we will elaborate further on the topic of learning through learning ecologies in the following lines.

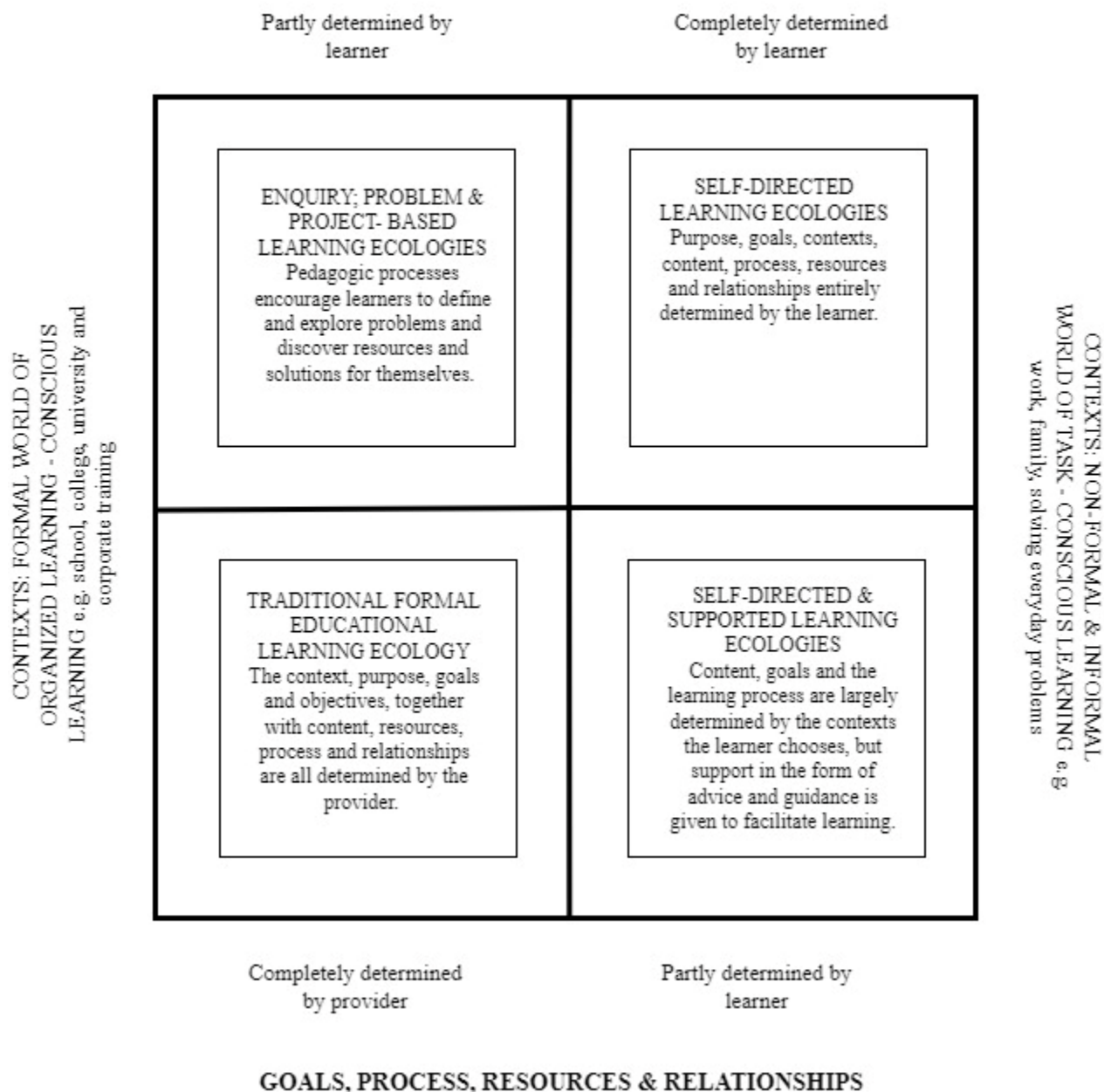
### ***1.3.2. Learning through Learning Ecologies***

The advancement of technology, in particular the Internet, has facilitated the creation and the expansion of diverse accessible and flexible means for educational, professional, and individual development beyond the traditional, formal options. It has enabled learning and knowledge transfer through ways that were often missing, as learners can learn anywhere, anytime, at their own speed, and through a variety of ways and styles by means of the different information and communication technologies (ICTs) existent.

In this regard, we have experienced the extension of formal learning through the use of the E-learning approach and the digitalization of sources. However, technology has also made evident how a greater extent of adult learning occurs through unofficial ways and contexts, with estimations ranging from 70-90% (Czerkawski, 2016; Hague & Logan, 2009; Maier, 2011; Rogers, 2014; Yen et al., 2019). Thus, as we have mentioned previously in this chapter, it is essential to understand how formal, non-formal and informal learning can become vital components for the implementation and enhancement of Lifelong Learning. Neither form of learning is superior to the other. They are rather different from each other in their value and application, as well as in their limitations.

As explained in the paragraphs above, “learning ecologies function as an integrative function of the different kinds of learning (existent) in the digital age” (González-Sanmamed et al., 2019, p. 1640) (see Figure 2). Informal and non-formal learning environments are specially learner-oriented focused, which means that the individual, in order to profit from the learning potential of such contexts, requires not only intention, but also self-regulatory skills given the lack of instructors or teachers. Moreover, in such environments the act of learning is based on a “doing and experiencing approach”, where learning is the side effect or result of performing an activity or practice. Furthermore, learning can take place through a self-directed perspective or in collaboration with others through shared practices, interests, or goals (Dron & Anderson, 2022).

## GOALS, PROCESS, RESOURCES & RELATIONSHIPS



**Figure 2: Categorization of Learning Ecologies and their learning contexts (Jackson, 2012a).**

Given the fact that Lifelong Learning refers to a continually ongoing process and that throughout our lives we create and inhabit diverse learning ecologies, learners need to acquire and refine the following six competencies (Kaplan, 2016): (1) self-management competency, (2) learning to learn competency, (3) initiative and entrepreneurship competency, (4) information acquisition competency, (5) digital competency and, (6) making decisions competency.

It is undeniable that information access has become easier than ever before thanks to modern technology and digitalization. Nevertheless, “an excess of information is not necessarily the source of additional knowledge” (UNESCO, 2005, p. p.19). This information needs to be processed and understood by the learner so to transform it into applicable knowledge. Thus, the six faculties mentioned above are critical, so learners can identify the meanings carried by the sources through cross-check, selection, and identification of key issues within the information flow.

The act of learning is the joint that introduces a critical dimension in the gap between information and knowledge. “Learning is both an individual and social process. While learning takes place at the individual level with the interplay of cognitive, emotional, and physical elements, the learning process is very much shaped by the environment in which the learner finds himself/herself. Learning environments (and in consequence the ecologies to which they belong) are not static and constantly pose new challenges to the learner. The learner needs to assimilate and accommodate the changes in his/her environment” (Medel-Añonuevo et al., 2001, p. 14). More than ever, the learner needs to be more conscious about his/her learning in terms of contexts, processes, situations, and relationships.

“This process in which individuals take the initiative with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing learning strategies and evaluating their learning outcomes” (Knowles as cited in Blaschke, 2012, p.58) is the definition of self-directed learning. This type of autonomous learning supposes a qualitative leap with respect to the traditional guided learning, in which an external source, usually a teacher or instructor, guides the learning process by providing the resources and feedback to meet the learning objectives of the individual. Through self-directed learning, the learner takes self-responsibility for their learning, triggered by his/her intrinsic motivation to identify his/her learning and knowledge gaps and how to address them.

As the motivation to expand the knowledge and deepen the understanding in several topics and arenas of life increases, the emotional commitment to learning also grows, in particular due to the ease to access further learning possibilities through the use of ICTs. As a consequence, individuals can develop capabilities in terms of knowing how to learn through a higher degree of self-efficacy for facing independently or in collaboration with others novel as well as familiar situations through the knowledge and skills they have, but also by acquiring new information and competences through a continuous learning perspective. When this occurs, we refer to a progression from self-directed learning into self-determined learning<sup>1</sup>. Through the latter, learners take completely the initiative for identifying their learning needs, for formulating their learning goals, for identifying their learning resources, for implementing problem-solving strategies, but in addition they also reflect upon their learning processes, so to challenge existing assumptions and increase their learning capabilities overtime (Blaschke, 2012). In this regard, self-determined learning

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<sup>1</sup>Andragogy is the educational theory that focuses on explaining self-directed learning in theory and in practice. Heutagogy is the study of self-determined learning, which expands the principles of Andragogy by building upon the idea of self-directed learning and incorporating to it the double loop learning capability. Through the aforementioned capability, individuals reflect on both the problem-solving process and the learning process and how the outcomes obtained influence their own beliefs and subsequent actions. Furthermore, Heutagogy considers the progression of the learners in maturity and autonomy (cf. Hase & Kenyon, 2000; Blaschke, 2012). Both Andragogy and Heutagogy are theories used in the fields of Distance Education and Online Learning.

emphasizes the need of learning to learn so to embrace actively Lifelong Learning by reflecting actively on the process of learning, as well as in the learner's objectives and the results he/she wants to achieve through it, thus owning the process as a whole (Peña-López, 2018) and throughout the lifespan.

Moreover, and bearing in mind that nowadays we inhabit a variety of offline and digital environments between which we switch at times by duty, at times by will, learning necessities in the current context are becoming less and less about the "the need-to-know information but instead know where to find it and what to do with it" (Dron & Anderson, 2022, p. 5). In this sense, the varied requirements, and motivations of the learners in terms of information, guided learning/self-directed learning/self-determined learning, knowledge, and skills need to be acknowledged, as these demands are what ultimately drive the ways in which learning ecologies can be understood and constructed. Furthermore, to be aware of the aspects and components present in the aforementioned ecologies is useful for understanding how Lifelong Learning is put into practice in different contexts and for a variety of purposes, but also how it is reshaped by technology, web-based spaces, and digitalization. Learning ecologies provide the opportunity to integrate knowledge from various disciplines through the application of a variety of learning strategies that can be used accordingly to the different situations faced by individuals during their lifetime.

## **Chapter 2. Performing Lifelong Learning through Online Learning Communities**

Online learning communities (OLCs) offer plentiful possibilities to the diverse needs of learners in formal, non-formal and informal settings. In this chapter we trace the roots of this notion and its evolution through its' relation to concepts such as community, virtual community and learning community. On a second instance, we present our working definition of the term and distinguish it from other online learning initiatives that tend to be confused with OLCs such as forums, social networks, massive open online courses, and virtual communities of practice. Furthermore, we proceed to identify the most common functional and technological features present in the instructional design of OLCs. We also discuss their organic aspects in terms of community development and membership structure. Through this background and clarification efforts about the concept of OLC, we reflect about its relevance as research field and bring forward our intention to frame our study around this type of communities and their influence on Lifelong Learning.

### ***2.1. Online Learning Communities as Part of a Learning Ecology***

As exposed in the previous chapter, learning ecologies are a good framework of reference because they reflect the manifold learning opportunities enabled by the current complex digital landscape, exemplifying how formal, informal, and non-formal learning possibilities are intermingled in an individual's lifelong learning journey. Furthermore, they help us to understand how we learn and what contexts and elements we use for this purpose, from both conceptual and practical perspectives (Jackson, 2012b).

Learning ecologies are based on a learner-centered learning model in two ways. On the one hand they foster the self-learning approach, but on the other they also favor collaborative learning experiences by linking the actors involved in the learning process. Examples of components in learning ecologies with both of the aforementioned characteristics are learning communities, organizations, and even learning cities and learning regions that can potentially be part of a learning ecology.

Online learning communities (OLCs), in particular, result interesting cases to approach. Such communities are often found as part of an individual learning ecology. This obeys the fact that they are as diverse in purpose and character as the human beings they are made up.

### ***2.2. What is an Online Learning Community? Elucidating a Concise Definition***

The notion Online Learning Community (OLC) seems, at first sight, to be a term of modern times. Although it is indeed an expression that emerged thanks to the use of ICTs, the notion has deeper roots. In order to elucidate a concise definition of the term, in this section we portray OLCs through both theoretical and structural perspectives.



Through the theoretical standpoint, we unveil the background and essence of the concept. Hence, as a first step we include a discussion of the three concepts that are foundation and leitmotiv for defining the term OLC, namely community, virtual community and learning community. On a second instance, we display the essential characteristics that distinguish OLCs from other type of virtual communities and present our working definition for the purposes of this study. Third, we identify conceptual differences among virtual learning tools, platforms and learning initiatives that tend to be often confused with OLCs.

Our intention by incorporating a structural perspective to our OLC definition is to complement the theoretical framework and thus, offer a more holistic approximation to the concept. For doing so, on the one hand, we examine the functional and technological features that characterize these communities. On the other hand, we explain organic aspects such as the community lifecycle and the role of the membership as information and knowledge generators. Finally, we reflect on how OLCs as an idea and a practical initiative have the potential to foster Lifelong Learning.

### ***2.2.1. Tracing the Roots of the Online Learning Community Concept***

Through an initial theoretical review of the concept of Online Learning Community (OLC), we realized that the term has developed from the interrelationship of three main concepts: community, virtual community and learning community. Therefore, firstly we provide a theoretical and historical background of the notions of community and virtual community. Second, we discuss the concept of learning community in relation to the two previous notions, in order to illustrate how such concepts are at the core of the definition of an OLC.

#### **I. Community and Virtual Community**

The discussion of the term community and its connotation is a common subject of analysis that different social disciplines such as Philosophy, Anthropology, Sociology, Economics and Psychology share, given the complexity to define it and the scope of applications of its concept. Nevertheless, although the notion of community cannot be reduced to a single definition (El Morr & Maret, 2012), there are common characteristics in the conceptualization of the different stances that result useful for establishing a general statement about its' meaning.

In this regard, a community, generally speaking, is a group of persons with characteristics and/or common interests, which can have or not a mutual specific objective and which share a territory or space (Coll et al., 2007). Moreover, communities “develop specific interaction patterns guided by (their own) socially constructed rules and norms” (Di, 2018, p. 6).

Among the common characteristics that communities can constitute themselves from/around we can cite, for example, language, culture, age, social status, land, ideology, roles, etc. In the case of shared interests, people can start, join and/or engage in communities for a variety of reasons: meet new people, inform themselves, ask for opinions, make questions, learn about a subject, provide information to others, etc.

Nowadays, virtual communities are a common alternative for joining and participating in a topic-specific community. The idea of gathering online for exchanging information and discussing has been put into practice since the end of the 1970s, when Usenet was used to host topical newsgroups with electronic bulletin boards where subscribers could upload articles and replies in form of threads about subjects of their interest (El Morr & Maret, 2012; Janssen & Ocana Machado, 2014). Notwithstanding, the origin of the online community movement is attributed to the foundation and development of the WELL (El Morr & Maret, 2012; Janssen & Ocana Machado, 2014).

The reputed online community was started by Stewart Brand and Larry Brilliant in 1985 originally under the name of the Whole Earth 'Lectronic Link (WELL). In the beginning it was an online space where independent writers and readers of the Whole Earth Review could exchange impressions and discuss with each other. With the years, the WELL became known not only for being a pioneering online community, but also because it evolved over the course of the decades to include even till today thousands of supervised forums known as conferences. These forums are organized around subjects such as art, politics, sport, travel, books, music, health, business, spirituality, software, hobbies, etc., where members participate(d) actively and bond(ed) with the space and with one another.

It was precisely the intensive, long-term engagement generated by online communities such as the WELL that led Howard Rheingold, one of its most active members, to coin the term virtual community in 1993. His intention when conceiving the aforementioned term was to describe the social groupings that emerged when people started to use the Internet regularly to search for like-minded spaces and peers. He described them as a “social aggregation that emerges from the Net when enough people carry on those public discussions long enough, with sufficient human feeling to form webs of personal relationships in cyber-space” (Di, 2018, p. p.7).

Hence, when talking about virtual communities we refer to geographically dispersed people who join voluntarily an online environment through ICTs so to find peers that share common interests, which they practice and/or discuss based on mutually accepted rules of conduct and communication. It is precisely through these characteristics -people, shared purpose, policies, and technology- (Janssen & Ocana Machado, 2014) that the relationship bond created and sustained among people in an online space makes users constitute and operate in a similar fashion to offline communities. In all respects, “virtual communities are not something outside our traditional society (...) (but) true parts of our society and as such also part of the ongoing change and evolution of society” (Stolterman et al., 1999, p.3).

## **II. Learning Communities**

As we have explained some lines above, people decide to join and engage both offline and virtual communities because these spaces deal with topics of their interest and through them, they can find peers that share their particular purposes with regards to these topics. One of these common shared purposes for joining a community is learning. Nevertheless, learning can also be a consequence of participating in the community, even though the original purpose of the member was different. Therefore, the question of learning in a community requires a closer examination.

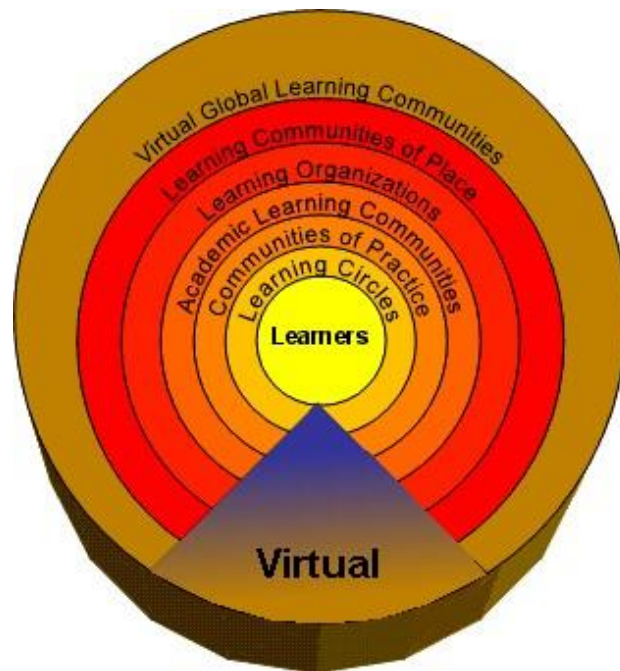
The cornerstone behind the idea of learning in community is commonly attributed to John Dewey's philosophical posture on the matter (Kilpatrick et al., 2003; Swan & Shea, 2005; Jessup-Anger, 2015), who focused part of his scholarly expertise in defining and defending progressive education reforms. In his book, "Experience and Education" written in 1938, he highlighted the importance of social interaction for all human learning endeavors and also envisioned the foundation for the theories of learner-centered learning and active learning.

This philosophical stance was nurtured later on through the social constructivism approach to learning (Kilpatrick et al., 2003; Swan & Shea, 2005; Ke & Hoadley, 2009). Social constructivism considers that the individual learns by actively building his/her knowledge by making sense of his/her experiences, as well as by testing his/her previously held values and attitudes against those of others and in interaction with them.

Indeed, in practice, to interact in a community introduces the person to new ideas, raises awareness of different ways to do things and even exposes people to commit with a common purpose and the norms and value sets attached to it. Furthermore, being part of a community aimed to foster learning "involves building connections among what is being learned and what is important to the participants while creating relations among participants with similar goals. Thus, the existence of a learning community is bounded by a set of conditions and practices that give rise to it" (Charalambos et al., 2004, p. 136). Some of these common aspects that give birth and shape the uses of learning communities include a shared purpose; concise and mutual interests/objectives; collaborative practices and/or ongoing interaction directed to generate and strengthen the partnership and the learning; the respect to diversity; and the enhancement of the potential and the outcomes of participating in the community for the individual and its members (Jessup-Anger, 2015).

Therefore, we can agree that a learning community is a subcategory of the concept of community because it shares several defining characteristics from the latter, but with a clear focus on the act of acquiring knowledge with and through others. Nevertheless, and likewise the notion of community, we encountered through our literature review that the term learning community has not a unique definition. Although we revisited several conceptualizations of the expression, we consider that the definition provided by Sue Kilpatrick, Margaret Barrett and Tammy Jones had the most straightforward yet comprehensive approach to it. In their words, "a learning community is any group of people connected by the same goals (of becoming versed in a topic or skill) and that collaborate in order to create a vibrant, synergistic environment, while respecting a variety of perspectives through the active provision of learning opportunities to its members which, in turn, may create new knowledge" (2003, p.5).

Given the fact that "a learning community is formed when a group of individuals decides to collaborate in order to achieve a common goal, expanding, along the way, their knowledge base with regard to related topics" (Santos, 2012, p. 52), it is possible to differentiate between stances of social learning aggregations. Such stances range from those of smallest scale (e.g., learning circles) to those of largest or global scale (e.g., virtual global learning communities). In this regard, the different examples of learning communities can be understood, in the words of Ron Faris, as "a nested concept of expanding scale and a cascade of social learning environments" (2006, p.11) (see Figure 3).



**Figure 3: Learning Communities: A nested concept of expanding scale and cascade of social learning environments (Faris, 2006).**

It is important to note that all these types of learning communities, both in its' offline and online modalities, fit into the definition provided above and despite the clear difference in terms of environments, “all are as real as any communities are” (Charalambos et al., 2004, p.136) and “must continually struggle with the problems and (deal with the) possibilities of their own capacities to become and remain communities”(Charalambos et al., 2004, p.141). In fact, it is precisely this sense of realness given by the virtual form of the learning communities that has driven the interest in using them for enforcing learning initiatives of all kinds, as well as for conducting academic research about their design and potential for learning purposes.

### ***2.2.2. Online Learning Communities: Our Conceptual Approximation***

ICTs and the Internet have made possible the use of computer-mediated communication (CMC) between people in the form of e-mail, instant messages, chat rooms, newsgroups, forums, blogs, social networking sites, etc. It is indeed through the rapid development and the persistent use of CMC since the mid to late 1990s that individuals have been able to transmit data rapidly and connect with other groups of people and/or institutions/organizations for different purposes (Bruckman, 2005). As mentioned previously, this technological revolution directly impacted the scope of the communities in general, which without the restrictions of space or time of the online world, could also flourish virtually (Jin et al., 2013) and to a worldwide scale.

In the specific case of OLCs, CMC has fostered the creation and the taking part in virtual social groupings with similar interests and endeavors so to access information about a given topic, to learn and to build-up their knowledge together and through other persons (Murua Anzola et al., 2014). The fact that the main and explicit focus of OLCs is on learning is what distinguishes them from other types of virtual communities (Daniel et al., 2003). This greater purpose is what gives sense not only to the existence of the community but also to the engagement of its members which have the clear and shared objective to advance their knowledge on a concrete topic or area. As a consequence, the communication tools, and the online resources available in them are intentionally targeted and used to foster the learning of a specific content, as well as to make the information easily accessible, shared and discussed (Coll et al., 2007).

Both offline and virtual learning communities share four defining characteristics, namely: (a) access, (b) relationships, (c) vision, and (d) function (Cronje & Van Zyl, 2022). The access alludes to the presence of different types of community members in a physical or online space. The relationships refer to the bonds among members that create interdependence, trust, and a feeling of belonging. The vision of the community is the shared sense of a learning purpose that ultimately allows the development of a collective identity. The function considers the actions that members do to realize the mutual learning vision and maintain the cohesion of the community. In both type of learning communities, the acts of getting and giving information through the communication and interaction of the participants are two of these core actions (Deng & Guo, 2021) that sustain and nourish the community by enabling the members to learn from, contribute, generate specific knowledge, and collectively build upon it.

Thus, OLCs can be depicted as “an extension of the physical learning community” (Ke & Hoadley, 2009, p. 488) to the virtual realm, developed by and maintained through the use of technology. This statement becomes true for OLCs insofar the commitment and identification of their virtual members with the learning objective supports the collaborative efforts for developing both the individual and the collective knowledge through their participation and engagement (Ala-Mutka, 2010).

Notwithstanding, we consider it important to make explicit the working definition of the term OLC that we will use for the purposes of our research. In this sense, we pondered that the concept proposed by Urban Carlén and Ove Jobring is adequate because it goes in line with the discussion we have presented about the definition of the notion (online) learning community included in this and the previous section of the current chapter.

According to Carlén and Jobring, an OLC is “a learning atmosphere, a context providing a supportive system from which sustainable learning processes are gained through a dialogue and a collaborative construction of knowledge by acquiring, generating, analyzing and structuring information” (Carlén & Jobring, 2005, p.273). The authors’ research on OLCs focuses not only in defining this type of virtual communities, but also in depicting the different categories of OLCs, their constituents in terms of actors, activities and tools, and a rationale that provides a frame of reference to understand the practices, conditions and settings that foster learning and knowledge building through OLCs (Carlén, 2002; Carlén et al., 2004; Carlén & Jobring, 2005).

In the view of these authors, the nature of OLCs encourages knowledge acquisition and exchange for different contexts, which they categorize according to three main different learning focuses (educational, professional or interest) that formal, non-formal and/or informal learning possibilities. Moreover, Carlén and Jobring also consider the levels of virtuality that OLCs can have. Because members can meet sometimes face-to-face upon agreement and at other times through technology, OLCs can be fully or partially virtual (Janssen & Ocana Machado, 2014). Hence, the authors also include in their depiction and study of OLCs those of online and blended nature.<sup>2</sup>

### ***2.2.3. Differences between Online Learning Communities and other Virtual Tools, Platforms and Learning Environments***

In practice, online learning communities (OLCs) are often confused with discussion forums, social networks, massive open online courses, and virtual communities of practice. Although these virtual tools, platforms and learning environments can be closely related, they are all different in essence and use. Hence, we consider it important to make a distinction among them. With this purpose in mind, we present a conceptual discussion of the differences between the aforementioned notions.

#### **I. Online learning communities vs. discussion forums**

“Discussion forums are a tool that enables learners to create information, collaborate and interact simultaneously or asynchronously in the online environment” (Kilinc & Altinpulluk, 2021, p. 314) via the creation and use of threads and comments as responses. An important learning asset of forums is that through them, learners have the chance to exchange information, reflect on their own ideas, as well as about their answers to other users during the process of writing and posting them as a thread or comment. They are also useful for helping less confident learners to express their opinions.

There are plenty of open-access forums that can be found on the Internet and many virtual communities have in-built forums as well. Furthermore, discussion forums are currently the most used component of learning management systems (Kilinc & Altinpulluk, 2021). Nevertheless, an important difference between a discussion forum alone and an OLC is the stricter community management of the latter. The content in OLCs is subject to a stronger verification and a user is more identifiable as contributor because the discussion forums are considered an instruction and interaction tool for the community. Thus, the discussion forums in OLCs “enable learners to participate in a social and interactive learning process and to form a questioning community” (Kilinc & Altinpulluk, 2021, p. 315).

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<sup>2</sup> We will discuss in more detail the OLC theoretical framework of Carlén and Jobring in Chapter 3, given the fact that it was a main element for building our own framework of analysis for the current study.

## **II. Online learning communities vs. social networks**

Social network sites are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site” (Hisham Saleh, 2014, p. 12). This capability to represent oneself online by sharing personal information is the key feature of social networks because it allows users to form and maintain a web of contacts, being them individuals or organizations.

In this regard, the essential difference between social networks and online communities lies in the fact that in the first ones, people are connected between them by means of their virtual presence (profile) in a public platform and the information circulating in it, which can be in form of video, videoblogs, podcast, audio, images and/or text postings. That makes social networks a fertile, environment ideal to find people who are most different from us in terms of background and even culture, thus, making them optimal for sharing innovative ideas/information with ease, getting exposed to a diversity of perspectives and establish new social ties through connection (Jarche, 2016). In contrast, through online communities, be it for example of practice or for learning, the individuals share common interests and objectives that they can explore, express, discuss, and share freely in a safer, private atmosphere, which motivates them to interact continuously with their peers through these virtual spaces, forming a cohesive whole by building trust and developing social ties. Hence, the focus in online communities is more on interaction for testing ideas/value propositions, sharing know-how/specialized information/best practices, exchanging/debating opinions and integrating knowledge and learning by means of participating in a more trustworthy, exclusive environment in comparison to that of social network sites (Sanz-Martos, 2010; Jarche, 2016).

Since the early 2000s, social network sites started to become the dominant form of virtual social interaction (El Morr & Maret, 2012). Even so, online communities are not in decline, but they continue to emerge and flourish along social networks. In the case of OLCs, this phenomenon is exemplified through the way members use social networks to host a common space to share information, questions, concerns, and thoughts and thus, exercise their mutual interest in learning and acquiring knowledge (Miralbell, 2014).

## **III. Online learning communities vs. Massive open online courses**

MOOC is the acronym for the term Massive Open Online Course, a relatively recent development in the field of distance education that started in 2008 and attracted greater interest since 2011 and onwards (Sultan, 2014). MOOCs were created as an option to access formal education in a flexible way, while also allowing millions of learners worldwide to take part in high quality courses provided by well-reputed institutions and universities. The initiative is part of the wider context of the Open Education Movement (Yuan & Powell, 2013), which aim is that anyone can participate in the MOOCs anywhere, usually for free.

Currently, there are more than 80 platforms that offer MOOCs. Stanford's Coursera, Harvard and MIT's edX, Udacity, Udemy and MOOEC are among the most recognized ones. MOOCs are made up of recorded short video lectures, combined with assignments and open learning materials, computer-grades tests that lead to receiving certificate and online discussion forums, all hosted through cloud computing systems (Hoy, 2014). "Most MOOCs fall under a non-formal or semi-formal education category (...) and target people who have already completed higher education or people who wish to supplement (but not replace) university learning" (Bali, 2014, p. 263).

MOOCs are further categorized according to their approach, as Connectivist MOOCs (cMOOCs) or Extension MOOCs (xMOOCs). cMOOCs, the earliest version of these initiatives, follow a connectivist approach that favors interaction among learners. Hosted using free social networking sites or learning management systems, the knowledge in cMOOCs is co-generated through content contribution via student-created videos/exercises, tweets, threads in discussion forums, blogs or wikis and the creation of artifacts. Participants have the freedom to define their learning goals and types of engagement. While there might be online lectures involved, the teacher acts only as a facilitator responsible for co-creating content and aiding in shaping learning goals through collaboration. The contribution of contents is privileged as the way to produce valuable sources of knowledge. Informal feedback is given from more knowledgeable participants with motivation and evaluation purposes (Yuan & Powell, 2013; Pilli & Admiraal, 2016; Sillak-Riesinger, 2017).

With the offer of the courses "Artificial Intelligence, Machine Learning" and "Introduction to Database" by the Stanford University, MOOCs bifurcated into the second branch of xMOOCs. This latter category is based on behaviorist principles and an individualistic approach to learning where the teacher is the expert, and the learners are knowledge consumers. Due to their reliance on a didactic pedagogy, a traditional course structure, content, and methods, together with the massive, worldwide enrollment of learners to them, xMOOCs have gained more attention and expanded exponentially, in comparison to cMOOCs (Nkuyubwatsi, 2014; Dubosson & Emad, 2015; Sillak-Riesinger, 2017).

xMOOCs often include discussion forums, where doubts are solved, or support is given to the learners. Nevertheless, these forums are not built to structure and maximize the quality of the contributions of the participants, therefore the intensity of the interaction and the engagement of the users in them does not allow the emergence of an OLC through them. cMOOCs are closer to the concept of OLC in the sense that they "crowd-source answers to problems and (aim to create) networks that distribute learning" (Yuan & Powell, 2013, p.11). Notwithstanding the difference between cMOOCs and OLCs lies upon the fact that the first ones are often solely focused on the higher education and academic arena, while the latter tend to cover a broader scope of topics.

#### **IV. Online learning communities vs. virtual communities of practice**

From the types of online environments that can be used for learning purposes that we have examined in this section; we consider that the virtual community of practice (VCoP) is the one that can be easiest confused with an OLC. VCoP and OLC are both concepts closely connected because they share the idea of learning together as their core through, for example, brainstorming for



problem solving, requesting information, seeking information, discussing knowledge, and identifying gaps, using available learning assets, etc.

VCoPs are, in a nutshell, the online version of a community of practice (CoP). A CoP is a group of people who are practitioners of a pastime, a craft and/or a profession (Mohapatra et al., 2016).

VCoPs are developed and sustained over the Internet to overcome the barrier of individuals that are not in the same location (Bissessar, 2022).

The term CoP was rooted by Wenger to describe how the acquisition of “knowledge is inseparable from practice and how (this) practice is inseparable from the communities in which it occurs” (Swan & Shea, 2005, p. 243). CoPs function through “a domain of knowledge, a community of people who care about this domain and the shared practice that they are developing to be effective in their domain” (Herranz et al., 2012, p.3). The theoretical and analytical framework of CoPs has proven to be useful for analyzing learning environments in the organizational and professional contexts, because it sets “the foundation of a perspective on knowing and learning that informs efforts to create learning systems in various sectors and at various levels of scale” (Skalicky & West, 2011, p.6).

An important similarity between OLCs and VCoPs derives from the fact that they both are an option for exercising collaborative learning online, which continues to be on trend since several decades. As mentioned previously, thanks to the rapid and steady development of the ICTs and the Internet applied to foster CMC, both types of virtual learning environments have incorporated themselves progressively in educational, organizational, political, cultural, and business arenas.

Nevertheless, and as explained through the definitions from OLC and VCoP exposed throughout this chapter, the fundamental distinction between both instances has to do with the way learning takes place in each of them (Sanz-Martos, 2010). These differences are subtle, therefore the conceptual line between OLCs and VCoPs is very thin.

In the case of VCoPs, the objective of learning is explicitly circumscribed to the professional practice of a subject (Bissessar, 2022). Membership in this type of community requires a level of competence and knowledge of the domain in order to belong (Gray, 2004). Hence, the specialized information, thoughts and experiences shared relate to best practices, methodologies, and solutions, as well as to the purpose of improving or deepening the knowledge and skills in the area of expertise through the online communication with other professionals. Members can learn via online discussions and by virtual instruction. This interaction around problems, solutions and insights of a shared practice contributes to develop and accumulate a common store of knowledge within the VCoP and creates a very cohesive membership (Daniel, 2003).

As for OLCs, their learning goals are broader than in VCoPs (Daniel et al., 2003). Moreover, while the topic of interest for an OLC can be concrete, the members of this type of community share information, content insights, stories, experiences, recommendations, and knowledge in a more general way, in comparison to VCoPs. In OLCs, members engage in the flow of information available in the community to meet their own learning needs or those of the community, but they bond together voluntarily and informally, which creates shifts in the membership over time.

### ***2.3. The Architecture of Online Learning Communities***

In this section we delve into the structural aspects of online learning communities (OLCs), in order to discuss the elements that influence the particular configuration of this type of communities. For doing so, first we present an account of the functional and technological features that distinguish them from other virtual communities. Second, we provide an insight about attributes such as the lifecycle and the membership composition of virtual communities, so to reflect about how OLCs emerge, function, and develop like organic systems and how their members play a role concerning the capacity of these communities to be not only learning resources, but also collective information and knowledge repositories.

#### ***2.3.1. Functional and Technological Aspects of Online Learning Communities***

The layout of the platform hosting the OLC is dependent on the visual identity that the community wants to convey, and therefore is unique. Notwithstanding, for all types of virtual communities it is advisable to ensure the usability of their portals in order to enhance accessibility and ease in terms of navigation, utilization of features and interaction. Moreover, virtual communities should include adequate data protection and privacy settings, as well as timely technical support. In this regard, the technical aspects of the platform are important because they contribute to the establishment and correct functioning of the community (Backroad Connections Pty Ltd, 2003).

Online community platforms often combine different technological tools with powerful data base features that allow to plan, register and follow-up what is done or said, by who and to whom within the system, while providing a hospitable, interactive, and safe space for the members (Coll et al., 2007). Nevertheless, in functional and technological terms, what distinguishes OLCs from other types of virtual communities is their pedagogic and learner-centered architecture (Tang & Lam, 2014). Hence, the instructional design of OLCs should comprise four components that allow (1) knowledge creation, (2) knowledge discovery, (3) knowledge dissemination and (4) community management (El Morr & Maret, 2012). Following this line of thought, in the next lines we provide a brief overview of the tools and the particular configuration in terms of instructional design that OLCs commonly use.

#### **I. Common ICT tools used for supporting Learning in Online Communities**

OLCs have a clear collaborative learning focus in their instructional design which is aimed to promote knowledge generation and exchange (Daniel, 2003; Raposo-Rivas & Escola, 2016). This obeys the fact that “collaborative learning environments are developed on the assumption that knowledge is a complex entity that is shaped by social context, not a simple product to be transmitted” (Daniel et al., 2003, p. 17). Thus, the platforms that support OLC share a repertoire of tools for supporting the learning purpose of the community, as well as the interactive activities of the members. Such tools can be categorized in three types (Murua Anzola et al., 2014):

*a) Tools for communication:* forum, notifications, newsletters, newsfeed, private messages, chat/instant messaging, live video, video/phone conferences, membership databases, search boxes, etc. are examples of features that allow members to get to know what is happening in the community, obtain information, and also to contact and interact with other users.

b) *Tools for project management*: shared documents, multimedia resources, presentations, links of interest available through repositories, surveys, wikis, webinars, blogs, private discussion/meeting groups, etc. are useful features for learning and for collaborating in building-up the information available in the community.

c) *Tools for organizing tasks*: features such as weekly or monthly schedules and calendars with appointments, announcing online events or regular and scheduled dynamics, etc. help members to engage in the community projects as well as to get to know other active members.

## II. Instructional design of Online Learning Communities

The different types of tools available in OLCs are the binding blocks within the instructional design of the community. On the one hand, such features support learning through access to published and shared information sources. On the other hand, they aid interaction between members by making possible the individual participation as well as the collective communication. Moreover, this allows interaction to happen both in asynchronous and synchronous ways.

In this sense, the pattern of interaction is influenced by the particular instructional and communication designs of the platform. Some OLCs might stress more the real-time engagement with the platform and/or the interaction between members, while other OLCs might characterize themselves for the participation and reactions that do not occur at the same time. Combinations of both synchronous and asynchronous designs are also frequent. In Figure 4 we depict examples of tools that are often included as part of the instructional and communication design of an OLC:

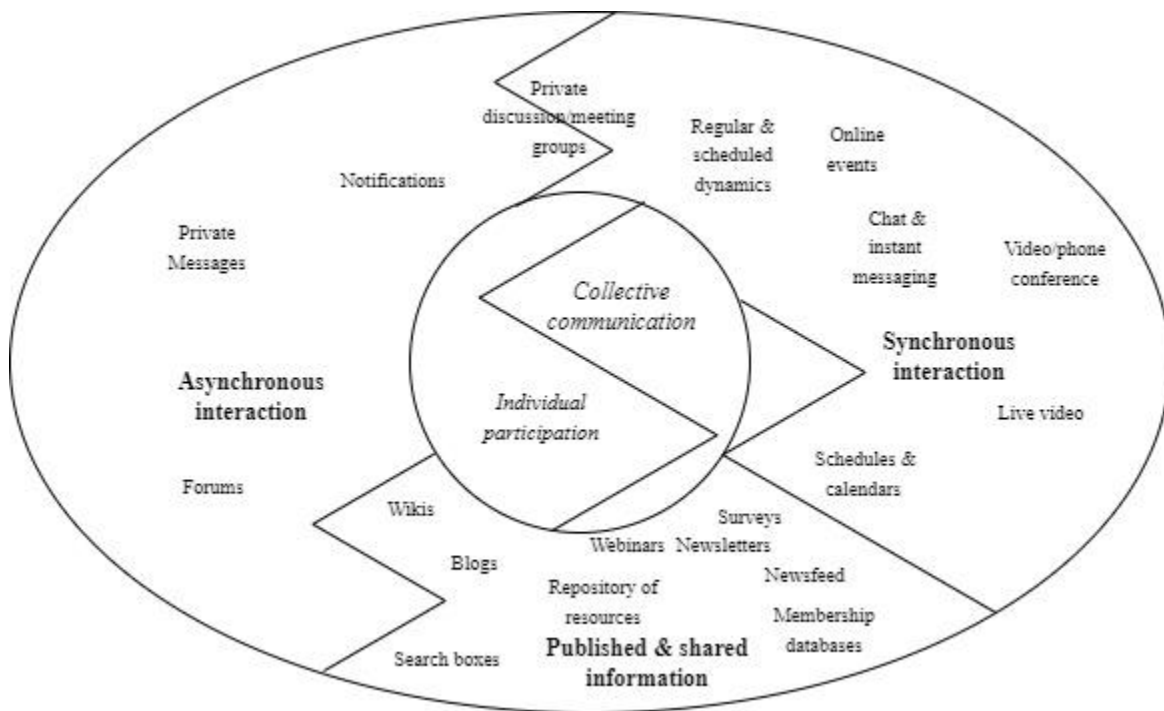


Figure 4: Tools for supporting learning and interaction in OLCs (revisited version -Sanz-Martos, 2010).

The instructional design and the tools available in an OLC open parallel possibilities for supporting the individual and collective learning purposes of the users in comparison to other offline and virtual environments. These features make possible the existence of different ways of interacting with the learning resources and the members that constitute them by means of stimulating the communication, the collaboration, and the knowledge exchange via asynchronous/synchronous interactions and/or through access to the published information assets available.

### ***2.3.2. Organic Aspects of Online Learning Communities***

The actual understanding of the concept and the essence of an online learning community (OLC) would not be complete without pondering its' organic dimension. This is a further and very relevant aspect related to the actual constitution of OLCs. Thus, in the next paragraphs we discuss OLCs as organic systems in order to provide an overview of their lifecycle. We complement our argumentation by explaining the typical composition of a virtual community membership and how members are key in terms of fostering learning, but also for generating collective information and knowledge repositories.

#### **I. Online Learning Communities as simile to living organisms**

Whether an OLC is designed with a purpose or whether it emerges naturally from the participation in an offline or virtual community, they are not static entities but rather fluid in nature (Ke & Hoadley, 2009), and they evolve organically as well. "Fluidity is a type of dynamism that allows resources such as passion, time, social disembodiment of ideas, socially ambiguous identities and temporary convergence to flow into and out of the network" (Wagner, 2014, p. 5). This fluidity is shaped by the type and regularity of the interactions, the transformation of the ICTs that support the communities, as well as by the waves of engagement and disengagement of their participants as and when it suits them. These two features also have a direct influence on the social dynamics and the content of these communities (Ferguson & Soekijad, 2016), which can be seen in the modifications of boundaries, norms, participants, artifacts and focus of the OLC over time.

Hence, OLCs can also be studied "as systems which, like biological organisms, are born, undergo growth, reach a level of mature functioning and then undergo decline and cease to function" (Swan & Shea, 2005, p. 261). We consider that this evolution schema was accurately depicted by Alicia Iriberry and Gony Leroy in a study conducted to detect and propose the tools, mechanisms, technologies, and management activities that benefit the development of an online community overtime. The authors, using the information systems lifecycle framework for their online community research review, detected and described the five stages which online communities, in general, undergo during their lifetime. These stages are inception, creation, growth, maturity, and death (Iriberry & Leroy, 2009).

The inception is the initial phase of every online community. In the case of OLCs, the idea of creating such a community emerges from a desire to cover a need of information and learning. During this stage, the community founders and/or managers elucidate the purpose, content focus, target audience, codes of conduct, trademark, and funding/revenue sources (if applicable).

The creation phase is the actual implementation of the planning with regards to the instructional, communication and technological design of the OLC. The interface and the platform components are chosen in this stage taking into consideration the purpose of the community and the learning needs of the potential membership. Questions such as the usability, security, privacy, performance, and reliability of the OLC platform and tools are defined and tested during this phase.

Once the OLC is launched, the community enters into the growth stage. During this phase, the interaction and the identity of the community develop. The concept of the OLC can attract more and more members and the community management becomes critical for integrating new users, while maintaining a regular engagement of the existent membership. Up-to-date and quality information and sources should be provided and revisited through content curation. Interaction and learning features should also be encouraged and adapted overtime, so to keep users participating and building up the information and knowledge repository of the OLC. In the growth stage, members engage in joint activities, share, or create content actively, and increase their commitment to the community. During this phase, users can start to forge relationships with other members and stay in touch with them, tagging them for advice, sending them messages and even holding reunions (Mohapatra et al., 2016).

According to Iriberry and Leroy's observations, when the development of the community during previous phases remains steady and successful, we refer to a mature status. In this phase, the virtual community has a permeated community management and netiquette, which can allow it to reach a critical members' mass and establish regular user-generated content that works satisfactorily and independently, thus, building trust and a feeling of camaraderie in its membership. Moreover, during the course of the years, the identity of the community, be it an OLC or any other type of virtual community, can be easily recognizable through the presence of a clear shared agenda to achieve an overarching (learning) goal, a signature culture, distinctive patterns of interaction, a common communication code among members, (Nikiforos et al., 2018; Cronje & Van Zyl, 2022) and a strong sense of belonging. In the case of mature OLCs, the information and the learning exchange becomes the greatest benefit that the community provides to its members. As a consequence, OLCs can establish themselves as authoritative or influential sources of knowledge (Janssen & Ocana Machado, 2014).

After reaching maturity, some communities remain sustainable over several years and perform a reiterative evaluation process to keep updated and attractive for their memberships by evolving according to the needs and the trends requested by their users. Nevertheless, other virtual communities can see a drop in their number of participants either because the interactions slow down or cease or because the members leave once the community has served their purpose. If the community becomes dysfunctional or irrelevant for the majority of the membership or if the founders/community managers decide to terminate the project, we refer to the death stage within the lifecycle of the community. In some cases, the OLC can remain so memorable, despite being dispersed or inactive, that people still remember it as a significant part of their identities and a center of knowledge during a time of their lives (Mohapatra et al., 2016).

## **II. Online Learning Communities as collective information and knowledge repositories born from a sense of belonging**

As we described previously in the chapter, for emerging and thriving, communities need a shared purpose and commitment in terms of participation from their memberships. In the case of OLCs this is not different. They require “collections of autonomous, independent individuals who are engaged by influencing each other within a learning process” (Ke & Hoadley, 2009, p. 489). Moreover, it is precisely through the “increasing levels of commitment in the transaction of knowledge” (Ke & Hoadley, 2009, p. 489) that members develop a sense of community and the OLC can evolve.

The membership of an OLC, alike other virtual communities, is composed of gatekeepers, contributors and lurkers who have a strong interest in the topic and the learning purpose of the community in question (Lai et al., 2018). Gatekeepers are the community managers who control the access to the community, administer the technical details, verify/curate the content shared and moderate the interactions among members. The moderation task is particularly important because it helps to incite and invigorate the interactive spirit of the community (Becerra-Traven & Gutiérrez-Esteban, 2016), while keeping the environment secure for the membership.

Contributors are the users that visit the community regularly and make posts often as well, either for asking questions, commenting the threads, providing recommendations and/or sharing experiences or information. They are the major producers of content (Lai et al., 2018) for the OLC, hence actively building up the resources of the community’s information and knowledge repository. Among the contributors we can distinguish creators, critics, and collectors (Janssen & Ocana Machado, 2014). Creators are the members that contribute most actively to the community either by providing original content or by responding to other members. The critics are those members who provide solicited and unsolicited opinions and comments. The collectors are members who organize and/or gather information that they find interesting and useful for the community and share it. to A number of contributors -either creators, critics, or collectors- can be experts in their fields, making the knowledge exchange experience richer in terms of information value.

Spectators or lurkers also participate often in the OLC, although they seldom contribute or ask questions. Nevertheless, they do read the ongoing threads and discussions and listen or watch the content available in the OLC, apprehending the information they find in the community and benefiting from its’ data and resources repository (Janssen & Ocana Machado, 2014) (Lai et al., 2018). Despite their silent engagement, a review of the statistics of the community platform can reveal their regular presence, as well as their role as information consumers (Cho & Wash, 2021; El Morr & Maret, 2012).

The information and resources provided and shared by the members in an OLC can become precious goods with incremental value in terms of learning and knowledge. The asynchronous written communication and the existence of repositories allow to build-up, on the one hand, a record of empirical knowledge and, on the other, to store the learning contents overtime. Hence, OLCs can function as accumulative, collective information and knowledge archives, when the

levels of interaction and reciprocity in terms of knowledge exchange are high enough to develop a continuous engagement and a strong sense of belonging.

#### ***2.4. The Potential of Online Learning Communities for Lifelong Learning***

For more than half a century, “learning communities have evolved from an innovation adopted in isolation by postsecondary institutions to a widespread reform movement embraced by over 800 colleges and universities” (Jessup-Anger, 2015, p. 17). It is interesting to see how these initiatives have flourished from the offline to the virtual world and become a recurrent option for the arenas of formal education and distance learning. More than that, OLCs have become resources that “complement institutional education in creating future learning spaces that enable meaningful and learner-centered lifelong learning” (Ala-Mutka, 2010, p. 62).

Be it through interaction to solve doubts and problems together, through the mutual sharing of experiences and by self-learning through the learning resources found in the community, OLCs are actively used worldwide. Their virtual modality allows individuals to connect with other users and learn about any topic without restrictions of place or time, which makes them extremely adaptable to meet diverse learning needs across different life stages and arenas. This characteristic constitutes the first aspect in terms of the potential that OLCs have for cultivating Lifelong Learning.

Learning through OLCs in an active and proactive process because the instructional design of these communities is learner-centered, while the content available/shared through them, as well as the contexts in which they emerge and function, are learner-generated/oriented. Moreover, OLCs emphasize the collaborative learning approach. “When learning collaboratively, learners work together in a collaborative space to create shared meaning and to reflect and think about how they learned and how to apply it in practice” (Blaschke, 2012, p.66). Therefore, a second aspect of the potentiality that OLCs can have in terms of Lifelong Learning relies precisely on this combination of collaborative learning and reflective practices. This combination promotes a deeper level of thought through the feedback received and the exposure to different ideas and perspectives, leading in consequence to a more meaningful learning experience (Palloff & Pratt, 2005), which in turn can motivate the individual to keep steadily learning.

In sum, the ways through which OLCs facilitate information exchange and flow of ideas, stimulate learning through collaboration, capture and diffuse knowledge, and help to connect with others that share a learning interest about a subject, practice, or skill, are all features that have made these communities remain as a relevant topic for online research over the years. In this chapter, we have elaborated on diverse theoretical considerations about the concept of learning communities that function online, their architecture and their potential to cultivate Lifelong Learning in formal, non-formal and informal settings through their learner-centered instructional design that encourages learning through collaboration with like-minded members. These characteristics make them truly valuable sources for any learning ecology. Given the fact that we are interested in analyzing how OLCs support Lifelong Learning in its’ different dimensions and possibilities, we will present our research problem together with the focus of our study, its objectives, research questions and hypotheses in the next chapter of this dissertation.

## **Chapter 3. Online Learning Communities and Lifelong Learning: Proposing a Framework of Analysis**

The first section, “Research Problem”, presents the significance and main purpose of our study. We remark the importance of lifelong learning for our current societies and how OLCs represent an online learning option that can contribute to foster it in formal, non-formal and informal ways. In addition, we state that there is a gap in terms of scientific research with regards to OLCs that offer and/or enhance unofficial learning modalities and why they result interesting subjects of analysis.

In the second section, “Focus of the Study”, we provide a definition of public OLCs and include the general criteria of selection we used to establish which learning communities would be analyzed as case studies. We also explain why we chose to rely on a particular typology to present 6 specific types of OLCs. Furthermore, we include a revisited version of the rationale of our chosen typology with the intention to show how OLCs can foster Lifelong Learning by providing formal, non-formal and informal learning opportunities. Finally, we offer a brief overview of the 6 cases selected for the current study.

The third section is entitled “Research Question, Objectives of the Study and Hypotheses”. As its name suggests, it exposes the general and secondary research questions and objectives of our study, as well as the general and working hypothesis that we established to conduct our investigation about OLCs and their influence on Lifelong Learning. Each element and their interrelationships are presented in a graphical form.

The fourth section, “Our Framework of Analysis” explains in detail the elements that compose our analytical stance towards our research problem. We include the reasons behind the choice of the Community of Inquiry (CoI) Framework as a pillar of our own analytical approach and why it is in general useful for the study of formal, non-formal and informal OLCs. In addition, we depict the way we associated this frame of reference with a Lifelong Learning - OLC Conceptual Model and an Informational and Digital Competences Model in order to complement and consolidate our own framework of analysis.

### ***3.1 Research Problem***

Since almost three decades, Lifelong Learning, as concept and policy, has endured to become a top priority for information and knowledge societies (Punie, Cabrera, Bogdanowicz, Zinnbauer, & Navajas, 2006; Jarvis, 2007; Center for Educational Research and Innovation, 2008; Cummins & Kunkel, 2015; Boeren, 2016). In today’s complex, technological and highly dynamic world, learning cannot be longer confined to take place only in educational formal settings or during the early years of an individual’s lifetime (Garrido, 2003; UNESCO, 2005). Learning should be enhanced throughout various life stages and contexts (Šimenc & Kodelja, 2016; Vargas, 2017). Today, more than ever, Lifelong Learning needs to be available for all (Reddy, 2017).

Online Learning has proven to be an effective alternative for enhancing digital, informational and knowledge skills throughout life, independently of the condition or context of the learner. Its



approach has revolutionized the educational arena in many respects. It has helped to make education more accessible to people, regardless of their age, gender, academic level, socioeconomic situation, or location (Punie et al., 2006). This obeys the fact that Online Learning offers formal, non-formal and informal possibilities for improving digital and other specific skills, while simultaneously gaining knowledge about a particular topic at any given time (Sloep, 2012). This evidence suggests that online learning can influence the Lifelong Learning processes of individuals in significant and varied manners. However, it is important to also distinguish the ways and circumstances in which the different online learning options contribute to foster effective learning, as they also have their own shortcomings and challenges (Trilling, 2007; Butcher, 2011).

As we referred in Chapter 2, OLCs are one among the multiple online learning sources within a learning ecology that can be useful for embracing Lifelong Learning. This kind of communities result interesting cases to analyze because they create an environment of shared goals and interests that motivates members to cooperate with each other in their learning objectives. Etienne Wenger (2000) supports this idea when he states that the social identity forged through social participation and active involvement in a community are the main drivers that help to transfer information into skills, learning and knowledge. Learning communities allow members to engage in collaborative learning and reflective practices, both essential elements of a meaningful learning process (Palloff & Pratt, 2005). Moreover, OLCs are adequate subjects of analysis because the virtual environment in which they operate allows to keep memory of the learning resources, interactions, and activities of the community members (Lesser & Storck, 2001), providing the researcher with different elements for analysis.

This kind of virtual communities with a clear objective in enhancing learning are developing worldwide at different rhythms, particularly in the Elementary, Secondary and Higher Education sectors. Hence, most research studies' focus was and still remains on these private OLCs that belong to formal educational arenas, particularly emphasizing their pedagogic and instructional design characteristics. Several studies (e.g., Allan & Lewis, 2006; Shea, 2006; Palloff & Pratt, 2007; Lapointe & Reissetter, 2008; Olofsson, 2008, Hall & Herrington, 2010; Murdock & Williams, 2010a; 2011; Santos, 2012; Tang & Lam, 2014 Chatterjee, 2015; Lee, 2018) have analyzed the benefits and shortcomings of these learning environments.

Nevertheless, we consider that the research made on OLCs should not be limited only to this closed schooling or academic arenas, but that it should also include virtual communities available to the public that promote learning, in any given setting, at any given stage of life. Hence, we refer explicitly to the online communities with an open nature with respect to their membership and that exhibit OLC traits (Torres, 2004; Wheeler & Faris, 2006; R. A. Schwier, Morrison, & Daniel, 2008; Ke & Hoadley, 2009; Ala-Mutka, 2010).

In sum, OLCs stand out as interesting options for cultivating Lifelong Learning because of their learner-centered perspective. The particular architecture of OLCs in terms of instructional design, tools and membership composition allows members to approach their informational and knowledge needs through both collaborative learning and self-learning, at their own pace and according to their interests. These characteristics, in conjunction with the virtual nature of OLCs, provide such learning communities with a strong potential to be used for formal, non-formal and informal learning settings and within different life contexts with no limitations of place or time.

Our interest in focusing on investigating OLCs with a public nature in terms of access, is as we referred in previous lines, that this type of virtual communities, despite being underrepresented in terms of academic research, are sources of non-formal and informal learning that can nourish the personal, educational, and professional development of people during the course of their lifetime. Therefore, their Lifelong Learning value needs to be analyzed and acknowledged. Taking the previously exposed facts into consideration, this research will focus on the case of public OLCs, which definition and rationale, together with a selection of case studies, will be presented in the next section.

### ***3.2 Focus of the Study***

As mentioned in the previous section, in our study we will focus on public OLCs, understood as learning sources of shared interest and purpose that depend on Internet and the use of ICTs to reach its potential members at a worldwide level and that have a free, open access orientation. In other words, we refer to OLCs where “everyone is able to join the activities and become a member” (Carlén, Jobring, Qvistgard, & Nilsen, 2004, p. 345). Our intention by defining explicitly this focus is to reflect on the variety of virtual learning communities which are useful for cultivating Lifelong Learning and that exist beyond the private, formal educational arena, as well as to have a first blueprint to guide our selection of case studies.

We are considering as part of the OLC public spectrum those communities that have open, semi-open and per registration access modalities (Bosco, Miño Puigecercós, Alonso Cano, & Rivera-Vargas, 2016). With open registration, we mean that the creation of a user profile to access content, publish or communicate with other members in the community is optional. In the case of semi-open registration, the creation of a user profile is only needed to publish content or interact with other members, however, not for viewing the contents available in the community. Finally, the registration access modality requires the creation of a user profile in order to consult and publish content, as well as for interacting with members of the community. Only one of our case studies changed its’ registration policies overtime due to privacy and security concerns from the members and the community administrator. This OLC can be considered semi-public in the sense that access to it requires an invitation extended by one of the members of the group in order to join, which is subject to the community manager’s approval.

Furthermore, we included online and blended public OLCs as case studies. To focus exclusively on 100% virtual communities could produce a very partial exploration of the universe of OLCs. This obeys the fact that there are OLCs that also have a mixed approach to learning; this is combining the traditional face-to-face meetings with the virtual interaction. Therefore, and with the purpose to prevent biased interpretations and results as much as possible, this research considers two major categories of public OLCs, namely those which are virtual and those which have a blended nature.

A careful examination of various studies that focus on learning communities aided us in deciding on a theoretical model to base our research and support our observations. Thus, in the next section, we discuss the reasons behind our choice for a particular typology and how it helped us in the

selection of our case studies. Moreover, we describe the procedure we used to choose our case studies and an overview of them according to the classification we followed.

### ***3.2.1 An Adapted Rationale of Online Learning Communities***

Researching OLCs can be a very tricky endeavor. There are thousands of virtual communities on the web, nevertheless not all of them help members to learn from each other collaboratively nor foster knowledge sharing practices. In order to distinguish which online communities have a clear focus on learning, it is useful to rely on a typology. Such a categorization allows us to detect the characteristics that explain how a virtual community contributes to the learning process of its members, as well as to distinguish different kinds of OLCs. In this regard, Sandra Sanz-Martos (2013) offers an interesting classification of online communities based on the “learning value” that they provide: learning communities, communities of practice, and interest communities.

In her typology, the author defines each kind of virtual learning community based on their purpose. Learning communities are spaces where students “learn in collaboration with other students, teachers or knowledgeable persons in a genuine process of research and collective building of knowledge about specific personal and socially relevant questions, concepts, subjects and matters” (Sanz-Martos, 2013, pp. 24&25). Communities of practice<sup>3</sup> are spaces where members that are involved in similar professional activities share both learning and professional experiences with the intention to “deepen their knowledge and improve their daily praxis at work. (...) (Therefore) they emerge in the context of organizations and professions” (Sanz-Martos, 2013, pp. 26 & 27). Interest communities “share a (general) common interest or passion for a topic or hobby. (...) (Unlike the other type of communities, interest communities flourish in Internet and it is often the case that) members do not know each other personally” (Sanz-Martos, 2013, pp. 26&27). While this typology is a good starting point for understanding the concept of online communities that foster learning, it does not provide us with enough elements for building an analytical framework to answer our main research question.

We considered a different scientific approach to OLCs that included both adequate conceptual and analytical elements for the purpose of our research. Hence, the selection of cases and the construction of the framework of analysis for our study was made taking into account the OLC typology proposed by Urban Carlén and Ove Jobring (2005). This typology is based on a survey of literature and research articles about collaborative learning over the Internet made by the authors. The resulting categorization has also been perfected over the years by adding further dimensions of analysis, which will be explained in further detail in the next paragraphs. We consider that this OLC typology results useful for describing, discussing, and analyzing learning practices found in different communities for two main reasons. On the one hand, to base our research on a typology that has been developed throughout years of careful research (Carlén, 2001, 2002; Carlén et al., 2004; Carlen & Jobring, 2005) and has proven to be solid over time as framework of analysis in various studies (Pongolini & Nilsson, 2006; Olofsson, 2007; Ke & Hoadley, 2009; Berry, 2017), allows us to provide a precise representation of the phenomenon we

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<sup>3</sup> For clarification purposes of this typology of online communities with a learning value, we reproduce here the concept of community of practice in the words of the author. In Chapter 2, we discussed in more detail the conceptual differences between (virtual) communities of practices and (online) learning communities.

are studying. On the other hand, to share common definitions and a terminology within a recent and dynamic research field such as that of OLCs, gives us a compass to develop the perspective of our study, and thus, contribute to the advancement of scientific inquiries about OLCs.

On a first categorization instance, Carlén (2002) identified six kinds of OLCs, which differentiate themselves according to their specific type of participants, purposes, and environments. The typology is presented in the following table:

Online Learning Communities		Environments	
		Online	Blended
Participants & Purposes	Educational OLC	Online Educational Community (OEC)	Blended Educational Community (BEC)
	Professional OLC	Online Professional Community (OPC)	Blended Professional Community (BPC)
	Interest OLC	Online Interest Community (OIC)	Blended Interest Community (BIC)

**Table 1: Typology of Online Learning Communities (Carlén, 2002).**

As seen in the table above, the author identifies general social practices and contexts where online learning can take place, based on the learning objectives/purposes that the participants within an online community have and/or express. Following this logic, Carlén distinguishes between educational, professional and interest practices and contexts that relate to three specific categories of learning communities: educational OLC, professional OLC and interest OLC. In this regard, he shares a similar perspective to that of Sanz-Martos as they both consider the existence of three general type of online communities that foster learning: educational/learning community, professional/practice community, and interest community.

In addition, Carlén observed that each one of these OLCs functions either through virtual platforms or in blended environments that include a mixture of virtual and face-to-face activity. Other authors have also highlighted the importance of distinguishing between online and blended environments when referring to OLCs (Matzat, 2013; Bosco et al., 2016; Raposo-Rivas & Escola, 2016). This conjunction of Participants & Objectives versus Environments factors configures the six OLC types that we will describe in our study: 1) Online Educational Community (OEC), 2) Blended Educational Community (BEC), 3) Online Professional Community (OPC), 4) Blended Professional Community (BPC), 5) Online Interest Community (OIC) and 6) Blended Interest Community (BIC).

In the case of Educational OLCs, Carlén defines them as communities where “participants learn in education systems, at colleges, universities and other formal institutions, (...) which can be based on a pure online environment or mixed with both in-person and virtual learning activities” (Carlén, 2002, pp. 7&8). As for Professional OLCs<sup>4</sup>, the author mentions they are online or

<sup>4</sup> A professional OLC is not to be confused with a virtual community of practice (VCoP), despite both of them sharing professions and crafts as their learning focus. As we mentioned in the second chapter of this dissertation, the global

blended communities where “participants learn within an internal and/or external organization based on their profession (...) and their interest of sharing knowledge of their common activities at work. (...) Often, they share a common vocabulary depending on their work assignment (...), (which) can be shared globally by its members” (Carlén, 2002, pp. 7–9). Finally, Interest OLCs are conceived as communities where “participants learn in an informal (online or blended) environment sharing a common interest in a subject. (...) (Here), people share knowledge and experiences by sending tips and/or information that give other members support and solutions to different problems” (Carlén, 2002, pp. 7–10).

We reproduced above the exact definitions provided by Carlén for each type of OLC because these were the concepts we used as a demarcating map when searching for potential case studies to exemplify the typology. However, during the course of this search, we noticed the existence of virtual and blended communities that can also be considered as learning communities but that where somewhere in the middle of the formal - informal learning spectrum suggested by Carlén in his classification. Sanz-Martos reflects on a similar issue in her typology when she mentions that in the case of educational/learning communities should “not be reduced exclusively to academic and pedagogical settings, as they can also be exportable to organizational (and other) contexts” (2013, p. p.25).

In this regard, it is important to highlight that OLCs can meet diverse learning, informational and communicational needs about a subject, due to their configuration as learning delivery systems that combine elements of online learning and traditional models of instruction and their expansive reach thanks to the use of technology that helps them to target wide audiences (Russell, 1999). Moreover, OLCs as learning systems are defined and legitimized by the communities and members concerned. This makes the learning process that occurs in them dynamic, learner-centered, and flexible, thus, adequate to support Lifelong Learning (Schnüttgen, 1997). The mixture of these factors explains why OLCs offer the opportunity to access formal, non-formal and informal possibilities of learning about a topic, according to the learners needs.

In Chapter 1 and 2, we described in detail how the formal, non-formal and informal dimensions of lifelong learning are intertwined and how OLCs have the potential to contribute to fostering these learning possibilities throughout life at individual and collective levels. These theoretical considerations, together with the initial findings of cases that did not fit exactly in the typology, led us to reflect on the need to revisit the Carlen’s (2002) original classification as well as Carlén and Jobring’s OLCs rationale model (2005), which is the most updated version of their OLC approach, as it includes the OLC typology and its constituents.

During this revision, we noticed that adding more OLC types to the categorization would not contribute to identify the qualitative factors that constitute a learning community and how it fits in the Lifelong Learning spectrum. Studies about OLCs that classify the communities only by focusing on their shared purpose (Kowch & Schwier, 1997), institutional background, thematic, production or platform (Aceto, Dondi, & Marzotto, 2010) are useful to recognize the heterogeneity of learning community examples. However, to list learning communities in this way does not

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scope of OLCs makes the learning focus broader, the interactions more general and the membership fluid, in comparison with VCoPs where the membership is smaller and more cohesive, thus making the learning focus and the interactions more specific.

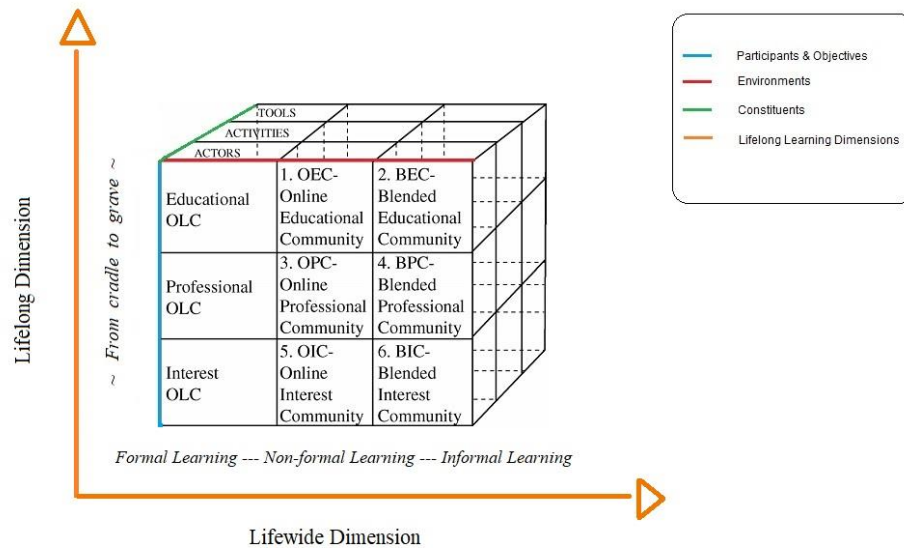
provide deeper scientific descriptions and analysis of the occurrence of OLCs. Moreover, lists can become longer over time as more examples appear, which makes them inaccurate as they are constructed based on a subjective perspective. A better option is to investigate and classify them according to their qualitative similarities and differences.

Taking this into consideration, we proceeded to analyze which qualitative factor could be included in the typology in order for it to reflect how OLCs influence Lifelong Learning. During our examination, we concluded that the participants/objectives and environment traits pinpointed by Carlén (2002), as well as the constituent factors mentioned in Carlén and Jobring's OLC Rationale (2005) in latter research are still valid constructs for the analysis of OLCs as scientific subjects of study where learning occurs. Nevertheless, the various OLC examples we found during our case-study search provided us with empirical evidence to point out a weakness the authors' typology and rationale, particularly when thinking about how OLCs contribute to Lifelong Learning.

The fact that in Carlén and Jobring's typology OLCs are classified based on whether the learning takes place in either formal or informal educational contexts is too polarized. We noticed this was particularly true when looking at examples of learning communities that exhibited Educational and Professional OLC traits, as we noticed that they provided learning opportunities in formal, non-formal and/or informal modalities. Furthermore, through our observations, we confirmed the fact that individuals engage in various virtual communities depending on their learning aims and possibilities, which results in them exhibiting various degrees of self-directness in their approaches to learning.

Studies about how members make use of non-formal and informal OLCs for enhancing their learning are still limited due to the fact that "existing research focuses almost exclusively on formal learning environments (...) managed by institutions of higher learning" (Schwier, Morrison, & Daniel, 2008, p. 321). While there is a general agreement about why formal, non-formal and informal learning should not be seen as hierarchical educational levels but rather as complementary learning opportunities (cf. Hodkinson, Colley, & Malcolm, 2002; Sins & Andriessen, 2012), there is still a lack of empirical evidence in terms of how non-formal and informal options such as OLCs actually contribute to foster learning (Cook & Smith, 2004; Schwier et al., 2008; Ala-Mutka, 2010; Matzat, 2013;). In this regard, OLCs represent an emblematic example that requires a closer examination both at theoretical and empirical levels in order to understand their influence in the Lifelong Learning continuum.

Therefore, we contemplated the need to include the Lifelong Learning dimensions' axis to Carlen and Jobring's OLC Rationale with the intention to integrate an additional qualitative factor. We consider that this helps to visualize how OLCs, as dynamic environments, can aid in fulfilling different learning needs in various modalities throughout life. Through the following figure, we want to summarize graphically this discussion and also present what we think is one of the main contributions that the current study makes to the OLC research field:



**Figure 5: Revisited version of Carlén & Jobring’s (2005) OLC Rationale (own elaboration).**

Finally, we would like to conclude this section by emphasizing that Carlén & Jobring's revisited Rationale is ideal for the purposes of this research because it considers the different social practices, environments, actors, activities, and tools that help OLC participants meet diverse learning objectives through their participation and/or collaboration in the community. Although the framework proposed has a general nature, it is comprehensive enough for categorizing OLC in a logical and concise way, as it serves as a basis for reflecting on learning communities’ influence on the different Lifelong Learning dimensions.

### 3.2.2 Selection of Cases Studies

We used a case-study approach in order to exemplify the six types of online and blended learning communities we defined in the previous subsection, as well as to structure the empirical data in terms of actors, activities, and tools according to our adapted version of Carlén and Jobring’s OLC Rationale (2005). Robert Yin defines “case study as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2013, p.13). We consider that this perspective results adequate to explain how and in which conditions public OLCs foster Lifelong Learning. Nevertheless, in the next chapter, “Research Design, Methodology and Methods”, we will explain in more detail the reasons behind the choice of this methodological perspective. For the moment, we will focus on describing the process we followed for selecting our case studies.

As a first step, we searched for various examples of public OLCs that matched the selection criteria we established through the focus of our study and the adapted version of the OLC Rationale that we developed. We concentrated in finding educational, professional and interest communities' examples that promoted non-formal and informal learning opportunities, because as mentioned in the previous subsection, most research focuses on formal learning environments (Schwier et al., 2008; Raposo-Rivas & Escola, 2016). All learning communities found were obtained through intensive online research and by asking for examples in expert forums about e-learning topics.<sup>5</sup>

From the examples obtained and as a second step in the selection process, we chose to contact only those communities that (1) explicitly stated to promote collaborative learning among their members, (2) presented high levels of activity and (3) exemplified how online and blended learning processes can take place in educational, professional, or interest-oriented communities. The criteria applied in the selection of cases allowed us to successfully identify diverse public OLCs that function in open, private, institutional environments or that are embedded in social network platforms.

The third and final step of the selection process was to obtain authorization from the founders and community managers of the potential case studies in order to conduct our data collection. The six communities that fulfilled all our case study research requirements and accepted to be used as case studies are Deutsch für Dich, RareConnect, edWeb.net, NovaGob, Cambridge in Colour and Momzilla! In the following lines, we offer a brief summary from these public OLCs that represent an example of each type of learning community depicted in our adapted OLC Rationale:

**1. *Deutsch für Dich*** is an example of an *online educational community (OEC)* that aims to be a virtual, collaborative aid for both teachers and students of the German language worldwide. This online community was created by the Goethe Institut, e.V. and launched in 2013 as part of their online strategy to foster and promote Germany and the German language through an international approach. Deutsch für Dich's platform was developed by Bokowsky + Laymann and based on the social network framework from CONTENTS relate. It is funded by the German Ministry of Foreign Affairs (*Auswärtiges Amt / Bildungsoffensive Deutsch*). The objective of Deutsch für Dich is to help the members of this online community to “learn German together for free” (*kostenlos gemeinsam Deutsch lernen*).<sup>6</sup> For doing so, the community's platform is available in English and German. It hosts as of May 2017, a forum with 6 general discussion rooms, 147 communities created by its members and a live chat. This allows its members to find tandem partners, build learning groups according to their level of knowledge or interests and search for a German mentor to assist them. As of May 2017, 36,728 discussion threads were available for the members to read or participate in. Moreover, Deutsch für Dich has a virtual repository with constantly updated learning contents that includes audio, text, video, and interactive exercises divided in language levels and skills. During the monitoring period, the repository had 198 learning contents available. Deutsch für Dich has a per registration access modality, where the creation of a user profile is needed to publish content, interact with other members, and view the contents available in the community. This OEC had, as of May 2017, 278, 660 registered users. During the data collection period it was not possible to obtain monthly traffic statistics, however during the monitoring period

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<sup>5</sup>The forums used were found in LinkedIn ([www.linkedin.com](http://www.linkedin.com)) and ResearchGate ([www.researchgate.net](http://www.researchgate.net)).

<sup>6</sup>As stated in their website <https://www.goethe.de/prj/dfd/de/home.cfm> in May 2017.



we counted 23,188 new registered members. 75 different countries of origin from active members were also identified during this period.

**2. *RareConnect*** is a virtual patient community that, given its particular characteristics, can also be considered as a *blended educational community (BEC)*. This initiative from the European Organization for Rare Diseases (EURORDIS) was founded in January, 2009 and launched in 2010 with the objective to “promote global conversation and collaboration to improve the lives of rare disease patients and assist the organizations that serve them”.<sup>7</sup> Hence, the main purpose of RareConnect is to connect people living with rare diseases both online and face-to-face, in order for them to learn about their medical condition and how to live with it. In this regard, members benefit from sharing their experiences online with other patients with similar medical conditions, while having access to expertise and information provided by specific patient organizations, health care professionals and researchers. Moreover, RareConnect also supports in the promotion and/or organization of disease-specific conferences and seminars worldwide, including the annual European Conference on Rare Diseases (ECRD). RareConnect’s platform allows patients to interact in English, Spanish, French, German, Italian, Portuguese, and Serbo-Croatian languages. RareConnect is a non-profit community. The platform is entirely financed by EURORDIS fundraising efforts (grants and corporate sponsorships) and the own BEC’s revenue generated through Google Ad Words and Facebook advertising. It hosts, as of February 2017, 87 online disease-specific groups. RareConnect has a semi-open registration access modality, where the creation of a user profile is required to publish content or interact with other members, but not to view the contents available in the community. Each group includes resources such as life stories, awareness campaigns, relevant medical studies, informative videos, interviews with medical experts, conference reports, disease incidence and medical specialists’ location maps, survey results reports, infographics, podcasts, invitations to attend events and webinars. From the 6 groups analyzed during the monitoring period, we counted a total of 613 learning resources. With regards to the discussion threads available in the forum section of each group, posts and replies made by the members can be translated to one of the languages mentioned above, be it through a computer-based translation or through human translation upon request. During the data collection period conducted in 6 groups, we considered a total of 231 discussion threads. This BEC had, as of February 2017, 25,000 registered users. Members in the community include patients, researchers, health care professionals and 600 patient organizations from over 40 countries. During the data collection period in April 2014, RareConnect had 9,117 registered users and a monthly traffic of 60,000 unique visitors from 170 different countries, from which 4,000 visits were made by 2,500 registered, active members.<sup>8</sup> Among the recognitions obtained by RareConnect is the “Audience Prize” for best newcomer at Health 2.0 Paris 2010.

**3. *edWeb.net*** is a well-known and prestigious *online professional community (OPC)* targeted to the teachers, faculty, administrators, and librarians at pre-Kindergarten to post-secondary schools around the world. This OPC was founded by Lisa Schmucki (current CEO) and launched in 2007 with the intention to offer an innovative model to provide high quality professional development

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<sup>7</sup>As stated in their website <https://www.rareconnect.org/en> in February 2017.

<sup>8</sup>Monthly traffic statistics were provided by the community managers of each case study, using Google Analytics or the statistics generated by the community’s platform.

options for educators. In this regard and since its foundation, edWeb.net's main objective remains to be "a place where educators who are looking for ways to improve teaching and learning can gather and share information and ideas with peers and thought leaders in the industry".<sup>9</sup> The platform of this OPC hosts, as of May 2017, 1,735 online groups classified in 58 topics around learning, education, and professional development. During this same period, edWeb.net had 216,292 registered members who could participate and learn not only from the discussions and resources shared in the groups, but also from live webinars and chats with experts in the field. The webinars are recorded and kept in the group's repository in case the member could not take part of the live sessions or wants to check past ones. As of May 2017, this OPC hosted 1,385 recorded live webinars. Furthermore, continuing education certificates can be provided to webinar participants. EdWeb.net's platform language is English, and it has a per registration access modality. It finances the work of its professional learning groups and programs through a strategic alliance with 79 partners and sponsors. During the data collection period, the online community had a monthly traffic of 21,246 visits, from which 15,486 visits were made by unique visitors and 5,760 made by registered, active members. During the monitoring period, we identified that active members in the forum and the live webinars were originally from 34 different countries. EdWeb.net has obtained various recognitions throughout the years such as the Edublog Award for Best Free and Open Professional Development for Educators (2012), the SIIA CODiE Award for Best Collaborative Social Media Solution for Educators (2015 and 2016) and the EdTech Digest Trendsetter Award (2017).

**4. NovaGob** is a spin-off, entrepreneurial project from the Autonomous University of Madrid's Foundation (*Fundación de la Universidad Autónoma de Madrid - FUAM*) which was born with the intention to create an online community for people interested in innovating the Public Sector in the Spanish speaking countries (*Hispanoamérica*). NovaGob was founded in December 2012 and launched in October 2013 by Francisco Rojas Martín (current Director), José Ignacio Criado (current Institutional Director and NovaGob.lab Director), Rainiero Holgado and David Fernández. It is an example of a *blended professional community (BPC)* where public servants, professionals, scholars, and students working or related to the Public Administration field can collaborate and learn from each other both virtually and face-to-face from innovation and best practices in the Public Sector. In this regard, NovaGob's main objective is to be "the social network for Public Administration in Spanish that innovates the Public Sector through the collaborative effort of the people working for/in it".<sup>10</sup> NovaGob works through an open-source platform, Elgg. It is funded by e-mail marketing campaigns and sponsorships obtained from its events or strategic partnerships with 11 regional organizations and institutions. This BPC had a semi-open registration access modality, but since its redesign to a 2.0 version in March 2017 it changed it to a per registration access modality. As of May 2017, NovaGob hosted 193 groups, displayed in four categories: groups recently active, groups with the greatest number of members, groups recently created and groups in alphabetical order. During the monitoring period, we counted 2,421 debates, 5,750 blog entries and 156 Wikigobs that configured the online resources available for members to learn about, discuss and share their views about innovation in the Public Sector. While offering a rich virtual meeting place for discussing various topics related to Public Administration and the innovation of the Public Sector, NovaGob also promotes related online and on-site conferences

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<sup>9</sup>As stated in their website <https://home.edweb.net/> in May 2017.

<sup>10</sup>As stated in their website <https://novagob.org/> in May 2017.

and seminars organized in Spain and Latin America. As of May 2017, 756 events were announced. This BPC also organizes an annual congress for its members, the *Congreso Iberoamericano de Innovación Pública*, also known as *Congreso NovaGob*. During this event, best practices and innovative projects in the Public Sector of the Spanish speaking countries are recognized through the awards *Premios NovaGob Excelencia*. As of May 2017, the community had 9,826 registered members, of which 1,326 were recently active and originally from 5 different countries. In terms of monthly traffic, NovaGob's website had 32,414 visits from which 9,627 visits were made by unique visitors and 22,787 made by returning visitors. NovaGob has obtained the following awards throughout the years: Second Place as Best Entrepreneurial Project in Human and Social Sciences from the Annual CIADE Awards (2013); Best Practices Case Study of Successful International Collaboration Among Public Servants by the Government Laboratory (GovLab) from the New York University and the Media Lab from the Massachusetts Institute of Technology (MIT); and finalist in the Social Media in Practice Excellence Awards from the Academic Conferences and Publishing International Awards (2017).

**5. Cambridge in Colour** is an *online interest community (OIC)* that defines itself as a “learning community for photographers”.<sup>11</sup> Its main topic is digital photography and its’ platform operates through vBulletin, a commercial community software. Cambridge in Colour’s main objective is to offer a virtual environment in English where amateur photographers from all over the world can learn the core concepts and techniques about photography. This OIC was launched in 2005 by Sean McHugh (founder and community manager) and has grown since then substantially in number of active users due to its two main learning resources: tutorials and a forum. The tutorials include concise, permanent, reference-style content about camera usage and photographic skills. As of April 2017, Cambridge in Colour included a collection of 80 tutorials divided into 5 categories that cover terminology, equipment, editing and post-processing, color management and style techniques. Tutorials are complemented by embedded; practical tools that clarify the theoretical information provided by them. During the data collection period, we counted 15 tools. The forum provides members with a space to share their work, ask specific questions about photography and obtain first-hand knowledge or practical experience from other members. Cambridge in Colour’s forum has 9 groups, classified in three categories: Tips & Techniques; Photo Commentary & Competition; and Open Talk. As of April 2016, the community had 42,655 registered members. It has a semi-open registration access. In terms of monthly traffic, as of June 2016, this OIC had between 80,000 to 100,000 visits per month, being 65% of them from new visitors. It has a rate of 200 to 300 active, registered users per day (logged in). Cambridge in Colour is a non-profit project, however it uses subtle advertisement on the main part of its website that combined with the monthly amount of traffic pays the fees for the platform’s hosting. As an additional source of income for the community and as a derived product of the tutorials and the feedback received from Cambridge in Colour users and members, Sean McHugh published “Understanding Photography”. This publication is available on the OIC’s platform in e-book and paperback versions. It consists of a trilogy that expands on the core concepts provided by the online tutorials as it includes revisited content as well as brand-new high-resolution diagrams and photographs.

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<sup>11</sup>As stated in their website <https://www.cambridgeincolour.com/> in April 2017.

**6. Momzilla** is a Mexican online community for parents, although its content is more targeted to mothers. Momzilla's objective is to be "a community for mothers and fathers that care about their families and a space of support, from birth till the children are adults and leave home. Momzilla believes in diversity, therefore all kinds of education and upbringing are respected".<sup>12</sup> It was founded in 2013 by Heike Söns Matsumoto using Facebook Groups platform. She did so with the intention of asking about the experiences and advice of new mothers in similar life circumstances to hers: those who wonder how to be an involved parent without sacrificing job or career and personal development. While the community started as a private group with 30 members, which included friends of Söns or friends of those friends, throughout the years it grew exponentially. Momzilla went beyond being just another virtual space to share everyday motherhood experiences with peers to become a thriving *blended interest community (BIC)*. Momzilla works through a per registration access modality, as in order to become a member of the community, the user has to be invited by a member and pass three different filters and security requisites established by the community managers in order to be accepted. The community is also configured as a "secret group" in order to increase the privacy of its members and activities. In this Spanish speaking community, members can buy, offer, and recommend products, services, and informative events from other members in a safe space, encouraging the family and local economy while fostering the maternal entrepreneurship. Moreover, Momzilla is open to the discussion and trustworthy information-sharing on a wide variety of topics about children's life and well-being, family concerns in the Mexican context, social campaigns related to maternity and gender issues, parenthood in a modern context, etc. In this regard, aside the great number of posts made every day by the members, during the three-month monitoring period, we counted 70 informative or learning resources uploaded by the members to the files' repository of Momzilla. In the community, members can interact with each other freely and the intervention of the community managers is kept to a minimum, being just for moderating heated discussions, removing posts that result offensive or reminding the members to follow Momzilla's community regulations. Furthermore, members not only learn from each other through virtual discussions and information sharing, but also through face-to-face conferences, workshops and courses that are offered in the community's annual event known as the *Momzilla Fest*. This event contributes to the cohesion of the community, as members and their families can actually meet each other and interact either in the informative activities or in the bazaar where entrepreneurial moms have the opportunity to present their products and services. The Momzilla Fest is also an important source of revenue to keep Momzilla running, because as the community is hosted in Facebook free groups platform, it is not self-sustainable. As of April 2016, Momzilla! had 8,582 registered members from which 6,028 were active members. The community's index of participation average is of 42,2%.<sup>13</sup> Momzilla! is a recognized community for parents in Mexico thanks to its active presence in social media as well as the active coverage that national media has made of the different editions of the Momzilla Fest. It has been featured in the TEDxCuauhtémoc edition of 2017, a program designed to help communities, organizations, and individuals to spark conversation and connection through local TED<sup>14</sup>-like experiences.

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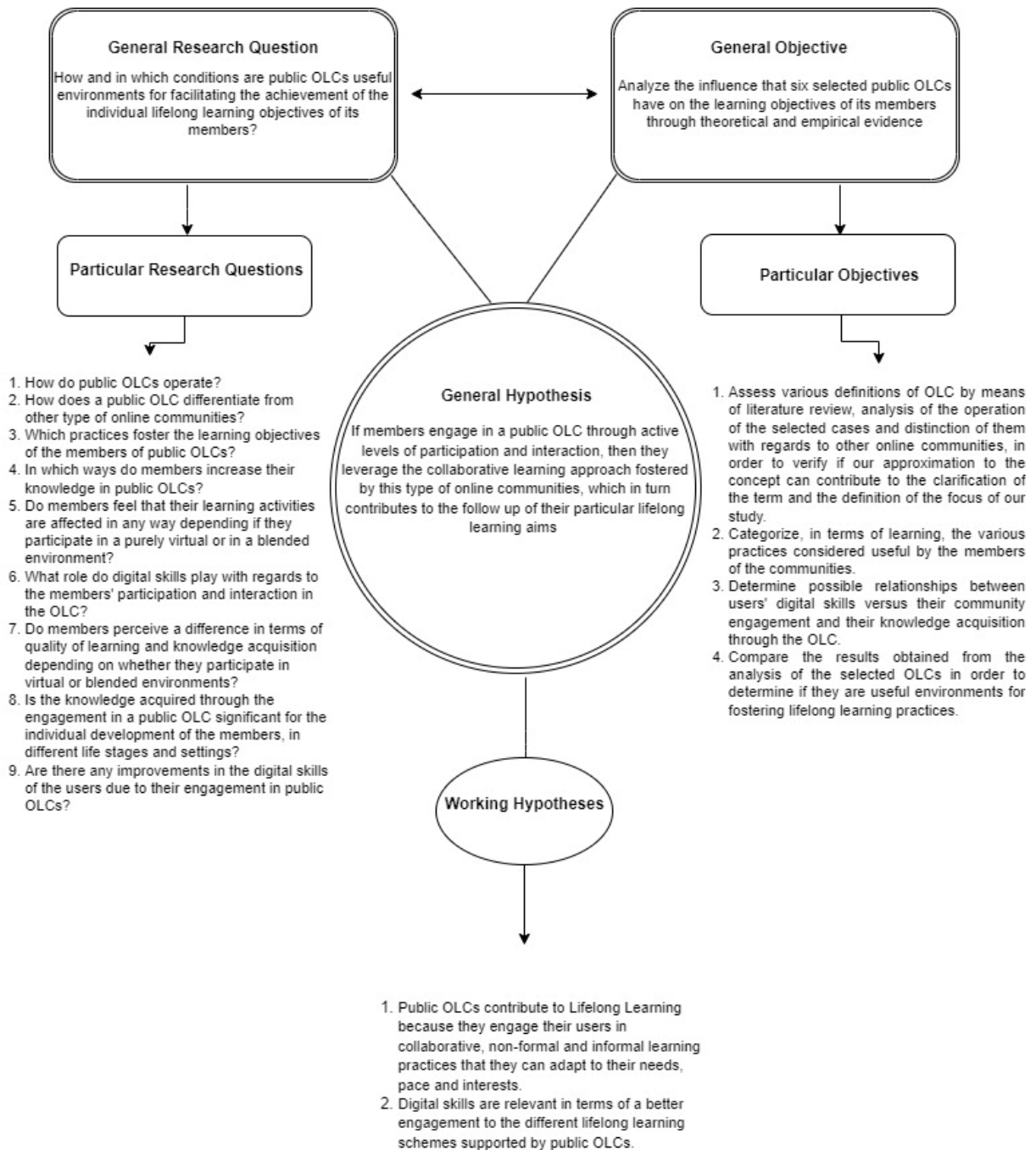
<sup>12</sup>As stated in their website <https://www.facebook.com/groups/435509109871228/?fref=nf> in April 2016.

<sup>13</sup>In the case of Momzilla, the community manager provided us with traffic statistics obtained through Grytics.

<sup>14</sup>TED is a nonprofit devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less). TED began in 1984 as a conference where Technology, Entertainment and Design converged, and today covers almost all topics — from science to business to global issues — in more than 100 languages. Meanwhile, independently run TEDx events help to share valuable ideas in communities around the world.

### ***3.3 Research Questions, Objectives of the Study and Hypotheses***

In this section, we present the research questions, objectives and hypotheses that demarcate the scope of our study. On a first instance, we defined a general research objective and a general research question in order to establish the purpose and direction of our investigation. On a second instance, we formulated secondary objectives and questions to help us meet our research goal through specific aims and inquiries that we intended to perform and cover in our study. On a third instance, we included a general hypothesis and two working hypothesis that we confronted with the evidence and results obtained through our research. The elements mentioned above, and their reciprocal relationships are exposed through the following diagram, with the intention to show how they act like the compass that guides this study:



**Figure 6: Research questions, objectives and hypothesis scheme.**

### ***3.4 Our Framework of Analysis***

In this section, we will expose the elements that compose our framework of analysis. We used the Community of Inquiry (CoI) Framework as a general frame of reference to guide our analytical endeavors. Our analytical choice was complemented by associating to it the concepts, dimensions and variables considered in our Lifelong Learning - OLC Conceptual Model (see Table #), as well as an Informational and Digital Competences Model (see Table #). Both models were also operationalized through the methodological instruments we used to collect our empirical evidence. We developed this framework of analysis with the purpose to approach the research questions by providing theoretical and empirical evidence to accept or reject the hypotheses stated, while considering the main objective of this study, which is to explain the different effects that the engagement in a public OLC can have or not on learning and knowledge acquisition throughout life.

#### ***3.4.1 Community of Inquiry: A General Frame of Reference for the Analysis of Online Learning Communities***

As mentioned in previous sections, we selected our case studies using our adapted version of Carlén and Jobring's OLC Rationale<sup>15</sup>, which considers participants and objectives, environments, constituents (actors, activities, and tools) and Lifelong Learning dimensions. In order to evaluate the data collected from each of our OLCs under study, we needed to rely on a comprehensive analytical scheme so to conduct our analysis and thus, bring together thoroughly the theoretical and empirical considerations obtained through our research. With this, we chose the Community of Inquiry (CoI) Framework as our general frame of reference to conduct our analysis.

The CoI Framework is social constructivist in nature and grounded in John Dewey's (1938, as cited in Armellini & De Stefani, 2015) notion of practical inquiry. It is a dynamic process model designed to define, describe, and measure elements supporting the development of online learning communities (Swan & Ice, 2010), which implies that worthwhile educational and learning experiences that take place in them are embedded within an active community of inquiry<sup>16</sup>. Hence, the main objective of the CoI Framework is to reveal the elements that create an effective community that enhances and supports learning.

Originally developed by Randy D. Garrison and his team (1999) for its application in formal educational contexts, the CoI Framework has been revised over the years by Garrison himself (2007, 2016) and other authors (Armellini & De Stefani, 2015; Dempsey, 2017; Swan & Ice, 2010)

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<sup>15</sup> Refer to section 3.2.1 An Adapted Rationale of Online Learning Communities in this chapter.

<sup>16</sup>In a community of inquiry members "listen to one another with respect, build on one another's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions" (Lipman, 2003, p. 20, as cited in Garrison, 2016). Due to these characteristics, a community of inquiry provides an environment in which members can take responsibility and control of their learning by negotiating meaning, diagnosing misconceptions, and challenging accepted beliefs. Thus, an active community of inquiry allows members to "create a shared understanding, which is a completely different task than exchanging information" (Schrage, 1989 as cited in Garrison, 2016).

due to its analytical implications. As a consequence, the CoI framework has been adopted and adapted by educators worldwide. Moreover, it has been used in a variety of ways to inform both research and practice in online and blended learning due to its focus on understanding the challenge and conditions of engaging in purposeful collaborative inquiry. In this regard, the CoI Framework can actually be defined as an analytical standpoint that can be used to investigate teaching and learning outcomes in online/distance learning environments and virtual learning communities by encompassing three tenants: teaching presence, social presence, and cognitive presence (Shea, 2006; Garth-James & Hollis, 2014; Ferrer-Mico, 2015).

The three aforementioned presences<sup>17</sup> of the CoI Framework are specific and interrelated analytical elements identified as triggering elements that foster the learning experiences of members in OLCs. The first of these elements, the Social Presence, is the ability of participants to identify with a group, communicate openly in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities (Garth-James & Hollis, 2014; Armellini & De Stefani, 2015). This ability of participants in a community to “project themselves socially and emotionally as real people, through the medium of communication being used” (Amemado & Manca, 2017, p. 24) helps to configure the context, dynamic and purpose of the learning community (Dempsey, 2017). The categories that define the Social Presence construct are Affective Communication, Open Communication (interaction) and Cohesive Responses (cohesion) (Rourke, Anderson, Garrison, & Archer, 2001) (Armellini & De Stefani, 2015).

The second analytical element, the Cognitive Presence is defined generally “as the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical CoI” (Armellini & De Stefani, 2015, p. 2). In this regard, Cognitive Presence refers to the reflective thinking practice through which learners critically assess their beliefs in the context of personal reflection and shared discourse with the purpose of building and confirming knowledge (Dempsey, 2017). This reflective thinking practice relies on two processes: Practical Inquiry and Shared Metacognition. The Practical Inquiry process is composed of four phases: triggering event, exploration, integration, and resolution (Garrison, Anderson, & Archer, 2001). Successful navigation through this process of constructing personal meaning and confirming public knowledge requires learners to engage in Shared Metacognition or the willingness to take responsibility to monitor and manage the learning process. As a consequence, Shared Metacognition has three functions: knowledge of cognition, monitoring of cognition and regulation of cognition (Dempsey, 2017).

The third analytical element, the Teaching Presence, is defined as “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Garrison, & Archer, 2001, p.5). The purpose of the Teaching Presence considers specifically the process of monitoring and managing the design and resources to help learners engage and guide their learning process in a collaborative way (Garrison, 2016). Therefore, the Teaching Presence is an essential element in the framework

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<sup>17</sup>Presence is a term used to connote the idea of fidelity - how real the learning and the learning environment are (Hosler & Arend as cited in Dempsey, 2017). In creating an authentic collaborative-constructivist learning context, the three presences -social, cognitive, and teaching- work together and support one another. The greater the interaction among the three active presences, the more realistic the learning experience is.



because it helps to bring the elements of a CoI together in a balanced and functional relationship, congruent with the intended learning outcomes, while respecting the needs and encouraging the active engagement of the learners. The Teaching Presence was traditionally identified through the figure of the instructor, in particular in OLCs belonging to private, formal educational environments. Nevertheless, the Teaching Presence has a broader nature, particularly in open/public online environments, where this figure of the instructor can also be understood as a facilitator (Ferrer-Mico, 2015). Thus, the teaching presence concept has been redefined: beyond an instructor, this presence includes new roles such as content curators, supporters, moderators, community manager, guide for thought repurposing and instigator for new ideas (Ferrer-Mico, 2015). Alike the Social and Cognitive Presences, the Teaching Presence includes the following categories that define it as construct and that are valid for online and blended environments: Instructional Design & Organization, Facilitating Discourse and Direct Instruction (Armellini & De Stefani, 2015). These categories allow the distribution of authority and responsibility for designing, facilitating, and directing the learning process throughout the community (Dempsey, 2017) via a learning centered approach (Garrison, 2016).

The following diagram represents in graphical form the most recent version of the CoI Framework. As explained in the paragraphs above, the framework intends to understand and explain “the process of creating a deep and meaningful (collaborative-constructivist) learning and/or educational experience through the development of three interdependent elements: social, cognitive and teaching presences” (Garrison, 2016, p.24).

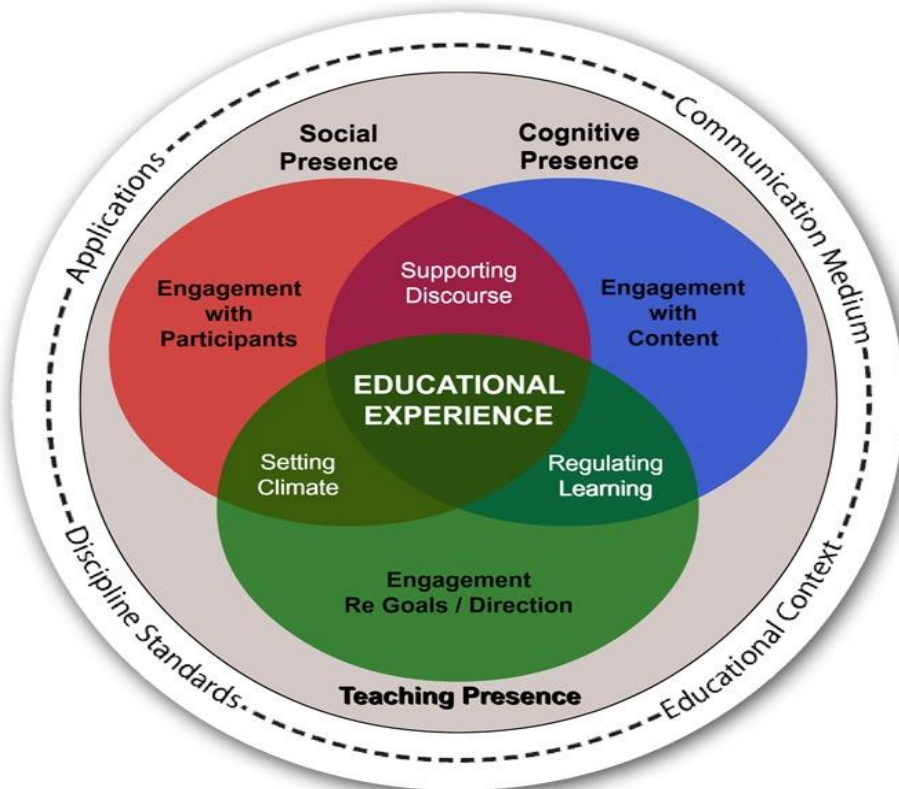


Figure 7: Community of Inquiry Framework (Garrison, 2016).

As seen through the theoretical elements elaborated above, the CoI Framework resulted an ideal choice for our analytical objectives due to two main reasons. On the one hand, the concept and purpose of a community of inquiry goes in line with our understanding of the definition and aim of joining an OLC. In the words of Garrison, „a community of inquiry is an extremely valuable, if not essential, context for higher-order learning. Such a community involves (re)constructing experience and knowledge through the critical analysis of subject matter, questioning, and the challenging of assumptions. This is consistent with the premise that a (...) (truly) learning experience is both collaborative and reflective “(2001, pp. 1&2). This kind of pursuit can be experienced most effectively within a CoI (or OLC) where members are engaged as real people thinking critically about intellectual issues (Ojokheta, 2015; Garrison, 2016; Amemado & Manca, 2017;).

On the other hand, the fact that the CoI Framework focuses on discovering the factors that foster members to think and learn collaboratively through their active and creative engagement in an online community rather than assuming that the learning experience is defined by the technology used, results a major advantage for grounding our research in a comprehensive and solid analytical frame of reference. As mentioned earlier, the CoI Framework intends to describe the interdependent and dynamic nature of the presences, “(as) learning experiences are a function of the evolving relationships among the presences” (Garrison, 2016, p. 24). In other words, understanding the dynamics of a community of inquiry helps to understand the development of the learning community as a whole (Garrison, 2016).

Though the CoI Framework was originally designed to analyze OLCs in formal education environments, the refinement of the analytical model throughout the years has allowed expanding its scope of use by aiding in the development of independent variables for specific studies (Shea, 2006). For instance, its focus on collective, interactive, and collaborative learning and its considerations about the influence and interrelation of the three presences described in the framework result pertinent and useful elements for the analysis of the dynamics and complexities present OLCs in formal, non-formal and informal spheres (Armellini & De Stefani, 2015; Sun, Franklin, & Gao, 2017), in both online and blended environments (Akyol, Garrison, & Ozden, 2009; Amemado & Manca, 2017). Derived from the explanations offered in this subsection, we consider that the CoI Framework can be used as an effective analytical model for public OLCs that foster non-formal and informal learning. Therefore, we decided to implement it for our research endeavors. In the next subsection we will discuss the details of the specific analytical models that we developed and included for investigating our OLC selected cases, which allowed us to bring together our adapted version of the Carlén and Jobring’s OLC Rationale and the general analytical logic proposed by the CoI Framework in a more precise way.

### ***3.4.2 Operationalization of Variables according to the CoI Framework***

In this subsection, we will expose the elements that nurture our analytical perspective. As exposed in the previous subsection, our analytical stance has as cornerstone the CoI framework. We complemented this framework by associating two models to it: our Lifelong Learning - OLC Conceptual Model (see Table #) and the Informational and Digital Competences Model (see Table #). We adapted the framework and models present in our analytical perspective with the purpose of studying closely how the engagement in a public OLC influences or not on learning and knowledge acquisition throughout life. In the next lines, we will describe the components of each of the two models mentioned previously.

Through the first model, our Lifelong Learning - OLC conceptual model, we considered the possible correlation among six concepts that are thought fundamental for understanding and explaining how and in which conditions these communities can facilitate the learning objectives of its members. These six concepts are the following: Lifelong Learning, user's profile, instructional design of the OLC, technological tools used to support learning in the OLC, collaborative learning in the OLC and knowledge. In addition, each concept includes a number of dimensions and variables that were approached during the course of our research and in each case study. The following table provides an overview of the concepts, dimensions and variables that compose our Lifelong Learning - OLC Conceptual Model:

Concepts	Dimensions	Variables
Lifelong learning	Lifelong Dimension	Specific stage of life in which the individual is learning <sup>18</sup>
	Life-wide Dimension	Specific way of learning of an individual according to his/her interests and settings <sup>19</sup>
User's profile	Characteristics of individuals in the OLC	Gender
		Age
		Profession
		Nationality
		Time the person has been a member
		Motivations behind the engagement with this OLC
		Frequency of access to the OLC
Instructional design of the OLC	Architecture of the instructional approach	Frequency of active use of the OLC
		Method and objectives of the OLC
		Environment
		Type of learning setting offered by the OLC
		Role of the member in the OLC
Technological tools used to support learning in the OLC	Variety, usability, and usefulness of the OLC's toolset	Structure of learning activities in the OLC
		Member's opinion with regards to his/her level of technological skills
		Type of asynchronous tools used
		Type of synchronous tools used
		Frequency of use of asynchronous tools
		Frequency of use of synchronous tools
		Level of comfort with all tools available

<sup>18</sup>Chronological stages of life where lifelong learning takes place include infancy, early childhood, school age, adolescence, young adulthood, middle adulthood, and late adulthood.

<sup>19</sup>The life-wide dimension of lifelong learning considers that a person keeps on learning throughout his/her lifetime depending on the context. Hence, learning can be formal, informal, non-formal, intentional and/or unexpected.

		Most useful tools according to the member
		Least useful tools according to the member
Collaborative learning in the OLC	Learning through participation	Frequency of participation with regards to content
		Type of participation with regards to content
		Opinion with regards to the level of homogeneity in participation
		Level of trust with regards to the content presented or shared in the OLC
		Frequency of interaction with other members
	Learning through interaction	Type of interaction with regards to other members
		Duration of interaction
		Opinion with regards to the level of responsiveness to the contributions presented
		Level of trust with regards to the expertise of the contributors
		Opinion of the member about the influence that the learning process made through his/her participation in the OLC has on his/her knowledge acquisition
Knowledge	Learning – Knowledge relation	Opinion of the member about the influence that the learning process made through his/her participation in the OLC has on his/her knowledge acquisition
	Quality of knowledge	Opinion of the member about the characteristics of the knowledge obtained through the OLC
	Usefulness of knowledge	Opinion of the member about the applicability of the knowledge obtained through the OLC for his/her specific purposes
		Opinion of the member about the influence that his/her participation has had on his/her informational and digital skills

**Table 2: Lifelong Learning - OLC Conceptual Model. A concepts-dimensions-variables matrix (own elaboration).**

The elements that compose this conceptual model were selected, on a first instance, based on literature review about lifelong learning, OLCs, collaborative learning in OLCs and approaches to participation and interaction in online communities (Mocker & Spear, 1982; Kowch & Schwier, 1997; Lave & Wenger, 1991; Kim, 2000; Skolverket, 2000; Hung & Chen, Wenger, 2000; 2001; Henri & Pudelko, 2003; Brook & Oliver, 2003; Richardson & Swan, 2003; Thompson & Gilding, 2003; Charalambos, Michalinos, & Chamberlain, 2004; de Souza & Preece, 2004; Sing & Khine, 2006; Wheeler & Faris, 2006; Meng Ma & Ritu Agarwal, 2007; Hara, Shachaf, & Stoerger, 2009; Ke & Hoadley, 2009; Bawden, 2010; Hall & Herrington, 2010; Sorrentino & Pettenati, 2014; Smith, Hayes, & Shea, 2017).

On a second instance, we reviewed various studies that analyzed specifically the influence and impacts of OLCs on lifelong learning in order to compare the variables used. From these, the perspectives of analysis provided by Carlén & Jobring (2005); Allan & Lewis (2006); Sylvan (2007); Lapointe & Reisetter (2008); Schwier (2008); Fini (2009a & 2009b.); Calvani et al. (2010); Ala-Mutka (2010); Olofsson (2010); Matzat (2013); Liu (2016) and Thomas et al. (2017) were particularly useful for fine-tuning the focus of our research.

On a third instance, we considered literature about scale measurement of human attitudes (Droba, 1931; Oskamp & Schultz, 2005; Aignerren, 2010) with the purpose to justify the inclusion of the members' opinions<sup>20</sup> with regards to their learning objectives and the knowledge acquisition and applicability through OLCs.

This choice of concepts, dimensions and variables was useful for analyzing the influence that OLCs have on individual lifelong learning objectives. The reliance on members' opinions provided evidence about the experience that individuals have with regards to learning and knowledge in this type of communities. Members are the ones that, as users, can directly evaluate the usefulness of public OLCs in their everyday lives.

In addition to the conceptual model proposed in Table # for analyzing the influence that public OLCs have on the achievement of the lifelong learning objectives of its members, we thought necessary to also include an analysis of the role that the users' informational and digital competences play with respect to their engagement with the community. This analysis is important because members of public OLCs require a certain extent of informational and digital skills for performing learning activities online, and thus, acquiring knowledge

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<sup>20</sup>Opinions are a specific manifestation of an attitude, which do not necessarily imply affective or conductual elements, but do include general judgements about an object (Aignerren, 2010).

through their participation in the community (Brolpito, 2018). Hence, this factor needed to be taken into consideration, due to its likelihood to influence the way members learn in OLCs. For doing so, we relied on the informational and digital competences measurement and analysis model proposed by the Norwegian Agency for Lifelong Learning (Kompetanse Norge, 2011). This model resulted appropriate for the purposes of our research, due to its comprehensiveness in terms of the specific digital skills required to fulfill basic informational needs through technology and its' usefulness for measuring the proficiency of such skills <sup>21</sup>. In the model, the fore mentioned competences are operationalized through eight ICT areas that consider 40 skill types, as shown in this table:

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<sup>21</sup> We chose the model proposed by the Norwegian Agency for Lifelong Learning because it focuses exclusively on the digital skills required to meet informational needs, which are the building blocks to transform information into knowledge when learning through ICTs. Other digital competence frameworks at international, regional, and national level which were reviewed at the moment of the literature review for this chapter were more general in their depiction of the information and data literacy skills or targeted teachers/trainers and policy makers and not necessarily the regular user. Such frameworks were accessed through the list updated regularly by the International Centre for Technical and Vocational Education and Training from UNESCO-UNEVOC which can be view in the following website: <https://unevoc.unesco.org/home/Digital+Competence+Frameworks>

ICT areas	Measures of skills/questions to respondents What is your experience/routine in:
<b>1. Defining information needs</b> Using ICT to identify and define information needs	Determining what kind of information, you need and that can possibly be retrieved using a computer/the Internet, for example pertaining on common tasks like shopping, travel and contact with governmental agencies.
<b>2. Access to information</b> Knowing how and where to find and collect information with the aid of ICT	Using search engines on the Internet (e.g., Google, Yahoo, etc.) Locating websites that contain the information you need Obtaining an overview and navigating on a website Finding specific information that you need on the websites of government agencies Finding websites in a language other than the native one
<b>3. Technological self-reliance</b> Undertaking technological operations independently	Creating an e-mail address independently Being able to install programs on the computer independently Using a program from a CD-ROM Using anti-virus software Opening computer programs independently Being able to transfer photos from a digital camera to a computer Creating a digital signature Creating a homepage
<b>4. Information management</b> Sorting and organizing information	Select information one needs from the Internet Organizing and storing files in one's computer, so that they can be easily retrieved Being able to organize the information found, for example by arranging it into lists or tables Being able to transfer figures from a spread sheet to a different program and vice versa.
<b>5. Information assessment</b> Assessing the quality, relevance, and usefulness of the information, as well as Internet safety	Assessing the quality of the information that you find on the Internet, for example whether it is old, biased and untrustworthy Assessing the safety of publishing information on the Internet, for example on Facebook, in chat rooms, etc.



<b>6. Integration of information</b> Interpreting, summarizing, and comparing information through different forms of presentations	Writing, editing, and transferring text in word processors
	Using spell checkers/dictionaries
	Inserting images/symbols in word processors
	Inserting and editing tables in word processors
	Using drawing/graphic applications for example Power Point
<b>7. Communication and information sharing</b> Sharing and exchanging information and knowledge with the aid of ICT	Sending/receiving SMS/MMS messages from a mobile phone
	Connecting to the Internet using a mobile phone
	Sending/receiving e-mail
	Sending attachments (files) with e-mails
	Using e-mail/calendar systems to organize/arrange meetings
	Ordering/purchasing tickets over the Internet
	Entering information by using a net-based template, for example electricity meter reading, etc.
	Buying and selling goods through own language websites
	Buying and selling goods through websites in other languages
	Using IP telephony or Skype
	Using a digital signature
	Participating in social networks, for example Twitter or Facebook
	Reading and/or commenting on a blog
	Participating in cooperation and project groups over the Internet
<b>8. Creating new information</b> Creating and presenting new information with the aid of ICT	Composing information that you have found, being able to present it to others electronically.

**Table 3: Informational and Digital Competences Model (Norwegian Agency for Lifelong Learning, 2011).**

As mentioned in the previous subsection, we considered the CoI Framework an ideal cornerstone for our analytical endeavors. In our case, the definition and function of each CoI Presence and its specific phases or categories allowed us to link the specific variables that we developed in our models to the CoI Framework. In other words, we associated each concept and dimension proposed in our models in order to show how the CoI Framework is applicable in the study of learning in informal online environments such as public online learning communities. This process was optimal for addressing our research questions and for guiding our analysis. Moreover, this

integration resulted helpful in conducting a solid operationalization of variables <sup>22</sup>( Borge Bravo, Ferrer, & Padró-Solanet, 2011; Bhattacharjee, 2012) through our data collection instruments. The following table depicts the association between the CoI Framework, our Lifelong Learning - OLC conceptual Model and the Informational and Digital Competences Model. In the next chapter, we will discuss in detail the research design, methodology and methods that we considered for conducting our research.

CoI Presences	CoI Phases / Categories	Associated Model's Concepts	Associated Model's Dimensions
Cognitive Presence	Triggering Event	Lifelong Learning	Lifelong Dimension
			Life-wide Dimension
	Exploration	Collaborative Learning in the OLC	Learning through participation
			Learning through interaction
		Informational and Digital Competences	ICT areas and skills
	Integration	Knowledge	Learning - knowledge relation
Resolution	Knowledge	Quality of knowledge	
		Usefulness of knowledge	
Social Presence	Emotional Expression	Technological Tools Used to	Variety, usability, and usefulness of the OLC's toolset

<sup>22</sup>Both models were operationalized through the development and utilization of the following methodological instruments: netnography, online questionnaire and online interview.

		Support Learning in the OLC	
	Open Communication	User's Profile	Characteristics of individuals in the OLC
	Group Cohesion	Lifelong Learning	Lifelong Dimension
			Life-wide Dimension
Teaching Presence	Instructional Management	Instructional Design	Architecture of the instructional approach
	Building Understanding	User's Profile	Characteristics of individuals in the OLC
	Direct Instruction	Technological Tools Used to Support Learning in the OLC	Variety, usability, and usefulness of the OLC's toolset

**Table 4: CoI Framework and models association in terms of concepts and dimensions (own elaboration).**

## Chapter 4. Research Design, Methodology and Methods

This chapter presents an overview of the research and methodological perspective that we used to collect and analyze the empirical data for the present study. We decided to use a combination of qualitative and quantitative methods for these endeavors. Our intention is to have a richness of empirical elements to contrast with our theoretical and analytical frameworks, thus providing a satisfactory answer to our main research question: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its members? For purposes of clarity about the specifics behind our methodological choices, we divided this chapter into four main sections.

The first section, “Case Study Research (CSR) for Investigating Online Learning Communities”, presents a discussion around the definition of CSR as a research design approach as well as the arguments that led us to choose Robert K. Yin’s CSR approach as the ideal perspective to conduct our online study. We also describe how we framed the study under an overall CSR qualitative design, the methodological principles we took into consideration and the strategies we followed in order to maximize the strengths of the CSR approach and confront the critiques around its deficits. Last, but not least, we defined our facilitative method perspective with regards to data collection and analysis procedures.

In the second section, “Methods Used for Data Collection”, we included a detailed overview of our facilitative method strategy with regards to the data collection process. We explain how we conducted our netnography, online survey and online interviews in each of the six OLCs. We also describe how we approached the topic of Ethics and Online Research in our study.

The third section, “Methods Used for Data Analysis and Interpretation of Results”, defines the mixed method analytical approach we took in our CSR study and clarifies the reasons behind this choice. We describe thoroughly our two-step analytical strategy. It is composed, on a first instance, by the combination of Thematic Analysis and Descriptive Statistics for the individual case studies’ analysis, and on a second instance, by the conduction of Cross-Case Analysis for the overall report of results.

In the fourth and last section, “Limitations of the Research Design and Methodology Chosen”, we reflect on the strengths of our research approach as well as on the limitations we encountered, in particular during the data collection phase. We discuss how both upsides and downsides affected our research and how we resolved it.

#### ***4.1 Case Study Research for Investigating Online Learning Communities***

Internet use is nowadays a common routine of the everyday life of approximately 4.9 billion users worldwide (Statista, 2021a). From these, it is estimated that around 4.26 billion are social media users (Statista, 2021b). This information suggests the importance that the Internet has for enabling human interaction and fostering information sharing through virtual environments such as social networks and online communities. Moreover, “the online experience is at all times tethered in some fashion to offline experience” (Jones, 1998, p. xii), reflecting the meaningfulness of Internet as “a form and medium of communication and meaning” (Jones, 1998, p. 2).

Thus, researchers encounter on the Internet and its populations a rich social space to conduct diverse studies with a myriad of focuses. Online research and its methods provide the possibility to recruit specific participants and collect a variety of data to understand their motivations and actions in virtual habitats. In this regard, online research is “valuable not only in gathering data to complement conventional approaches, but also in taking new approaches to data that would otherwise be difficult to obtain” (Germain, Harris, Mackay, & Maxwell, 2017, p. 6).

Nevertheless, online research has a complex nature. Questions of ethical guidance and examples of fixed methodological frameworks are limited or without a clear consensus among the scientific community (Germain et al., 2017). As a consequence, online research differs from traditional research in terms of conceptualizing and operationalizing the studies (cf. Gaiser & Schreiner, 2009). Therefore, online researchers face the challenge of continually adapting traditional and virtual research tools and methods to concrete research problems and questions (Denzin, 2003). All of these factors configure online research as a cross-disciplinary and multidisciplinary field.

Online research on the field of virtual communities is as heterogeneous as the perspective, the purpose, the approach, the unit of analysis and the context of each study and each researcher (Stolterman, et al., 1999). In the specific case of OLCs, online research tends to focus in exploring innovative cases or practical experiences to develop best practices for the educational arena; in transversal or longitudinal studies to investigate and explain educational or learning cases within their context; and in theoretical contributions to revisit, improve and elaborate frameworks of analysis to understand these online learning phenomena (Raposo-Rivas & Escola, 2016). The present study falls into the two last categories mentioned, as we were interested in analyzing the extent to which public OLCs influence lifelong learning experiences through theoretical and empirical evidence.

We used Robert K. Yin’s Case Study Research (CSR) (2013) as our perspective to investigate the six selected public OLCs. CSR is, first and foremost, a research design approach that allows “the intensive study of one or more cases for some explicit purpose” (Sandelowski, 2011, p. 154), both online and offline. In this regard, Yin’s CSR approach does not adhere to a particular methodology or is defined by having a number of cases (Morgan, Pullon, Macdonald, McKinlay, & Gray, 2017). Rather, it is characterized for providing the researcher with the freedom to build a particular design to frame the study and to choose a specific method or methods to develop a concentrated focus on a case or cases. The selected empirical units of analysis constitute the cases. Therefore, “a case is a spatially and temporally defined entity created by researchers via a process referred to a casing” (Sandelowski, 2011, p. 154). Casing is a key procedure in CSR because it allows researchers to

define, delimit and declare the objects for case study based on a theoretical framework and through different case selection techniques, therefore addressing the question of representativeness (Seawright & Gerring, 2008). CSR is useful in three ways. First, it helps to generate, refine, and test research questions, hypotheses, and theoretical propositions by focusing its inquiries intensively on one or more cases selected for study. Second, it fosters the empirical intimacy that researchers require to conduct deeper and detailed analyses on their targets of study. Third, it transcends the qualitative / quantitative methodological divide by recognizing that the choice of one, the other or a combination of methods are valid depending on the purposes and design of the study.

We framed our study within an overall CSR qualitative methodological design, following Yin's principles (2013) and based on a facilitative method approach for data collection and analysis. We found the distinction made by Mills (2014) of the terms methodology and method particularly useful for configuring our research design. For the author, the methodology is "the lens through which the researcher views and makes decisions about the study", while methods are "the procedures and techniques employed in the study" (Harrison, Birks, Franklin, & Mills, 2017, p.6). Following this logic, Yin's CSR stance was ideal for the objectives of our study because it allowed us to case carefully and make an in-depth qualitative investigation of the purposely selected six units of analysis (virtual and blended communities), which we considered represented adequately the OLC typology explained in the previous section. The value of the facilitative method approach relies on the fact that the inclusion of complementary qualitative and quantitative perspectives helped us to make a richer data collection and analysis of each community, rather than if we have relied solely on one method. In the following subsections we provide further details on methodological considerations within the conduction of case studies using this multiple method perspective.

#### ***4.1.1 Methodological Considerations within our Case Study Research Approach***

One of the strongest points of the CSR rationale is how it allows researchers to make a "thick description" (Burton, 2013, p.2) of the case by integrating the interpretation of what the subjects of study say about their reality and providing a thorough contextualization. A second advantage of using CSR is the way it "interrogates an instance in action" (Burton, 2013, p.2), which is very useful for understanding the case within its context and discovering "a wide variety of social, cultural, political (and economical) factors potentially related to the phenomenon of interest that may not be known in advance" (Bhattacharjee, 2012 p.40). A third strength of CSR is that its methodology is "particularly appropriate for exploratory studies for discovering relevant constructs in areas where theory building is at the formative stages, for studies where the experiences of participants and context of actions are critical, and for studies aimed at understanding complex, temporal processes" (Bhattacharjee, 2012, p.94). Critiques about CSR consider that using this methodology makes it difficult to establish causality and replicability due to a lack of controlled observations. On a second instance, a commonly discussed weakness is that the findings obtained from a single case study cannot be generalized. A final criticism to CSR contemplates the question of academic rigor in terms of research, as the quality of the interpretation of findings depends on the observational and integrative skills of the researcher (Darke, Shanks, & Broadbent, 1998; Bhattacharjee, 2012).

There are three methodological approaches commonly used in CSR, which are based on the philosophical perspectives of the foundational methodologists of this field: Robert K. Yin, Sharan B. Merriam, and Robert E. Stake. These three differing perspectives on CSR conceptualization and methodology are exposed in detail in the authors’ major works: “Case Study Research Design and Methods” (Yin, 2002); “Qualitative Research and Case Study Applications in Education” (Merriam, 1998) and “The Art of Case Study Research” (Stake, 1995). In this respect, Bedrettin Yazan (2015) provides an excellent overview of Yin, Merriam, and Stake methodological positions in terms of the epistemological commitments of CSR, the definition of case and case study, the principles of case study design, and the data collection, analysis, and validation processes (see Table 5<sup>23</sup>):

<b>Juxtaposition of three Case Study Approaches</b>			
<i>Dimension of interest</i>	Robert Yin	Robert Stake	Sharan Merriam
<i>Epistemological Commitments</i>	Positivism	Constructivism & existentialism	Constructivism
<i>Defining case and case study</i>	A case is a contemporary phenomenon within its real-life context. Case study is an empirical inquiry that addresses the how and why questions concerning the phenomenon of interest.	A case is an integrated, purposive system with boundaries and working parts. Case study is a qualitative, holistic, empirical, interpretive, and emphatic study of the particularity and complexity of a single case and its activity.	A case as unit can be a person, program, group, policy, etc. Case study is an intensive, particularistic, and heuristic description of the unit subject of analysis.
<i>Designing case study</i>	Five components’ design: questions, propositions, unit(s) of analysis, logic for linking data to propositions and criteria for interpreting findings.	Flexible design is based on two or three research questions which are sharpened over the course of the study through progressive focusing.	Five steps of research design: conducting literature review, constructing a theoretical framework, identifying a research problem, establish research questions and select a purposive sample.
<i>Gathering data</i>	Quantitative and qualitative data	Exclusively qualitative data	Exclusively qualitative data

<sup>23</sup> This is a summarized version of Yazan’s overview table. For the detailed assessment of the approaches, please refer to page 148-150 of his paper “Three Approaches to Case Study Methods in Education: Yin, Merriam and Stake” (2015).

	sources gathered through documentation, archival records, interviews, direct observations, participant observation and physical artifacts.	sources gathered through observation, interview, and document review.	sources gathered through interviews, observation and document analysis.
<i>Analyzing data</i>	Examination, categorization, tabulation, testing or recombination of quantitative and qualitative evidence through pattern matching, explanation building, time-series analysis, program logic models and cross-case synthesis.	Simultaneity of data collection and analysis through categorical aggregation and direct interpretation.	Simultaneity of data collection and analysis through ethnographic analysis, narrative analysis, phenomenological analysis, constant comparative method, content analysis and analytical induction.
<i>Validating data</i>	Construct validity and reliability through triangulation of multiple sources of evidence.	Data validation through triangulation of data source, investigator, theory, and methodology.	Validity and reliability through triangulation of knowledge produced in research via long-term observation, disclosure of investigator position/bias, audit trail, thick description, etc.

**Table 5: Juxtaposition of three Case Study approaches (Yazan, 2015).**

The choice to follow one or the other methodological suggestions from each author or to construct an amalgam of tools mixing the fore mentioned perspectives influences to a great extent the decisions concerning the case study design (Yazan, 2015). Hence, the main goal behind each specific methodological alignment chosen should be “to engender coherence between the researcher’s position, their research question, design and methods to be used in the study” (Harrison et al., 2017, p.9). Furthermore, it is important to mention that aside the methodological choices, “the essential requisite for employing CSR stems from one’s motivation to illuminate understanding of phenomena” (Harrison et al., 2017, p.12).



Following the methodological logic exposed above, we decided to frame our research taking into consideration the principles of the CSR Methodology exposed by Yin (2013):

- a) Use Case Study as an empirical inquiry and comprehensive research strategy to investigate and understand in-depth contemporary phenomena within their real-life context.
- b) Focus on addressing “how” and “why” questions concerning the phenomenon of interest.
- c) CSR design requires five components to assure cohesion, consistency, and quality within the research: study’s questions; theoretical propositions; unit(s) of analysis, logic linking theory and empirical data; and criteria for interpreting the findings.
- d) Selection of cases or “casing” should be purposefully chosen, this is, based on the main objective of the research and related to the theoretical propositions about the topic of interest.
- e) Inclusion of different data collection and/or analysis methods, as the combination of quantitative and qualitative sources and/or tools are equally instrumental for reliability and validation purposes.

Our decision for choosing Yin CSR’s perspective obeys the fact that his methodological principles are in accord to the research stance that we are taking for this dissertation. Our study will investigate 6 case studies through the combination of a qualitative and a quantitative data collection and analysis. The results from this research endeavors will be presented in two main ways, so to show the explanatory richness that CSR has for approaching a contemporary phenomenon such as OLCs within their real-life context. First, we will portray two of our learning communities as case study reports, with the intention to illustrate thoroughly the characteristics found to be useful for fostering Lifelong Learning in a 100% virtual and in a blended OLC. Second, we will include a cross-case comparison of the six communities considered, so to provide a comparative synthesis of their lifelong learning value in educational, professional and interest contexts.

With the intention to maximize the strengths of CSR following Yin’s approach and to confront the critiques<sup>24</sup> around its deficits (Flyvbjerg, 2006), we implemented the following strategies in our research design:

- 1) We revised theoretical and empirical research in the field of OLC in order to formulate specific research questions that would guide our study, as well as hypothesis that could be tested against our empirical evidence.
- 2) We cased diverse typical cases, this is, we carefully selected the communities for our study according to their representativeness and based on the fit they had with our OLC theoretical framework and our research questions. We did so with the intention to gain a close, deep understanding of each category of OLC mentioned in our typology, but also to compare them so to evidence the similarities and contrasts among communities through a rich, cross-cased analysis of the phenomena of lifelong learning in virtual communities.
- 3) We used a facilitative method approach for data collection and analysis and included a detailed description of the procedures followed. Our objective was to provide our study with reliable

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<sup>24</sup>Bent Flyvbjerg makes a valuable contribution about the value of CSR by discussing and correcting five common misunderstandings often associated to this methodology. His intention is to emphasize the importance to produce a greater number of good case studies to contribute to advance Science.

and in-depth, complementary data with the intention to reduce biased interpretations through data triangulation for the individual case study reports and the cross-case comparison. In the next subsection we will describe in detail our multiple method perspective.

#### ***4.1.2 Facilitative Method Perspective: Our Methodological Choice for Data Collection and Analysis***

CSR from Yin's perspective (2013) enables the inclusion of multiple methods in a natural way given the myriad of approaches to research design, analysis and interpretation that are possible through this methodology. The combination of different qualitative and quantitative methods to collect and analyze the empirical data required to investigate the units under study provides a broader floor for testability of hypotheses and a richer, contextual basis for interpreting and validating the research results (Kaplan & Duchon, 1988; Morse & Cheek, 2014). In our study, we decided to use a facilitative method approach for the explanatory purposes of the research. Neil Spicer defines it as "the use of qualitative methods to facilitate or inform primarily quantitative research and vice versa" (2004, p.294). Hence, qualitative, quantitative or a mixture of both methods can be combined simultaneously or sequentially with the intention to nurture the investigation.

The combination of multiple methods in a facilitative way is not only useful to deepen the understanding of the phenomenon under study, but also to increase the dependability and credibility of the study itself (Hair & Clark, 2003). This use of multiple methods for the aforementioned purpose is known as triangulation. Triangulation is useful for two main reasons. On the one hand, it allows developing a rigorous data collection and consistent proceedings to crosscheck data from different sources, which can alert researchers about correcting potential analytical errors, omissions, and lack of consistency both in the research procedures as well as in the results. Hence, it can be helpful in increasing the study's accuracy, this its methodological dependability. On the other hand, it can also lead to develop new insights or modes of analysis, as it can reveal complementarity, convergence, and dissonance among the findings and thus, strengthen the study's trustworthiness, this is, its credibility (Kaplan & Duchon, 1988; Spicer, 2004; Hussein, 2009; Cronin, 2014).

It is important to mention that combining multiple methods within a study through a facilitative approach is not the same as conducting a Mixed Method Research (MMR) (Small, 2011; Morse & Cheek, 2014). The similarity of the terminology might make both perspectives appear as synonyms. However, to embark in MMR means to develop a far more challenging, complex design and model of analysis than the one that a facilitative mix-method approach requires. In MMR, researchers combine and integrate systematically diverse type of qualitative and quantitative research approaches (e.g., perspectives, data gathering and analysis, inference techniques, etc.) for the main goal to generate broader and deeper understanding and corroboration of initial results, all in the context of a single, but ambitious, study (Driscoll, Appiah-Yeboah,

Salib, & Rupert, 2007; Onwuegbuzie & Combs, 2011; Wisdom & Creswell, 2013; Schoonenboom & Johnson, 2017).<sup>25</sup>

We developed our facilitative method perspective considering all the elements exposed above, as well as the five dimensions of multi-strategy research <sup>26</sup>(Bryman, 2006; Burton, 2013). It consisted in the combination of two qualitative methods with a quantitative method for data collection purposes to inform our qualitative CSR design. We chose to make a virtual ethnography in each of the cases selected to portray our OLC typology and in order to analyze the communities as learning environments. This information was complemented with the data obtained through the conduction of an online survey and online interviews with the intention to know the opinion that members have about the influence that a specific OLC has on their individual lifelong learning objectives. We considered that the combination of both types of methods was necessary for the purposes of our study because this allowed us to make a more comprehensive data gathering, rather than if we had only chosen one or the other. In terms of data analysis, we chose to make a thematic analysis for the qualitative information obtained from the netnography, the open questions of the survey and the online interviews. We performed a descriptive statistics analysis for the survey's quantitative information. Integrating both analyses nurtured our interpretation, which resulted in a fuller picture of each case under study. Moreover, our facilitative method approach proved to be adequate to increase the robustness of our discussion of results because it enabled us to cross-validate our different information sources and with this, build our cross-case analysis. In the next two sections of this chapter, we will provide further details on the methods used for data collection and analysis.

#### ***4.2 Methods Used for Data Collection***

Immersion in the context is a hallmark of the qualitative research perspective, which as mentioned before, is the overall approach that we took to build and conduct our CSR. In order to immerse themselves in the case and its context, “qualitative researchers attempt to understand the way others construct, conceptualize, and understand events, concepts, and categories, in part because these are assumed to influence individuals’ behavior. The researchers examine the social reality and intersubjective meanings held by subjects by eliciting and observing what is significant and important to the subjects in situations where the behavior occurs ordinarily” (Kaplan & Duchon,

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<sup>25</sup>While there is no consensus in the definition of MMR, literature around the topic can be categorized according to three criteria that a mixed-methods study has to consider in its design: “the purported motivations to combine different types of data, the extent of sequencing of the data collection, and the level of nesting of the multiple data sources” (Small, 2011, p.63). Authors in this field also focus on the phases and criteria that the complexity of analysis in MMR requires (Onwuegbuzie & Combs, 2011). When examining the discussions about all these criteria mentioned above, the reader can notice the level of intrication, time investment, budget, and resources that MMR supposes.

<sup>26</sup>When conducting a multi-strategy research that combines multiple methods, there are different aspects that require the researcher’s attention. Alan Bryman (2006) summarizes them in five dimensions:

1. How are the research methods chosen used?
2. Which method(s) has (have) priority with regard to the overall research design?
3. Which is the purpose of the method combination?
4. In which stage of the research does the combination/integration of methods occur?
5. How many sources of data does the research have?

1988, p. 572). With this vision in mind, we decided to use the facilitative method strategy depicted in the previous section for both the data collection and the analysis phases.

In terms of data collection, our facilitative method approach included the conduction of a virtual netnography, an online survey and online interviews in our six selected OLCs. The strategy proved to be successful for describing the online environment of our learning communities, as well as for obtaining direct contact with their founders, community managers and members. In this section we present a detailed explanation of how each qualitative or quantitative data collection method was implemented in each of our case studies. We also expose the limitations encountered during the data collection process. Finally, we describe the ethical considerations we took in our online research in terms of investigating virtual communities.

#### ***4.2.1 Netnography as Qualitative Research Method***

Netnography is a form of online and digitally mediated qualitative method which has gained momentum in current online research trends. The term was coined by marketing professor Robert Kozinets who combined the words Internet with ethnography so to name the analytical tool he originally developed for analyzing online fan discussions about the Star Trek franchise (Morais et al., 2020). Netnography can be defined as a specific set of related research practices (Kozinets, 2015) for “studying and describing (characterizing) people and phenomena on the basis of users’ behavior and its consequences, which can be observed on the Internet. Field research is conducted in the existing Internet environment in real time (i.e., online)” (Juszczuk, 2014, p. 206). Netnography includes the use of virtual field notes, digital archives, online observations, and online discussions as informative sources. It is also regarded under different methodological terms such as “Virtual Ethnography”, “Ethnography for the Internet”, “Cyber-ethnography”, “Webnography”, “Digital Ethnography” (cf. Costello, McDermott, & Wallace, 2017; L. Evans, 2010; Richmond, 2014), etc.<sup>27</sup>

In the case of our study, we considered that the conduction of a netnography was very adequate for collecting data from the OLCs because one of its main principles of action is the intensive engagement of the researcher with the medium and the mediated interactions (*Internet as a cultural product*) in a virtual research field (*Cyberspace*) (Hine, 2004, 2008, 2015). For doing so, this method “adapts ethnographic research techniques to the study of cultures and communities emerging through electronic networks and computer-mediated communications” (Kozinets, 2015, p.246). Thus, and similarly to Ethnography, Netnography strives to explain how the experiences reported by the researcher represent the “webs of meaning” (L. Evans, 2010, p.2) that configure an online community or culture, this the cultural and social constructions in which people coexist and interact virtually, despite them being physically scattered worldwide.

In the specific case of the virtual communities, “netnography recognizes that the cultures of online communities are constructed by the members who are invested in their development; hence their description and any construction of theory should be derived from the community members in

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<sup>27</sup>We decided to use the term “Netnography” in our study because we based ourselves on Robert Kozinets (2015) conceptualization and methodological principles of this qualitative method.

question”(Costello et al., 2017, p. p.4) In this regard, we recognized the interactions of the community members among themselves and with the researcher, as well as those of the researcher with the founders, community managers and members and the own participation of the researcher in the OLCs, as invaluable sources of insight. In order to describe thoroughly each community, we relied in particular on Observation as the main technique for gathering the required data to build our netnography.

Observation is the cornerstone of the whole (virtual) ethnographic process. It allows the researcher to have a true immersion in the case under study, this is, its specific context, environment, actors, social interactions, etc. It is also a major means for collecting qualitative data and offering a firsthand account of the case under study (Merriam & Tisdell, 2015; Morgan et al., 2017). There are two type of observations that can be conducted within a netnography: Participant Observation (also known as Involved, Discursive or Communicative Research / Observation in Full) and Non-Participant Observation (also referred to as Distanced Research / Peripheral Participation). Participant and Non-Participant Observation distinguish each other in the fact that the first one actively integrates members of the community into the research process by means of interacting socially with them in the online space, while the second one passively monitors the community for later integrating and evaluating the gathered information, knowledge and ideas into the narrative netnographic report(Garrido, 2003; L. Evans, 2010; Borge Bravo, Ferrer, & Padró-Solanet, 2011; Costello et al., 2017).

To collect data, we performed a netnography for three months. During this time, we conducted both types of observations in two steps: (1) Non-participatory Observation for two months and (2) Participatory Observation in the third month through a post presenting ourselves, explaining the members the objective of the research and inviting them to participate in an online survey.

On the one hand, our non-participatory observations allowed to monitor the communication and interaction of the community members, as well as to describe the online environment and its context, which led us to gain empirical insight into their usage of each OLC as a learning environment. Other benefit associated to this specific perspective of the netnographic process was the anonymity of the researcher during the monitoring process, which ensured that the members of the community were unaware of our research activities and therefore the interaction remained uninhibited and natural. On the other hand, our participant observation in each selected community increased the close communication with the founders, community managers and active members and allowed unexpected data to emerge from these interactions. It also helped us to build trust between the study participants and the researcher, as the members knew the purpose of the study and what will happen with their answers. This mixture of participant and non-participant observation helped us to make a thicker description of each learning community, because we could cross-check our interpretation with the data provided by the members of the OLC under study.

It is important to highlight that Netnography has a systematic approach, reflected in a series of procedural steps for its conduction. These steps provided stability, consistency, and legitimacy to our overall research CSR design in terms of obtaining and working with the data. It was, as well, an ideal method for framing the data collection of our CSR approach because Netnography can be adapted and combined with other methodologies and/or data collection techniques for triangulation purposes (Mkono & Markwell, 2014). When designing the strategy to perform our netnography,

we took into consideration the six steps of Robert Kozinets(2010) netnographic method and complemented it with the advice of Neil Hair and Mora Clark (2003)about critical aspects to take into account when conducting a virtual ethnography and the netnographic research process for investigating online communities depicted by Stephanie T. Jong(2016):

*1. Research planning:* We recognized the research potential that OLCs offer in terms of being rich, genuine, and authentic sources of information ready to be analyzed. We also noticed the lack of research about OLCs as dynamic expressions neither of the lifelong learning spectrum and its dimensions, nor of their value as spaces that promote learning for different purposes and contexts. Therefore, we defined the research questions, considered an OLC typology to present in our research and we developed a framework of analysis and a methodological approach. We chose CSR as our research design and established the general strategy to investigate each community within their online context. We determined how we would proceed with the data collection process through a facilitative method perspective, which helped us to integrate multiple sources of evidence. We identified and selected six communities as case studies, taking into consideration our OLC typology, together with a variety of research concerns regarding access, privacy, and ethical issues around the study of online communities.

*2. Entrée:* We contacted the founders and community managers of the chosen OLCs in order to obtain permission to conduct the research and also to establish relationships with them, as they would be key informants and our main liaisons to the community. We took time to explain them our project and how both sides could benefit from a mutual cooperation, as our research would be about them but also for them. We communicated our ethical principles with regards to the research. We familiarized ourselves with the communities (objectives of the OLC, environment, design, resources, relationships of the participants, etc.) and gained research approval to actually start the netnography and conduct the online survey. This was an important step to ensure the quality of the actual data collection process.

*3. Data collection:* We immersed ourselves in the netnographic process through careful observation of the communities for data collection purposes. The observations were reported in digital field notes. We developed a format field note (see Appendix 1), in order to assure a heterogeneous data collection in each of the six selected OLC. The format field note considered the following elements to configure the netnography:

I. Description of the community

- a) Overall instructional design (sections within the community)
- b) Overall participation and interaction tools
- c) Users' profile configuration
- d) Demographics

II. Daily report during a three-month period, per group selected, about the activities noticed in each community

- a) Participation of members (e.g., new threads)

- b) Interaction among members
- c) New members' registration
- d) Most active members at the end of the month and at the end of the three months data collection period
- e) Personal impressions on how participation and interaction help to build information and knowledge among members

In Table 6 we present an overview of the collected data for the netnography of each of our six learning communities:

<b>Community</b>	<b>Period of Data Collection</b>	<b>Groups/Sections considered</b>	<b>Number of Threads considered during Monitoring Period</b>	<b>Learning Resources available in the Groups/Sections</b>	<b>Demographic Data during Monitoring Period</b>	<b>Language</b>
Deutsch für Dich	October - December 2016	4 sections out of 7 available in the community.	111	198	-222,260 registered members. -23,188 new members registered during monitoring period. -From the newly registered members, 3,590 were identified as women. -From the active users that posted/commented during the monitoring period, 247 were identified as women. -International membership with 75 countries of origin identified during the monitoring period.	German & English
RareConnect	July-October 2014	6 groups out of 80 available in the community.	231	613	-10,000 registered members -394 new members registered during monitoring period. -From the newly registered members, 57 were identified as men. -From the active users that posted/commented during the monitoring period, 52 were identified as women.	English, Spanish, Portuguese, Italian, French & German



					-International membership with 41 countries of origin identified during the monitoring period.	
edWeb.net	July - September 2016	4 groups out of the 59 most recently active. There are 1,735 groups available in the community.	71	166	-175,000 registered members -10,000 new members registered during monitoring period. -It was not possible to identify the sex trend in registration as there was no information available. -From the active users that posted/commented during the monitoring period, 8 were identified as men. -International membership with 34 countries of origin/location identified during the monitoring period. -Strong regional membership with 21 states of origin/location identified in the United States of America during the monitoring period.	English
NovaGob	December 2016 - February 2017	4 groups out of 193 available in the community.	201	8,297	-9,826 registered members. -119 new members registered during monitoring period. From the newly registered members, 48 were identified as women. -From the active users that posted/commented during the monitoring period, 30 were identified as women.	Spanish

					<p>-Diverse Hispanic membership with 5 countries of origin identified during the monitoring period.</p> <p>-Strong regional membership with 30 provinces of origin identified in Spain during the monitoring period.</p>	
Cambridge in Colour	February - April 2016	4 groups out of 9 available in the community.	300	98	<p>-42,520 registered members</p> <p>-1,150 new members registered during monitoring period.</p> <p>-It was not possible to identify the sex trend in registration as there was no information available.</p> <p>-From the active users that posted/commented during the monitoring period, 34 were identified as women.</p> <p>-International membership with 34 countries of origin identified during the monitoring period.</p>	English
Momzilla!	April - July 2016	Newsfeed of the community	600	70	<p>-8,582 registered members</p> <p>-493 new members registered during monitoring period.</p> <p>From the newly registered members, all were identified as women.</p> <p>-From the active users that posted/commented during the monitoring period, all were identified as women.</p>	Spanish, English

					- International membership with 17 countries of origin/location identified during the monitoring period. - Strong regional membership with 30 states of origin/location identified in Mexico during the monitoring period.	
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**Table 6: Data collection through Netnography.**

4. *Data analysis:* NVivo software was used for performing the thematic analysis of the qualitative data collected. SPSS software was used for the descriptive statistics analysis of the quantitative data collection. Both analyses were integrated to present the narrative report of each OLC as well as for including the interpretation of findings in a cross-case syntheses. This triangulation of analytical methods allowed us to make sense of all quantitative and qualitative data collected. With this, we gained a thorough understanding of the dynamic of the selected online communities and the perception of the members about their communities in terms of learning value. It also provided credibility and dependability to our study.

5. *Ethical standards:* We established and communicated the ethical principles that would guide our research from the beginning. Confidentiality and anonymity of the participants was kept throughout all the research process, in particular when making the case description and results reports.

6. *Research representation:* We presented the research in terms of per case and cross comparative findings. We elaborated in the conclusions in the theoretical contributions of our investigation. We reflected on the policy implications. We returned the results and analysis to each community.

To conclude this section, we would like to emphasize that although our netnography is the pillar of our qualitative CSR approach for investigating OLCs, it is supported by other quantitative and qualitative methods we included in our facilitative method strategy. The triangulation of these methods gave us the opportunity to obtain insights from different perspectives and to make a thicker description of the communities. Hence, the next subsections regarding “Methods of Data Collection” provide further details on the online survey and the online interviews used to complement our netnography, as well as of the ethical precautions we took during the data collection process. We also devote the section “Methods Used for Data Analysis and Interpretation of Results” to explain thoroughly how we analyzed the information gathered of the six cases considered.

#### ***4.2.2 Online Survey as Quantitative Research Method***

Online surveying, thanks to the self-administrated questionnaire modality, offers significant technological advancements and economic benefits in terms of scientific research. The global reach, the flexibility in design and conduction, the automatized data collection process, the data storage capacity within a survey platform and the way research time/costs become more efficient and convenient in online surveys are their major strengths when compared to their offline, traditional version. Nevertheless, online surveys are also affected by non-coverage<sup>28</sup> and sampling frame problems,<sup>29</sup> as well as by variable response rates influenced by respondents' motivation to participate, their perceptions of the survey, their computer literacy and/or their privacy concerns (J. R. Evans & Mathur, 2005; Vehovar & Lozar Manfreda, 2008).

In our facilitative method approach, the inclusion of an online survey was thought to be used to collect data that allowed us to provide factual information about the characteristics of the population of each of the six OLCs, as well as documented insights about the opinions, attitudes, and experiences of the members (Borge Bravo & Padró-Solanet, 2011; Bhattacharjee, 2012; Bíró, Botzenhardt, & Ferdinand, 2014). Furthermore, the online survey had the intention to reach both active users and lurkers<sup>30</sup> within the OLCs. The netnography could report only a small fraction of the online communities' activities: those constrained to the public interactions taking place in the platform. In this regard, we consider that our online survey perfectly complemented the comprehensive description we made through the netnography about the communities. Through the questionnaire, the members provided us with in-depth data with high informational value about specific aspects of their participation in the OLCs and their perceptions of the influence that the communities have on their lifelong learning objectives.

The strategy we considered for conducting our online survey was based on the Survey Research Process Flow developed by Valerie Sue and Lois Ritter (2012), the Online Survey Design, Development and Implementations Guidelines from Dorine Andrews, Blair Nonnecke and Jennifer Preece (2003) and the practical advice provided by Duncan D. Nulty in terms of response rates in online surveying (2008). As a first step, after analyzing our research questions, hypotheses and objectives and conducting a literature review on the topics of virtual communities, OLCs and lifelong learning, we considered that an online survey was an adequate data collection method that together with the netnography and the online interviews, would allow us to answer our research questions. Thus, we proceeded to contact the founders and community managers of the selected communities. We explained them the purpose of our research and our intention to conduct an online survey within the community, in order to obtain their support and authorization to do so.

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<sup>28</sup>The variations in access to Internet at regional, national, and organizational levels can result in significant sampling biases, as it cannot be guaranteed that the target population has regular access to the web in order to respond the survey.

<sup>29</sup>Online surveys are often confronted with the lack of single registries or contact detail lists of specific populations, which can become an impediment to conduct the data collection.

<sup>30</sup>As we explained in chapter 2, lurkers or spectators are a type of active, but silent participants in virtual communities. They are information consumers; therefore, their existence should not be ignored in an online study. To understand how lurkers behave and why they do not interact, and post openly is fundamental for explaining social interactions online (Nonnecke & Preece, 2003).

Secondly, we proceeded to evaluate different sampling options (Andrews et al., 2003; Bhattacharjee, 2012). We chose to obtain the samples using a probability-based sampling approach through the simple random sampling technique (Fricker, 2008).<sup>31</sup> However, selecting the sample of participants resulted challenging because the total number of registered members does not reflect the actual active users of the community. Not all registered members visit the community with the same regularity. Therefore, we selected the sample based on the actual number of monthly active users, and not on the total number of registered members. We also decreased the acceptable sample size by increasing the margin of error from +/-5 to +/-10 to adapt to these research conditions, while keeping a 95% confidence level (See Appendix 2). We took this decision following the principle that states that “the sample size required for a survey partly depends on the statistical quality needed for survey findings; this, in turn relates to how the results will be used” (Scheuren, 1999 p.10). Furthermore, the founders and community managers supported us by allowing us to post our invitation and survey and by implementing strategies to assure their dissemination and follow-up. These actions resulted effective for the conduction of the survey in four of our six selected communities, as we had high response rates ranging from 100% (and more) to 78% with respect to the required sample size.

However, for the two remaining OLCs under study, we realized that we would be confronted with very low response rates or a lack of quantitative data. In one of the communities, we did not count with the support of the community manager due to lack of time. In the second OLC, their privacy policy restricted any direct access to the community members. Therefore, for the first case in which we did not count with the gatekeepers collaboration, we decided to use a nonprobability sampling perspective. Nonprobability samples are often used in situations when it is somehow convenient to do so, such as “when either the probability that every unit or respondent included in the sample cannot be determined, or (when) it is left up to each individual to choose to participate in the survey” (Fricker, 2008, p. 199). Respondents for this survey were selected among those who opted to participate after reading the invitation. In this case, we did not estimate a sample size nor a margin of error. This obeys the fact that in nonprobability samples “it is impossible to know the likelihood of any particular participant selected for the sample, therefore, there is no estimate of the variability in the underlying population -essential information for the calculation of a suitable sample size” (Sue & Ritter, 2012, p.45). As a consequence, such samples are not completely representative of the general population and therefore cannot be used for statistical inferences. Despite their limitations, non-probability samples “work well for explorative research or as part of a multimethod approach” (Sue & Ritter, 2012, p.11). Moreover, through a non-probability sample we could still collect data and gain insight in the community.

In the case of the second OLC with a more restrictive privacy policy, the founder provided us with a recent statistical report that depicted the opinion of the users in terms of learning by means of the community as well as information about the community’s membership configuration. The decisions to use a non-probability sample and the statistical report allowed us to still address our research questions, hypotheses, and objectives, despite the access, time, and resources constraints we were confronted with. In general, we considered that the survey results obtained from the two types of samples and the information contained in the report provided us with invaluable data

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<sup>31</sup>Simple random sampling “selects n units out of a population of size N such that every sample of size n has an equal chance of being drawn” (Fricker, 2008, p. 199).

which was unlikely to be collected in any other way, as the members of the community were difficult to reach otherwise.

As a third step, we drafted the questionnaire and the invitation for the community members to participate in the online survey. In order to validate<sup>32</sup> our survey in internal and external ways (Sue & Ritter, 2012; Wiersma, 2013), all questions were formulated considering the framework of analysis we presented in chapter 3. In this regard, we elaborated 73 questions grouped in 6 sections that intended to examine the connection between the answers of the respondents, the questions posed and the concepts we were investigating. The questionnaire considered different levels of construct measurement by including nominal, ordinal, interval, and ratio scale questions. 56 questions were closed ended and 17 were open ended questions. We wrote all questions in a generic way, so that the questionnaire could be applied in all our selected communities. We also provided an approximate time of completion of the instrument (25 minutes) and included a dynamic progress indicator. Additionally, we developed a codebook (see Appendix 3) with the intention to have a comprehensive layout of the structure and content of the questionnaire that would ease the subsequent analysis of the quantitative data collected (Borge Bravo & Padró-Solanet, 2011). We decided to conduct the quantitative data collection through a web-based survey format, this is, through a questionnaire hosted on a website.<sup>33</sup> We conducted our online survey through the SocSci Survey platform. Respondents could access the survey by clicking on the hyperlink provided in the invitation. The survey consisted of the following sections:

1. Digital Skills Questions (6 questions)
2. Questions about the community, the participation, and the interactions (26 questions)
3. Questions about the environment and the tools available (9 questions)
4. Questions about information, learning and knowledge (25 questions)
5. Sociodemographic questions (6 questions)
6. Contact details (1 question)

As a fourth step we pre-tested the questionnaire and the invitation (Andrews et al., 2003). For doing so, we sent the invitation and the link to the questionnaire hosted in the SocSci Survey platform to the community manager of one of our selected OLCs (RareConnect). He distributed them within the RareConnect Team and other active community members. We received comments from six testers. We made the form, the content, and the technical revisions of both according to the feedback received until our final versions were approved. With regards to the questionnaire, we took into consideration all corrections and comments. Despite the length being one of the critiques, we decided to take the risk and not shorten the questionnaire as our intention is to describe in detail each of the communities. In the case of the invitation, we appealed to the importance that the participation of the members in the survey had for our research. We reminded them that their participation would be anonymous and that their answers would be kept

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<sup>32</sup>We understand validity of a survey as the fact that the questions capture the underlying concepts under evaluation, this is, that the instrument represents what it intends and claims to represent (Sue & Ritter, 2012) (Wiersma, 2013). There are two types of validity that should be taken into consideration. The first one, the internal validity refers to the rigor of measurement, this is, that the concepts that one wants to investigate, and measure are actually measured through the questions within the survey. The second one, the external validity, is related to the generalizability of the survey to the population it intends to investigate and also across contexts (Wiersma, 2013).

<sup>33</sup>Online surveying can be conducted through different asynchronous or synchronous formats. E-mail surveys, web-based surveys and mobile surveys are the most usual ones (Andrews, et al., 2003) (Sue & Ritter, 2012).

confidential. We decided to include an incentive in our invitation, in order to motivate the participants and increase the response rate (Andrews et al., 2003; Nulty, 2008). We translated the questionnaire (see Appendix 4) and the invitation (see Appendix 5) originally written in English, to Spanish, French, Italian, German, and Portuguese. This task was possible thanks to the funding provided by RareConnect and the European Organization of Rare Diseases (EURORDIS). Additionally, all translations were proofread by native speakers. Finally, we uploaded the final version of the questionnaire and its correspondent translations to the SocSci Survey platform, configured its design and created an individual hyperlink for each of our six OLCs. The whole process of developing the online survey (considering all four stages described above) took several months, from March 2014 to May 2016.

Our fifth step consisted in establishing launching dates for the online survey and developing dissemination strategies for the questionnaire in cooperation with the founders and community managers of each selected OLC. We kept close contact with them during the whole surveying process, which led us to build a relationship with each of them over time, as the mutual collaboration for the research was seen as an asset that could benefit both parties. Our joint effort with the gatekeepers from the communities was invaluable to address privacy concerns, implement the strategies of dissemination, build trust with the members, and encourage their engagement to the research project, and actually conduct the data collection.

Our sixth step was the actual launch of the online survey on the dates convened for each case. The invitation to participate in the survey, as well as a link to access it was posted or distributed on each community. This post, as well as the online survey remained active during a month in each OLC. During this period, we also monitored the responses, answered the participants' questions, and sent or coordinated the reminders (Nulty, 2008). At the end of surveying period, we thanked the participants, the founders, and the community managers. We also made the raffle and notified the winners of the electronic gift certificates from Amazon.<sup>34</sup> All digital vouchers were sent and redeemed. With the intention to summarize the process described above, the following table presents an overview of the quantitative data collection process made through our online survey:

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<sup>34</sup>The incentive consisted in two Amazon gift certificates per community, each worth 25 EUR.

<b>Community</b>	<b>Period of Data Collection</b>	<b>Type of Sampling</b>	<b>Monthly Active Users per Community<sup>35</sup></b>	<b>Total Number of Questionnaires Accessed</b>	<b>Total Number of Questionnaires Fully Answered</b>	<b>Response Rate with respect to Required Sample</b>	<b>Strategy of Survey Dissemination</b>
Deutsch für Dich	December 2016-January 2017	Nonprobability	Not available	55	30	Not applicable	<p>We posted two threads (German and English) in all groups available in the forum section inviting the members to participate in our online survey. As the thread could not be posted as static and we were not allowed to send private messages to the members' data base, we updated every day the threads so that they would appear in the general newsfeed of the community and of each group as a reminder measurement.</p> <p>Parallel, we answered all questions and comments from the members that</p>

<sup>35</sup>This information was provided by the founders and community managers. We considered the monthly active users data closer to the online survey launch date for each community.



							contacted us public or privately.
RareConnect	June-July 2016	Probability	2,500	182	95	102%	<p>Stage 1: We posted threads with the invitation and the survey's link on the 80 groups hosted by the community.</p> <p>Stage 2: On the second week after launching the survey, the community manager sent a private message to all registered</p>

							<p>members inviting / reminding them to participate in the study.</p> <p>Parallel, we answered all private and public messages from the members concerning the online survey. We also used the posted threads to make reminders and follow-ups from the survey.</p>
edWeb.net	June 2016	Nonprobability	6,736	The report “edWeb Teacher Professional Development Survey” was provided by the founder.	2,000	Not applicable	The online survey developed by edWeb was disseminated via e-mail in March 2016 to two groups: 150,000 edWeb registered members and 400,000 educators from the MCH K-12 teacher database.
NovaGob	February-March 2017	Probability	2,831	114	84	90%	Stage 1: We were allowed to start a thread in the specific space of the community for sharing collaborative studies about the topics covered by this OLC or research about NovaGob. We commented with updates and reminders on the

						<p>thread three times per week during the first three weeks of the survey period and every day during the fourth week. This kept the thread visible in the group and in the general newsfeed of the community.</p> <p>Stage 2: Parallel to the launch of the survey, the community manager and the information coordinator sent a special newsletter inviting all members to participate in the survey. They also published tweets regularly to remind members to participate in the study during the four weeks that the online survey was available.</p> <p>During all the data collection period, we answered all public and private messages sent by the members of the community.</p>
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Cambridge in Colour	June-July 2016	Probability	7,500	88	74	78%	<p>Stage 1: We had the authorization of the founder to start a thread with the invitation and link to the survey in the General Announcements section of the community's forum. The thread was pinned by the moderators to keep it static in the newsfeed.</p> <p>Stage 2: From the second week after the survey's launch and onwards, one of the moderators implemented a banner that announced or reminded the members to check the invitation and participate in the study every time they accessed the community.</p> <p>Parallel, we answered all private and public messages from the members with regard to the study.</p>
Momzilla!	April-May 2016	Probability	6,028	354	227	239%	Stage 1: The community manager started a thread

						<p>inviting all members to participate in the study and included the link to the survey. We were allowed to use this thread to make daily reminders or updates so that it would appear every day in the newsfeed.</p> <p>Stage 2: On the second week after the survey's launch, the community manager made a new thread reminding the members to participate in the study and encourage others to do so.</p> <p>After this, influential and active members of the community made separate threads or tagged other members with the intention to increase the participation in the survey.</p> <p>Parallel, we answered all private and public</p>
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							messages from the members concerning the study.
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**Table 7: Data collection through Online Survey.**

#### ***4.2.3 Online Interview as Qualitative Research Method***

As seen throughout this chapter, online research methods have an enormous methodological potential and versatility for research in all scientific fields. Online interviews are particularly valuable for contacting individuals or groups who otherwise due to time, costs, distance, or privacy circumstances would be difficult to reach. Alike Netnography and Online Surveying, Online Interviewing has flourished in the last two decades as the use of these methods becomes more widespread (Bampton & Cowton, 2002; O’Connor, Madge, Shaw, & Wellens, 2008).

Online interviews, also known as e-Interviews, can be conducted in asynchronous or synchronous modalities (Bampton & Cowton, 2002; O’Connor et al., 2008). Asynchronous interviews are structured and conducted in non-real time (Hair & Clark, 2003; Borge Bravo & Ferrer i Fons, 2011), being the use of e-mail the most often facilitated via to do so. In this case, the researcher obtains the authorization and e-mail addresses from the potential respondents, for then sending out an e-mail which contains the interview questions, either in its body or as attached document. The participants are invited to respond the interview and return their answers to the researcher over a period of time. The simplicity for setting up and administering the interview, the flexibility in data collection, the convenience in terms of response and privacy for both the researcher and the interviewee, and the fact that transcripts are automatically created are among the main advantages of this modality. On the downside, in asynchronous interviews responses tend to be well considered and carefully thought, which can be seen as a disadvantage as they are not so spontaneous as in a face-to-face interview. E-mail interviews often are in risk to be ignored or deleted when received by busy or not interested participants. Non-verbal cues present in face-to-face interviews that result helpful to contextualize are completely lost in this modality that we describe above. However, the use of emoticons in online interviews can somehow compensate this problem.

Synchronous online interviews allow the researcher to conduct the semi-structured or unstructured interview in real time (Hair & Clark, 2003; Borge Bravo & Ferrer i Fons, 2011), mostly through conferencing, Internet telephoning and instant messaging software. In a similar fashion to traditional face-to-face interviews, in this modality researchers and respondents can interact with one another, enabling participants to respond immediately and spontaneously. Moreover, as questions tend to follow a dialogue rather than a sequential format, researchers can pose further inquiries and interviewees can provide content richer answers (Al-Saggaf & Williamson, 2004). As a result, the transcription of synchronous online interviews resembles more a “written conversation”.

Bearing all these theoretical aspects in mind, we decided that Online Interviewing was an adequate, complementary data collection tool for our facilitative method approach. For conducting our online interviews in each community, we opted to use the asynchronous modality with the members and the founders or community managers that had limited time. We also conducted synchronous, semi-structured online interviews with those community managers whom we could arrange an appointment for this specific task and with the members that wished to be interviewed so. In all cases, we formulated the set of questions for users (see Appendix 6) and gatekeepers (see Appendix 7) in similar terms, so that their responses would allow us to obtain first-hand information about each community and deepen our understanding of their individual learning processes. We also got the informed consent to conduct the interviews via direct request through e-mail in the case of the founders and community managers of the OLCs and through one of the questions in the online survey, where interested participants could leave their e-mail address in case they wanted to be contacted for an interview. In the multilingual communities, we chose English as our *lingua franca* for both synchronous and asynchronous online interviews. However, we also gave the option to the members of the communities to answer the e-mail interviews in their mother tongue if that turned out to be more convenient for them. In the Spanish speaking OLCs, we conducted all online interviews in this language. We summarize the data collection made through our online interviews in the six selected OLCs through the following table:

<b>Community</b>	<b>Period of Data Collection</b>	<b>Type of Online Interviewing</b>	<b>Total Number of Interviews conducted</b>	<b>Language</b>
Deutsch für Dich	February 2017	Asynchronous	Members <sup>36</sup> (3)	English
RareConnect	April 2014, July-August 2016	Synchronous & Asynchronous	Community Manager (1), Members (8)	English
edWeb.net	April 2017	Asynchronous	Founder <sup>37</sup> (1)	English
NovaGob	April-May 2017	Asynchronous	Founder - Community Manager <sup>38</sup> (1), Members (7)	Spanish
Cambridge in Colour	July-September 2016	Synchronous & Asynchronous	Founder (1), Moderators (2), Members (11)	English
Momzilla!	April 2016	Asynchronous	Founder (1), Moderator (1), Members (22)	Spanish

**Table 8: Data collection through Online Interview.**

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<sup>36</sup>In the case of Deutsch für Dich, we could only interview the members of the community that gave us their explicit consent through the online survey. Although we had the authorization from Anna Peterwerth, Project Manager of the community, to conduct our study, she could not grant us an interview with her due to lack of time.

<sup>37</sup>While we had the authorization of Lisa Schmucki, founder of edWeb.net, to conduct our study, the privacy policy of this community did not allow us to contact the members in any form. However, she allowed us to use the 99 testimonials from registered members, sponsors and partners collected over the years by the edWeb.net team.

<sup>38</sup>In the case of NovaGob, Francisco Martín Rojas, Founder and General Director, together with Mentxu Ramilo Araujo (Community Manager) proposed us to answer the interview in a collaborative way through a wiki hosted in Google Drive.



#### ***4.2.4 Human Subjects Research and Ethics Precautions***

Online communities are dynamic and complex expressions of our modern, technological societies. As points of convergence for the real and the virtual, they have become part of our everyday life, thus, interesting research phenomena. Nevertheless, the particular nature of online communities has made clear that traditional ethical considerations cannot be standard for all research settings, in particular for Online Research, as the Internet will continually raise novel ethical issues as it continues expanding its scope and contexts (Eynon, Fry, & Schroeder, 2008).

As a consequence, in Online Research “basic principles of ethical research conduct associated with respecting the autonomy of research subjects, avoiding harm, and protecting privacy and data, are extremely topical, and more discussion and understanding is needed about their implications” (Kantanen & Manninen, 2016 p. 86) in and for virtual environments. When conducting online research, questions related to concepts of public and private, confidentiality, integrity of data, reputational risks, intellectual property issues, participant recruitment, disclosure of presence and how to cite, anonymize and credit when reporting and disseminating research results should be carefully evaluated according to the type of study conducted and the ethical stance that each researcher assumes. Such considerations are of high importance because “individual’s choices to participate and present themselves truthfully in (online) research environments are influenced by the extent to which researchers have established a clear ethical framework for a study that helps participants to feel protected from intentional or unintentional harm, (...) (while respecting their interests and values” (James & Busher, 2015 p. 92).

In this regard, we developed our ethical approach towards our study taking into account the argument presented by Helena Kantanen and Jyri Manninen about the importance of framing “ethical considerations more through a case-based perspective, instead of relying on one model for all solutions” (2016, p. 86). For doing so, we followed the recommendations and guidelines concerning Internet research outlined by the Association of Internet Researchers -AoIR- (Ess, 2002; Markham & Buchanan, 2012). The general principles proposed by this organization helped us as a guide to establish our ethical stance with respect to the study of OLCs. We also reflected on the discussion about good ethical practices for Internet Research from Jacqueline G. Warrell & Michele Jacobsen (2014). Thus, the specific ethical precautions that we implemented for our research revolve around the following topics:

*a) Human Subjects Research:* Our facilitative methods approach for data collection implies human subjects’ research as we placed ourselves as active participant observers in each community and established significant interactions with our research participants. In consequence and with the purpose of conducting our research in an ethical way, we disclosed our presence, academic affiliation and research intentions to the founders, community managers and members of the community. We established a close relationship with the gatekeepers and promptly answered the members’ questions about our study, in order to build trustworthiness about our research intentions and the ethical precautions that we would take with regards to the data collection and the report of results.

*b) Publicity and Privacy:* While the Internet supports the flow of constant public expressions through a variety of social interactions (e.g., blogs, forums, broadcasting videos, chats, social

networks, online communities, etc.), researchers are confronted with the question of privacy when investigating these expressions and their contexts. Individuals participating in virtual environments may find inappropriate that external parties monitor, collect, analyze and/or widely disseminate their shared thoughts and content. This is clearly reflected in the fact that many online communities have specific registration requirements, so only interested users can join and interact in a safe space. In our case, we decided to tackle the public/privacy question by obtaining informed consent to conduct our research from the founders and community managers of each of our selected OLCs, while also leaving the invitation to participate open to all members interested in the study. We also excluded any transmission of collected data to third parties.

*c) Are we studying data (texts) or persons?* In our research we are interested in the input of the users with respect to their experiences in online communities in terms of lifelong learning. Therefore, the variety of information obtained through our data collection is relevant but requires taking measurements to ensure the confidentiality of the members. Thus, we decided to include the name of each community studied in our report of results as well as those of the founders and community managers, but to anonymize the participants identifying details (e.g., nicknames, profile ID) when quoting them directly. We thought this was an adequate course of action as our study does not disclose any high risk or sensitive information.

*d) Top-down versus bottom-up approaches to Ethics:* We acknowledged the importance of balancing our needs as researchers with the contextual, regulatory, and case specific requirements that each community has. We did so with the intention of reaching a fair agreement with the founders and community managers, so that they would grant us the authorization to conduct our study. For doing so, we revised the regulations (Netiquette) and privacy policy of each of our six communities and explained their gatekeepers and users the purpose and ethical considerations of our research. Our intention was to obtain their informed consent for conducting our netnography, online survey and online interviews without compromising the wellbeing of the communities or their members.

To conclude this subsection about “Methods Used for Data Collection”, we want to highlight that we conducted our study using the four ethical precautions we exposed above not only during the whole data collection. We also had them present during all the data analysis process. In the next section we will expose the methods that we used for data analysis and interpretation of results. We will give a closure to this chapter with a reflection about the strengths and limitations of our research design and our chosen methodology.

### ***4.3 Methods Used for Data Analysis and Interpretation of Results***

Research Analysis is “the explicit step to conceptually interpret the data set as a whole, using specific analytic strategies to transform the raw data into a new and coherent depiction of the thing being studied” (Thorne, 2000, p. 68). Hence, this essential task in the research process involves “(1) comprehending the phenomenon under study; (2) synthesizing a portrait of the phenomenon that accounts for relations and linkages within its aspects; (3) theorizing about how and why these relations appear as they do; and (4) re-contextualizing or putting the new knowledge about phenomena and relations back into the context of how others have articulated the evolving knowledge” (Thorne, 2000, p. 70). In the following lines we describe the methods that we used for our data analysis and interpretation of results, as well as the reasons behind our choice.

For our qualitative CSR study, we decided to conduct a person focused analysis (Charalampidi & Hammond, 2016), which seeks to understand a phenomenon considering the standpoint of the participants (Schutt, 2015). In our case, we were interested in evaluating the experiences and opinion of the members of our OLC with respect to their lifelong learning experiences in and through these virtual environments. For doing so, we considered to use Netnography, Online Surveying and Online Interviewing because they are methods that (can) include such qualitative data collection and analysis procedures, therefore fitting in the aforementioned analytical category. Following the logic of our facilitative method approach, we also used a mixed method analysis perspective (Schutt, 2015), with the intention to triangulate our inquiries and “enhance the trustworthiness of (our) research findings by providing confirming, complementary and contrasting sources of data” (Charalampidi & Hammond, 2016, p. 4). In this regard, our analytical strategy consisted in combining, on a first instance, Thematic Analysis and Descriptive Statistics to build a detailed portray of each community through a case per case analysis. On a second instance, we used Cross-Case Synthesis in order to present our report of results, which included the analysis as a whole of the selected OLCs.

Thematic Analysis is “essentially a method for identifying, analyzing and reporting patterns within qualitative data” (Clarke & Braun, 2006, p.6). This method “also often goes further than this and interprets various aspects of the research topic” (Clarke & Braun, 2006, p.6). It is based on the principle of “constant comparative analysis” (Bumbalough, 2016, p.61), which helps to find the possible relations between different pieces of data. This allows us to go beyond simply summarizing the data, as thematic analysis interprets and makes sense of it (Maguire & Delahunt, 2017), generating often unanticipated insights. The flexibility of Thematic Analysis is one of its main virtues, as it can be applied within a range of theoretical frameworks and research questions, it can be used to analyze different types of data, it works well with both large and small datasets, and it can be applied to produce data-driven or theory-driven analyses. Among its disadvantages are the time and experience required to understand and use the method. After considering the pros and cons of the method, we thought it was adequate to enrich the detailed netnographic depiction of each of our OLCs under study by means of a well-grounded and informed narrative based on the perspective of the participants. Therefore, we used Thematic Analysis to analyze the 1,514 threads monitorized during our three months netnography, as well as the output obtained from the 17 open-ended questions of our online survey and the 59 online interviews.

To conduct our thematic analysis, we based ourselves on the six phases of Thematic Analysis developed by Victoria Clarke & Virginia Braun (2006, 2013). We complemented their approach with the recommendations exposed by Moira Maguire and Brid Delahunt (2017) in their text “Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars” and the guidelines provided by Lorelli S. Nowell, Jill M. Norris, Deborah E. White, and Nancy J. Moules (2017) in their common article “Thematic Analysis: Striving to Meet the Trustworthiness Criteria”. We also considered good practice examples of selected studies that used Thematic Analysis (Al-Saggaf & Williamson, 2004; Frith & Gleeson, 2004; Bumbalough, 2016; Costa, Breda, Pinho, Bakas, & Durão, 2016). In the next lines we describe the path of our actions for each phase:

1. *Familiarization with the data*: We immersed ourselves in our collected data by reading and re-reading it several times. We noted down our initial analytic observations in memos. We triangulated our different data collection methods and the information obtained with the purpose of providing trustworthiness to our analysis.

2. *Coding*: We chose to make a theoretical thematic analysis through the coding process proposed by Anselm Strauss and Juliet Corbin<sup>39</sup> (1998). As a first step, we systematized all our collected information (corpus of analysis) by means of an open coding process. For doing so, we generated labels for the important features (codes) from data extracts that we considered had relevance for our research questions and our theoretical and analytical frameworks. We kept an audit trail of the code generation in memos and tables. We used the software NVivo to support our coding and analysis procedures.

3. *Searching for themes*: After open coding the data collected in each community, we continued our analysis by means of an axial coding. In this process, we identified similarities and singularities among codes and collated them. We did so with the intention to identify meaningful, distinct patterns in our data and construct coherent themes that resulted interesting to provide answers for our research questions. We used thematic maps to make sense of the theme connections and kept detailed notes about the development and hierarchies of the themes, codes, and concepts.

4. *Reviewing themes*: We checked if our produced themes worked well in relation with our codes and the full-data set of each community through a selective coding approach. For doing so, we reflected on the nature of each individual theme and if the data coded really supported it. Afterward, we reviewed the relationship between themes and whether they were useful to present a compelling analysis of the data. During this process some themes were modified, collapsed together, others split into two or more and a few were discarded.

5. *Defining and naming themes*: After we developed our definitive set of themes, we analyzed them one by one with the intention to identify the essence of each of them so to name and describe them accordingly.

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<sup>39</sup>According to Strauss and Corbin, the creation of codes requires a mixture of rigor, logic, and creativity in order to build an operational system of categories. Hence, their coding process involves the implementation of three progressive coding techniques: open coding, axial coding, and selective coding.

6. *Writing up*: Our thematic maps helped us to build each case in a coherent and interesting way by means of intertwining our analytic narrative and the selected, significant data extracts with the contextualizing elements and the relevant theoretical framework of our research. We kept sufficient evidence to describe the process of coding and analysis in sufficient detail.

To complement our Thematic Analysis, we used Descriptive Statistics Analysis. This quantitative method “refers to statistically describing, aggregating and presenting the constructs of interest or associations between these constructs” (Bhattacharjee, 2012 p. 119). We analyzed the 56 closed-ended questions of the survey through a univariate analysis that considered frequency distribution as well as mean and mode in terms of central tendency measures<sup>40</sup> (Borge Bravo & Padró-Solanet, 2011; Bhattacharjee, 2012;). These analyses provided valuable and interesting insights about general characteristics concerning the dimensions of digital skills, participation/interaction, online environment/tools, information/learning/knowledge, and sociodemographic details. We also examined correlation between the variables present in each dimension. We used the software SPSS to conduct our quantitative analysis. We consider that the convergence of methods of analysis in this first instance of analysis allowed us to strengthen each case study findings as we could incorporate successfully multiple sources of evidence.

As mentioned previously, our second instance of analysis consisted in integrating the qualitative and quantitative individual analysis with the intention to provide higher-order empirical and theoretical interpretations about lifelong learning in OLCs. We chose to conduct a Cross-Case Analysis because it “is a method that facilitates the comparison of commonalities and differences in the events, activities and processes that are the units of analyses in case studies” (Khan & VanWynsberghe, 2008, p.2). In Cross-Case Analysis, the process of analysis and synthesis is important because the organization of the multiple extracted relevant evidence helps to produce more robust data and thus, build a body of knowledge from individual cases (Khan & VanWynsberghe, 2008; Barth & Thomas, 2012). Furthermore, this highly systematic method allows the inclusion and analysis of diverse types of evidence within a multi-case setting or from completely different case studies. Hence, it aids in the construction of interpretations across cases which can be used for concept refinement/development and for theory-building (Bhattacharjee, 2012).

We based our analytical approach on Matthew B. Miles and A. Michael Huberman’s (1994) Cross-Case Analysis process, which considers three concurrent flows of activities: data reduction, data display and conclusion drawing/verification. The perspective of these authors goes in line with the propositions of Thematic Analysis, because in Cross-Case Analysis “the evidence from each primary study is summarized and coded under broad thematic heading, and then summarized within themes across studies with a brief citation of primary evidence” (Cruzes, Dybå, Runeson, & Höst, 2015, p. 1640). The clustered results can be presented through a variety of devices such as tabular displays, graphs, and meta-matrices. As a final step, “the researcher can thus demonstrate

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<sup>40</sup>Descriptive Statistics include two types of analysis:

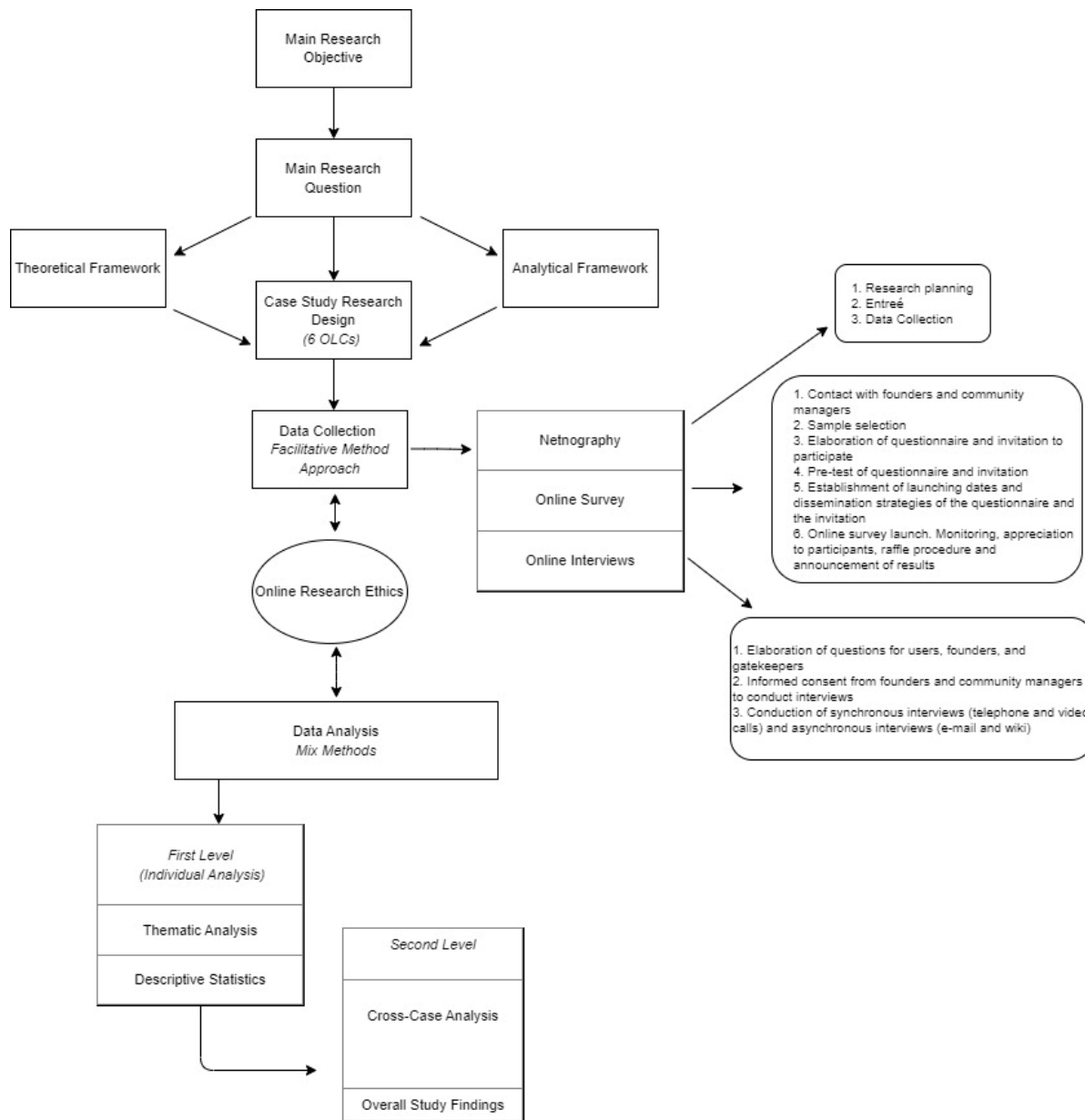
1) Univariate Analysis: it refers to the set of techniques that describe the properties of one variable. Frequency distribution, central tendency and dispersion are univariate, summary measurements.

2) Bivariate Analysis: it examines how two variables are related to each other and the strength of this relationship. Hence, we can speak of positive, negative and zero correlations.

that the outcomes in the cases selected are in fact enough alike to be treated as instances of the same thing” (Khan & VanWynsberghe, 2008 p.5), following the principle that quotes: “commonalities across multiple instances of a phenomenon may contribute to conditional generalizations” (Khan & VanWynsberghe, 2008, p. 5). In our research, this method was particularly useful for aggregating the analyzed data from each case study and working towards a more solid report of results and conclusions. Through our cross-case analysis, we could exemplify the differences and similarities in our six selected OLCs, which provided us with a good basis for discussing the specific assets that push or not forward the learning experience in and through this type of communities.

#### ***4.4 Strengths and Limitations of the Research Design and the Methodology Chosen***

By means of conclusion, we would like to summarize all what we exposed in this chapter by presenting a graphical description of how we implemented our CSR design and the methodological elements that compose it. In Figure 8, we expose the step-by-step process that we followed for conducting our study. Furthermore, the interplay and complementarity between the chosen research framework, the data collection and analysis approaches and the ethical considerations of our study are depicted.



**Figure 8: Research Design and Methodology processes.**

We consider that one of the main strengths and contributions of our study relies on its research design and chosen methodology to investigate online communities. The reasons are manifold. First, the triangulation of three different data collection methods helped us to collect and integrate diverse sources of evidence and, as a consequence, to make a more comprehensive and accurate analysis. Second, the fact that we used the same data analysis techniques for each of our six selected communities allowed us to portray each of them in a similar way and increased the validity of the comparison undertaken. Third, our ethical stance towards investigating OLCs gave us the opportunity to obtain informed consent for conducting our research in exclusive or restricted communities that otherwise we would not have been able to access. Moreover, it developed our understanding of the online culture and practices in each community, which nurtured our strategy

for collecting data in a respectful, confidential way and provided us with invaluable information for our research purposes. Fourth, the detailed description of how we protocolled and conducted our data collection and data analysis related directly to the transparency and trustworthiness of the research process.

While our research design and methodological approaches proved to be strong and coherent, they also brought up challenges and limitations in the praxis. Both data collection and data analysis were extremely complex and time consuming because we were confronted with a large amount and variety of content that we had to systematize and report in a valid, reliable way. The data collection process was particularly difficult. To contact the founders and/or community managers in order to ask for their authorization to use the learning communities as case studies resulted a complicated, slow, and at times, frustrating process. We needed this permission not only for research ethical questions, but also because our study required close cooperation with the members and the administrators for the data collection process. The different obstacles we had for establishing contact with the founders and/or community managers, as well as the restrictions that they established regarding our data collection methods and the contact to members from the community due to their privacy policies were two big limitations that affected the final outcome of our research.

The challenges and limitations we were confronted with led us to reflect on the unpredictable nature of the scientific research process, the specifics of online research in virtual communities and the lessons we can learn from this. Hence, we decided to make up for the obstacles we faced by following a similar approach to that of the multiple case study “Pedagogical Innovation in New Learning Communities. An In-depth Study of Twelve Online Learning Communities” (Aceto, Dondi, & Marzotto, 2010). This study was part of the research project “Learncom. Pedagogical Innovations in New ICT-facilitated Learning Communities”<sup>41</sup> (Ala-Mutka, 2010), made by the Joint Research Centre (Information Society Unit) from the European Commission. In the aforementioned study, the authors, like us, faced similar difficulties in terms of data collection.<sup>42</sup> Notwithstanding, we considered to conduct our investigation in a likewise fashion, despite the limitations set by our heterogeneous data collection. The result was a stimulating and valuable account of emblematic OLCs that contribute to fostering lifelong learning in different contexts, which we will present in the next two chapters of this dissertation.

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<sup>41</sup>The research project aimed to examine different online communities in order to find innovative pedagogical and organizational practices that supported lifelong learning in different settings and that fostered innovations in the interactions of teachers, learners, and organizations. It was conducted from 2008 to 2010. During this time, Learncom delivered desk research, an in-depth case study, expert workshops, dissemination events and related publications. The final report of Learncom, “Learning in Informal Networks and Communities”, was released in 2010 and provided a synthesis of the overall research results, their implications, and several policy considerations for stakeholders in education and training.

<sup>42</sup>The authors originally contacted 32 communities but were able to analyze 12 in an uneven way. They planned to conduct interviews with the community managers and the members, a survey and a participant observation of the structure and activities within the communities. However, the communication with the community managers was lengthy and complicated, or they did not obtain any answer at all; while not all communities authorized them to conduct all types of data collection, resulting in having only 12 from the 32 desired communities available for analysis. The data collection included a homogeneous participant observation of all twelve communities, 10 surveyed communities, access to supporting material (insider information) in 3 communities and interviews for all 12 communities.



## Chapter 5. Case Study 1: Cambridge in Colour

### *Case Study Narrative Considerations*

In this and in the following chapter, we present the results of the quantitative and qualitative analyses conducted in two selected online learning communities (OLCs) through an in-depth case study report. These communities were chosen based on the OLC concept and typology proposed by Urban Carlén and Ove Jobring (2005) that we referred to in Chapter 3. As mentioned in Chapter 4, we opted to use Robert K. Yin's Case Study Research (CSR) approach (2013) to best portray the results obtained through our facilitative method strategy in terms of data collection and our mixed method data analysis.

From the combination of these conceptual and methodological frameworks, we developed a common *Case Study Narrative* (CSN) for the chosen communities, with the intention to explain the outcomes obtained from our thorough research. This narrative allowed us, on the one hand, to illustrate in depth the features and conditions that foster Lifelong Learning in online and blended learning communities through a qualitative and quantitative evidence-rich case study report. In this regard, this chapter portrays two exemplary case studies: Cambridge in Colour and Momzilla. On the other hand, our CSN also resulted helpful for detecting the generalities shared by the six selected OLCs, as well as for contrasting their particularities in terms of context, topics of interest and learning dynamics. This cross-case comparison will be presented in Chapter 6.

Our CSN encompasses diverse interrelated elements, that together, provide a useful structure for illustrating the results obtained from the three different data collection sets made per community and their correspondent quantitative and qualitative analyses. Moreover, the narrative helps the reader to understand how these data collection and analysis endeavours relate to the research questions that guided our investigation. In this regard and as depicted in Figure 9, our CSN considers three main report categories, namely, (1) Contextual information; (2) Relevant themes for the community; and (3) Learning in community. Each one of these categories has (a) correspondent leading research question(s), themes, and aspects:

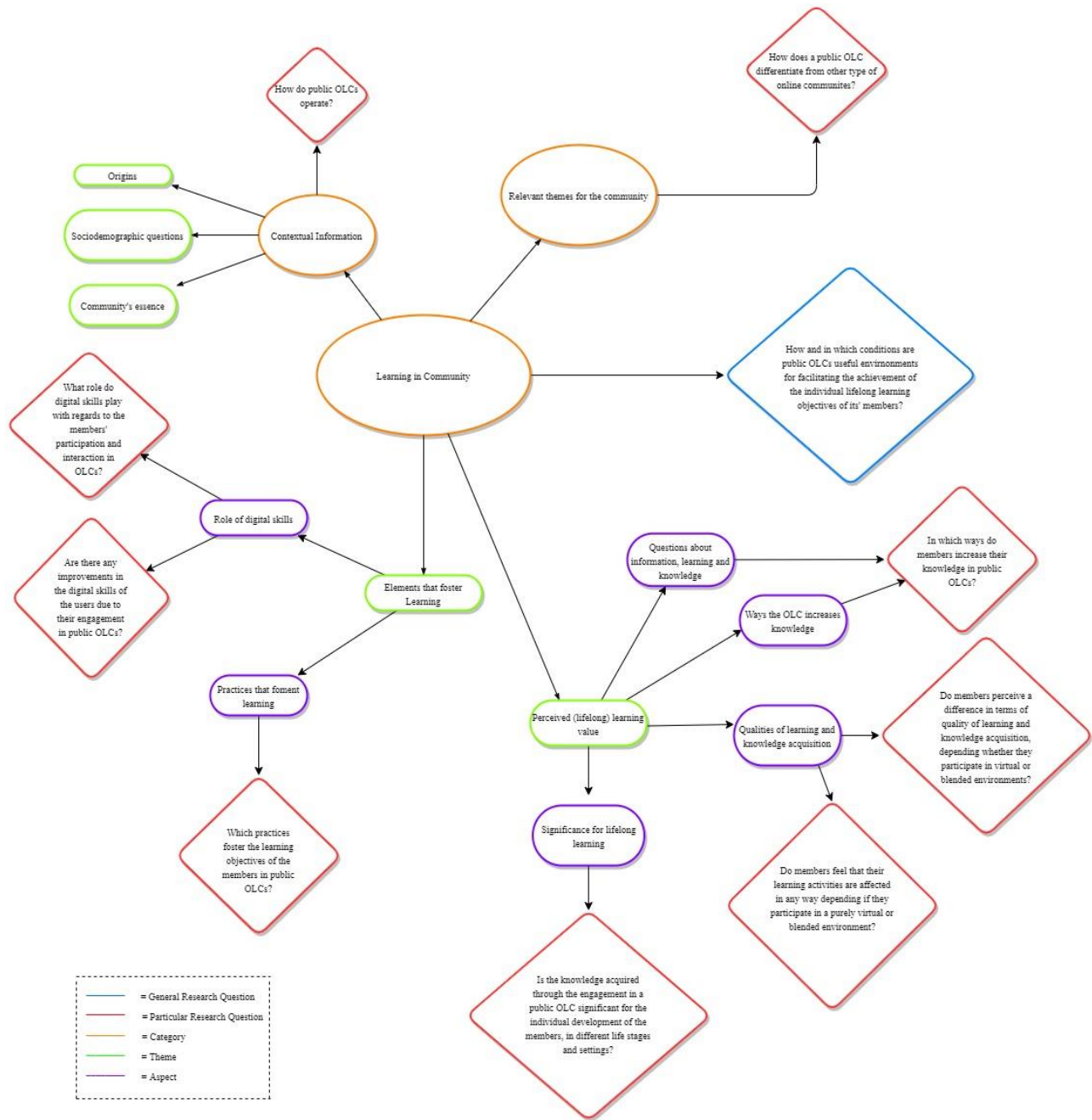


Figure 9: Case Study Narrative: Categories, Research questions, Themes and Aspects (own elaboration).

## 5.1 Cambridge in Colour: An Online Interest Community

*“The wisest mind has something yet to learn” -George Santayana*

Online interest communities (OICs) are virtual learning contexts where people with the need to obtain and/or share information and knowledge of a subject of particular significance for their spare time and daily routines, can find and/or provide answers and gather with other like-minded people (Carlén, 2002). The examples of these communities<sup>43</sup> are diverse because they are based on the individual interests that generate them.

We selected the two case studies that we present in this chapter based on Carlén and Jobrings’ OLC constituents’ conceptualization and framework (Carlén et al., 2004). We considered Cambridge in Colour as an exemplary case study because the actors, activities and tools found during the data collection phase in the community matched the definition of OIC that we are using for the purposes of our research. In this regard, Cambridge in Colour is an OIC because members participate in the virtual platform with the intention to learn and contribute with their knowledge about Photography, be it by asking and providing technical recommendations on shots, software, and equipment or by sharing their photographs looking for feedback from members from all over the world<sup>44</sup>.

The results reported in this section reflect the quantitative and qualitative analysis of the data collection obtained from Cambridge in Colour during a three-month observation period. The data collection comprised a netnography performed in the community’s online environment, as well as an online survey and online interviews conducted with the founder, the community manager, and several members from this OIC. In the following table, we provide a summary of the data collection strategy we implemented for Cambridge in Colour:

<b>Cambridge in Colour</b>			
<i>Method</i>	<i>Strategy</i>	<i>Data collection period</i>	<i>Data Collected</i>
Netnography	Three months monitoring of the activity in the newsfeed. Information reported in digital field notes.	February - April 2016	300 threads monitorized from 4 out of 9 groups from the community
Online Survey	Two stage strategy: 1) Pinned thread with an invitation and a link	June - July 2016	88 questionnaires accessed; 74 questionnaires completely answered

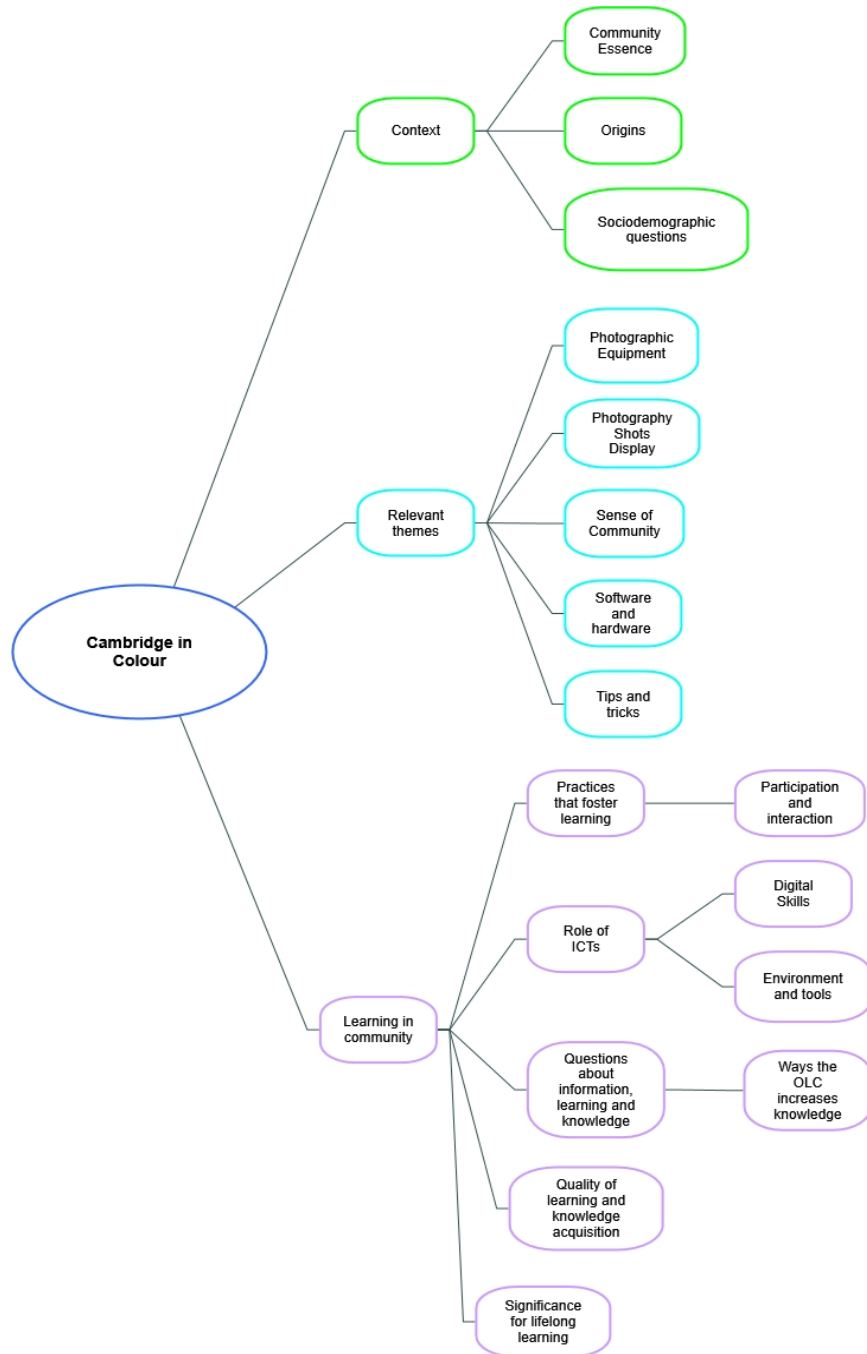
<sup>43</sup> Learning about gardening, art, pets, sports, do-it-yourself projects, and other leisure activities are typical examples of OIC communities.

<sup>44</sup> We justify in more depth the reasons for choosing Cambridge in Colour as a case study in Chapter 3.

	<p>to the online survey, in the General Announcement section. The founder authorized the thread.</p> <p>2) Banner reminding members to participate in the study, activated every time the users logged in.</p>		
Online Interviews	Asynchronous, via e-mail. Synchronous via phone call.	July - September 2016	14 Interviews

**Table 9: Data collection strategy details - Cambridge in Colour.**

As mentioned in the Introduction of this chapter, to portray each OLC, we organized and systematized the analyzed data into three main categories based in our common CSN. These categories are Context, Relevant Themes for the Community and Learning in Community. Each category includes distinctive topics that cover both the description of the community’s nature and the explanation of how learning takes place in it. This categorization proved to be useful, as it allowed us to build the specific narrative for each community. It is general enough to provide a structure to discuss the results in relation to our research questions, while allowing flexibility for explaining the particularities of each case. This result can be seen in the following figure that displays Cambridge in Colour’s narrative:



**Figure 10: Case Study Narrative Categories - Cambridge in Colour.**

With this logic in mind, we will proceed to present the results’ analysis of our first OLC case study, the OIC Cambridge in Colour. We will do so by developing in detail its three CSN categories. In this regard, each category will be explained through a section of its own, namely: Contextual Information, Relevant Themes for the Community and Learning in an Online Community.

### ***5.1.1 Contextual Information***

In this section, entitled "Contextual Information", we explored our research question: How do public OLCs operate? For doing so, we developed the first category of our CSN structure, "Context". This category describes the nature of Cambridge in Colour, our case study selected to discuss the typical characteristics and dynamics of an OLC-OIC. It considers the results obtained from the qualitative and quantitative analysis conducted in Cambridge in Colour, which were organized around three main themes, namely: "Origins", "Sociodemographic questions" and "Community's Essence". This triad provides the reader with a contextual background of the community. In the next lines, we present each of the three topics.

#### ***5.1.1.1 Origins***

Cambridge in Colour was founded by Sean McHugh originally as an own photographic gallery<sup>45</sup> in 2005. It soon transformed itself naturally into an informative website on photography due to the quality of the content shared and the feedback provided by the readers, as recounted by McHugh:

“As I started adding more and more photographs and I started getting a lot of traffic, I started getting a lot of emails asking how I took something or what the technique was or what camera, or various things about camera technology. And so I was replying to a lot of those emails and after a while, I started putting those replies into articles so that I wouldn’t have to kind of answer the same questions over and over. And so the website transferred from being gallery to articles and then after a while into all the tutorials (...)” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

Hence, this idea to step up Cambridge in Colour pedagogical vision through tutorials came up from “the strong need for more permanent, reference-style content that readers can continue to benefit from time and again. Toward this end, our tutorials typically focus more on concept than procedure, are highly visual and often interactive, and cover each topic thoroughly but concisely. We also try to keep them as independent of the type of camera or software as possible. We feel it's of great benefit to readers who learn best from this type of approach” (Cambridge in Colour, 2017, About section).

As the website increased its search engine traffic and more and more readers sent questions or contributed with their observations to the tutorials, McHugh decided to start and boost an online community within the website. In his words,

“(...) it was kind of a natural next step to allow people to start helping each other as opposed to just me replying to all the questions, because it just wasn’t helpful” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

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<sup>45</sup> The gallery includes 42 photographs from a series taken entitled „Cambridge in Colour“ and it presents images from in and around the University of Cambridge in the United Kingdom using long exposures during rare twilight or moonlight conditions. It can still be accessed on the website.

The online community was and is still hosted in the VBulletin platform since April 2008. The tutorials, together with the incorporation of a forum section, shaped again greatly Cambridge in Colour's didactic profile and objective, which became a "learning community for photographers" (Cambridge in Colour, 2017, Home section).

The instructional design of Cambridge in Colour is composed of 5 general sections, namely Home, Books, Tools, Tutorials and Forums. These sections in combination englobe the richness of photographic content for visual appreciation and self-learning purposes, as well as the interactive learning opportunities that the OLC offers for visitors and members alike.

The section "Home" functions as a general newsfeed of the OLC in three ways. First, it shows the recent additions to the community in terms of learning content.<sup>46</sup> Second, it contains an overview of basic knowledge for photographers through a collection of hyperlinks to photography essential content<sup>47</sup> that can be found in Cambridge in Colour. Third, it fosters interactive learning by directing the user to various ways through which he or she can obtain specialized information from experts and amateurs or for sharing their own work with other photographers.

The section "Books" displays an overview of the table of contents and graphic extracts from each of the three volumes that compose the series „Understanding Photography “. The three books took 10 years to be developed and they are the result of the founder's experience and the upgrade of Cambridge in Colour's tutorials through the contributions and feedback of the OLC's engaged members. Each of the books<sup>48</sup> includes theory and practice of Photography embedded through imagery and diagrams, through which "any and all skill levels can benefit, especially if you have a desire to understand your hobby or profession at a deeper level" (Cambridge in Colour, 2017, Books section).

The section "Tools" includes a collection of links to various calculators and other utilities that help the visitor or member to understand how camera settings impact photos and to develop an intuition for shooting details. Each of the tools is also embedded within the tutorial pages to provide context and more clarification of their use. At the time of the data collection, there were 15 tools available. The photography tools were arranged in five categories: (1) Timing & Location, (2) Depth of Field & Resolution, (3) Subject Size & Speed, (4) Macro & Close-Up, and (5) Photo Stitching & Panoramas.

The section "Tutorials" includes a collection of digital photography tutorials that emphasize concept over procedure, so they can be used as guidance to take and edit digital photographs. The

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<sup>46</sup> During the data collection period of our netnography, the examples shown in the newsfeed were: using camera shutter speed creatively, digital cameras vs. The human eye, introduction to portrait lighting: one light source, compact vs. Digital SLR cameras and using lens corrections to improve image quality.

<sup>47</sup> The topics considered as basic knowledge for photographers were camera lenses - focal length & aperture, camera exposure: - aperture, ISO & shutter speed, understanding depth of field, understanding histograms - tones & contrast and making the most of natural light.

<sup>48</sup> The first volume of the series "Understanding Photography" introduces the core concepts and techniques that are necessary prior to and during digital image capture. The second volume explores all the key considerations after capture, including post-processing and maximizing digital image quality. The third volume describes advanced techniques and camera technology.

collection is divided in 5 categories: (1) Concepts & Terminology, (2) Using Camera Equipment, (3) Editing & Post-Processing, (4) Color Management & Printing and, (5) Photo Techniques & Styles. Each tutorial is carefully explained through detailed concepts, graphics, tools, and practical exercises. In many of them different useful tips are also included. Each tutorial can be shared via the “Share this“ widget to diverse social networks and through other communication means. The tutorials are rarely influenced by changes in image editing software and camera equipment, due to their unique self-learning approach. Therefore, the tutorials can be used with any type of compact and digital cameras. During the data collection period, the section included 80 tutorials, all in English. Some of the tutorials were translated to Portuguese, Russian and French.

The “Forum” is the fifth section that can be found in the Cambridge in Colour website. It is the heart of the community and can be viewed in guest mode or in member mode. The latter gives unlimited access to the forum's features, namely (1) Latest threads, (2) Discussion categories, (3) Photography tutorials, (4) Newsletter and (5) Advanced Search box. These features serve both as learning and interaction tools. Moreover, different popular member photos are displayed everyday through a dynamic sideshow view so to present the work of the various members of the group. Finally, the Forum offers various groups where members can discuss Photography topics, share their own photographic work, obtain feedback, and get to know the members of the community. There are nine groups within the Forum, which are classified in three categories:

#### 1) Tips & Techniques

- a) Digital Cameras & Equipment: for sharing advice on all camera equipment topics)
- b) Image Post-Processing & Printing: for sharing tips on image editing, Photoshop, and RAW files)
- c) General Photography Discussion: for discussing digital camera technology & techniques

#### 2) Photo Commentary & Competition

- a) Nature & Architecture: landscapes, wildlife, and architectural photography
- b) People & Pets: portrait, sport, street, and pet photography)
- c) Mini Competitions: submission of own images and possibility to vote for the best ones.
- d) Monthly & Other Competitions: similar to the previous one but with a fix monthly dynamic.

#### 3) Open Talk

- a) Meet the Members: interviews and new member introductions
- b) Community Lounge: forums help, feedback & all other off-topic discussions

The visits as well as membership of the OLC increased exponentially over the years thanks to its newsletter, which helped to route the website traffic and the members towards new and/or specific tutorials. It also helped to automatize the announcement of photographic shot competitions in the forum and to inform the members about particular sections within it, who quickly reacted to the announcement keeping the community very active. Moreover, the community has also presence in social networks such as Facebook, Twitter, and Google+, however it is the keyword engine searches and the newsletter what keep attracting visitors and new members. Our observations of the symbiosis of content and interaction for learning and sharing knowledge about photography that distinguishes Cambridge in Colour, together with the feedback dynamic for photographic shots and competitions, made us classify this OLC as an online interest community (OIC).



With regards to its access policy, Cambridge in Colour can be classified as a semi-open community. This means that while a great amount of its learning repository is public and free to see and use when entering the OIC's website (e.g., tutorials and tools), the admission to the community forum requires registration. To register as member is a fast and free process. Interested people have to provide a username, a password, and an e-mail address. They should make an image and human verification process and provide their time zone. Finally, they should decide if they would like to receive from time-to-time e-mails from the administrators and they should promise to abide to the Forum regulations.

The community orients itself through a code of conduct<sup>49</sup>, frequent answers and questions (FAQs)<sup>50</sup> and default instructions<sup>51</sup> documents, which are found within its Forum. This netiquette and FAQs have the intention to provide members with a set of regulations in terms of interaction and with clear instructions of how to use the different functions available for sharing content and posting/answering threads and comments. Moreover, the enforcement of rules, the resolution of conflicts and the follow up of thematic threads are made by the founder and his team of three committed community managers. Manfred Müller, Dave Humphries, and Donald<sup>52</sup> are in charge to keep the atmosphere friendly and the threads strictly limited to photographic matters. The founder and his team are based in different locations (United Kingdom, Scotland, Canada, and United States of America). This has allowed that at least one moderator is online to administer the community during the day. Over the years the community managers have become experienced in their duties, as they have

“(...)moderated heated discussions, mediated between personality clashes, detected trolls, spammers and dealt with cyber-attacks, hardware failures and forum firmware updates” (D. Humphries, Moderator. Personal communication. August 7, 2016).

During its years of existence, Cambridge in Colour has developed a very solid identity. With English as common language, the OIC has a very international membership. During the data collection period, we detected active members from 34 different countries.<sup>53</sup> In words of Müller, the OIC distinguishes from other websites and communities for

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<sup>49</sup> The code of conduct considers topics such as (a) Title and thread organization., (b) Clear writing style, (c) Respectful communication with the audience, (d) Editing policies, (e) Intellectual property, (f) Spam (g) Moderator actions and contact.

<sup>50</sup> The questions answered here include the following: How do I post images here? What are the options for viewing images on this site?, What is the best way to receive feedback on my photos?, Do you have any other tips on using the forum?, What is our Code of Conduct?, Site history and background information.

<sup>51</sup> The Default Instructions help members to learn how to use the online forum by providing general, but concise, step by step explanations of the diverse activities one can perform in the forum and the profile settings. The instructions include the following topics: (a) General Forum Usage, (b) Setting and Profile Features and, (c) Reading and Posting Messages.

<sup>52</sup> No last name was provided.

<sup>53</sup> The countries of origin detected were Argentina, Australia, Bangalore, Brazil, Bulgaria, Canada, China, Croatia, Cuba, France, Germany, Greece, Hawaii, India, Ireland, Italy, Japan, Malaysia, Nepal, Netherlands, New Zealand, Norway, Pakistan, Philippines, Romania, Scotland, South Africa, Spain, Sweden, Switzerland, Tasmania, United Kingdom, United States of America and Vietnam.

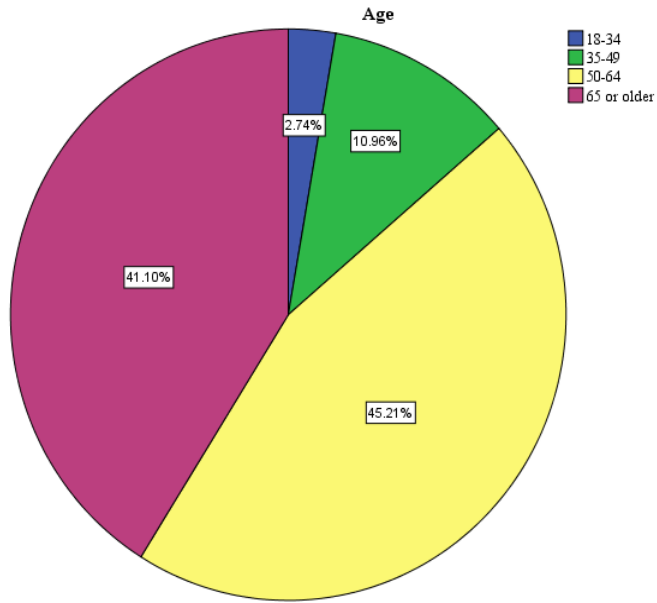
“(...) the quality of the site. Other sites direct people to the Cambridge in Colour tutorials, as they are well known for being high quality. They also know that this is a site where all are welcome, anyone from rank beginners to pros. This is one of the very few (I'd almost be tempted to say one of the only) sites where troll-like behaviour is NOT tolerated, and bad language or behaviour is quickly shut down by the moderators. Members are quick to report problems and I suspect this is fairly well known around the web” (M. Müller, Moderator. Personal communication. December 21, 2016).

In this regard, over its many years of existence, Cambridge has become an international signature learning community for photographers because it offers tutorials perfected in its content till excellence, photography tools and software, books based on the tutorials and contributions from the community and a very active, and a respectful and specialized forum that includes thematic photographic sections and hosts regular photography competitions.

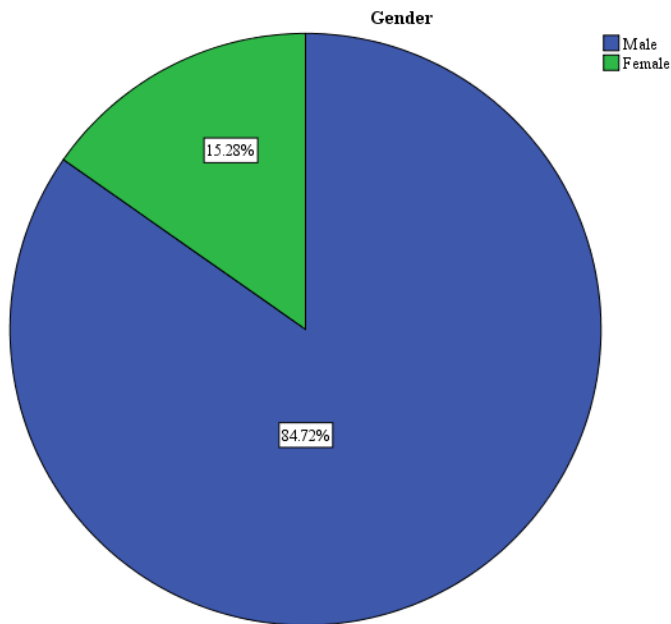
Although the community is open and free for the public, and its moderation is made upon a voluntary basis, Cambridge in Colour sustains itself through website traffic and subtle advertisement within its website.

#### ***5.1.1.2 Sociodemographic questions***

During the data collection period, Cambridge in Colour had 45,520 registered members. According to the results obtained from the online survey conducted in the community, Cambridge in Colour's membership was integrated in its majority by adults with 50 years and more (see Figure 11). Members between 50-64 years old constituted almost one half of the users (45.21%), followed by members with 65 years old or older (41.10%). As shown in Figure 12, the active membership of the OIC was, at the time the survey was conducted, mostly masculine (84.72%).

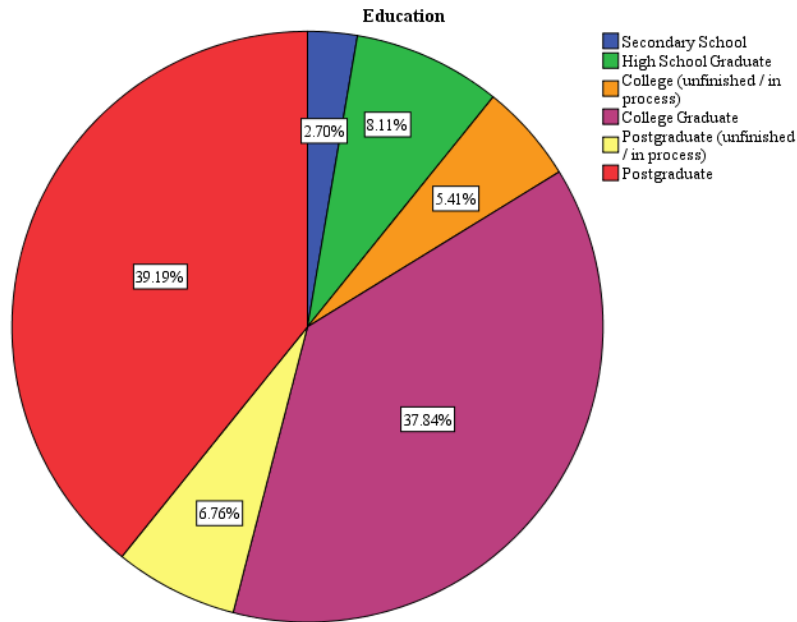


**Figure 11: Members' age (Cambridge in Colour).**



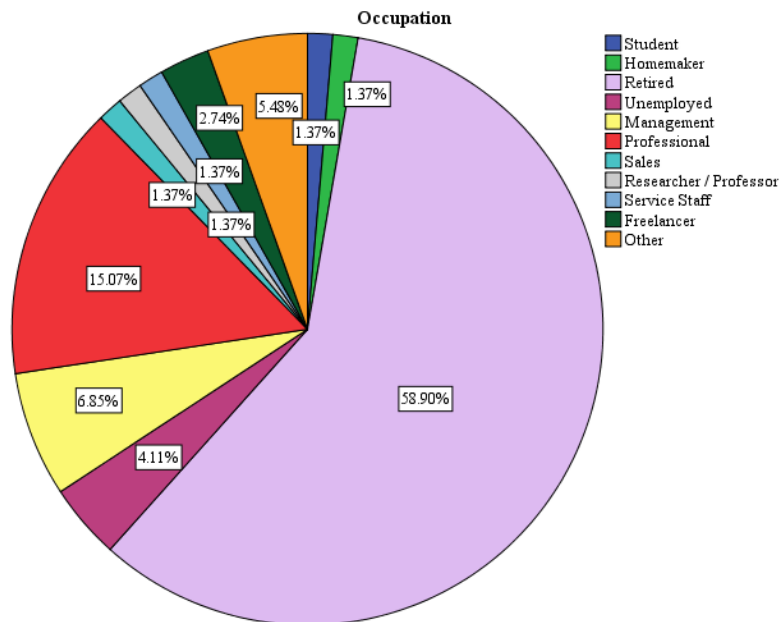
**Figure 12: Active members' gender (Cambridge in Colour).**

With regards to the level of education (see Figure 13), a great majority of members reported to have finished graduate (37.84%) and postgraduate studies (39.19%).



**Figure 13: Members' level of education (Cambridge in Colour).**

In addition to the level education, the survey also revealed aspects of occupation of the members (see Figure 14) that corresponded to the age and education levels reported. For instance, and when looking at the three most reported jobs in Cambridge in Colour, 58.90% of the respondents were retired, 15.07% were professionals and 6.85% occupied management positions.



**Figure 14: Members' occupation (Cambridge in Colour).**

### 5.1.1.3 Community's Essence

In order to explore the lifelong learning value of any OLC, we need to refer first to the specific elements that configure its' essence. These components are, on the one hand, the online community's life-cycle stage, and on the other hand, its' three constituents -actors, activities, and tools-. The life cycle helps us to recognize "the needs of the users and the community management and (how they) evolve"(Iriberry & Leroy, 2009, p. 13)<sup>54</sup>. The interrelation among constituents is fundamental "in order to understand and describe learning in OLCs"(Carlén et al., 2004, p. 342). Taking both components into consideration, we will describe in the next lines Cambridge in Colour's life-cycle stage and constituents.

Based on the contextual factors depicted in previous sections, Cambridge in Colour can be classified, in terms of its life cycle, as a thriving online learning community in a maturity stage (cf. Iriberry & Leroy, 2009). Since its foundation and throughout its twelve years of existence<sup>55</sup>, Cambridge in Colour has followed an organic progression from online photographic gallery to informative website to OLC. The community has evolved in a way that it hosts a vast learning repository and a specialized forum based on a very organized instructional design. The OLC has clear regulations in terms of conduct, as well as explicit instructions on how to use the forum, the tools, and the tutorials. The community has remained very active throughout the years thanks to the high-quality learning resources, the committed community management, and the useful contributions of the engaged membership.

In this regard, Cambridge in Colour is remarkable because over a decade it has adapted to different informative and technological needs of the community, as well as to various interaction cycles and has managed to regain momentum and keep stable in its objective: learn about Photography. In words of McHugh, the lifecycle of Cambridge in Colour reflects a journey of:

“(...) people coming and going over the years. There have been a number of different, memorable groups. There have been a number of times big disagreements in the community, some members move on and go elsewhere. It's had its ups and downs. But overall, I think one of the biggest things is as the community grows, even if you have a group leaving, the content and the kind of dialogue remain, so it's still a very accumulative thing. They still contribute a lot to dialogue; a lot of their posts are still referenced over the years and the database just continues to grow” (S. McHugh, Founder. Personal communication. June 17, 2016).

Every OLC has three constituents -actors, activities, and tools-. The interrelation of these elements configures the learning environment. The first constituent, the actors, are the participants involved in the activities that take place in the OLC. Their involvement can be active or passive, regular or sporadic, with different degrees in terms of engagement and roles in the community. Members can also fall into distinct categories according to the dynamics proposed by each community and their

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<sup>54</sup> For further details on the lifecycle of online communities, refer to chapter 2 of this dissertation.

<sup>55</sup> We described the OLC in terms of its lifecycle status as it was observed during the monitoring period.

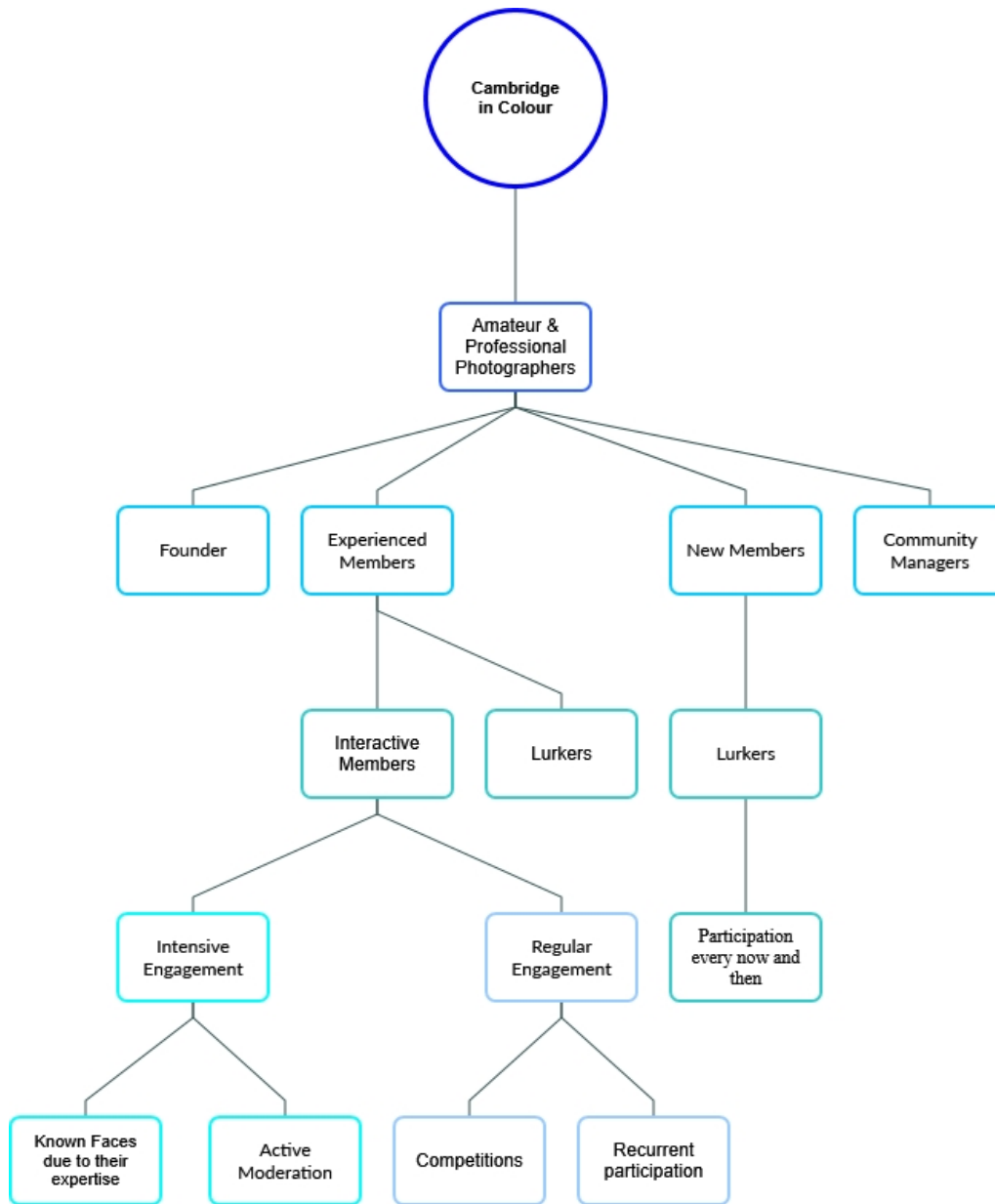
level of activity in it. In the case of our research, we decided to categorize them according to their membership status.<sup>56</sup> founder, community manager(s), new members, and experienced members.

In Cambridge in Colour, the actors (see Figure 15) detected were amateur and professional photographers. Sean McHugh, the founder, is a hobbyist photographer. He created and developed the OIC concept based on a self-learning and collaborative learning approach that combines high quality tutorials with a well curated, respectful forum. During our netnography, we noticed that a great factor in the success of the OIC relies on the 24/7 community management. McHugh was supported at the time of the data collection by three community managers knowledgeable in Photography matters, being at least one of them available for moderation and content curation tasks in the forum.

In terms of membership, we detected two types of members. The first type included the new members. These are the users who recently registered after finding and accessing the open learning content available on the website or joined the community based on recommendation. We observed that they often lurked and later participated with threads looking for punctual recommendations about equipment or shooting techniques. With the time, they could become more active and participate in the forum's competitions. The second kind of members were the experienced ones. Some of these members logged in regularly but engaged passively in the community as they often read the threads and interacted once in a while. Other more active experienced members joined the monthly contests and posted or answered threads regularly. They participated sharing their expertise through recommendations and feedback for the tutorials, the shots shared by other members or the threads with technical questions. We noticed a high level of interaction of some experienced members that logged in often and seemed very knowledgeable, as well as of all the community managers. In both cases, these members could be identified as the "known faces" in Cambridge in Colour.

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<sup>56</sup> We defined this membership status through the roles detected and/or reported by the members during the monitoring and data collection periods.



**Figure 15 Constituents - A visual representation of Cambridge in Colour's community's essence expressed through its actors.**

The second constituent of an OLC are the activities (see Figure 16). They refer to the way through which the actors organize and structure together the specific actions within the community, in order to communicate, obtain information and learn from each other. In the case of Cambridge in Colour, we detected six topics through the netnography, and the thematic analysis conducted. These themes revealed distinctive aspects of the community's identity and dynamics in form of the particular activities that took place in this OIC. In the next lines, we provide an overview of each of the themes and the specific activities they considered:

1) *Instructional design*: this theme considered references to the ways members used the sections and layout of the OLC, as well as mentions about Cambridge in Colour's learning objective.

2) *Interactive learning through forums*: Information concerning the features that the forum offers for the members to learn from each other. Of particular relevance for the members were the groups (understood as the categories within the forum) and the communication tools such as the forum threads, the private message system, and the profile functions.

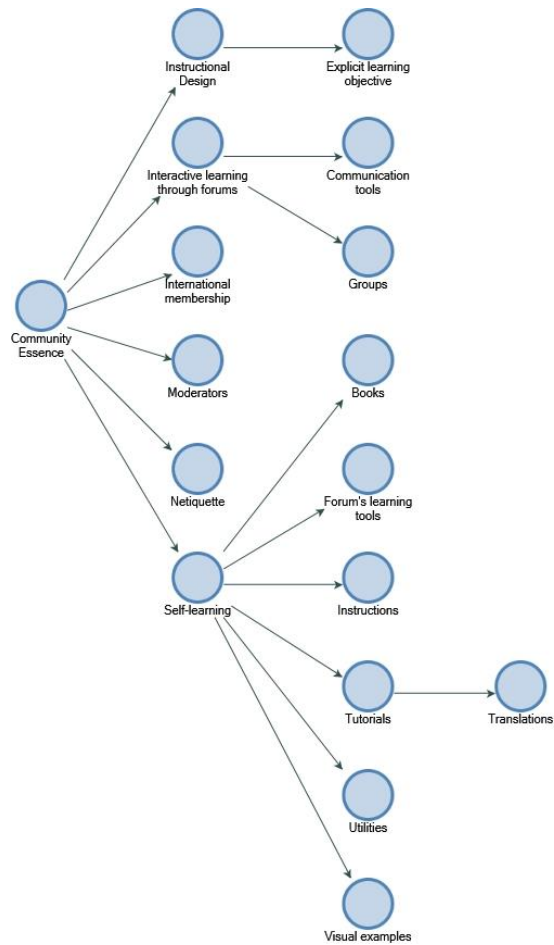
3) *Netiquette*: Questions, mentions and reports related to the registration regulations, the code of conduct and the guidelines for posting critiques and comments.

4) *Self-learning*: Requests from members or information from the community managers concerning the resources available in Cambridge in Colour that can be used for obtaining information autonomously. During the data collection period, the instructions, the forum's learning tools, the books, the tutorials (including their translations), the visual examples of photographic shoots shared by members in the forum and the utilities were of particular importance for the self-learning purposes of the members.

5) *Moderators*: Dynamics fostered by the community managers. Mentions about the moderators' profile information and contact details.

6) *International membership*: Reports about the interaction of members in English as common language and mentions about their country of origin or current location.





**Figure 16: Constituents - A visual representation of Cambridge in Colour's community's essence expressed through its activities.**

The third constituent of an OLC are its tools. They are the specific ICTs available in the community that allow the actors to undertake their activities in the community. In Cambridge in Colour, these tools (see Figure 17) are the books, the photographic software tools, the tutorials, the forum (the FAQ tool, the Community tool, the Forum actions function and the View your threads or posts' function), the private messaging system, and the community newsfeed.

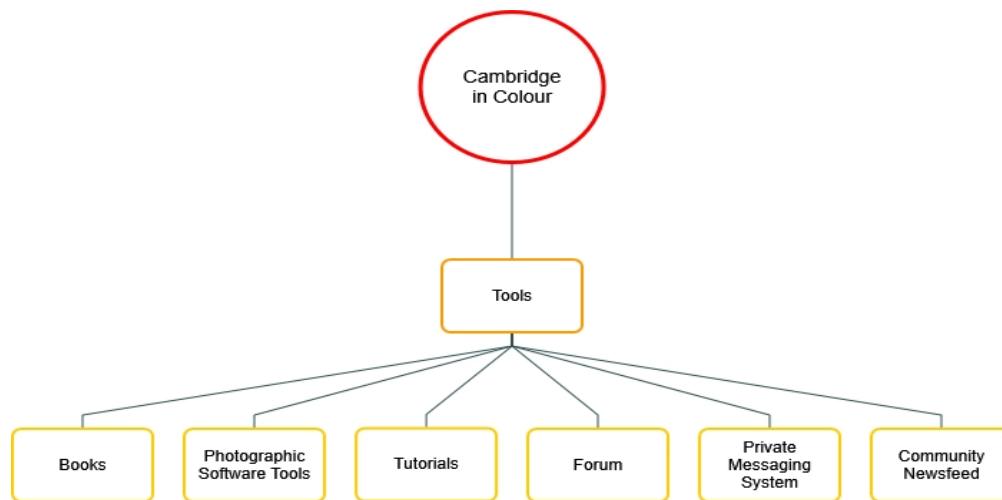
The most important feature in terms of participation, interaction and learning in Cambridge in Colour is the Forum.<sup>57</sup> In the case of this OIC, the forum is a very comprehensive feature. It has different tools that aid the participation, interaction and learning purposes of the members such as

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<sup>57</sup> Threads in the forum often include questions, but also recommendations, opinions, links to content and feedback requests. Threads can be replied by simply adding an answer or by using the embedded text editor for including a quote, a smiley, a picture, formatting the size and font of the text, etc. Threads and comments can be reported for misuse or abusive conducts or also receive helpful votes (thumbs up).

the Latest Threads<sup>58</sup> tool, the Discussion Categories<sup>59</sup> tool, the Advanced Search Box<sup>60</sup>, the New Posts<sup>61</sup> tool, the Community<sup>62</sup> tool, the Forum Actions<sup>63</sup> tool, the Quick Links<sup>64</sup> tool and the View Your Threads or Posts<sup>65</sup> tool.

The Private Messaging System of Cambridge in Colour is a feature that deserves acknowledgment for its interactivity value. It offers a very complete internal e-mail system. It includes an Inbox folder, a Sent Items Folder, and a Subscriptions Folder. It is possible to track messages in order to know if the recipient has read the message. Private messages can be sent by clicking directly on the profile of the person or in a thread or post made by the member one wishes to contact. Members can be included in a contact list as well.



**Figure 17: Constituents - A visual representation of Cambridge in Colour's community's essence expressed through its tools.**

<sup>58</sup> The Latest Thread tool allows user to detect the newest threads in the community. It normally provides the threads of the last two days and information about who, where and what was posted by showing the title of the thread, the summary of the latest replies, as well as statistics of views and number of replies.

<sup>59</sup> The Discussion Categories tool shows the most used thread tags. During the data collection period there were 40 thread tags available, as well as a tag search box.

<sup>60</sup> The Advanced Search Box that allows members to search single or multiple content types, be it in the groups within the forum, in specific posts or in both. It has additional searching options such as keywords, username, tag, find posts according to date or novelty and sort results according to relevance or ascending/descending order.

<sup>61</sup> The New Posts tool shows the latest 8 posts made in the Forum.

<sup>62</sup> The Community tool gives an overview of what is going on in Cambridge in Colour in terms of members' activity in the Forum by showing a) Albums, b) Who's online, c) Member post counts, d) Themed competition winners, e) Monthly competition winners, f) Thanks/like statistics and g) Hottest threads/posts.

<sup>63</sup> The Forum Actions tools allows to make general settings adjustments, edit the own profile of mark groups as read.

<sup>64</sup> The Quick Links tool provides an overview of today's posts as well as of the subscribed threads. It also includes a pop-up functionality that shows contacts, the overview of the site leaders, thanks/like statistics, and hottest threads/posts overview.

<sup>65</sup> The View Your Threads or Posts tool allows the member to visualize, in separate windows, all the thread or posts he/she has started or has contributed in.

The actors, the activities and the tools interrelate and configure the learning mechanics of OLCs. In order to explain how Cambridge in Colour's constituents shape and promote lifelong learning in this mature OIC, we will present the results of the qualitative and quantitative analysis conducted in it that aided us in understanding how the community impules learning through out life. For doing so, in the following sections we include an overview of the relevant themes for the OIC and a thorough discussion of how learning took place in this community.

### ***5.1.2 Relevant Themes for the Community***

In this section we focus on the second category from our case study narrative, namely, the relevant themes for the community. Hence, we present the topics that were significant for the members of Cambridge in Colour during the netnography conducted in the months of February to April 2016. These main subjects emerged from the thematic analysis of the data collected from the newsfeed of the OIC during the monitoring period. Our familiarization with the daily threads posted allowed us to systematize the information by means of an open coding process. We reviewed our codes and detected patterns, singularities, and relationships among them, which led us to produce useful themes to categorize the codes found.

Through the analysis of the relevant themes for the community, we explored our research question: How does a public OLC (OIC) differentiate from other type of online communities? In this regard, each theme reflects the significant topics that made members engage actively in Cambridge in Colour. Therefore, through each theme we summarized the most recurrent subjects mentioned by the members of the community when they were looking for answers, discussing, sharing information and experiences, etc. The themes also reveal the type of interactions that the members had through their conversations in the threads and why the community was important for the members in terms of the information that could be found in it.

In the case of Cambridge in Colour, we defined 5 themes by means of the thematic analysis of the 300 threads obtained from the netnography conducted in the OIC. The 5 themes that were most meaningful for the community during the monitoring period were: (1) Photographic equipment, (2) Photography shots display, (3) Sense of community, (4) Software and hardware advice and recommendations, and (5) Tips and tricks. (see Figure 18). In the following lines we include a summary of each theme and the codes that compose it:

*1) Photography equipment:* questions, discussions, advice and answers around cameras and photographic accessories.

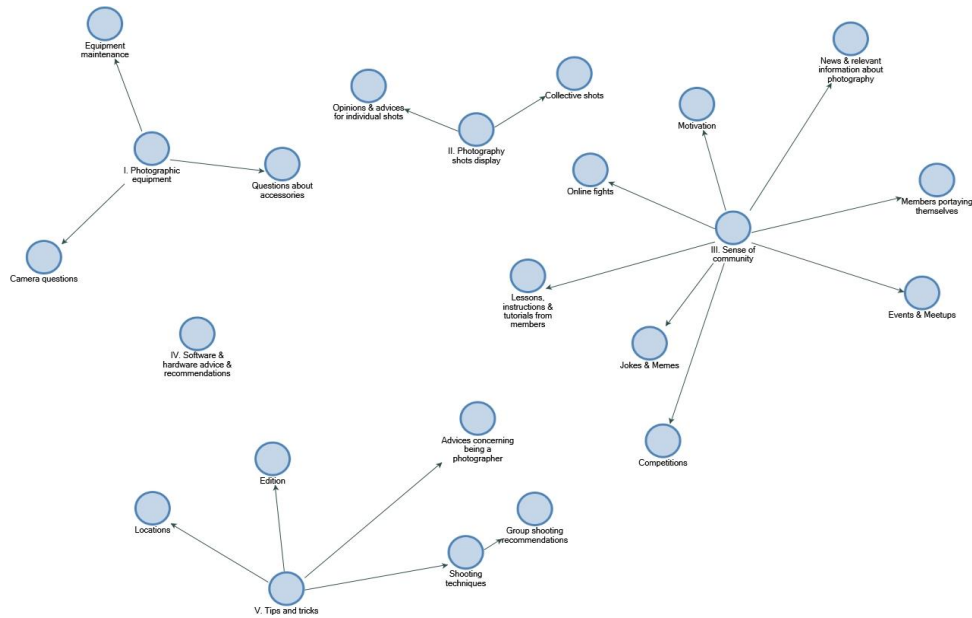
*1.1 Equipment maintenance:* questions, answers, and advice around conservation of photographic equipment.

*1.2 Questions about accessories:* questions, answers, advice, and discussions around the topic of different accessories for cameras.

*1.3 Camera questions:* questions, answers, and advice around models, uses and functions of photographic equipment.

*2) Photography shots displays* group dynamic through which members share individually or collectively their photo shots with diverse purposes.

- 2.1 *Collective shots*: Project 52 & most meaningful picture of the year for members.
- 2.2 *Opinions and advice for individual shots*: individual shots shared looking for opinions and advice from other members.
- 3) *Sense of community*: elements that provide the community with cohesion and nurture its dynamics.
- 3.1 *Events and meet-ups*: interesting photography events and invitations to meet in person.
- 3.2 *Jokes and memes*: Funny anecdotes, jokes, and silly pictures.
- 3.3 *Lessons, instructions, and tutorials for members*: Guidance, self-written information or useful resources shared by the community.
- 3.4 *Members portraying themselves*: Map, introduction threads and instructions/questions to configure profiles.
- 3.5 *Motivation*: encouragement for other members in difficult circumstances.
- 3.6 *Online fights*: emoticons and language use, disagreements, moderators' actions in fights.
- 3.7 *News and relevant information*: links about gadgets, cameras and photography topics shared by members. Discussions and opinions around these topics.
- 3.8 *Competitions*: details about the Mini contests and the monthly contests.
- 4) *Software and hardware*: apps, printers, scanners, photo edition software, external memories and files questions and answers, recommendations, and advice.
- 5) *Tips and tricks*: recommendations for different topics related to photography.
- 5.1 *Locations*: display and suggestions about interesting shooting locations.
- 5.2 *Shooting techniques*: questions and advice on how to make or improve a shot. Shooting styles discussions.
- 5.2.1 *Group shooting recommendations*: "Photographers Repertoire" thread that collects advice from members of the group concerning photo shooting.
- 5.3 *Edition*: Questions around digital cropping and editing photos.
- 5.4 *Advice concerning being a photographer*: Everyday situations and questions that photographers face.



**Figure 18: Netnography. A visual representation of the Thematic Analysis (Cambridge in Colour).**

We decided to round off our analytical process with the word frequency query provided by the NVivo software (see Figure 19), in order to see if there were similarities and differences in terms of the themes obtained through the thematic analysis that we used, and which is based on the principles of Victoria Clarke and Virginia Braun (2006, 2013). This automatic function from NVivo works by finding frequently occurring words and concepts. The fact that words such as photos, replies, camera, devices, image setting, votes, moderator, comments, helpful and constructive were among the most frequent, led us to reflect about the purposes that the community might fulfill for its members in terms of learning and knowledge. Hence, in the next sections, we will explore in more in detail the ways through which members learn in Cambridge in Colour and the perceptions that they have about this learning process.



**Figure 19: Cambridge in Colour - Word cloud of recurrent terms.**

### ***5.1.3 Learning in an Online Interest Community***

In this section, we elaborated the third category of our case study narrative, learning in community. Thus, we approached our main research question: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its members? In this regard, the analysis of Cambridge in Colour provided us with insights about the ways in which learning happens in an OLC of the type OIC.

For our analysis, we examined two main themes. The first one, “Elements that Foster Learning”, distinguished the role that the digital skills of the members play in terms of learning, as well as the specific practices that foment learning in the community. The second theme, “Perceived (Lifelong) Learning Value” considered different questions about information, learning and knowledge; the ways the OLC increased knowledge; as well as explicit references to the quality of learning and knowledge acquisition, together with arguments about the significance that the community had for its members in terms of lifelong learning.

We developed the analysis by taking into consideration the answers provided by the members in the online questionnaire and the online structured and semi-structured interviews that we conducted in Cambridge in Colour, together with the data collection from our netnography. Hence, we discussed the qualitative results obtained from the online survey as well as the thematic analysis applied to the interviews and the open questions from the survey. Where pertinent, we included extracts from interviews, open questions and/or threads obtained from the netnography, in order to exemplify the members’ points of view and the particular learning experiences that occurred or were referred to by the users during the monitoring period.

#### ***5.1.3.1 Elements that Foster Learning***

In “Elements that Foster Learning”, the first theme of our category “Learning in Community”, we considered two main aspects. In the first aspect, “Role of digital skills”, we investigated if such skills influenced members’ engagement in the OLC. Therefore, this aspect addressed two research questions that focused on the particularities of each type of OLC analyzed. In the case of Cambridge in Colour, the first question examined the specific set of digital skills that the members of this community had during the data collection period. The second question centered on the relevance that these skills had for the learning purposes of the members when using the environment and the tools existent in the OIC.

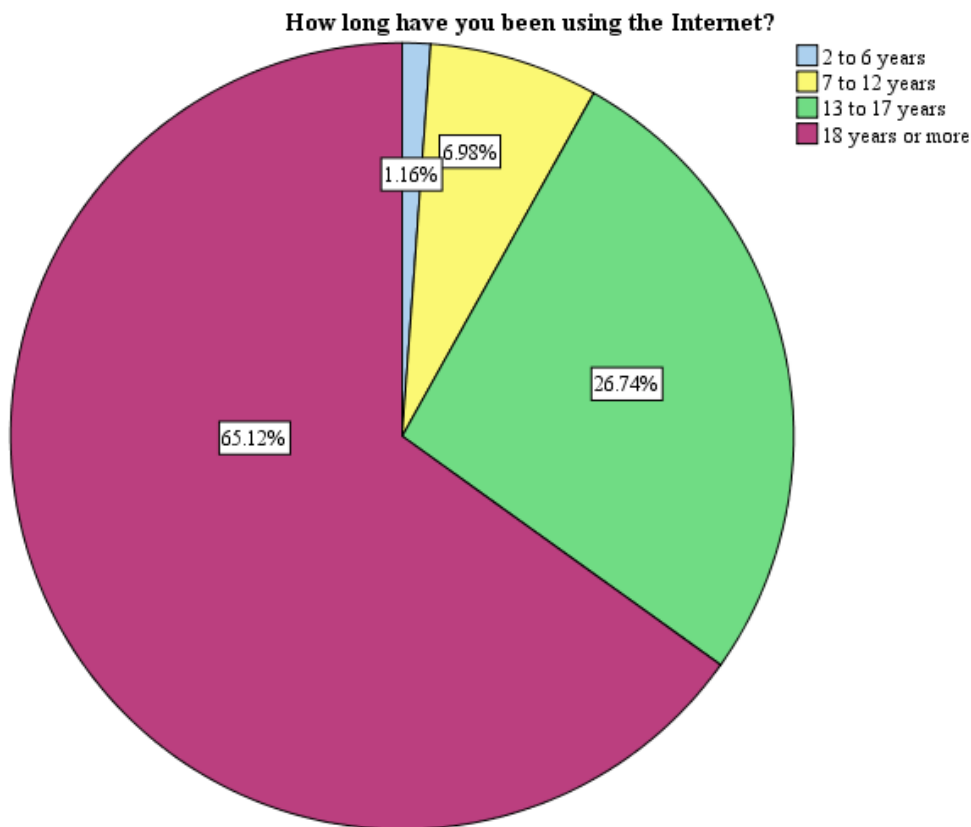
The second aspect from our theme “Elements that Foster Learning” included a description of the activities that, according to our research, supported learning in Cambridge in Colour. We entitled this aspect “Practices that foment learning”. Through this exploration, we assessed which particular actions fostered the learning objectives of the members of the OIC.

## I. Role of digital skills

What role do digital skills play with regards to the members' participation and interaction in OLCs? is an important research question to consider when determining which elements aid learning in learning communities. For approaching this question in Cambridge in Colour, our online survey and interviews included queries aimed to determine (a) the specific digital skills that members in the selected OIC had during the data collection period, as well as (b) the influence that their digital skills had in terms of learning when using the environment and the tools available in the community and if these skills experienced any change overtime, according to the opinion of the users.

### a) Member's digital skills

In Figure 20, we can see that 91.86% of the interviewed members in Cambridge in Colour had been using the Internet between 13 and up to 18 years or more. They reported being competent online (see Table 10), as more than half of the respondents said they had used Internet for gathering information, doing academic research, shopping, playing games, reading news, looking up/sell real estate, e-mail, chat, online calls, social networks, and searching/posting classifieds. Interviewees also mentioned that they used the Internet for the following tasks, in order of frequency: to gather information, to use their e-mail, to read news, to shop and to access social networks (see Table 11).



**Figure 20: Span of time using the Internet (Cambridge in Colour).**

<b>Have you used the Internet for any of the following activities?</b>			
<b>Activities</b>		<b>Count</b>	<b>Percentage</b>
Information Gathering	No	2	2.3%
	Yes	86	97.7%
Academic Research	No	30	34.1%
	Yes	58	65.9%
Shopping	No	4	4.5%
	Yes	84	95.5%
Games	No	41	46.6%
	Yes	47	53.4%
News	No	8	9.1%
	Yes	80	90.9%
Real Estate	No	41	46.6%
	Yes	47	53.4%
E-mail	No	3	3.4%
	Yes	85	96.6%
Chat and online calls	No	35	39.8%
	Yes	53	60.2%
Social Networks	No	30	34.1%
	Yes	58	65.9%
Job Hunting	No	51	58.0%
	Yes	37	42.0%
Classifieds	No	40	45.5%
	Yes	48	54.5%
Stock Market	No	61	69.3%
	Yes	27	30.7%
Blogging	No	67	76.1%
	Yes	21	23.9%
Creation and/or administration of webpages, forums, communities, etc.	No	47	53.4%
	Yes	41	46.6%
Other	No	82	93.2%
	Yes	6	6.8%

**Table 10: Digital activities performed when using the Internet (Cambridge in Colour).**



<b>What do you use the Internet for?</b>	
<b>Activities</b>	<b>Frequency of Internet Use per Activity (Mode)</b>
Information Gathering	1
Academic Research	5
Shopping	4
Games	6
News	4
Real Estate	9
E-mail	1
Chat and online calls	6
Social Networks	5
Job Hunting	10
Classifieds	9
Stock Market	12
Blogging	14
Creation and/or administration of webpages, forums, communities, etc.	14
Frequency uses internet: Other	15

Ranked from 1-15, being 1 the most frequent and 15 the least frequent.

**Table 11: Most frequent digital activities in Internet (Cambridge in Colour).**

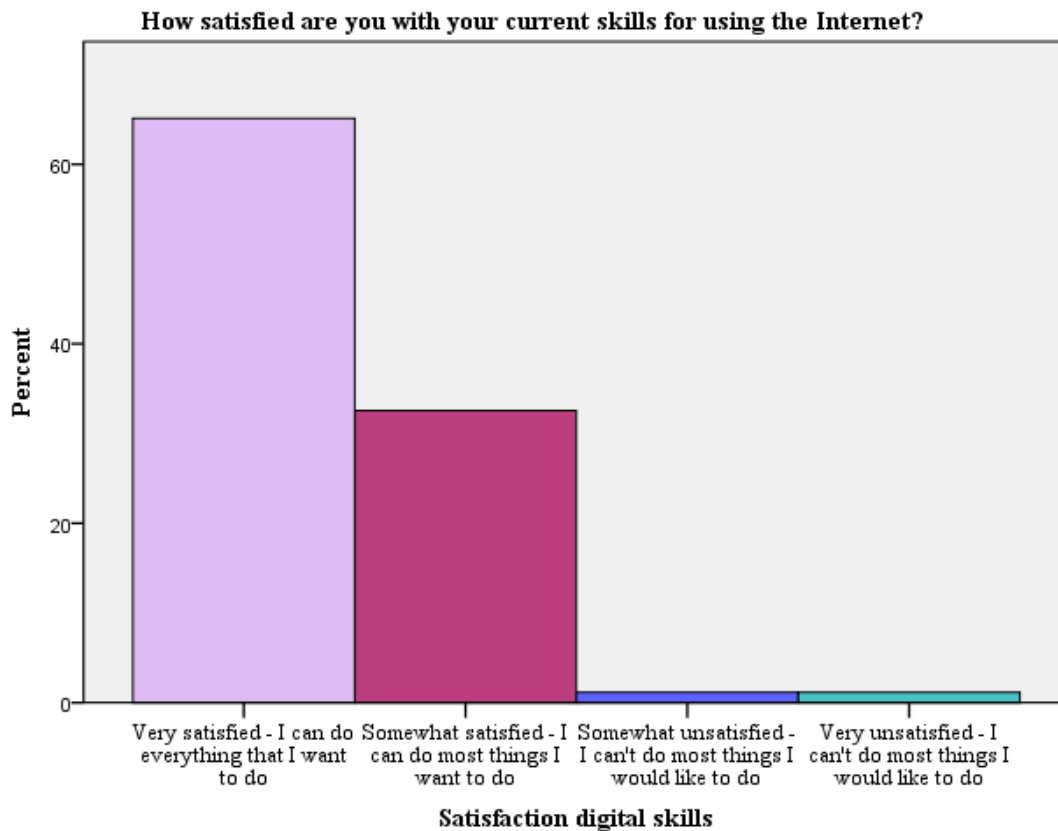
According to the survey results, Cambridge in Colour members seemed to have a good set of digital skills. From the data in Table 12, it can be seen that most respondents knew how to search for information online; read online articles, newspapers and blogs; used e-mail; could modify their browser's homepage; used the settings options of their browsers; chose their cookies preferences; used bookmarks; knew how to fill virtual forms; had experience buying online; downloaded and uploaded content; knew how to customize online profiles in social networks and webpages; listened to podcasts; participated in chats; posted comments in websites; and were active in discussion forums and online groups. Around half of the respondents could make online calls, knew how to store their information in cloud services, and had taken webinars, online courses or even pursued online degrees. Interestingly, 19.3% of the interviewees blogged regularly and 47.7% created and administered webpages.

<b>Which of the following activities have you done?</b>			
<b>Digital Activities Done</b>		<b>Count</b>	<b>Percentage</b>
Searched for information online	No	3	3.4%
	Yes	85	96.6%
Read an article, newspaper or blog post online	No	6	6.8%
	Yes	82	93.2%
Used e-mail services	No	8	9.1%
	Yes	80	90.9%
Changed your browser's homepage	No	18	20.5%
	Yes	70	79.5%
Changed your cookies preferences	No	24	27.3%
	Yes	64	72.7%
Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form	No	18	20.5%
	Yes	70	79.5%
Made a purchase online	No	4	4.5%
	Yes	84	95.5%
Customized a webpage and/or social network profile for yourself	No	33	37.5%
	Yes	55	62.5%
Downloaded content and/or information	No	6	6.8%
	Yes	82	93.2%
Uploaded content and/or information	No	14	15.9%
	Yes	74	84.1%
Created and used regularly an own blog	No	71	80.7%
	Yes	17	19.3%
Created and/or administered a webpage	No	46	52.3%
	Yes	42	47.7%
Listened to a radio broadcast / podcast online	No	30	34.1%
	Yes	58	65.9%
Participated in online chats	No	28	31.8%
	Yes	60	68.2%
Posted comments in webpages	No	11	12.5%
	Yes	77	87.5%
Participated in a forum discussion or online group	No	7	8.0%
	Yes	81	92.0%

Made a telephone call online	No	45	51.1%
	Yes	43	48.9%
Taken a webinar	No	37	42.0%
	Yes	51	58.0%
Taken online courses / study an online degree	No	44	50.0%
	Yes	44	50.0%
Saved my information in the „cloud“	No	42	47.7%
	Yes	46	52.3%
Used bookmarks or other services online for organizing information	No	21	23.9%
	Yes	67	76.1%

**Table 12: Digital activities performed by Cambridge in Colour members.**

Likewise, and as shown in Figure 21, Cambridge in Colour interviewees mentioned that they felt very satisfied with their digital skills, as they could do everything they wanted to do when using the Internet (65.1%) or most of them (32.6%).

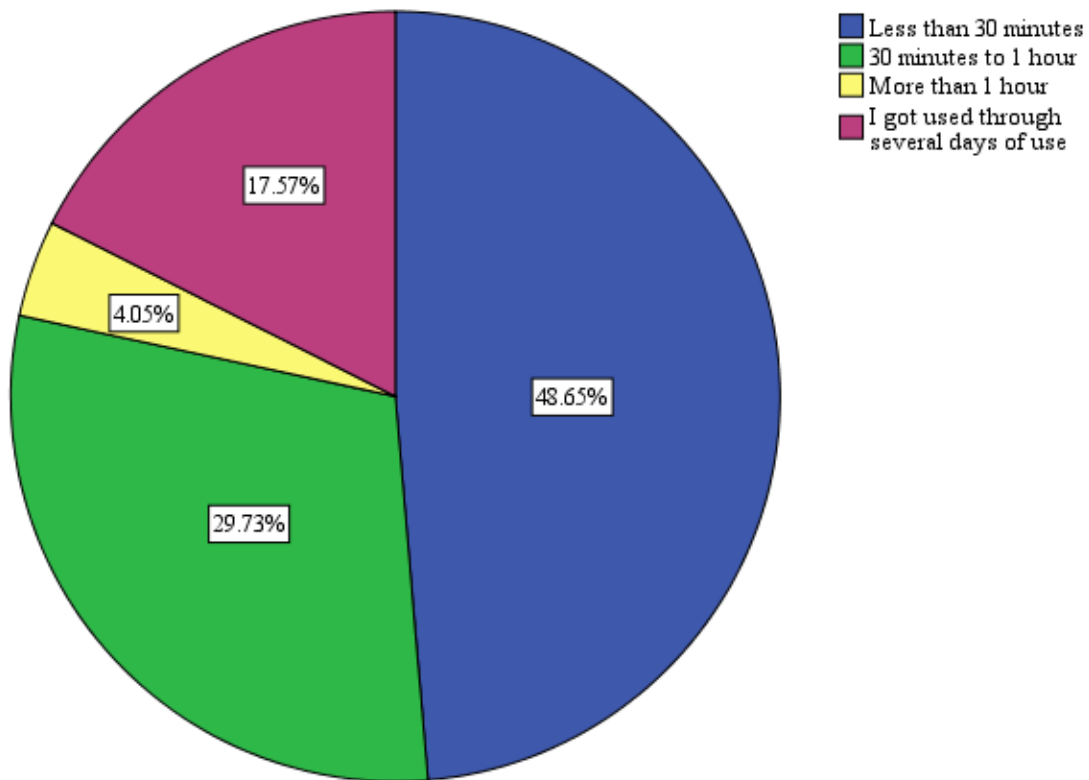


**Figure 21: Degree of satisfaction with own online digital skills (Cambridge in Colour).**

***b) Digital Skills and Use of Environment and Tools***

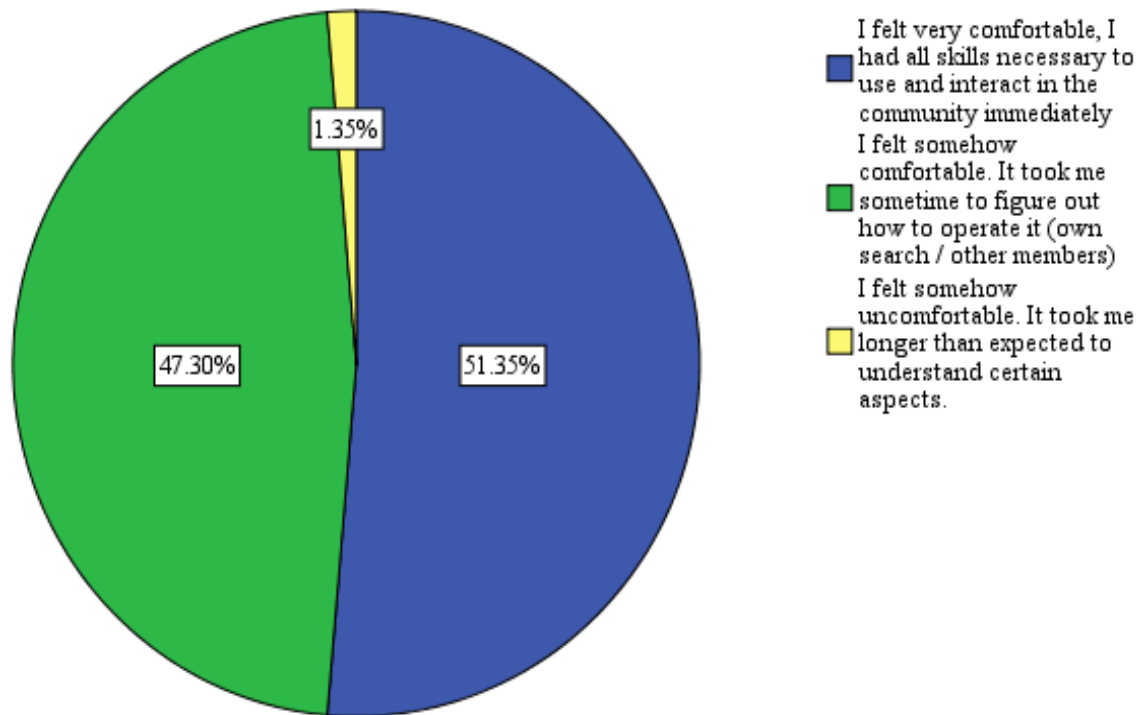
As stated previously, members of this community reported having good digital skills and that they used Internet, in the first place, to gather information. In the case of Cambridge in Colour, our analysis showed that the digital skills of the members, as well as their main purpose when using Internet, aided them to use the OIC’s platform with ease. As seen from the results illustrated in the pie chart (Figure 22), 48.95% took less than 30 minutes to become familiar with the virtual environment of the OIC, followed by a 29.73% that took 30 minutes to 1 hour. Interviewees also reported feeling very comfortable (51.35%) and somehow comfortable (47.30%) using the resources available in the community and when interacting with others (see Figure 23).

**How long did it took you to become familiar with the use of the virtual environment of the online community?**



**Figure 22: Time required to become familiar with the environment (Cambridge in Colour).**

**During your very first days as member in the online community, how did you felt with regards to the digital and informational skills you had for using the community, its resources and communicating or interacting with other members?**



**Figure 23: Digital skills and use of community (Cambridge in Colour).**

As shown in Table 13 the forum was, by far, the most frequently used tool for interacting with other members. In a much lesser degree, members interacted also through the comments on the competitions and via private messages. 92.0% of the interviewees reported feeling comfortable using the communication tools available in Cambridge in Colour (see Figure 24). In terms of interaction, the forum (73.33%) and the private messages (17.33%) had the fastest response time, according to the members of the OIC (see Figure 25).

<p style="text-align: center;"><b>In order of importance and frequency (being 1 the most important and frequent and 4 the least important and frequent), which of the following tools in the community do you use to communicate and/or interact with other members:</b></p>			
Tools		Count	Percentage
Chat	Rank 1	0	0.0%
	Rank 2	2	2.8%
	Rank 3	18	25.0%
	Rank 4	52	72.2%
Forum	Rank 1	68	89.5%
	Rank 2	6	7.9%
	Rank 3	2	2.6%
	Rank 4	0	0.0%
Private message	Rank 1	1	1.3%
	Rank 2	16	21.3%
	Rank 3	40	53.3%
	Rank 4	18	24.0%
Comments on competitions, stories and/or shared resources	Rank 1	7	9.5%
	Rank 2	52	70.3%
	Rank 3	13	17.6%
	Rank 4	2	2.7%

**Table 13: Importance and frequency of use from communication tools in the community (Cambridge in Colour).**

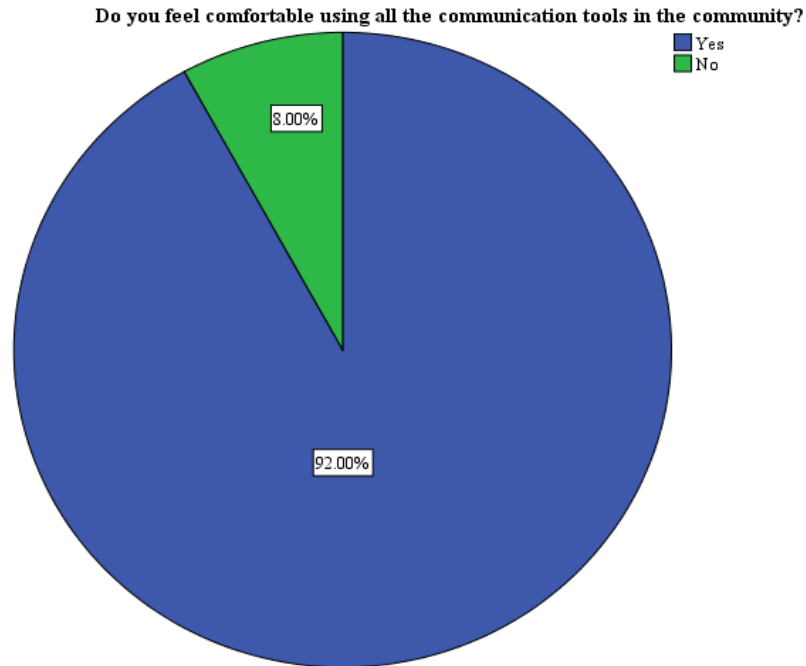


Figure 24: Satisfaction in terms of use of the communication tools in the community (Cambridge in Colour).

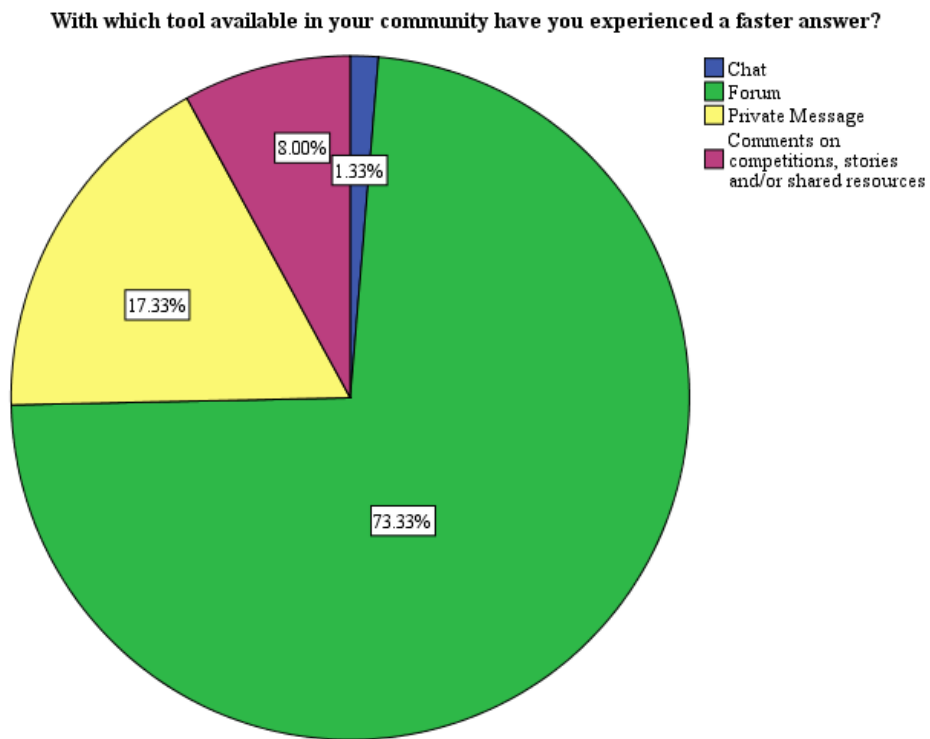
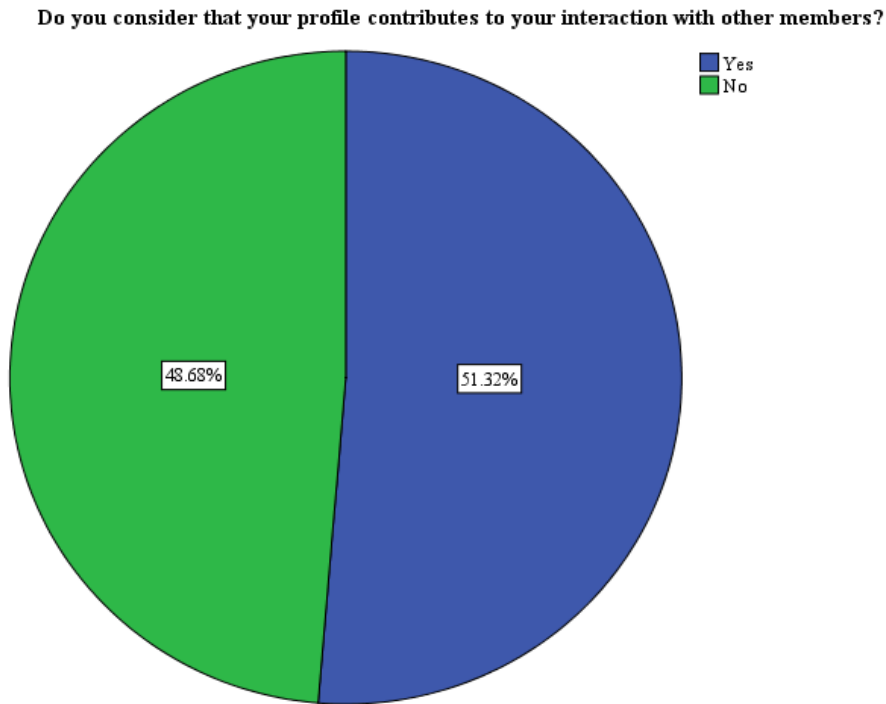


Figure 25: Communication tools and response time (Cambridge in Colour).

In the case of Cambridge in Colour, 51.32% of the members mentioned that they considered that their user profile was a factor that contributed to their interaction with other members (see Figure 26). Among the information available in their user profile, 85.7% of the interviewed members from this OLC included their real name, 63.6% specified their nickname, 68.8% provided location information and 29.9% shared their own website information. (see Table 14).



**Figure 26: Profile contribution with respect to interaction (Cambridge in Colour).**

<b>Which of the following information can be found in your user-profile?</b>			
<b>Type of personal information</b>		<b>Count</b>	<b>Percentage</b>
Nickname	No	28	36.4%
	Yes	49	63.6%
Real name	No	11	14.3%
	Yes	66	85.7%
E-mail	No	56	72.7%
	Yes	21	27.3%
Phone number	No	75	97.4%
	Yes	2	2.6%
Skype contact	No	75	97.4%
	Yes	2	2.6%



Social network contact details	No	72	93.5%
	Yes	5	6.5%
Webpage information	No	54	70.1%
	Yes	23	29.9%
Work information	No	72	93.5%
	Yes	5	6.5%
Location information	No	24	31.2%
	Yes	53	68.8%

**Table 14: User information visible in profile (Cambridge in Colour).**

When interviewed about the environment and tools available in this OIC, members in Cambridge in Colour highlighted three characteristics that distinguish the community’s platform from other sources: (1) Provides access to specific informative sources, (2) Allows online communication with knowledgeable people worldwide and (3) Has a newsletter redirection to interesting content.

For the members of Cambridge in Colour, the community functions as a Photography information niche where they can *access specific informative sources* from various technical topics in different formats, all concentrated in one site and well targeted to the need of deepening the knowledge in the subject. The experience of one of the interviewed members exemplifies the added value that the learning environment of Cambridge in Colour provided him in this respect:

“Offline (learning) experiences have been non-existent really. I am mostly self taught. Basically no one is teaching photography around me. The closest sources are one hour travel away from me and their courses are very expensive. Also, most of it is on computer processing. I have not seen any other training available that is aimed at helping people learn better photography techniques (like the one offered in this OIC). In terms of other ‘virtual ways’ there’s a lot of helpful learning forums out on the web. I like video presentations. I seem to learn well from them. Sometimes Cambridge in Colour members share some of these sources and that is very helpful.” (R.B. Personal communication, August 11, 2016).

The Forum is, as mentioned before, the most valued communication tool in the community and a distinctive characteristic of Cambridge in Colour because, in words of the members, it *allows them to interact with knowledgeable people worldwide* easily and with the assurance that they will obtain responses:

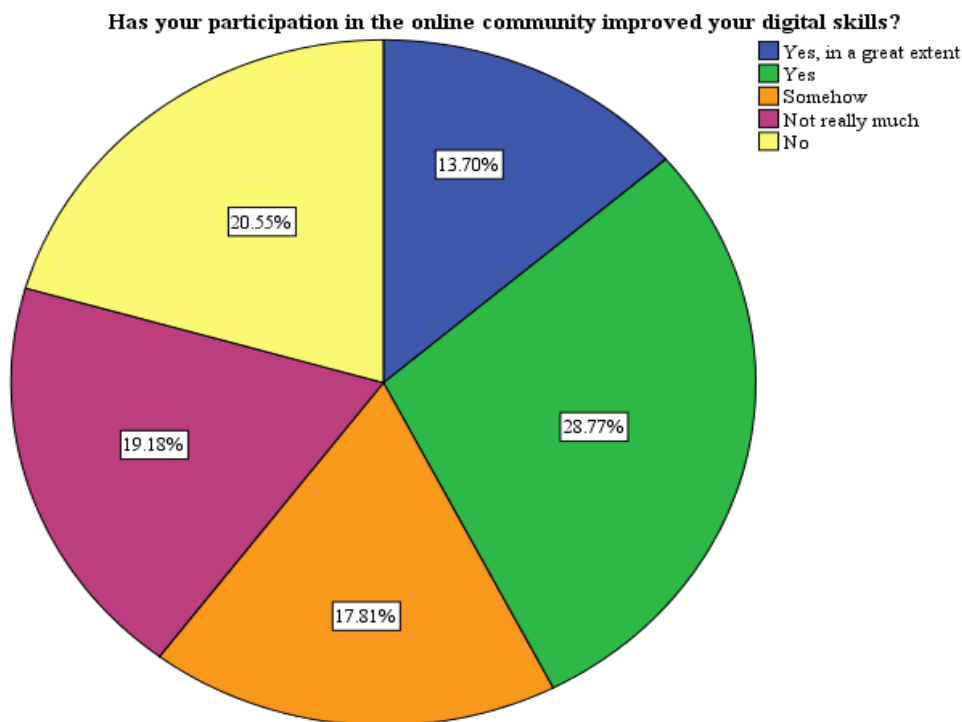
“The forum can be asked specific questions or offered images for review, and you get the benefit of several answers and can follow up with further questions if you still don't understand. (In addition,) the anonymity helps those that are shy” (D. Humphries, Moderator. Personal communication. August 7, 2016).

“How has your participation in Cambridge in Colour helped you in your own learning process about photography? My brother asked me the same question. I sent him a shot from a member and said because they can do this and will help me to get this good” (J.B.W. Personal communication. August 10, 2016).

The *newsletter*, the third distinctive characteristic of Cambridge in Colour in terms of OLC environment, complements the learning experience by providing concise information about the sources and tools available to newcomers through four pre-done editions and by informing timely and per e-mail all registered members whenever there are new tutorial additions to the community. The newsletter is important because

“(…)it helps people to be reminded about the community and to retain them” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

While using OLCs requires a certain extent of digital skills, we also noticed during our netnographic monitoring that a regular engagement seemed to have an effect on the improvement of such skills. Hence, we included a question about this aspect in our online survey. In the case of Cambridge in Colour, respondents considered that their participation in the online community did have an effect on their digital skills. 13.70% of the interviewees reported that their digital skills improved in a great extent, 28.77% reported that their digital skills did improve and 17.81% mentioned a slight positive change in this regard (see Figure 27).



**Figure 27: Improvement of digital skills through OLC (Cambridge in Colour).**

## II. Practices that foment learning

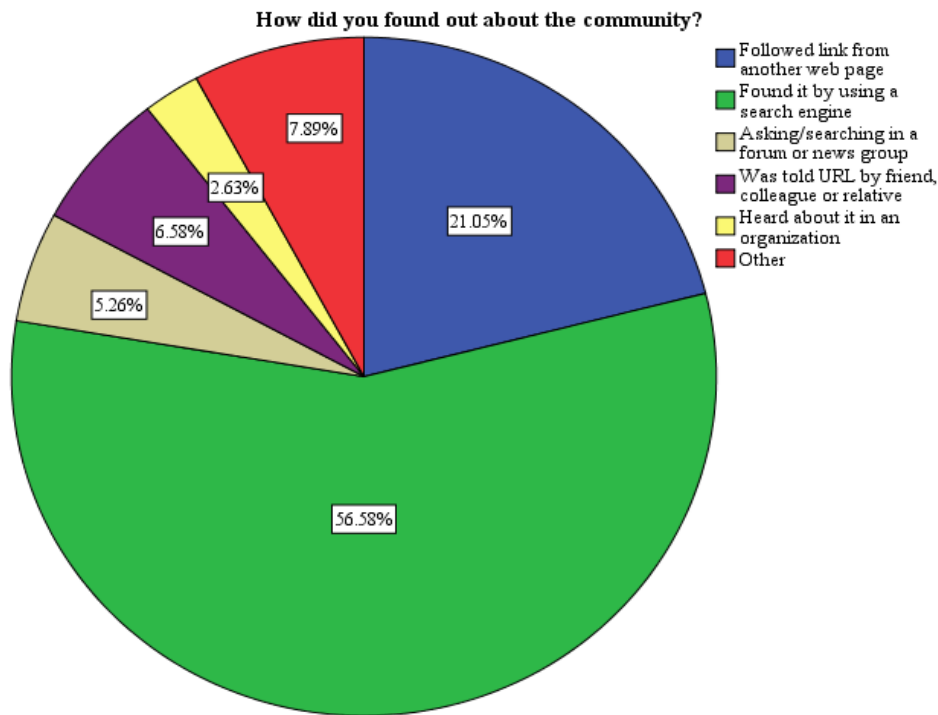
Which practices foster the learning objectives of the members of public OLCs? is the research question that we used to guide our investigation of the specific actions and values that supported

learning in each of our selected OLCs. Thereupon, we relied on specific queries directed to the members, that through our online data collection instruments, allowed us to report such practices in form of (a) the dynamics behind the participation and interaction in Cambridge in Colour and (b) the principles that oriented the learning environment of the OIC during the data collection period.

**a) Dynamics of participation and interaction**

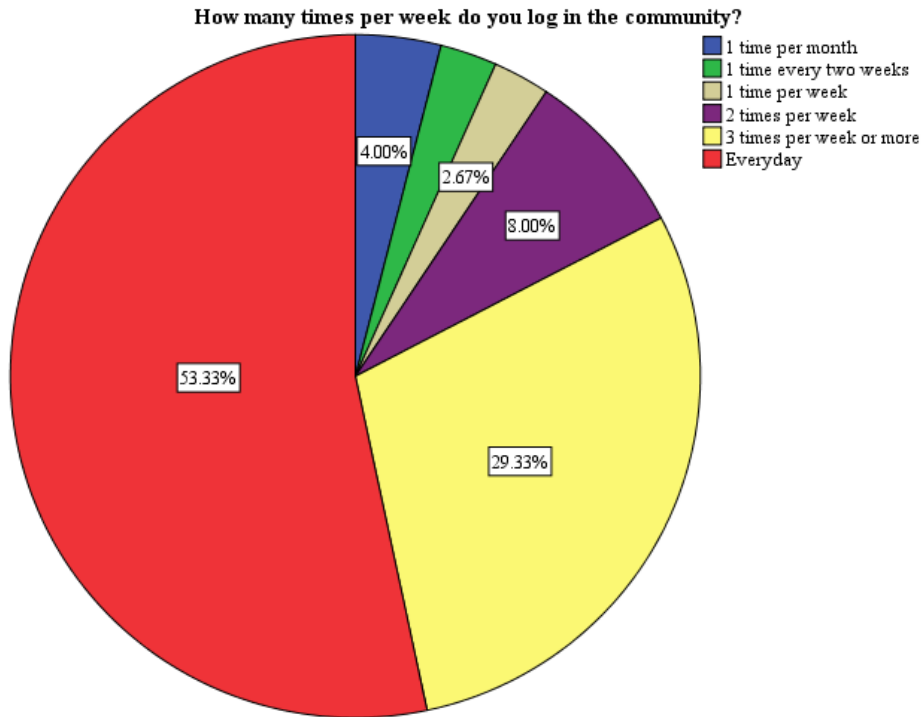
Through the combination of the quantitative and thematic analyses conducted in Cambridge in Colour, we detected four practices that fostered the participation and interaction of the members during the data collection period: (1) Lurking on the website, (2) Interaction with peers, (3) Participation in competitions, and (4) Community moderation. These activities performed regularly in Cambridge in Colour were referred by the members of the community as enablers that allowed and reinforced their engagement in the OIC, while helping them to learn on a variety of topics around Photography.

In terms of community discovery, 56.58% of the interviewees found out about Cambridge in Colour by using a search engine and 21.05% by following a link from another web page (see Figure 28). These results reflected the access policy of the OIC mentioned in the "Contextual Information" section: while the tutorials and the forum can be found through search engines and are open for public to view them, the participation in the discussion groups of the forum requires registration.

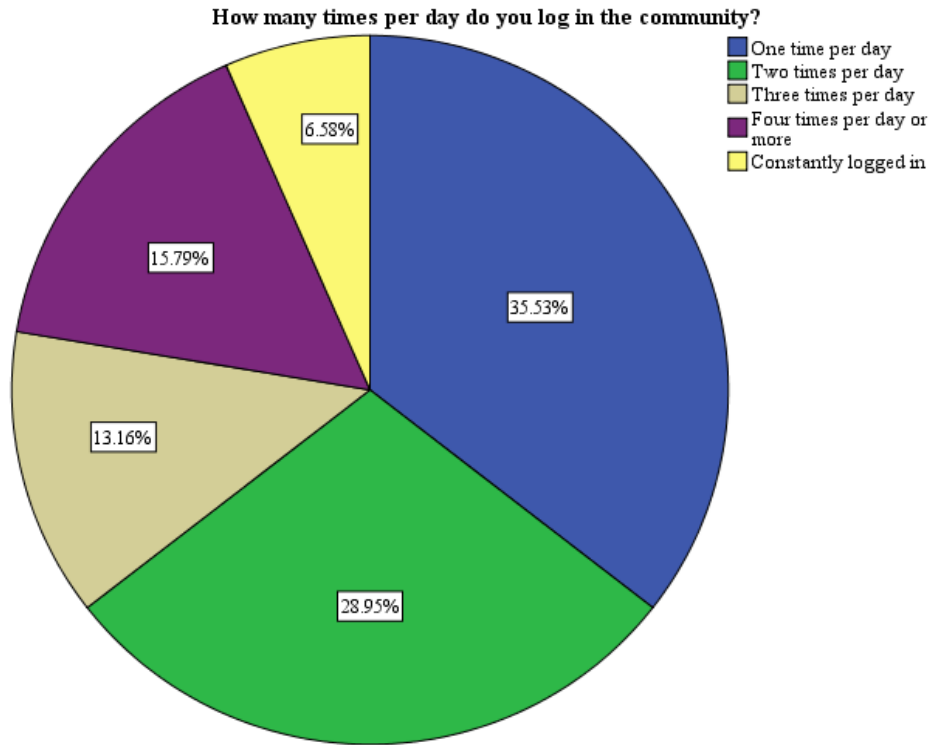


**Figure 28: Community discovery (Cambridge in Colour).**

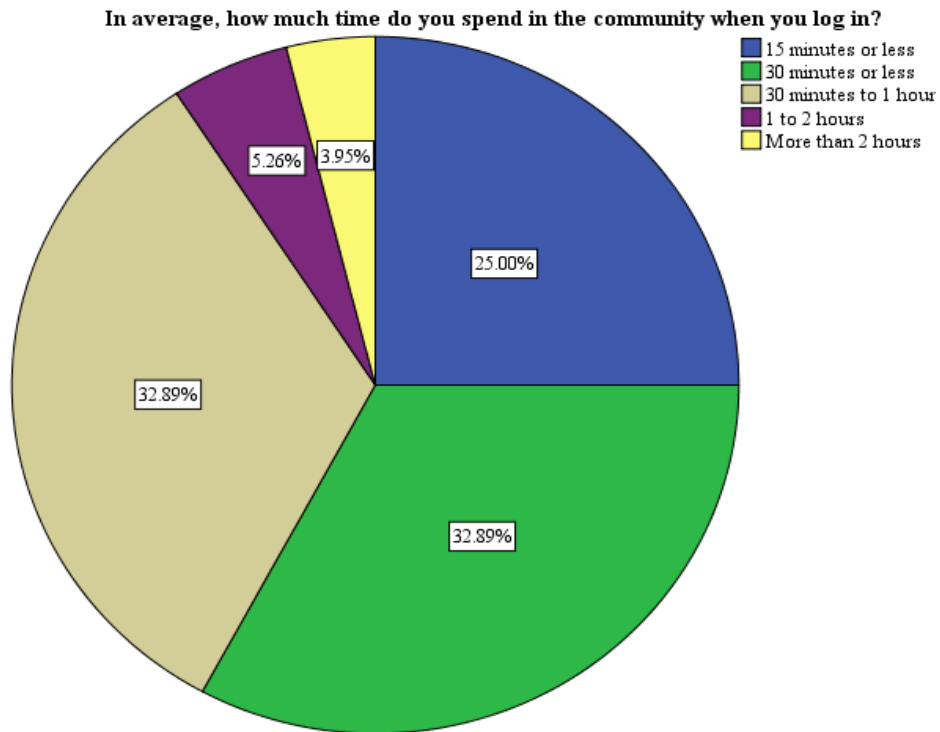
Moreover, 53.33% of interviewed members reported logging in Cambridge in Colour everyday, followed by a 29.33% that did it 3 times per week or more (see Figure 29). As it can be seen from Figure 30, in terms of daily login frequency 35.53% of the members referred to log in to community only once a day, a 28.95% logged in two times per day, and 15.79% logged in four times or more per day. 32.89% of the respondents said they spent between 30 minutes to 1 hour in the community in every log in, 32.89% spent 30 minutes or less and 25.0% spent 15 minutes or less (see Figure 31).



**Figure 29: Weekly login frequency (Cambridge in Colour).**



**Figure 30: Daily login frequency (Cambridge in Colour).**



**Figure 31: Span of time spent (Cambridge in Colour).**

Interestingly, more than the half of the interviewed members reported that they remained in Cambridge in Colour 30 or more minutes every time they logged in. A possible explanation to these longer periods of engagement in the OIC relies on the fact that it offers the possibility of *interacting with peers*. This perspective is reflected through the testimonials of two members:

“It’s a good combination of advice and peer participation and the quality of both is first class. The advice is reasoned, not at all dogmatic, and I have consistently found it to be accurate and helpful. Likewise, the discussions - the Forum is mercifully troll-free!” (W.T. Personal communication. August 10, 2016).

“It was after I returned to NZ to live in the late 90s that I got back into photography with more interest. (...) I missed the interaction with other photographers, and as my partner was not at all interested in visual arts (she is a linguist), my shoots were either alone or with her being politely tolerant of my activities while she read a book. I needed to be able to engage with others of my interest, and so we come to my chance encounter with Cambridge in Colour. I was immediately impressed by the quality of the images, but perhaps more so by the constructive and supportive nature of the participants, who had a global range of experiences, interests, and skill levels. I have come and gone as my other activities allow, but always visit the website and the community when I can” (T.H. Personal communication. August 10, 2016).

In Cambridge in Colour, 41.33% of the respondents described themselves as sometimes active, sometimes inactive, 24.0% as regularly active users, and 21.33% as quite active. 6.67% of the members considered themselves as very active users, while 6.67% also mentioned they were quite inactive (see Figure 32).

How would you describe yourself with regards to the use that you make of the community?

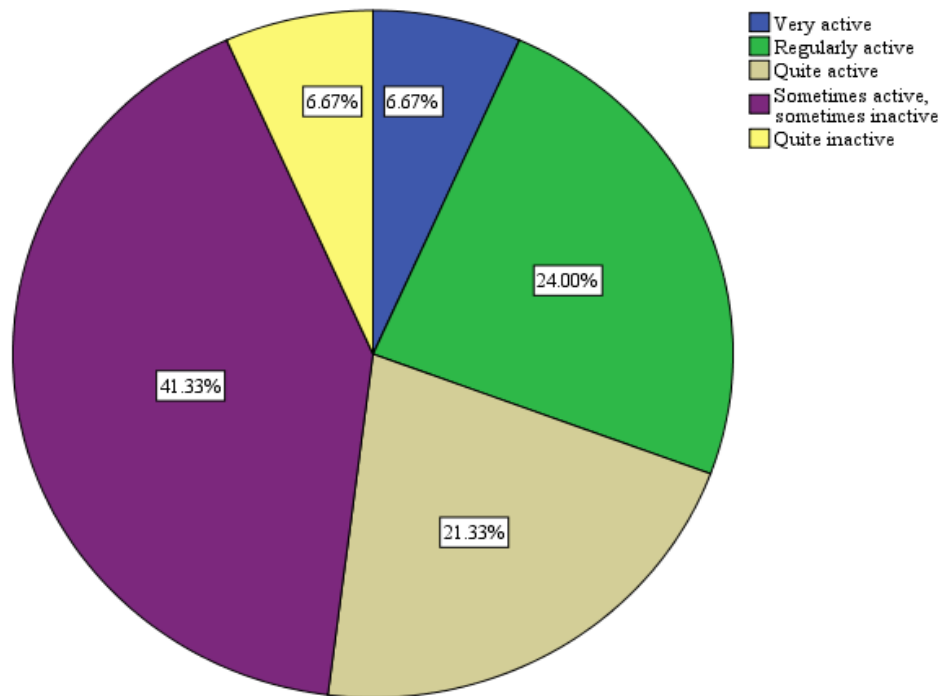


Figure 32: Level of activity (Cambridge in Colour).

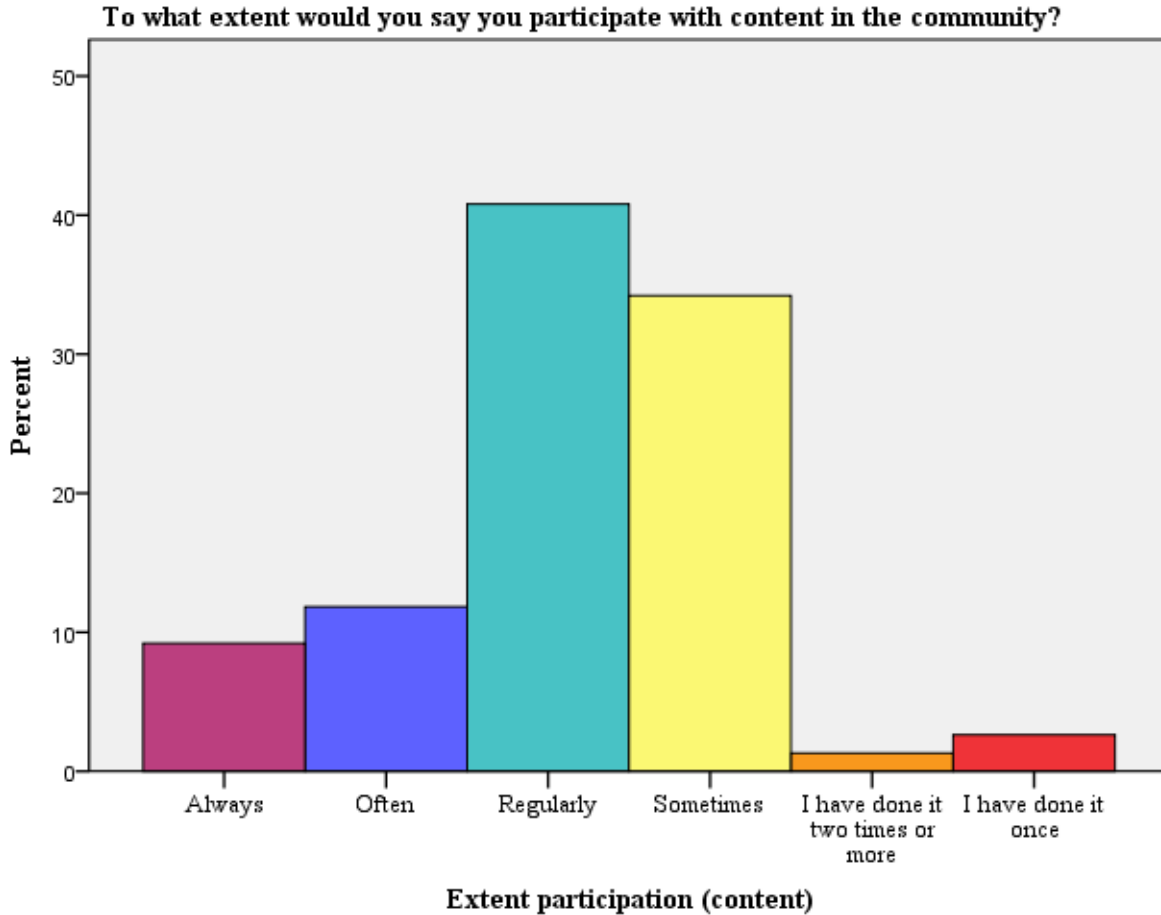
The fact that almost half of the members mentioned they were on and off in terms of active engagement can be explained by the amount of time they also spent *lurking on the website* and reading the tutorials, the answers in the forum questions and the replies to the image postings:

“With Cambridge in Colour I can decide when it is most convenient for me to devote time to further learning. I can concentrate on areas which interest me more than others. I can view photographs from other photographers and read peer reviews or comments” (G.M. Personal communication. August 10, 2016).

“I learn a lot by looking at others’ images, and there is a constant stream of those appearing on the website from photographers who have amazing talents and skill levels, but also from those with less developed abilities. Not only can I look at the images objectively, but I can learn from the comments of those who have obviously had more technical experience than me. I have discovered that educational pages on the technologies and techniques associated with the digital medium and find them to be at a higher level than the ones that often appear in books available on the market” (T.H. Personal communication. August 10, 2016).

In terms of participation through content in the OIC, 40.8% of the survey respondents said they posted threads or resources regularly, 34.2% did it sometimes and 11.8% did it often (see Figure 33). As it can be seen from Table 15, 80.8% of the members have contributed with content by providing information or resources when replying to a thread; 76.9% have also posted own threads

with questions about a topic or with the intention to foster a discussion; 67.9% have posted informative resources such as links, images or contact details; 20.5% have shared presentations, articles, e- books, infographics, videos and webinars and 38.5% have included self-created content.



**Figure 33: Extent of participation (Cambridge in Colour).**

<b>With what type of content have you contributed?</b>			
<b>Type of content</b>		<b>Count</b>	<b>Percentage</b>
Started a topic through a question or fostering a discussion	No	18	23.1%
	Yes	60	76.9%
Provided information or resources by replying to someone's petition/post	No	15	19.2%
	Yes	63	80.8%
Posted an informative resource (link, image, contact details, etc.)	No	25	32.1%
	Yes	53	67.9%



Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.)	No	62	79.5%
	Yes	16	20.5%
Contributed to the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.)	No	48	61.5%
	Yes	30	38.5%

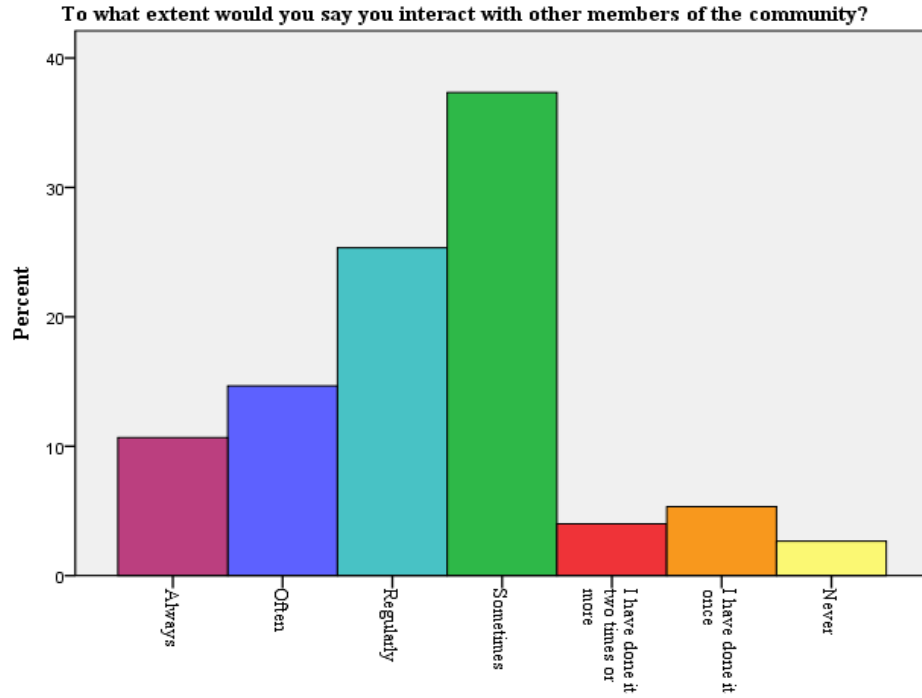
**Table 15: Content and type of contribution (Cambridge in Colour).**

In Cambridge in Colour, a popular and regular dynamic that fostered learning and motivated members to participate and interact with different types of content was, according to the interviewed members, the *participation in competitions*:

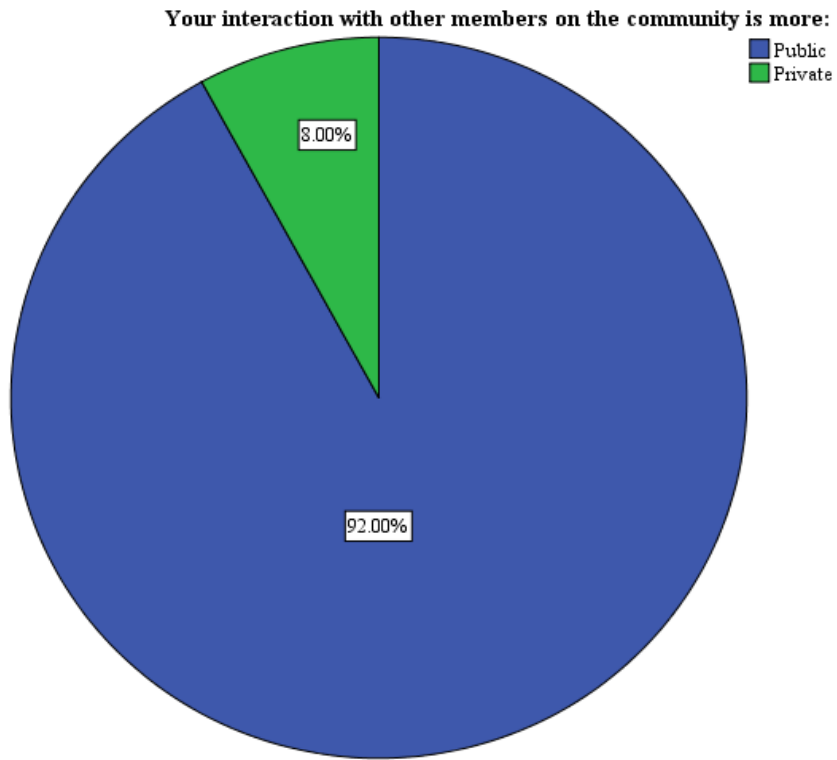
“(…) I have also learned from participation in and reviewing the results of the various competitions that Cambridge in Colour run” (W.T. Personal communication. August 10, 2016).

“I have always enjoyed the Mini competitions as it can be interesting to see, very quickly, how closely the opinions of the members, or the ones who have voted, match my own. That in itself is a useful learning tool as you are finding out what most people like” (K.C. Personal communication. August 10, 2016).

With regards to their interaction with other members in Cambridge in Colour, 37.3% of the interviewees mentioned that they interacted sometimes, 25.3% regularly, 14.7% often, 10.7% interacted always, 5.3% had done it once, 4.0% had done it two times or more, and 2.7% had never interacted (see Figure 34). Furthermore, 92.0% referred that their interactions were public, this is, in the forum of the OIC (see Figure 35). In terms of reaction and response to threads and messages, 28.4% of the members had always gotten replies, 24.3% considered that other members replied to them regularly, 24.3% sometimes, 18.9% often, 1.4% said members had answered back two times or more, 1.4% had gotten answers only once, and 1.4% had never gotten replies (see Figure 36).

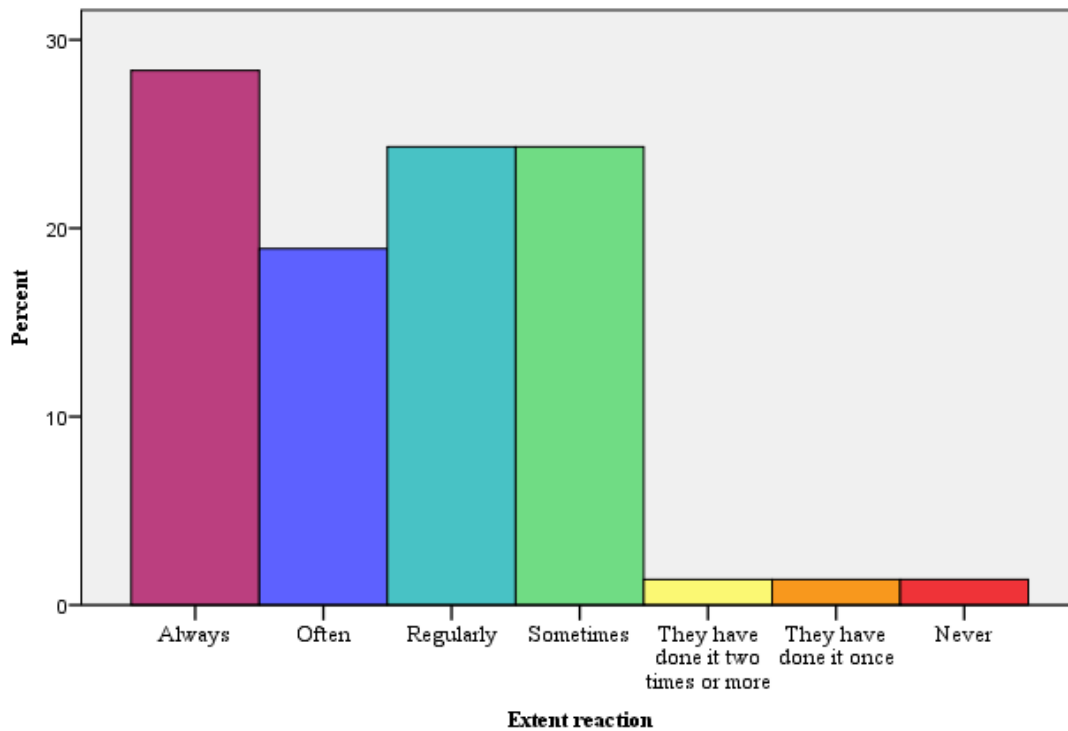


**Figure 34: Extent of own interaction (Cambridge in Colour).**



**Figure 35: Type of interaction (Cambridge in Colour).**

**To what extent do you consider that members react and respond to your posts or messages?**



**Figure 36: Perception of members' interaction (Cambridge in Colour).**

Last but certainly not least, another element that we detected as instrumental for supervising the proper functioning of the Forum learning dynamics in Cambridge in Colour was the strict but fair *community moderation*:

“There are many other sites that discuss photography, one of the others I visit a lot is DPRReview.com, but many of the good topics on those sites are spoiled by negativity and trolling, resulting in abusive and non-productive discussions that quickly lose my interest. Cambridge in Colour has a demand for mutual respect and constructive criticism that is enforced the moderators. This keeps the level of interaction shown between contributors to a high standard and encourages one to trust one’s work or opinion to open review” (T.H. Personal communication. August 10, 2016).

“I was becoming disillusioned by the heavy-handed enforced civility at Nikoncafe, which does not permit any conversations involving sex, politics, or religion, has a “no nudes” policy, and concerns itself with a policy of ignorant sweetness and light where nothing

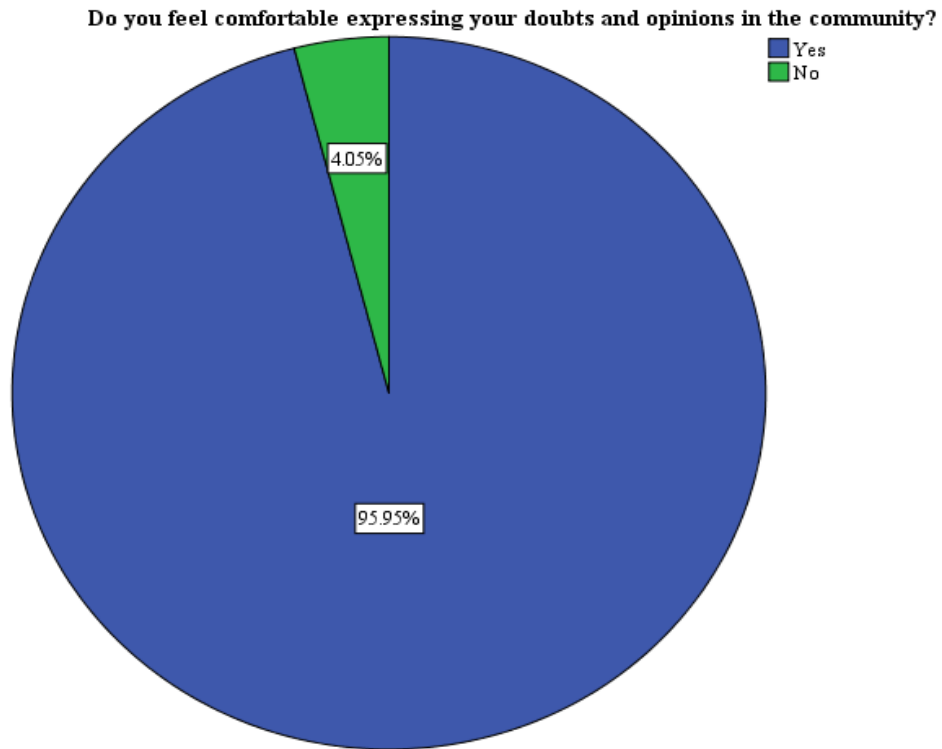
even remotely controversial is allowed and quickly deleted by the overzealous moderators. On recommendation, I visited Cambridge in Colour, and after visiting the Forum, signed up. So far, with one or two exceptions, the posters are for the most part nice folks, and I do get feedback on virtually every image I post, and the moderators are more lenient and less micro-managers that those at Nikoncafe” (R.S. Personal communication. August 10, 2016).

“I started visiting Cambridge in Colour for the tutorials, but the active live forum is what has kept me coming back. It seems to get a lot of attention from the moderators and other members who really have a lot to offer in support. It also seems to be a ‘safe’ place where people of all levels of experience can ask questions” (R.B. Personal communication. August 11, 2016).

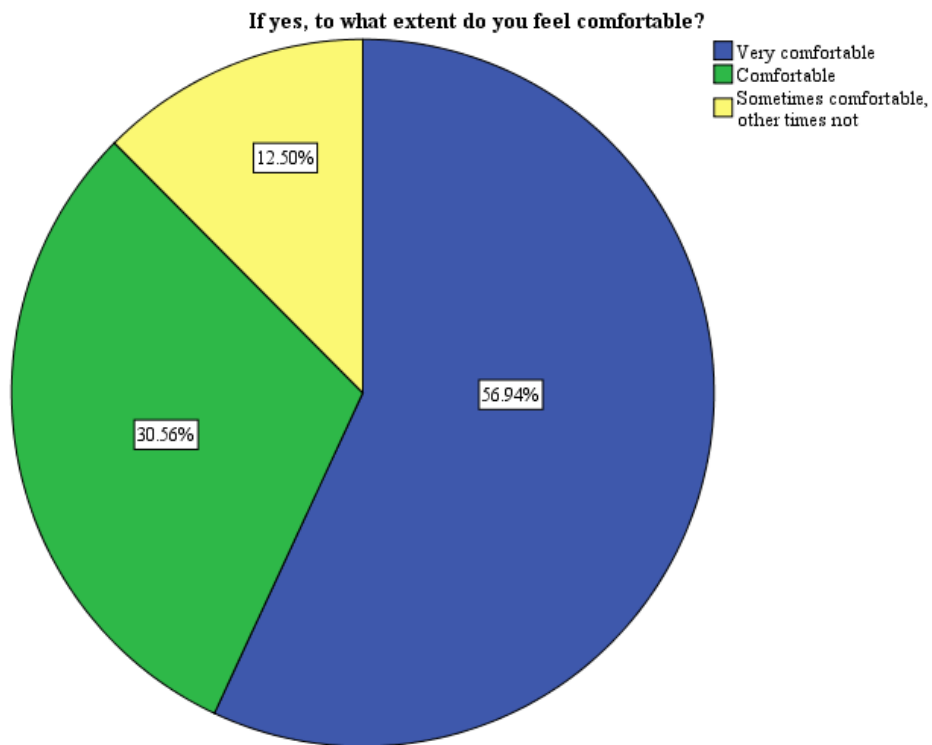
### ***b) Guiding principles***

From the results of our analyses, we could also detect two values that played an important role in terms of cohesion and engagement for the community: (1) Honest and respectful feedback and (2) Friendly atmosphere. Both of these values led the dynamics of each of the aforementioned practices that impulse learning in Cambridge in Colour. In the following lines, we discuss their influence as guiding principles in the OIC.

The first principle detected, *Honest and respectful feedback*, is a maxim directly related to the value of trust. According to the survey results, 95.95% of the members felt comfortable when expressing doubts and opinions in Cambridge in Colour (see Figure 37). We included a control question in our questionnaire with the intention to find out the extent of trust in the community perceived by the respondents. From the results presented in Figure 38, we noticed a slight variability with respect to the high levels of trust reported in the OIC: 56.94% expressed they felt very comfortable when expressing doubts and opinions at all times, 30.56% felt comfortable and 12.50% felt sometimes comfortable and other times not. Correspondingly, 97.30% of the respondents felt comfortable expressing their opinions and ideas, even when they were opposite to their perspectives or when other members corrected them (see Figure 39). With regards to confronting interactions, 47.95% said they felt very comfortable in these situations, while 42.47% mentioned that they felt comfortable. (see Figure 40).

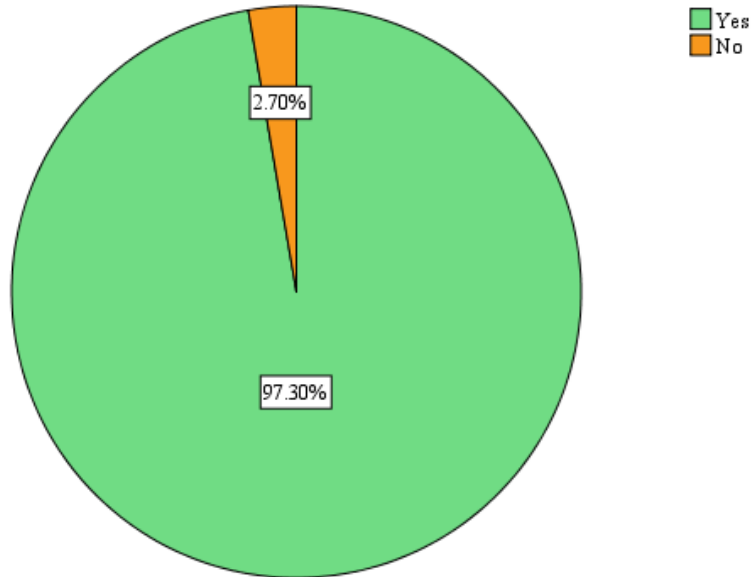


**Figure 37: Freedom of expression (Cambridge in Colour).**

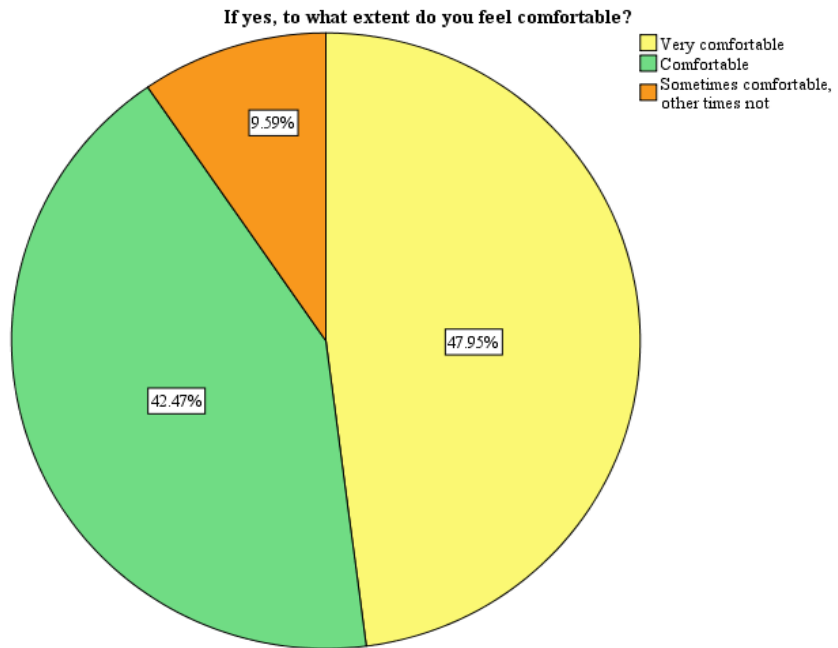


**Figure 38: Perception of the extent of freedom of expression (Cambridge in Colour).**

**Do you feel comfortable with the other members of the community during discussions or exchange of opinions and ideas, even when they are opposite to your own views or when they correct you?**



**Figure 39: Comfort during discussions and debates (Cambridge in Colour).**



**Figure 40: Perception of the extent of comfort during discussions and debates (Cambridge in Colour).**

As seen from the survey results, the majority of members felt comfortable during their interactions in Cambridge in Colour. When interviewed, several of them depicted this OIC as a space of *honest and respectful feedback* when asking and posting information, and in particular when sharing their photographic shoots looking for opinions:

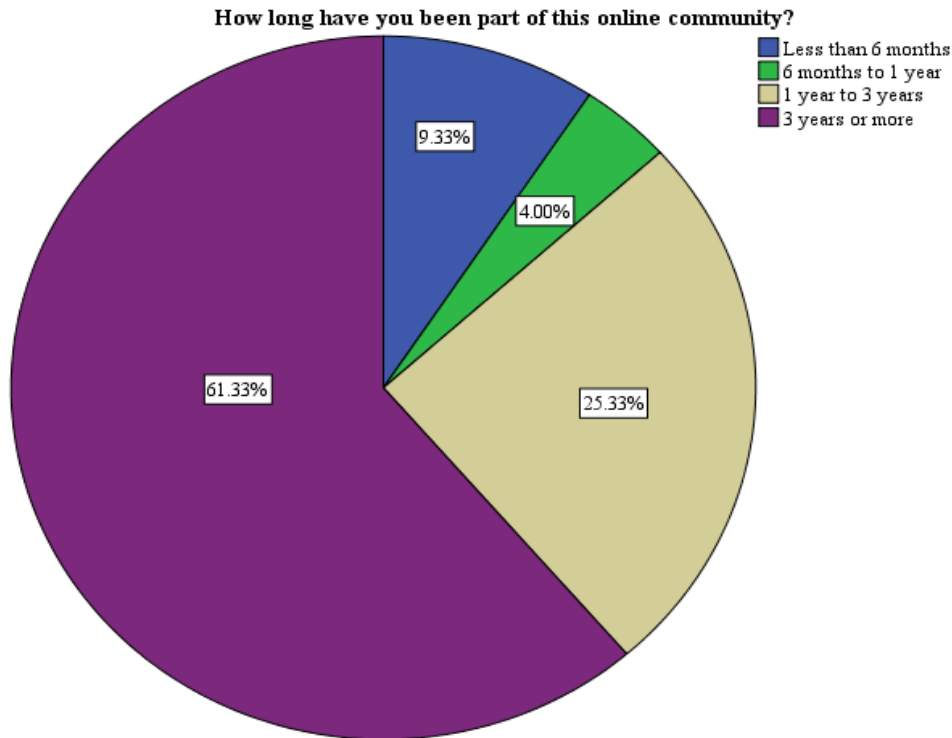
“I am not a Digital photographer, but rather shoot only with Film and old Film-based equipment so I neither participate in, nor benefit from nearly all of the Digitally based discussions. However, I do benefit from some of the comments I receive on my photos” (R.S. Personal communication. August 10, 2016).

“I trained as a scientist and worked as one until retirement. Photography was and is something I have engaged in solely for my own purposes. Apart from the 'technical' aspects of imaging which I am more than capable of researching for myself, I wanted a forum where I could explore other people’s response to my imaging and where I could engage in informed discussion with others at all skill levels to continue developing my understanding of Photography as an art. I find that Cambridge in Colour keeps a good balance between the 'passion' that develops in such discussions, and 'common sense’” (J.E. Personal communication. September 20, 2016).

“I have felt confident in submitting my own images knowing that they will be critiqued with respect and in their own right, not seen as better or worse than others’ work. As you will have guessed by now, I compete with myself rather than others” (T.H. Personal communication. August 10, 2016).

“The feedback from members on the Forum, for posted images (in general, not only for ones that I post) is excellent and always constructive” (W.T. Personal communication. August 10, 2016).

As seen in Figure 41, 61.33% of the interviewees have been members of Cambridge in Colour for three years or more, 25.33% between 1 to 3 years, 9.33% are members since less than 6 months and 4.0% are registered since 6 months to 1 year ago. This evidence suggested that a great majority of the active membership in Cambridge in Colour was constituted in a great majority by more experienced members, being the rest novel participants.



**Figure 41: Membership (Cambridge in Colour).**

Collaborative learning practices, such as helping members in the community to obtain information or to learn by sharing knowledge, generate a sense of belonging to the community. In Cambridge in Colour, 91.89% of the respondents reported aiding their peers through these actions (see Figure 42). When looking to the frequency of collaboration, 38.7% of the interviewees mentioned incurring in these cooperative practices sometimes; 20.0% regularly, 14.7% did it often, 13.3% said they had done it two times or more, 6.7% commented they did it always, and 6.7% never (see Figure 43). In addition, 88.33% mentioned that they received feedback from other members when they had contributed with comments or resources in their threads (see Figure 44).



Have you helped other members in the community to obtain information or increase their knowledge on a topic?

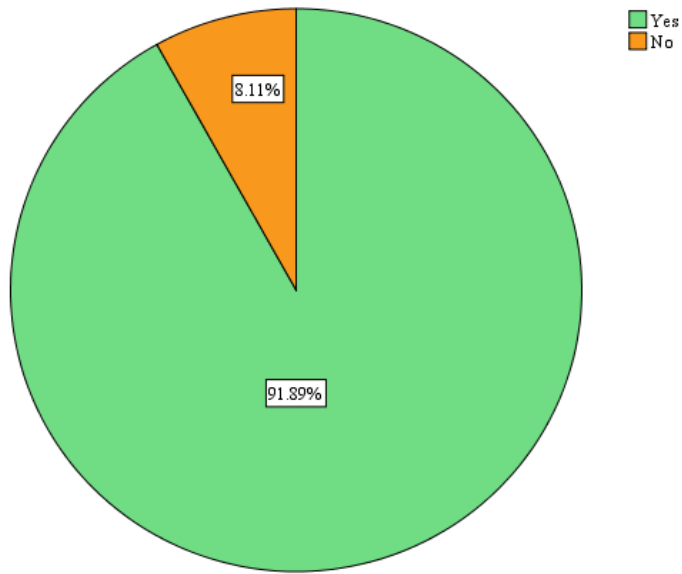


Figure 42: Cooperation in the community (Cambridge in Colour).

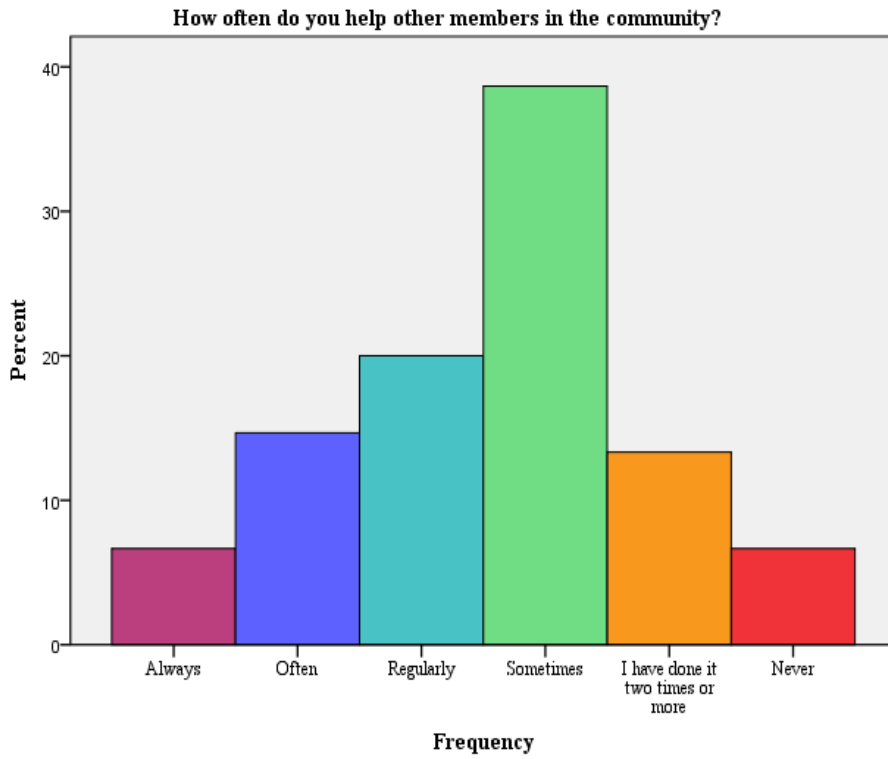


Figure 43: Frequency of cooperation (Cambridge in Colour).

Have you received any feedback from members in the community with regards to your help and/or contribution?

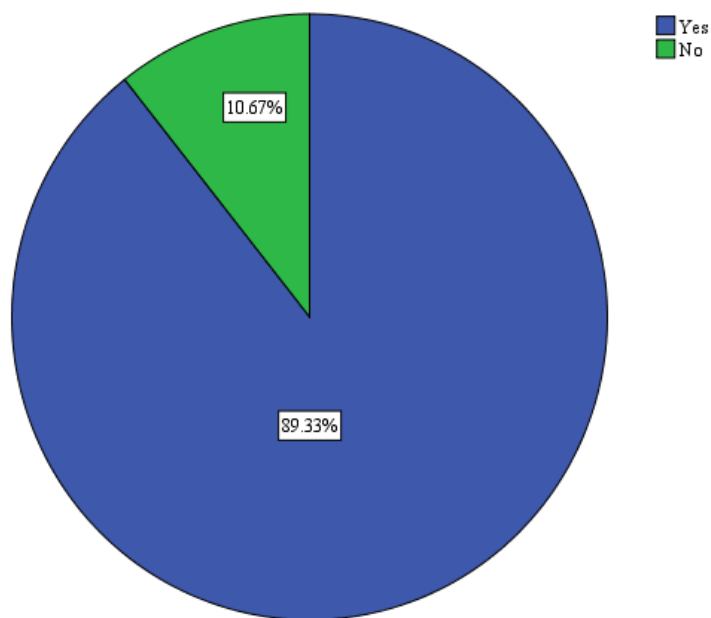


Figure 44: Cooperation and feedback (Cambridge in Colour).

According to 41.33% of the respondents, the frequency of interactions has led them to build relationships with certain members in Cambridge in Colour (see Figure 45). As seen in Table 16, the interviewees mentioned that through Cambridge in Colour they have mainly met persons with similar hobbies (87.2%), people who shared their interests (29.5%), friends/acquaintances (9.0%), people in their profession (7.7%) and people in similar life situations (7.7%). A 10.3% of the interviewed members referred not meeting anyone further, despite them interacting regularly with others.

Have you built a virtual relationship with certain users due to your frequent interactions with them?

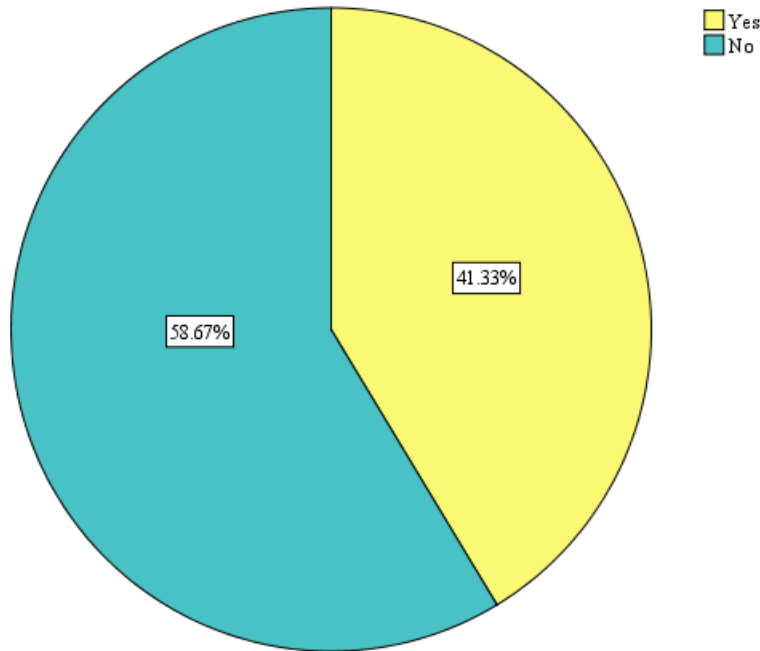


Figure 45: Virtual relationship among members (Cambridge in Colour).

Which of these groups have you become more connected to through this community?			
Groups		Count	Percentage
People who share my interests (political, economic, social, health, academic/educational, etc.)	No	55	70.5%
	Yes	23	29.5%
People who share my hobbies / recreational activities	No	10	12.8%
	Yes	68	87.2%
People who share my religion or spiritual beliefs	No	78	100.0%
	Yes	0	0.0%
People in my profession	No	72	92.3%
	Yes	6	7.7%
People in my family	No	73	93.6%
	Yes	5	6.4%

Colleagues from my workplace	No	76	97.4%
	Yes	2	2.6%
Friends or acquaintances	No	71	91.0%
	Yes	7	9.0%
People in similar life situations	No	72	92.3%
	Yes	6	7.7%
Other group	No	77	98.7%
	Yes	1	1.3%
None	No	70	89.7%
	Yes	8	10.3%

**Table 16: Contact with other groups (Cambridge in Colour).**

When questioned specifically about their sense of belonging, the members who participated in the online survey agreed to the fact that they felt a sense of community in Cambridge in Colour and that members of the OIC were responsive, as they read and answered threads. Members considered that the levels of participation and interaction in the community were well balanced. In this regard, interviewees highlighted that there were two or three members that posted and interacted more frequently in Cambridge in Colour, making them "known faces" in the OIC. At the same time, they mentioned that they can access information with ease through Cambridge in Colour. Respondents rated the information available in the community as trustworthy and of good quality, emphasizing the fact that several members of the community have expertise in diverse topics. They also underlined the fact that the community managers foster collaboration and respect among members, while being available at all times for them. (see Table 17).

<b>Indicate the degree of agreement with the following statements:</b>	
<b>Sense of belonging</b>	<b>Perception (Mode)</b>
a) I feel a sense of community in my online community.	4
b) I feel members are interested in reading and answering my posts.	4
c) I feel members are interested in getting to know more about me after reading my posts or contributions.	3
d) I consider that the level of participation in my community is well	4

balanced among its members.	
e) I think that the level of interaction in my community is well balanced among its members.	4
f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members.	5
g) I feel confident that I can easily obtain the information I need from my online community.	4
h) The data and content shared by the members is trustworthy and of good quality.	4
i) Several members in my community are experts in their topic.	5
j) The information available in the community is trustworthy and of good quality.	4
k) The community manager promotes an atmosphere of collaboration and respect in the community.	5
l) The community manager is available for the members at all times.	4

1 = Strongly disagree  
2 = Disagree  
3 = Neither agree nor disagree  
4 = Agree  
5 = Strongly agree  
-1 = don't know  
-9 = Not answered

**Table 17: Sense of belonging (Cambridge in Colour).**

The second guiding principle we detected in Cambridge in Colour was the *friendly atmosphere* in the community. The statistics showing high levels of collaboration and rating positively the sense of belonging was corroborated through the testimonials of several members:

“This is a site where all are welcome, anyone from rank beginners to pros” (M.Müller, Moderator. Personal communication. December 21, 2016).

“After joining I stayed and participated because of the high standard of discussion on the Forum and, more importantly, the excellent level of courteous interactions” (W.T. Personal communication. August 10, 2016).

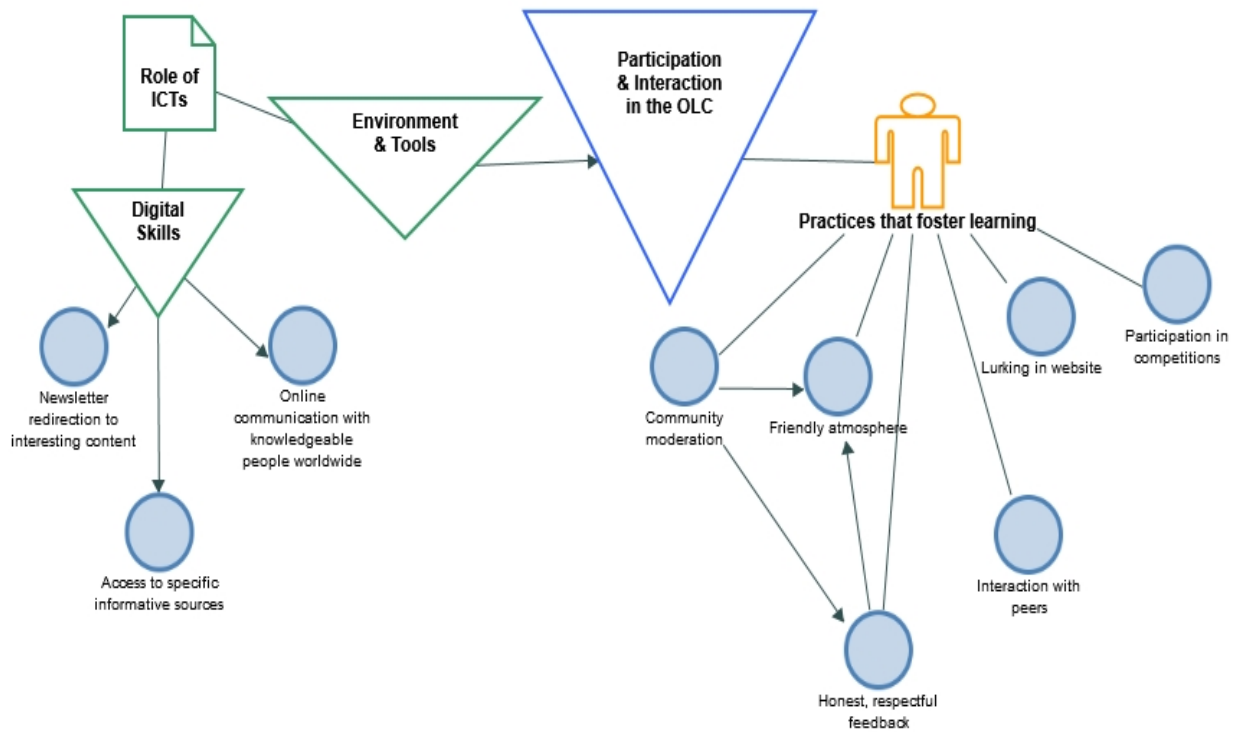
“I enjoy the interaction with other members, the very civil discourse and the helpfulness of the majority of members” (T.R. Personal communication. August 11, 2016).

“I have been involved in photography for 50+ years, as an amateur. When digital imaging began around the turn of the millennium, I started to research the new technology and in due course made the switch to digital photography. I bought technical texts etc. but was interested in comparing my experiences and wanted to check my understanding with others of a like mind. I came across Cambridge in Colour by accident. I dislike other forums where there is less of a 'learning and sharing' philosophy. I found they were elitist from a 'knowledge' point of view and often aggressive and condescending to people looking to learn. For me this is totally unacceptable. I stayed with Cambridge in Colour because it rejects any form of abuse or elitism” (J.E. Personal communication. September 20, 2016).

“In general, I have found the Cambridge in Colour community to be very accepting of new people and nonjudgmental. Furthermore, while the community is generally small compared to other sites, it does not suffer from being too close knit that it does not openly allow others into the group. Opinions and participation are welcome by everyone, and the discussions are generally factual and contain a positive tone overall. These facts alone make it easy to continue to be part of the Cambridge in Colour community” (E.A. Personal communication. August 18, 2016).

The results discussed in this section suggest that the digital skills of the members of an OLC, together with the specific practices found to drive learning in a community are elements that configure the particular way through which an OLC can foster learning. Furthermore, we observed that the specific dynamics of participation and interaction of the community are interrelated to their guiding values. These principles and dynamics shape together the practices that impulse learning in an OLC. In this regard and to conclude this section, we provide an overview of the

interdependence of each element considered to be of importance in fostering learning in Cambridge in Colour through the following figure:



**Figure 46: Conceptual map of the elements that foster learning in an Online Interest Community: Cambridge in Colour.**

### 5.1.3.2 Perceived (Lifelong) Learning Value

For “Perceived (Lifelong) Learning Value”, the second theme from our category “Learning in Community”, we considered four main aspects. First, we investigated if members recognized their learning activities affected in any way, depending on the OLC’s type of environment (online or blended). For doing so, we explored different questions about information, learning and knowledge in the OLC. Second, we explained the ways public OLCs increase knowledge, according to the experiences of their members. Third, we reflected on the users’ point of view about the quality of learning and knowledge acquisition with respect to virtual and blended environments. Fourth, we elaborated on the significance that OLCs have for learning in different stages and settings by approaching this question in terms of the members opinions and engagement in their communities.

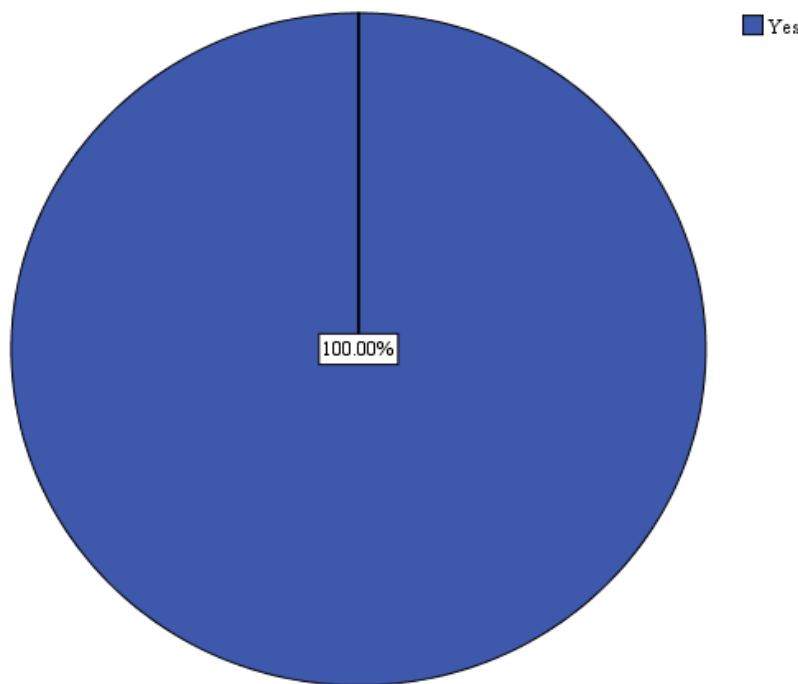
We delved into these four topics for each of the OLCs that we selected as case studies. Therefore, in this section we present a comprehensive explanation about the lifelong learning assets that online or blended learning communities provide (if any), based on our quantitative and qualitative evidence. In this regard, through Cambridge in Colour, we exemplify the lifelong learning value that the community, as OIC, provided its members with.

## I. Questions about information, learning and knowledge

In which ways do members increase their knowledge in public OLCs? is an essential research question for exploring how users utilize the tools and resources of online communities for their lifelong learning purposes. Likewise, the question aids for understanding the dynamic of the triad information-learning-knowledge present in these communities. In this subsection, we present the results obtained from the online survey about the topics of information, learning and knowledge, from the perspective of the members consulted in Cambridge in Colour.

The series of queries included in the online survey aimed to describe the nature of the information found in the OIC and the way members perceived its usefulness for learning and building up their knowledge in matters of Photography. In the case of Cambridge in Colour, 100% of the interviewed members considered that the OIC was a useful source of information (see Figure 47), be it by obtaining it through the forum groups,<sup>66</sup> by accessing the tutorials and tools available in the community's learning repository<sup>67</sup> or by making use of the advanced search box within the website.

Are you able to find suitable answers to your questions while browsing in the sections of the community?



**Figure 47: Community's usefulness for searching and finding information (Cambridge in Colour).**

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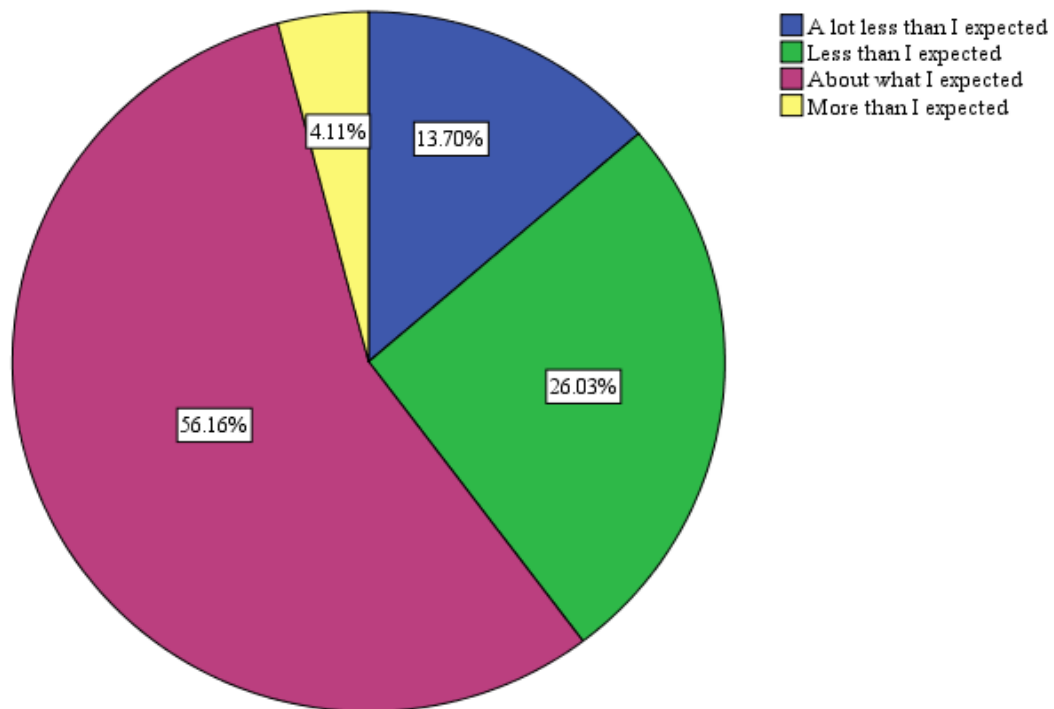
<sup>66</sup> At the time of the data collection, there were 9 groups available in Cambridge in Colour's Forum. An overview of the Forum's specific was presented in the "Origins" section of the community.

<sup>67</sup> At the time of the data collection, the learning repository had 95 resources available. A summary of the type of resources was presented in the "Origins" section of the OIC.



56.16% of the interviewees reported that the time it took them to find the information they needed through the community was about what they expected, in comparison with other ways available through the Internet. Nevertheless, a 13.70% of the respondents took a lot less time than expected and 26.30% took less time than expected when searching for information in Cambridge in Colour. (see Figure 48).

**In comparison to other ways of accessing to information in internet, how much time did it took you to find answers to your questions in the community?**



**Figure 48: Span of time needed to search and find information (Cambridge in Colour).**

It can be seen from the results reported through Figure 49 that the members rated positively the quality of the information found in Cambridge in Colour, with 64.38% from the interviewees rating it as high and 31.51% as good quality respectively.

Based on your experience, how would you rate the quality of the information in this community?

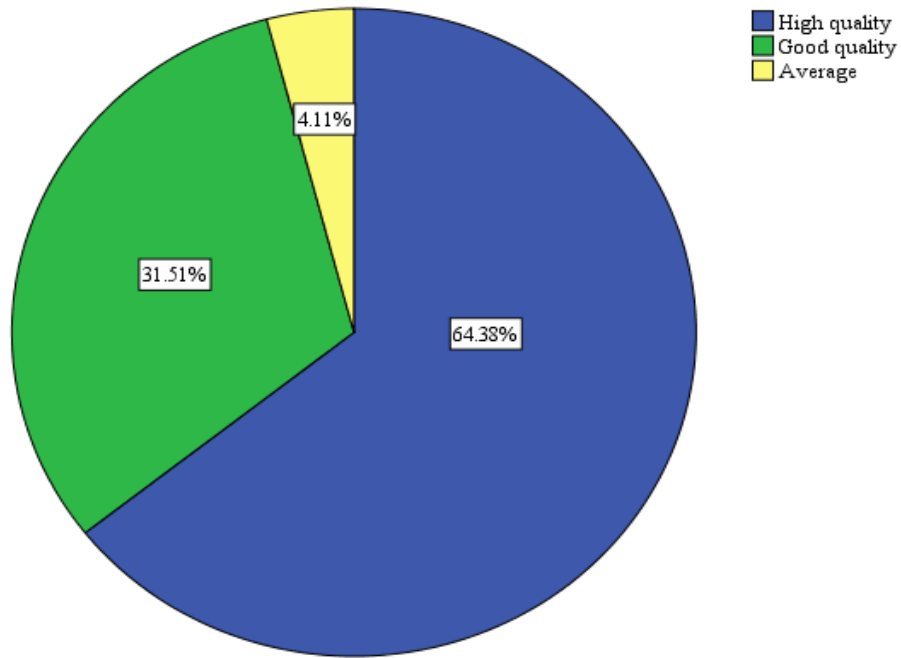


Figure 49: Quality of information (Cambridge in Colour).

In terms of learning and knowledge, the survey results showed that Cambridge in Colour is a positive source to learn and become knowledgeable in Photography topics. As it stands out in Figure 50, 98.63% of the interviewed members considered that the OIC helped them to increase their knowledge. Interestingly, more than half of the interviewees acknowledged that their participation in Cambridge in Colour has increased their knowledge more (41.67%) and a lot more (19.44%) than they expected (See Figure 51).

Do you consider that the online community has helped you to increase the knowledge in a topic of your interest?

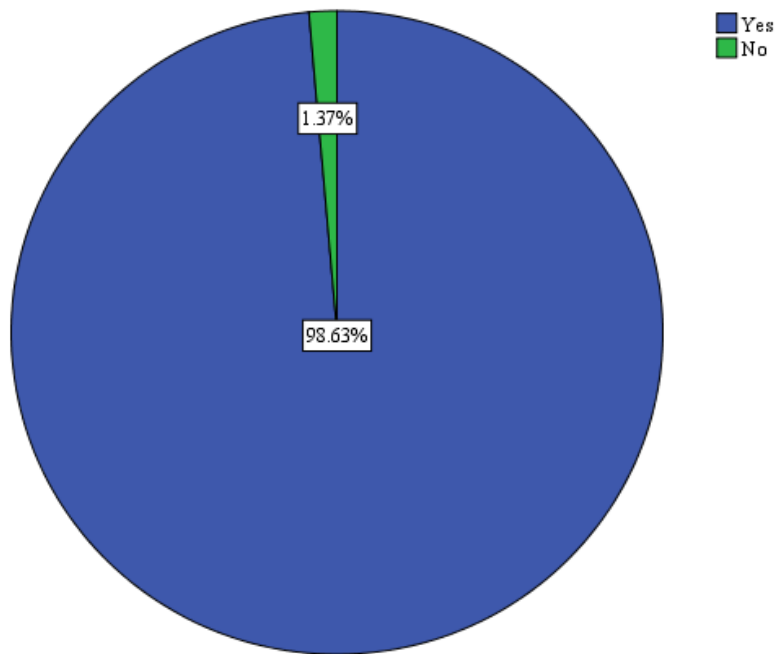


Figure 50: Contribution to knowledge (Cambridge in Colour).

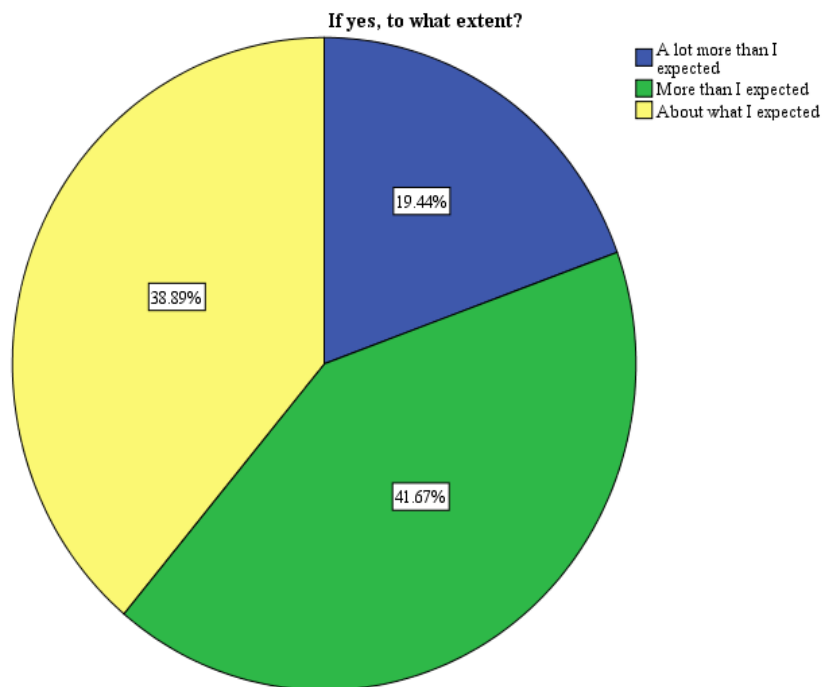


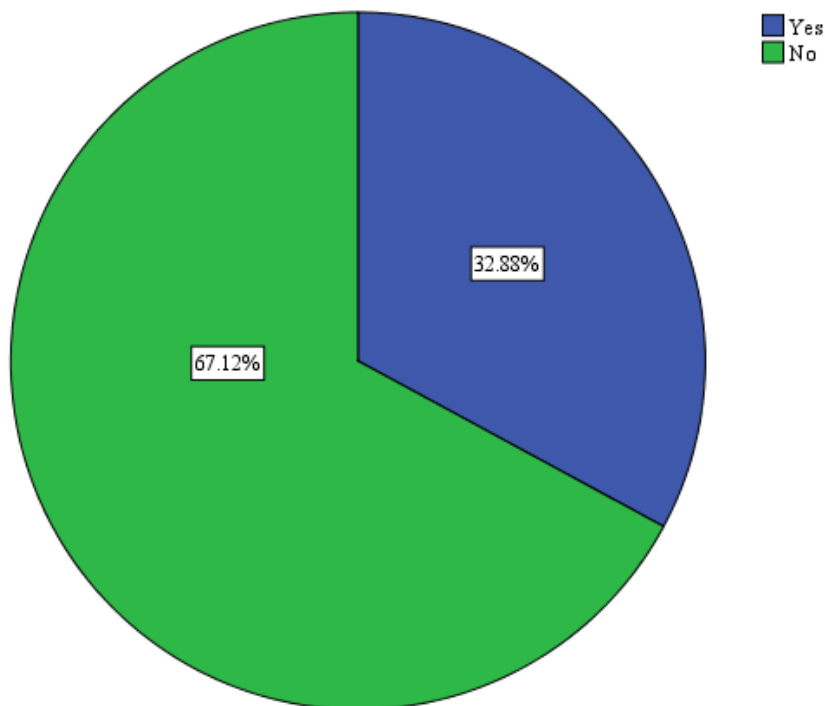
Figure 51: Extent of contribution to knowledge (Cambridge in Colour).

## II. Ways the OLC-OIC increases knowledge

In the first subsection, "Questions about information, learning and knowledge" we described the nature of these elements for the case of Cambridge in Colour. In this second subsection we complemented our research question In which ways do members increase their knowledge in public OLCs? with the results of the thematic analysis of our qualitative data and the correspondent queries of the online survey. Through the netnography conducted in the OIC and the interviews with members of Cambridge in Colour, we detected four main themes that illustrate the particular ways through which this type of OLC increased knowledge. These themes are: (1) Tutorials, (2) Sharing know-how, (3) Repository of user shared or self-generated content and (4) Books. In the following lines, we explain in detail each of these four themes.

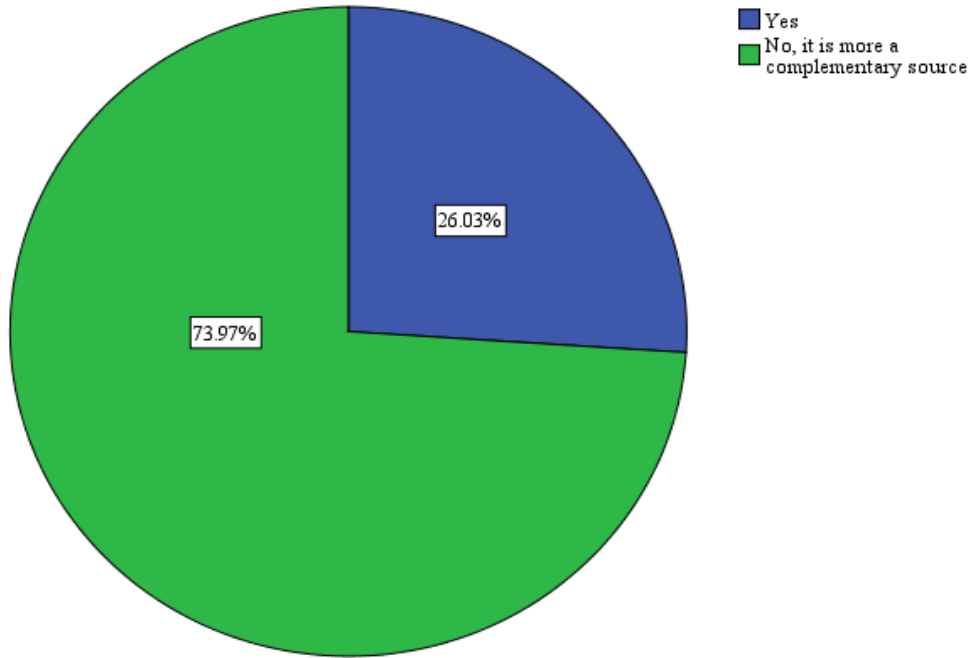
Despite the success of Cambridge in Colour in being an OLC that shares diverse sources with its members and the public, 67.12% of the interviewees did not consider Cambridge in Colour as a source that substituted the ways they had for informing themselves or learning about Photography, according to the results shown by Figure 52. This outcome goes in line with the fact that 73.97% of the respondents perceived the OIC more as a complementary source of information, rather than a main one (see Figure 53).

**Has the community become a source that substitutes other ways of accessing information and learning about the subject of your interest?**



**Figure 52: Substitute of information sources (Cambridge in Colour).**

**Is the community your main source for accessing information and learning about the topic of your interest?**



**Figure 53: Main source of information and learning (Cambridge in Colour).**

With respect to the specific resources available in Cambridge in Colour that were used for informational and learning purposes, respondents reported that the forum and the text, image, or multimedia informative resources available in the community were the two most useful ones (see Table 18).

<b>Which of the following resources in your community have you found more useful for satisfying your informational and learning needs?</b>			
<b>Resources</b>		<b>Count</b>	<b>Percentage</b>
Discussion group or forum	Rank 1	63	86.3%
	Rank 2	5	6.8%
	Rank 3	4	5.5%
	Rank 4	1	1.4%
	Rank 5	0	0.0%
Private message	Rank 1	2	2.9%
	Rank 2	21	30.0%
	Rank 3	26	37.1%
	Rank 4	11	15.7%
	Rank 5	10	14.3%

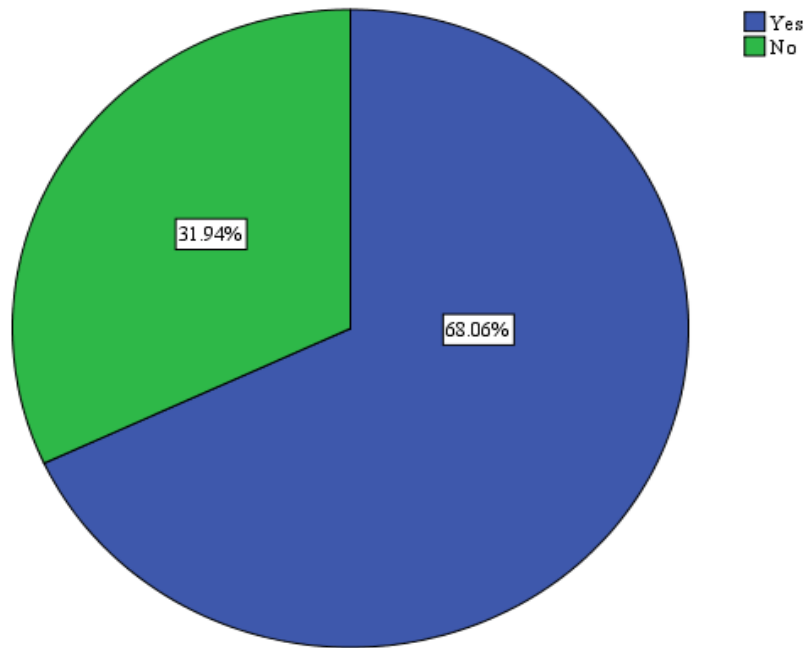
Webinar	Rank 1	1	1.6%
	Rank 2	4	6.5%
	Rank 3	7	11.3%
	Rank 4	12	19.4%
	Rank 5	38	61.3%
Recorded audio and video	Rank 1	1	1.6%
	Rank 2	8	12.7%
	Rank 3	11	17.5%
	Rank 4	33	52.4%
	Rank 5	10	15.9%
Text, image or multimedia resources available for self-study/information	Rank 1	6	8.6%
	Rank 2	35	50.0%
	Rank 3	20	28.6%
	Rank 4	5	7.1%
	Rank 5	4	5.7%

Rated according to their usefulness, being 1 the most useful and 5 the least useful

**Table 18: Usefulness of online learning resources (Cambridge in Colour).**

68.06% of the interviewees considered that their presence in Cambridge in Colour -in terms of active participation- was important for building up both the informative resources and accessing learning possibilities through the community (see Figure 54). In this regard and as shown in Table 19, active members assessed the OIC as very important for obtaining specific information and learning about Photography, be it by exercising their self-learning while lurking in the platform, by interacting with other members and by making use of the collaborative learning approach of Cambridge in Colour reflected in the members' active contributions through and to the threads of the forum.

**Do you think that your presence contributes to the information resources and learning processes in the community?**



**Figure 54: Presence contribution with regards to information resources and learning (Cambridge in Colour).**

<b>Please indicate your opinion to the following statements:</b>	
	<b>Rate (Mode)</b>
a) How important do you consider the online community for obtaining specific information on your interest?	5
b) How important do you consider the online community for learning something new by yourself?	4
c) How important do you consider the contributions of the other members of the community for your own learning?	5

d) How important do you consider your interactions with the community manager for your own learning?	2
e) How important do you consider your interactions with other members of the community for your own learning?	4

Statements were rated using a scale of 1-5 (1 being not important at all, 5 being very important).

**Table 19: Perception of the role of the community with regards to information and learning (Cambridge in Colour).**

Moreover, and according to the results shown in Table 20, in Cambridge in Colour, lurking - understood as reading through the threads found in the forum- was rated as the most important activity performed by the members in order to solve doubts or learn something new related to Photography. Discussing in threads and interacting with knowledgeable members were also assessed, in second place of relevance, as important elements in terms of learning and knowledge build-up. The educational and informational resources available in the community were mentioned in third place of importance.

<b>Which of the following elements, in order of importance (1 being the most important, 6 the least important), have helped you to increase your knowledge?</b>			
		<b>Count</b>	<b>Percentage</b>
Reading posts	Rank 1	37	50.7%
	Rank 2	17	23.3%
	Rank 3	7	9.6%
	Rank 4	8	11.0%
	Rank 5	3	4.1%
	Rank 6	1	1.4%
Participation in discussions	Rank 1	10	13.9%
	Rank 2	18	25.0%
	Rank 3	18	25.0%
	Rank 4	9	12.5%
	Rank 5	12	16.7%
	Rank 6	5	6.9%



Answers of / Interaction with an expert when I have posted something	Rank 1	9	12.9%
	Rank 2	16	22.9%
	Rank 3	12	17.1%
	Rank 4	13	18.6%
	Rank 5	14	20.0%
	Rank 6	6	8.6%
Answers of / Interaction with members when I have posted something	Rank 1	7	9.6%
	Rank 2	13	17.8%
	Rank 3	23	31.5%
	Rank 4	19	26.0%
	Rank 5	8	11.0%
	Rank 6	3	4.1%
Answers of / Interaction with the community manager	Rank 1	1	1.4%
	Rank 2	0	0.0%
	Rank 3	3	4.3%
	Rank 4	8	11.6%
	Rank 5	9	13.0%
	Rank 6	48	69.6%
Educational and/or informative resources available in the community	Rank 1	9	12.5%
	Rank 2	9	12.5%
	Rank 3	9	12.5%
	Rank 4	15	20.8%
	Rank 5	24	33.3%
	Rank 6	6	8.3%

**Table 20: Activities in the community that help to increase knowledge (Cambridge in Colour).**

These quantitative results were corroborated when interviewing different members in Cambridge in Colour. Their testimonials pictured the OIC as a space that allowed self-learning and collaborative learning for photographers through four axis that comprise the specific ways through which this OLC increases knowledge:

*a) Tutorials:* presented as technical, timeless articles, the tutorials are a signature content from Cambridge in Colour. Its value resides in the way they communicate the information and help to keep the discussions on point:

“Cambridge in Colour has excellent tutorials that help in disseminating information on the basics (of Photography)” (Erik Anderson. Personal communication. August 18, 2016).

“I think the tutorials are really what helps to keep the conversation focused and constructive. Whereas a lot of communities it’s just arguing, it’s just who knows more and is technically more correct, I do think that the synergy between the content and the community is what gives the site a purpose and helps to give people a basis for the arguments” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

**b) *Sharing know-how:*** the knowledge shared freely by many members of the community when asking photographic questions, when having own images reviewed or when narrating the procedures followed to obtain a shot was reported as second particular way through which Cambridge in Colour increased members’ understanding of Photography:

“I started with talent but not much knowledge and no wisdom. They have offered the knowledge and guided me towards wisdom” (J.B.W. Personal communication. August 10, 2016).

“I like looking at the images posted for competitions along with the comments from within all of the community – I feel that is a less biased way of gauging quality than handing the decisions to a small elite to rank the quality of the work. Probably the most valuable to me is the day-to-day postings of images by members that generate constructive and respectful discussion and comment. These threads include images taken, articles that contributors have found, and technical questions and answer sessions” (T.H. Personal communication. August 10, 2016).

“(In Cambridge in Colour) it’s less about just kind of sharing, this is my neat photo, and more about how someone created that photo. A lot of online communities are just kind of sharing their latest stuff and getting a pat on the back and this is more about learning. And I think that’s the core part of the community is helping people understand” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

**c) *Repository of user shared or self-generated content:*** the vast, quality information elaborated or found and included in the forum by the members of Cambridge in Colour overtime was referred as a particular way through which the OIC increased knowledge:

“The discussion forums are their strength, but they are their weakness too. Great information is in many of the discussion threads, but it can be hard to find. But it is the member participation that drives a lot of the best information in Cambridge in Colour. Members frequently contribute ideas and links to learning resources” (R.B. Personal communication. August 11, 2016).

“I think one of the biggest things is as the community grows, even if you have a group (of people) leaving, (is that) the content and the kind of dialogue remain, so it’s still a very accumulative thing. They still contribute a lot to dialogue; a lot of their posts are still referenced over the years and the database of stuff just continues to grow” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

*d) Books:*<sup>68</sup> while these resources were not offered for free, they were referred as a fourth specific way through which Cambridge in Colour increased knowledge as they constituted the consolidation in printed form of a decade of perfecting technical and visual information on Photography based on the feedback of an active, insightful, and well-informed community.

### **III. Qualities of learning and knowledge acquisition**

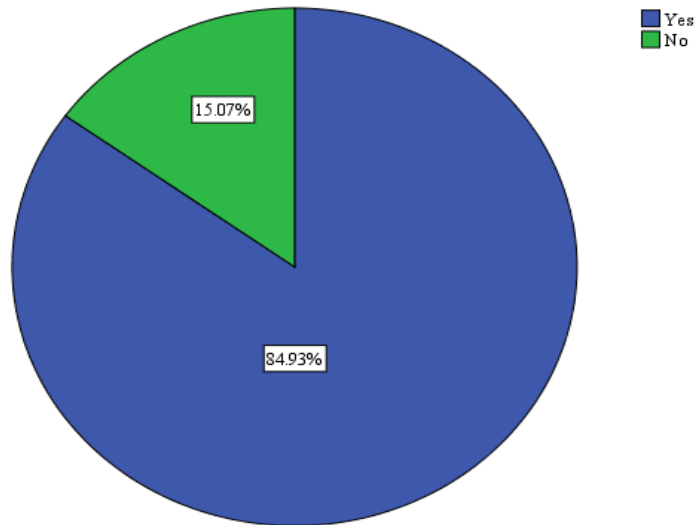
In this third subsection, entitled "Qualities of learning and knowledge acquisition", we explored the singularities that members recognized in an OIC like Cambridge in Colour, when compared to other online or mixed format learning possibilities. For doing so, we approached our data collection guided by two of our research questions. The first question considered was: Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending on whether they participate in virtual or blended environments?

In the case of Cambridge in Colour, 84.93% of the interviewees referred that learning through an online community was different in comparison to other offline and online possibilities (see Figure 55). In addition, as Figure 56 illustrates, 82.19% of the respondents identified OLCs as a complementary source to obtain information and/or increase their knowledge.

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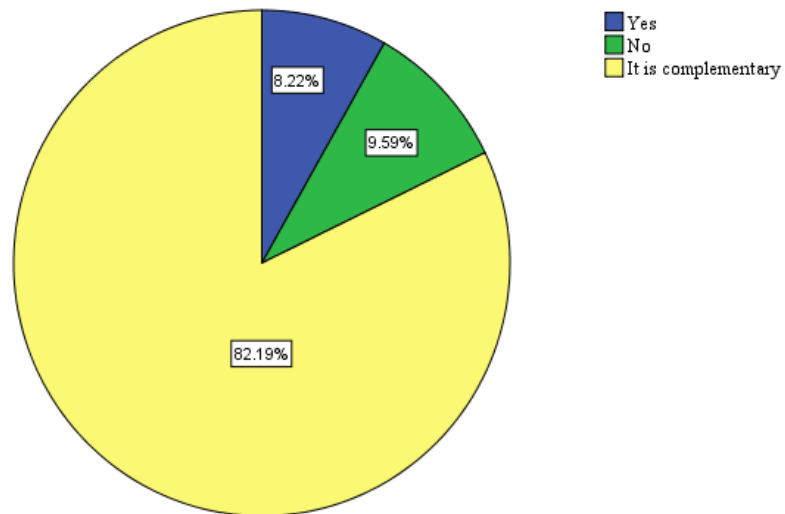
<sup>68</sup> A summary of the books contest was included in the “Origins” section of Cambridge in Colour.

**Do you consider that learning through an online community is different in comparison to other ways of accessing information and learning about the subject of your interest?**



**Figure 55: Perception of online community as source of information and learning (Cambridge in Colour).**

**Do you think that your learning process through the online community is better off in comparison to other options that you could also use to obtain information/knowledge about the topic of your interest?**



**Figure 56: Perception of quality of learning through an online community (Cambridge in Colour).**

When asked specifically about the influence that their engagement in Cambridge in Colour had on their learning experiences, 35.6% of the survey respondents agreed that their participation in the OIC made them modify their approach towards any problems faced when it came to Photography matters and 31.5% referred that their participation in Cambridge in Colour led them to modify their learning objectives in that respect. 34.2% also mentioned that their participation in Cambridge in Colour made them learn in a different way than they had expected, while a 32.9% agreed that their active engagement in the OIC helped them to discover new means for learning about Photography (see Table 21).

<b>Indicate your degree of agreement with the following statements:</b>	
	<b>Rate (Mode)</b>
a) My participation in the online community has made me modify my approach towards problems.	3 (37.0%), 4 (35.6%)
b) My participation in the online community has made me modify my learning objectives.	3 (32.9%), 4 (31.5%)
c) My participation in the online community has made me learn in a different way than I expected.	3 (35.6%), 4 (34.2%)
d) My participation in the online community has made me reflect on the existence of various ways of learning.	3 (32.9%), 4 (32.9%)

**Table 21: Participation and learning (Cambridge in Colour).<sup>69</sup>**

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree
- 1 = Don't know
- 9 = Not answered

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<sup>69</sup> We report the Mode values of the rating with percentages, because the two highest values obtained (3=Neither agree nor disagree and 4= Agree) in all four statements were very close.

Our online survey revealed that a majority of members in Cambridge in Colour perceived OLCs as a distinct and counterbalancing alternative for learning, in comparison to other virtual and blended options. When questioned about their participation in the OIC and its influence on their own learning, around a third of the respondents agreed that their engagement in the community did have an impact on their learning experiences and perceptions. However, another third of the survey respondents also reported their perspective on the same matter as neutral. Therefore, we considered necessary to explore the reasons behind these impressions. In this regard, it is important to emphasize that, from our observations, we noticed that such wherefores depend on the nature of each community and its membership.

In order to illustrate these findings, we considered relevant to examine in what ways was the learning and knowledge acquisition different and complementary in an OLC like Cambridge in Colour. We made a further exploration of this question by contrasting the survey results with our qualitative analysis. This allowed us to detect two specific characteristics that differentiated the OIC, according to its' users' perceptions: (a) Referenced content, and (b) High quality sources.

#### ***a) Referenced content***

The fact that the content available in Cambridge in Colour is referenced in various sources was a first quality that distinguished the learning experiences and the knowledge acquisition made through the OIC as trustworthy. According to several interviewed members, this was a factor that differentiated learning about Photography through the community when compared to other virtual or blended opportunities:

“I currently post at a number of other sites as well ([www.photochimps.com](http://www.photochimps.com) -which is my hosting site, [www.nikoncafe.com](http://www.nikoncafe.com), [www.nikongear.org](http://www.nikongear.org), [www.fotozones.com](http://www.fotozones.com), [www.rangefinderforum.com](http://www.rangefinderforum.com) , and one or two others that I rarely visit. I learned about Cambridge in Colour during a discussion at another site regarding the lack of participation by its members. The person was going to stop posting there but indicated that he had gone to Cambridge in Colour and was pleased with the site, and the amount of participation and feedback by its members and suggested that we might try it” (R.S. Personal communication. August 10, 2016).

“We (or the Tutorials section of the website) get the odd mention in other fora, blogs and on websites” (D. Humphries, Moderator. Personal communication. August 7, 2016).

“I have been at a camera club meeting where another member mentioned Cambridge in Colour and have seen an online course where Cambridge in Colour was mentioned as a resource. (Moreover,) other sites direct people to the Cambridge in Colour tutorials, as they are well known for being high quality.” (M. Müller, Moderator. Personal communication. December 21, 2016).

### ***b) High quality content***

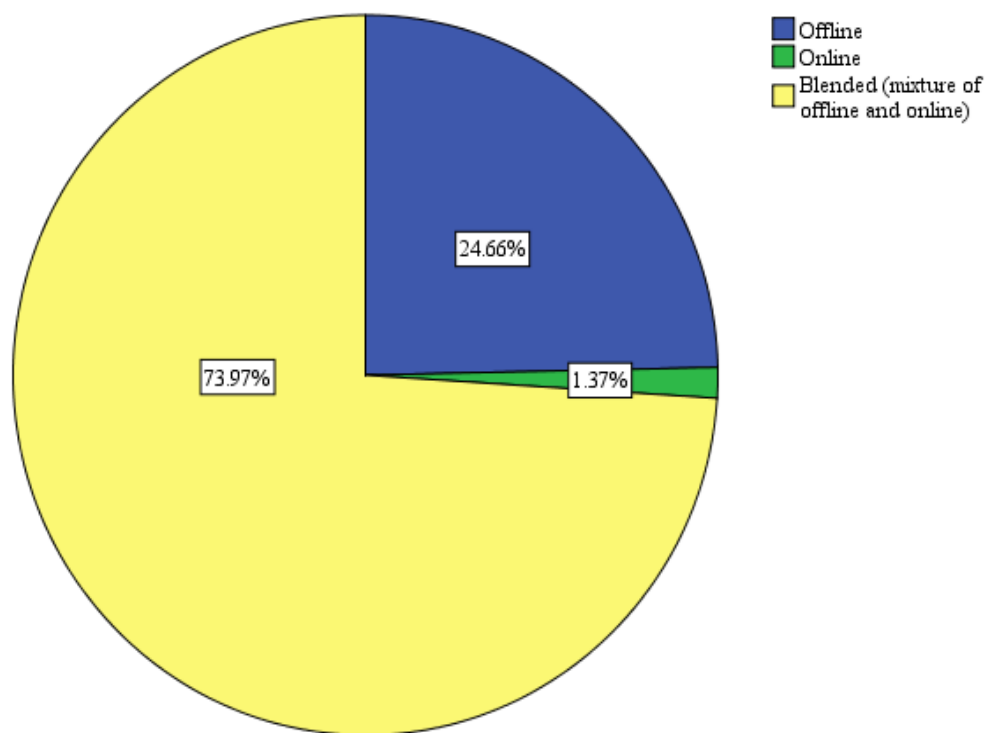
The high-quality content from Cambridge in Colour was the second feature that defined the learning experiences and the knowledge acquisition through the OIC. Through our netnography and as we have exposed in previous sections, we detected that the community provided members with an excellent, well curated, and free repository of tutorials and photographic tools, a specialized forum and a professional community management that kept the atmosphere friendly and the contributions on point. All these factors combined guaranteed members the access to online learning resources of excellency through the community. In this regard, it is not surprising that the high-quality contents of Cambridge in Colour are referenced in various sites and courses and that members distinguish the value of its resources:

“Cambridge in Colour has many elements found in other educational forums, especially in terms of documents explaining technology or techniques. I do like the fact that the material is shared freely (as opposed to many websites that come with a cost) and with authority, but also that it comes from a global community” (T.H. Personal communication. August 10, 2016).

Our first research question considered for this section, Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending on whether they participate in virtual or blended environments? was important for exploring the distinctive nature of an OIC like Cambridge in Colour. Nevertheless, we pondered necessary to also reflect on the influence that participating in an OLC had in the learning experience, both when considering the actual participation in the community and also in comparison to other environments. Thus, for this section we also analyzed our data collection based on a second research question: Do members feel that their learning activities are affected in any way depending on if they participate in a purely virtual or blended environment?

As shown in Figure 57, 73.97% of the respondents in Cambridge in Colour considered that, in general, they learned the best in blended environments. A 24.66% of the interviewed members said that they still learn better offline and only 1.37% replied that online was their preferred way for learning.

**In your opinion and according to your different learning experiences throughout your life, in which environment do you think you have learned the best?**

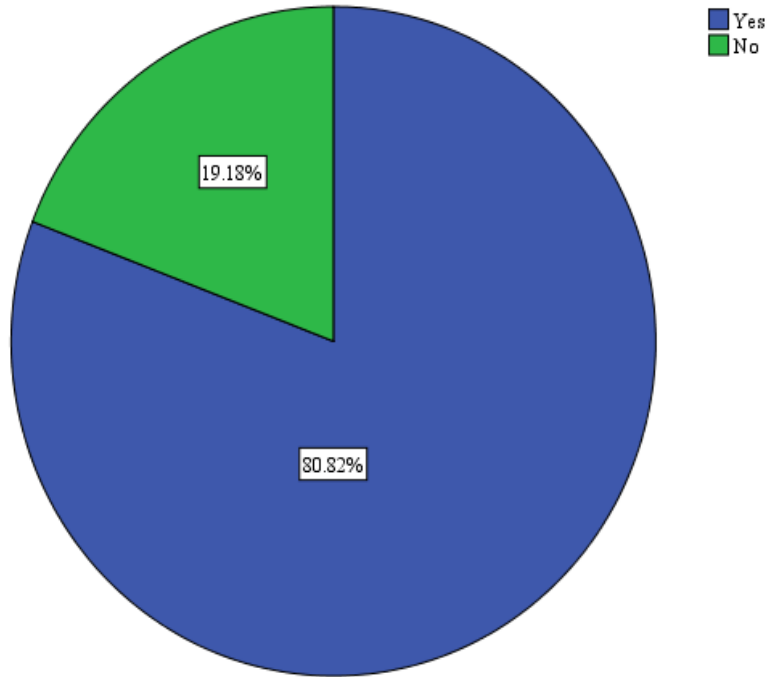


**Figure 57: Best learning environment (Cambridge in Colour).**

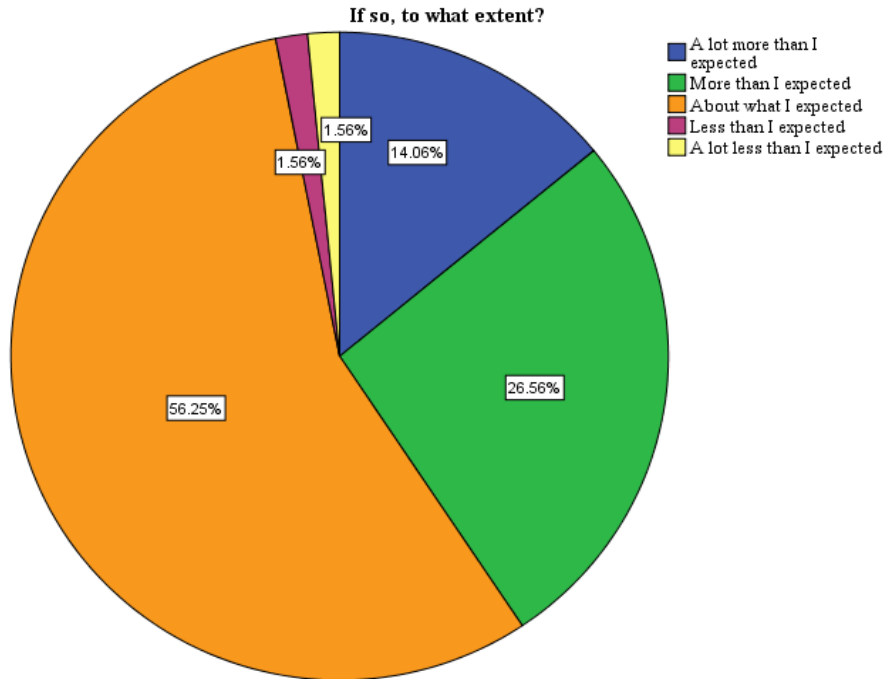
According to the opinion of the surveyed members, Cambridge in Colour was perceived as a very useful OLC. As shown in Figure 58, 80.82% of the respondents considered that the knowledge they have obtained through it has been applicable for their daily activities and needs. Moreover, and when looking at Figure 59, it can be seen that the expectations regarding the information access and the learning possibilities about Photography through the OIC were met, as 56.25% of the respondents referred that the knowledge applicability was about what they expected. Yet, a 14.06% also mentioned that the knowledge obtained from Cambridge in Colour was a lot more applicable than they had expected, while 26.56% referred that it was more applicable than they had expected. These findings contrast with the results of the initial perception about the influence that the participation in the community had on the learning experiences of the members (see Table 21), where a third of the respondents were neutral when questioned if they considered that their engagement in Cambridge in Colour had an effect on their learning. It appears that rather than neutral, these respondents tend to incline themselves more to agree that their engagement in the community did influence their learning process and knowledge acquisition in the topic of Photography.



**Do you consider that the knowledge obtained through the online community is applicable to your daily activities/needs?**



**Figure 58: Community's knowledge applicability (Cambridge in Colour).**



**Figure 59: Extent of community's knowledge applicability (Cambridge in Colour).**

Why was the knowledge obtained from Cambridge in Colour rated so positively in terms of applicability? Despite the preference of the majority of the interviewed members for blended learning environments, this OIC was appraised as outstanding when compared to other online and presence possibilities. This obeyed the fact that the knowledge obtained through Cambridge in Colour is perceived as high quality, convenient, interactive, and honest, making it an adequate counterpart for other learning sources:

“It complements other forms of learning. I have taken formal college level courses, online courses, take photography workshops, watched videos (YouTube, Kelby One, Lynda.com), etc. Where Cambridge in Colour fits in is, it is a place to get "expert" advice that is not possible in on-line courses, videos, or books as there is a two-way dialogue between the person(s) asking the question(s) and the people responding. While this is probably not as good as a formal classroom or workshop, access to this type of learning is easy and has no cost” (M. Müller, Moderator. Personal communication. December 21, 2016).

“Compared to a book, there’s a question and answer to the dialogue, there’s feedback where you can effectively have a conversation. Compared to an in-person workshop, you can have a dialogue there but it’s much harder to share your photos and it’s much harder to get feedback from a lot of people. And it’s one thing to get feedback from someone in person and they’re going to be kind of more guarded, but if you do it online people can be very blunt; sometimes they can be kind of harsh in their feedback, but sometimes more honest.(...) I think it’s also just scale, I mean just the sheer number of people seeing your photos, just the diversity of backgrounds allows that community to kind of build off each other a lot more; someone always has an answer to something. Whereas more traditionally it’s limited by the number of people or within a book, if it’s not in the book then there’s nothing you can do, whereas you can (always) just ask someone in the community” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

#### **IV. Significance for lifelong learning**

In our fourth subsection, denominated "Significance for lifelong learning" we investigated the value that Cambridge in Colour had for its members in terms of lifelong learning. For doing so, we rested upon our research question: Is the knowledge acquired through the engagement in a public OLC significant for the individual development of the members, in different stages and settings? The data analysis conducted in our qualitative data collection, provided us with various elements to answer this question, which were summarized in five main themes: (a) Usefulness of advice based on feedback, (b) Articles cited in scholarly work, (c) Synergy of content and community, (d) Supportive community of photographers, and (e) Window for creative expressions. In the following lines, we discuss each theme with the intention to reveal aspects from the participation in the OIC that were detected as relevant for the members in terms of lifelong learning.

### ***a) Usefulness of advice based on feedback***

Photography as an art can be approached from a professional or an amateur perspective. Either way, while basic technical knowledge is required, the photographer needs to keep on learning throughout the years to improve his/her technique, operate modern equipment and software and develop his/her own style. In this regard, a passionate photographer will embrace lifelong learning in his/her commitment to learn more about and express him/herself through Photography.

While self-learning is a common way to deepen the own knowledge about Photography, in particular if it is a hobby, interviewees in Cambridge in Colour emphasized the usefulness of the community's collaborative learning approach in terms of the practical information and the honest assessments obtained from the members. Our observations in this respect were endorsed by one of the community managers:

“People do thank others for answers to their posts (within the thread) or send PM with notes of thanks. I have certainly received positive feedback through both these channels” (M. Müller, Moderator. Personal communication. December 21, 2016).

The heterogeneous opinions, experiences, advice, and resources shared by peers in a respectful way result not only useful in terms of information and knowledge acquisition, but also strengthen the sense of belonging and the will to support and learn from each other:

“By incorporating the critique and discussion points into my shooting and post processing techniques (and also) by posting images and opinions I am forced to consider aspects of my own work” (T.R Personal communication. August 11, 2016).

“We share knowledge and wisdom with encouragement” (J.B.W. Personal communication. August 10, 2016).

### ***b) Articles cited in scholarly work***

Throughout our thematic analysis, a recurrent subject was the trustworthiness and high quality of the tutorials as learning sources. According to various members, the tutorials provide an excellent technical basis for anyone interested in Photography. Moreover, several of the interviewees, as well as the community managers, ratified that the tutorials were what attracted them to visit Cambridge in Colour regularly, as they were referenced through search engines, in other websites, online communities and in virtual and in-person courses. Undoubtedly, the tutorials and their software tools available for free as part of the learning repository of Cambridge in Colour are an important hallmark of the OIC.

As mentioned in previous sections, all tutorials have been written based on carefully researched information about Photography techniques in order to present the basic concepts and procedures in a clear and timeless manner, so that only occasional updates are needed. Moreover, the tutorials reflect the contribution of the community in perfecting their knowledge value, as each article has been opened up to feedback and review to the membership before its final inclusion in the tutorial repository and adapted as part of a series of three books. The fact that several articles from Cambridge in Colour are cited in scholarly work gives undeniable proof of their quality as reference and consultation source in matters of Photography. Certainly, this is one of the major contributions in terms of lifelong learning that a OIC like Cambridge in Colour provides to its members:

“Many of the articles have been cited in research papers and digital work imaging. A lot of the articles are very high-ranking on Google for very important terms like depth of field or camera lens or lens filter (...)” (S. McHugh, Cambridge in Colour Founder. Personal communication. June 17, 2016).

### *c) Synergy of content and community*

During our netnographic monitoring in Cambridge in Colour, we observed that in addition to the tutorial and tools collection, the contributions of the members also added-up informative sources through their posts and feedback on a great variety of topics that resulted useful for learning about different aspects of Photography. In this regard the Forum of Cambridge in Colour functions as a supplementary database that keeps growing overtime, either through new threads or by adding new comments. Moreover, these threads can be (and in fact are), searched, labelled, categorized, read and re-read or re-opened, despite the time of their publication. This dyad of content and community keeps the membership engaged in their purpose of understanding and knowing more about Photography, each person at their own rhythm. In consequence the synergy of content and community offers a continuous possibility for learning on the subject for various members derived from their active participation in Cambridge in Colour:

“My participation in Cambridge in Colour has most definitely helped my photography learning process. I find the greatest help is from the critiques of my photos, and specifically the many different viewpoints and opinions regarding my work. From a technical standpoint, Cambridge in Colour has helped learn about the many aspects of Photography via tutorials and feedback from members” (E.A. Personal communication. August 18, 2016).

“The main positive difference relative to traditional learning is the access to the very large community for feedback and information. I participate in three groups in Flickr, but these provide a negligible degree of feedback compared to Cambridge in Colour. I have taken 2 MOOCs and 1 high-level paid online course in Photography. One of the MOOCs was poor; the other (from MoMA) was very good but dealt with Photography as art and did

not contribute much to my learning. The paid one was run by the OU/RPS and was excellent, but of course did not have the continuing engagement that Cambridge in Colour provides. One of the negatives about Cambridge in Colour and similar sources is that they are virtual and do not provide project work/assignments - this was probably the main positive of the OU/RPS course” (W.T. Personal communication. August 10, 2016).

#### *d) Supportive community of photographers*

The enforcement of clear regulations and the committed community management have been two elements that have been decisive to keep the discussions constructive and making sure that people are not afraid to ask questions despite of receiving critiques or having opposite views. This has impacted in the sense of belonging and the trust developed overtime in Cambridge in Colour, making that despite there is an international flux of members leaving every now and then, new members joining regularly, as well as at times active or inactive members, the atmosphere remains inclusive, friendly and with the will to share information and assist each other to improve their skills and knowledge. Regardless of the interaction being completely online, some interviewees reported meeting occasionally in person with other members they had met through the community, either because they lived near their place of residence or their travel destination. This facet of Cambridge in Colour identity as a supportive community of photographers fuels the motivation of the members in their lifelong journey through learning about Photography, as these three testimonials reveal:

“At the simplest level the forum has such a diverse membership that it tends to surface questions about every aspect of Photography rather than focusing solely in specific niche areas of the discipline. Because the forum is 'safe' members are happy to admit their lack of experience or indulge in 'speculation' about what interests them, knowing they will get responses that respect their interest. In principle, Cambridge in Colour embraces the idea that there is no such thing as a stupid question, and there is no such person as a stupid person. We are all on a journey and at different stages of development. Oh yes, and one final point, there are a number of members with learning difficulties who use the forum. This is positive, but what characterizes Cambridge in Colour is that it is not necessary to actually 'highlight' a learning difficulty to engage with the members” (J.E. Personal communication. September 20, 2016).

“Cambridge in Colour has excellent tutorials that help in disseminating information on the basics. Again, I would state the strength of Cambridge in Colour is its members and their willingness to be open and help out anyone of any level in Photography. This help is unbiased and allows for the reader to make his own opinions and decisions without fear of retribution” (E.A. Personal communication. August 18, 2016).

“Cambridge in Colour is a website, so is accessible to anyone who has the means to access it, thus it is no longer limited to a physical space. Because of its open and global

community, it engages with extremely skilled and educated contributors who are happy to share their wealth of knowledge via discussions or articles that are open to all. As mentioned, the demand for mutual respect while fostering constructive comment and criticism encourages a collegial approach to sharing and improving our levels of photography. The interface is easy to operate and navigate, and one can go back to a library of such material. The ability to contact other members for face-to-face engagement means that I have made local connections that have proved most valuable” (T.H. Personal communication. August 10, 2016).

#### *d) Window for creative expressions*

While the main objective of Cambridge in Colour is to explicitly be a learning community for photographers, it also serves as a window for creative expressions. During the data collection period, we observed that members joined and participated actively in the competitions, be it by including a shot for the monthly and thematic contests or by voting for their favourite pictures. Likewise, our analysis revealed that members were open to share their shots looking for other members to review them and provide them with feedback, but also just for the pure joy of sharing their creations. In the same manner, members enjoyed contemplating the artistic collection composed by the thousands of beautiful pictures uploaded by the membership of the OIC for over a decade:

“I value the explicit descriptions of other people’s actual experience (in Photography). I am not interested in Photography as an employment option. I also have an interest in exploring how I use imaging to express myself and look for how others use the medium to express themselves. As such I am not interested in a codified or structured approach since for me at least this 'constrains' my exploration. Since I trained and worked as a scientist, I wish with my imaging to step away from any type of scientific method when it comes to Photography” (J.E. Personal communication. September 20, 2016).

As a closing note for this chapter, we included a figure that outlines the different elements that fostered learning in Cambridge in Colour, which consisted of the questions about information, learning and knowledge; the ways that the OLC increased knowledge; and the qualities of learning and knowledge acquisition. Likewise, the diagram portrays how these elements related to the perceived lifelong learning significance that Cambridge in Colour, in its role of OLC-OIC, had for its' members.

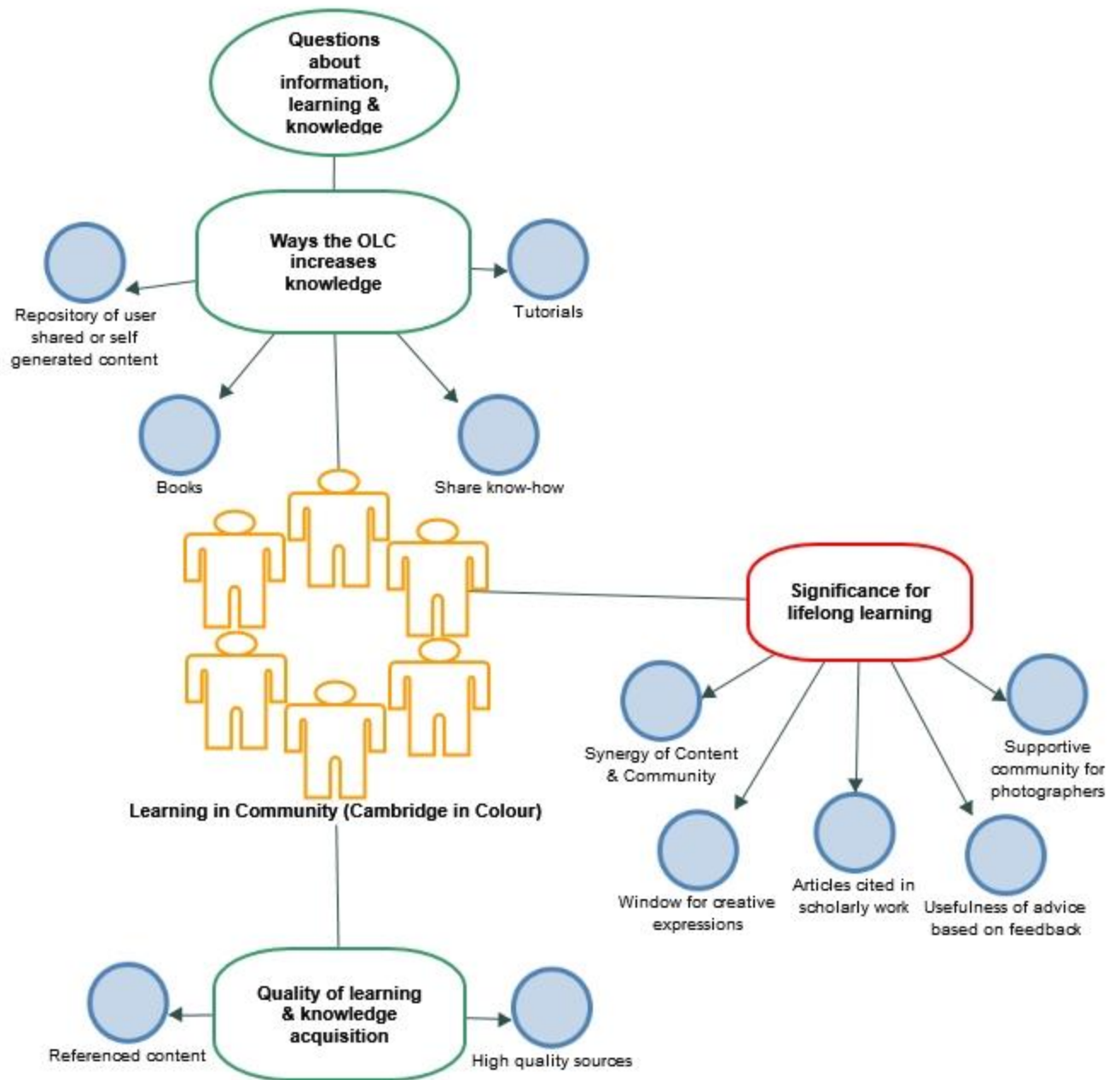


Figure 60: Conceptual map of the value of an Online Interest Community for Lifelong Learning, according to its members - Cambridge in Colour.

## Chapter 6. Case Study 2: Momzilla

### 6.1 Momzilla: A Blended Interest Community

*“Knowing is not enough, we must apply. Willing is not enough, we must do.” -Bruce Lee*

Blended interest communities (BICs) are spaces where people with the need to learn and/or obtain knowledge of a subject of particular significance for their everyday lives, can find answers and gather with other people that share the passion for the topic. Moreover, what distinguishes this type of communities from Online Interest Communities (OICs) is the fact that they exist in a virtual environment but also in a physical context (Carlén, 2002). A community that gathers regularly face-to-face can become a BIC using ICTs to be able to also meet online. The same is true when members from an OIC decide to join not only virtually, but also offline, hence evolving into a BIC. However, an essential characteristic that distinguishes both OICs and BICs, from other type of virtual or blended communities is their purpose to foster learning about their core topic. This attribute is what configures them as learning communities, independently of their online or blended modalities.

Following the logic proposed by Carlén and Jobring (Carlén et al., 2004) in the OLC constituents' conceptualization and framework here as well, we selected Momzilla as an emblematic case study because the actors, activities and tools found through the observation of the community matched the definition of BIC that we are using for the purposes of our research. In this regard, Momzilla is a BIC because members participate in it with the intention to find support and answers to motherhood questions, while interacting with each other online through a social network platform and in person through events, informal gatherings, and individual economical transactions.<sup>70</sup>

The results reported in this section reflect the quantitative and qualitative analysis of the data collection obtained from Momzilla during a three-month observation period. Likewise, Cambridge in Colour, the data collection of Momzilla also included a netnography performed in the community's online environment, as well as an online survey and online interviews conducted with the founder, the community manager, and several members from the BIC. In the following table, we provide a summary of the data collection strategy we implemented for Momzilla:

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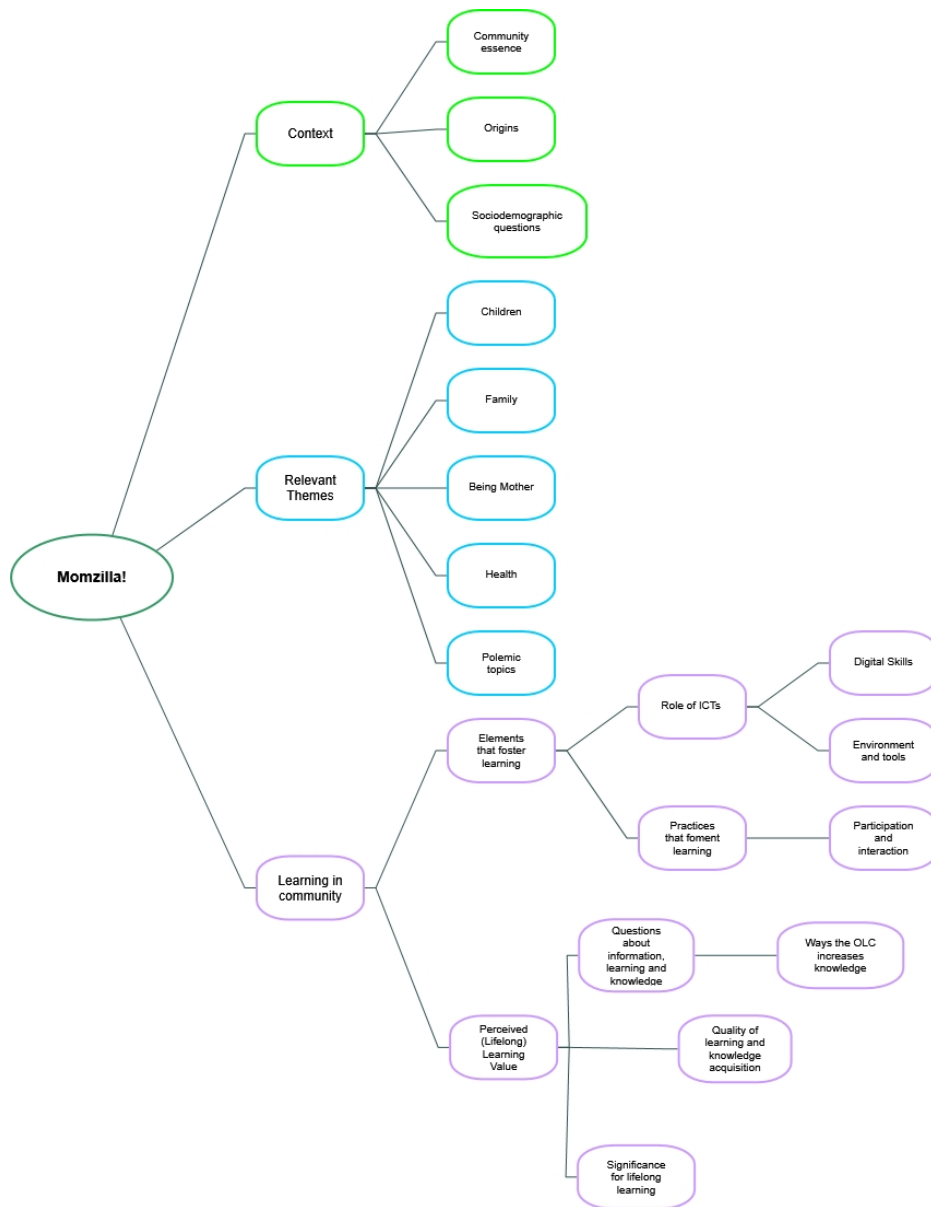
<sup>70</sup> A more thoroughly justification of the choice of this community can be found on chapter 3. In the current chapter, we concentrate on the discussion of the results from the analysis of the data collection.



<b>Momzilla</b>			
<i>Method</i>	<i>Strategy</i>	<i>Data collection period</i>	<i>Data Collected</i>
Netnography	Three months monitoring of the activity in the newsfeed. Information reported in digital field notes.	April - July 2016	600 threads from newsfeed of the community
Online Survey	Two stage strategy:  1) Invitation thread to participate in the survey posted by the community manager. Daily reminders or updates in the comments section in order for the thread to appear everyday in the newsfeed.  2) Reminder thread posted by the community manager. Tagging of other users made by active members of the community to invite them to participate. Permanent communication with members concerning questions about the study.	April - May 2016	354 questionnaires accessed; 227 questionnaires completely answered
Online Interviews	Asynchronous, via e-mail	April 2016	24 Interviews

**Table 22: Data collection strategy details – Momzilla.**

In a similar fashion to what we did with Cambridge in Colour, we used our CSN to develop the Context, Relevant Themes for the Community and Learning in Community categories, with the intention to depict Momzilla’s nature and explain in detail its’ particular learning dynamics (see Figure 61).



**Figure 61: Case Study Narrative categories – Momzilla.**

Following this line of thought, we will present and discuss the findings in terms of the features and conditions that were relevant for fostering the learning dynamics in our second OLC case study, the BIC Momzilla. We will do so by developing in detail the three categories of our CSN structure. In this regard, each category will be explained through a section of its own, namely: Contextual Information, Relevant Themes for the Community and Learning in a Blended Community.

### **6.1.1 Contextual Information**

In this section, entitled “Contextual Information”, we explored our research question: How do public OLCs operate? For doing so, we developed the first category of our CSN structure, “Context”. This category describes the nature of Momzilla, our case study selected to discuss the typical characteristics and dynamics of an OLC-BIC. It considers the results obtained from the qualitative and quantitative analysis conducted in Momzilla, which were organized around three main themes, namely: “Origins”, Sociodemographic questions” and “Community’s Essence”. This triad provides the reader with a contextual background of the community. In the next lines, we present each of the three topics.

#### **6.1.1.1 Origins**

Momzilla was created in March 2013 by Heike Söns. The online community is hosted in the Groups platform from the social network Facebook. Momzilla started from the need to obtain advice from mothers from similar age and conditions to those of the founder, as she thought that the recommendations on how to take care of her baby or motherhood in general that she obtained from her relatives was not applicable to the current context.

Since its creation, Momzilla has been a per registration community. While Momzilla can be found through Facebook’s public search toolbar as well as in other social networks and its own website, the access to the BICs’ community is configured as private through the settings provided by the Groups platform from Facebook. This means that the access to the community in terms of content and interaction depends on the community manager’s approval and the community policies. In the case of Momzilla, an invitation to join must be extended by a member. After this, the user’s profile is controlled by the community managers through filters and security requisites before being accepted.

While Momzilla started as a small group among friends and friends of friends,<sup>71</sup> over the course of the months, the number and the interaction among members transformed into a series of debates about various topics from the Mexican mothers’ daily life, but also about the societal factors that influence their motherhood. Members spoke, for example, about tips on how to feed or shower a newborn, but also about the dilemma of how to maintain a balance between their maternal role, their job, their family, and their personal development. At the same time, the Internet presence of the OLC became more solid due to the work and the experience brought by the professional background of the founder and the community managers. In consequence, Momzilla turned also into a famous online source of news about motherhood and upbringing among a specific sector of mothers that used social media in Mexico, particularly in Mexico City.

As the engagement and participation incremented in quality and quantity both in the online community and through their Internet presence, Momzilla became, in words of Söns,

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<sup>71</sup> At the time of its creation, the BIC had 30 members.

“a trustworthy and diverse network of support and information about the beauty and the challenges of motherhood” (H. Söns, Momzilla founder. Personal communication, May 17, 2016)<sup>72</sup>.

Although in the beginning the community targeted women only, it opened for the male partners<sup>73</sup> of the mothers to join, virtually or face to face. This was reflected in the group’s objectives, which were included in the community’s profile description: “Momzilla is a community for mothers and fathers that care about their families. We respect all ways of upbringing and education, from birth till the children are adults and leave home. We believe in diversity, and we respect how others decide to raise their children”.

Consequently, Söns established a series of regulations with the intention to moderate the increasingly active interaction of the members in the virtual community and maintain a harmonic space. This “User Guide” (*Guía de Uso Momzilla*)<sup>74</sup> was, on a first instance, communicated and enforced by her and another member with community manager functions, Maru Monroy. On a second instance, the administrators made a fixed post of it in the newsfeed of the community and asked the mothers to remind newly added members to read it upon their access. Interestingly, members internalized the normative, not only following it, but also reminding members about it when discussions heated up or tagging the community managers so they could moderate and/or mediate in the conflicts.

During its years of existence, Momzilla has developed its very particular identity. An own jargon<sup>75</sup> and a well enforced netiquette were key factors for the identification among members and the

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<sup>72</sup> Own translation. Original source: una red de apoyo e información confiable y diversa acerca de la belleza y los retos de la maternidad.

<sup>73</sup> Fathers who participated actively in Momzilla organized later their own online community: “Dadzilla”. However, several of them remained as (mostly quiet) members in Momzilla as well.

<sup>74</sup> Regulations for the community focused in four topics: netiquette, norms for buying and selling, regulations for contacting members of the group and content rules.

<sup>75</sup> The jargon in Momzilla included terms developed by the administrators or the active members in the community. They were usually highlighted in the thread through a hashtag (#) and they helped to emphasize the message, to invite to join an activity (group thread) or to give a specific tone to the conversation. The regular use of this jargon became well known among the members, which contributed to strengthen the sense of belonging and identity in Momzilla. Some of the most popular jargon terms found during the monitoring period were:

- Momzilla/Momz
- Dadzillo/Dadz
- Kidzilla/o
- Momzilla Power
- Pregunta anónima (Anonymous question)
- No me linchen (do not lynch me)
- Desahogo (emotional vent)
- Viernes de Memes (Memes’ friday)
- Punto mitotero (Nossy dot)
- Momzilla recomienda Momzilla (Mom recommends Mom)
- Intenzilla (for intense, bothering members)
- Suegra from Hell (for a mother in law that bothers)

evolution of the community from a forum into a safe space where members could ask doubts, obtain information, and speak freely -be it in terms of emotions, opinions, or perspectives- about parenthood, while getting to know like minded people. Subgroups<sup>76</sup> with their own thematic were created. Several derived and in many cases remained closely related to the original community. This progression of conversations into informal learning through an automatic and almost instant questions/answers system, shared content, and lively moderated discussions through a community normative enforced both by community managers and members configured a truly qualitative leap for Momzilla. It differentiated itself from other online communities for mothers to become an online learning community, and more specifically, an online interest community (OIC).

In parallel and given the need to find information, services and products that targeted parents and children, Momzilla also became a space for entrepreneurial moms to present their related projects. Several members got inspiration from the endeavours of the others. Thereupon, many mothers created and/or developed their business ventures further, while learning from one another in community about entrepreneurship. Sons also created and shared in the online community a “Directorio”: a database of services and products which included the contact information of the moms and the description of their enterprises. Members started to buy and recommend one and other within Momzilla, but also among their families, friends, and acquaintances, fostering a local commerce. This led the OIC to organize face-to-face meetings to promote selling points for their multiple entrepreneurial members. Overtime, these informal meetings turned into the brand event

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-Post largo (long thread)

-No me ignoren (do not ignore me)

-Consulta (Enquiry)

-Loteria (bingo photo used to display the most popular posts during the month)

-Fin del comunicado (end of communication, used in very long thread or after a moment of reflection)

-Etiqueten a las administradoras (tag the moderators)

-No soy popular (I am not popular, to catch the attention of the mothers and get comments).

<sup>76</sup> The intention behind the creation of the subgroups was to focus te conversation among Momzilla members in topics not necessarily related to motherhood. Some of the subgroups derived from Momzilla are:

-Chefzilla (all around cooking recipes)

-Dadzilla (for the husbands or partners of the Momz)

-Bookzilla (literature recommendations and meetings)

-Deutschzillas (Momz living in Germany, Austria or Switzerland)

-Hotzillas (sex tips)

-Craftzilla (crafting tips)

-Designerzilla (Graphic designers – recommendations on tools, how to make work more efficient, job offers)

-Plantzilla (gardening tips)

-Teenzilla (for mothers with teenagers)

-Youngzilla (for mothers younger than 25 years old)

-Workzillas (post offering jobs or ads of job searchers)

-Moms&Beats (music recommendations)

-Adelgazilla (fitness and tips for loosing weight)

-Bridezilla (tips and service recommendations for wedding planning)

-Mamás múltiples (for mothers with twin or multiple children)

-Familias por adopción México (for adoptive families)

-Truequezillas (for exchanging baby or children’s products, used or new. Not a sales group)

-Almas del Sol (alternative therapies, esoteric topics)

of Momzilla, the “Momzilla Fest”,<sup>77</sup> which consequently made Momzilla evolve into a blended interest community (BIC).

At the time of the interview with its founder, Momzilla was not yet self-sustainable. It operated on a volunteer basis. However, it was giving its first steps towards this goal. The name Momzilla, the jargon term Momz, Momzilla Fest and the community logo were registered as trademarks. As marginal revenue from the events and the Facebook fan page were obtained, the BIC started to turn into Söns own entrepreneurial project.

### ***6.1.1.2 Sociodemographic questions***

During the data collection period, Momzilla had 8,582 registered members. According to the results obtained from the online survey conducted in the community, Momzilla’s membership was integrated mainly by young adults and adults (see Figure 62). Members between 35-49 years old constituted half of the users (52.65%), followed by members between 18 to 34 years old (46.90%). As shown in Figure 63, the active membership of the BIC was completely female. During the data collection period, however, the founder and the members reported the existence of male members in the community as well, which reflects the gender inclusion perspective of the BIC, even though men might not have been active participants online.

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<sup>77</sup> The Momzilla Fest was a weekend event for the members of the BIC and their families to celebrate their tribe and the sense of sorority in the context of motherhood. The event was organized twice a year in a different location in Mexico City. It was also open to interested public in general. A bazaar where entrepreneurial mothers could offer their products and services, meeting points with food and drinks, conferences for parents and educational/recreational activities for children were the elements that configured the concept of the Momzilla Fest.

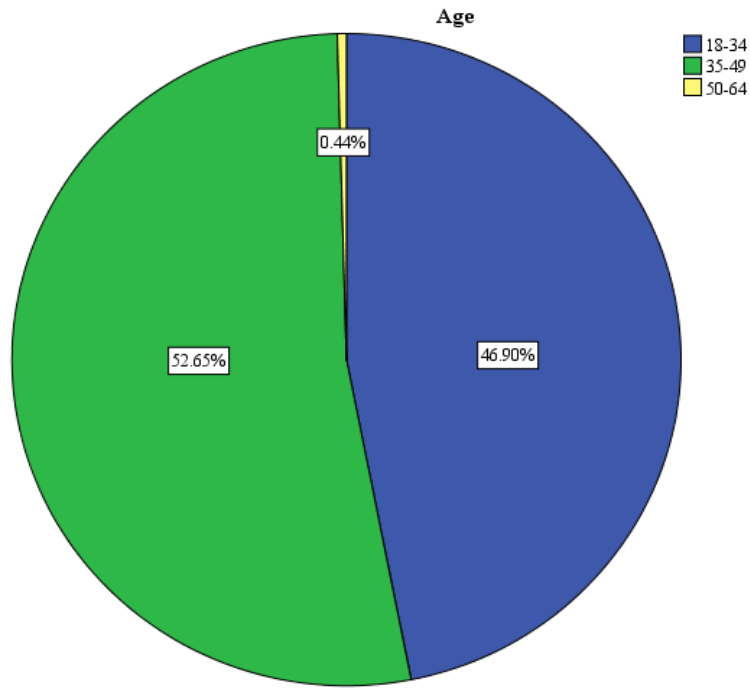


Figure 62: Members' age (Momzilla).

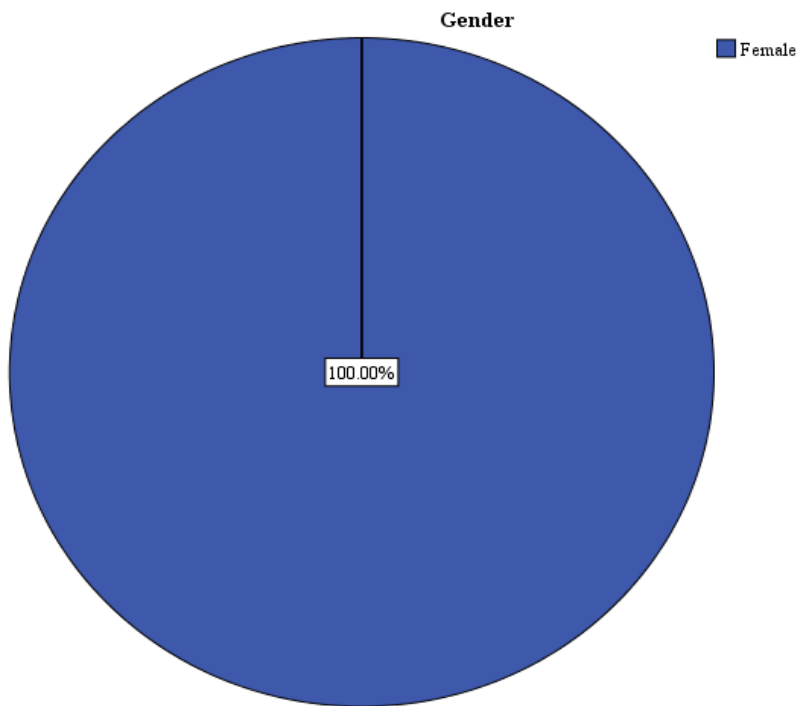
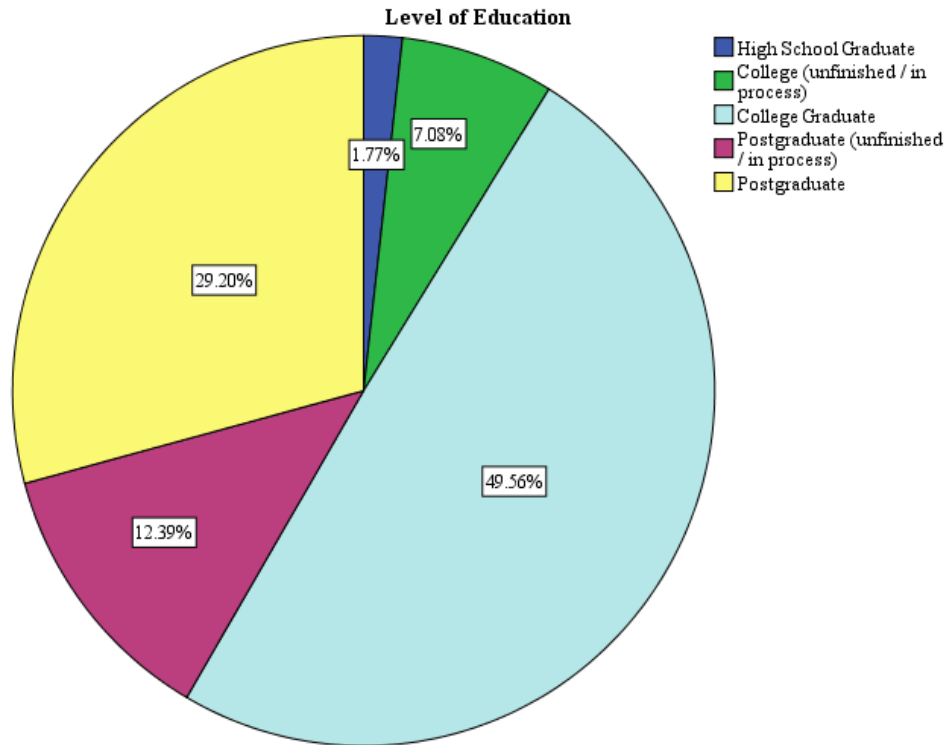


Figure 63: Active members' gender (Momzilla).

With regards to the level of education (see Figure 64), a great majority of members reported to have graduate (49.56%) and postgraduate studies (29.20%).



**Figure 64: Members' level of education (Momzilla).**

In addition to the level education, the survey also revealed aspects of the economical situation of the members (see Figure 65). Among the different occupations mentioned, an interesting result rested upon the fact that the three most reported jobs in Momzilla were the following: 32.3% of the surveyed members were homemakers, 25.66% were professionals and 15.93% were freelancers. At a first view, these numbers could suggest that women lower their professional activity and stay at home after giving birth; for later deciding to return (or not) to their professional activities through full/part-time jobs or freelancing activities.



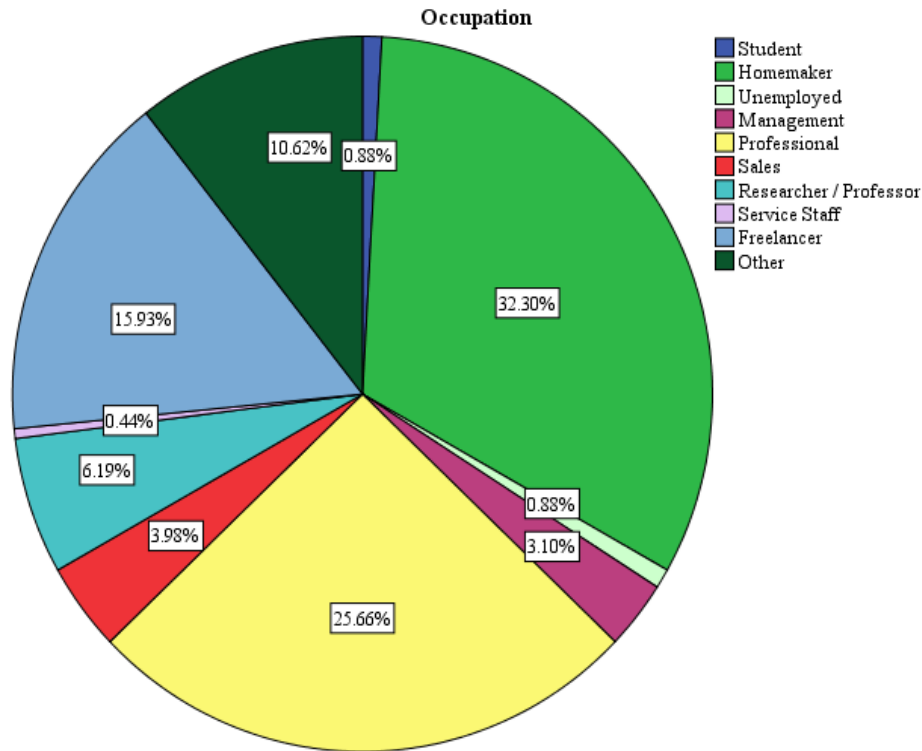


Figure 65: Members' occupation (Momzilla).

However, when interviewing the members and after analysing several threads found in the newsfeed of the BIC, we obtained several insights that revealed that the results from the statistics were not so as straight forward as they appeared. The complexities of the gender situation in Mexico in terms of employment during the motherhood context were reflected in the community through the experiences shared by the members in the online survey and in several threads from the netnography that we conducted:

“I am a psychiatrist. I have been happily working for a public health institution for seven years, but since my baby was born, I have decided to spend more time with him. (...) (That’s why) I want to work now 100% through a private praxis, which means I will have to quit my job. I would like to ask you, Momz, for the following: 1. Your support: if you need medical and pharmacological consultation, I can help you. Please recommend me as well. 2. I look for someone who can help me to design my website and my marketing campaigns (...). Thanks Momz, I know we are a great team and I hope that this project can prosper.”

“One year ago, I was in a completely different set of circumstances than today. I was in a very bad situation with my now ex husband, I had many economic problems, I was about to turn 39 and it was May. (...) During that time the community administrators made the Mothers Day dynamic where they were giving away products from sponsors or

entrepreneurial moms from the group and I won two! That moved me a lot and I decided to start with the production of body care natural products that until that moment I was making only for my daughters and me. I took it serious and from there began the story of Biolua (...) To be honest it has been a complex process, but thanks to you all, by reading your threads and from your comments I took the decision to be responsible for changing what was going on in my life (...). Here I am today, 11 days before turning 40, 6 months after my divorce and 7 months since I started to sell my products.”

“I do not know what would have been of my motherhood without Momzilla. Fortunately, one of my friends noticed how lost I was feeling and invited me to join the community. I was alone at home, in a bad neighbourhood where we ended up living because of our economic situation. I started to have postpartum depression and I was the whole day only with my baby. Then I started reading how others in Momzilla solved the challenges with their babies and that helped me (...) One Momzilla published a thread with a job offer and I applied and now I can sustain myself and my baby.”

“Momzilla has helped me to offer my services and make my source of income prosper.”

“Here I have been able to push forward and a make my business grow, because the members in the community are 100% my business target.”

### ***6.1.1.3 Community's Essence***

As a first step to explore the lifelong learning value of Momzilla and in the same way we did with Cambridge in Colour, in this section we will depict the specific elements that configure it's OLC's essence. These components are the online community's life-cycle stage, and its three constituents -actors, activities, and tools-.

Based on the contextual factors depicted in previous sections, Momzilla can be classified, in terms of its life cycle, as a young, blended learning community in an initial growth stage (cf. Iriberry & Leroy, 2009). Since its foundation and throughout its three years of existence<sup>78</sup> the discussion of specific topics became more refined from the point of view of content and regulations, aiding in the development of an own identity and strengthening the interaction among members. Members used a common vocabulary and accessed the community for various reasons. While members assumed different roles and participated in distinct ways, what they all had in common was their engagement to this OLC.

In Momzilla, members used different ICTs to search, participate, interact and/or collaborate in the BIC based on having a common interest: motherhood. Members had also a clear aim: they wanted

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<sup>78</sup> We described the BIC in terms of its lifecycle status as it was observed during the monitoring period.

to obtain and/or share information, experiences, knowledge. Likewise, any OLC, the constituents in Momzilla were its actors, its activities, and its tools (Carlén et al., 2004), which we describe in detail in the next lines. Each of these elements were interrelated and helped to configure the BIC as an arena where learning took place in various ways and through online and face-to-face modalities.

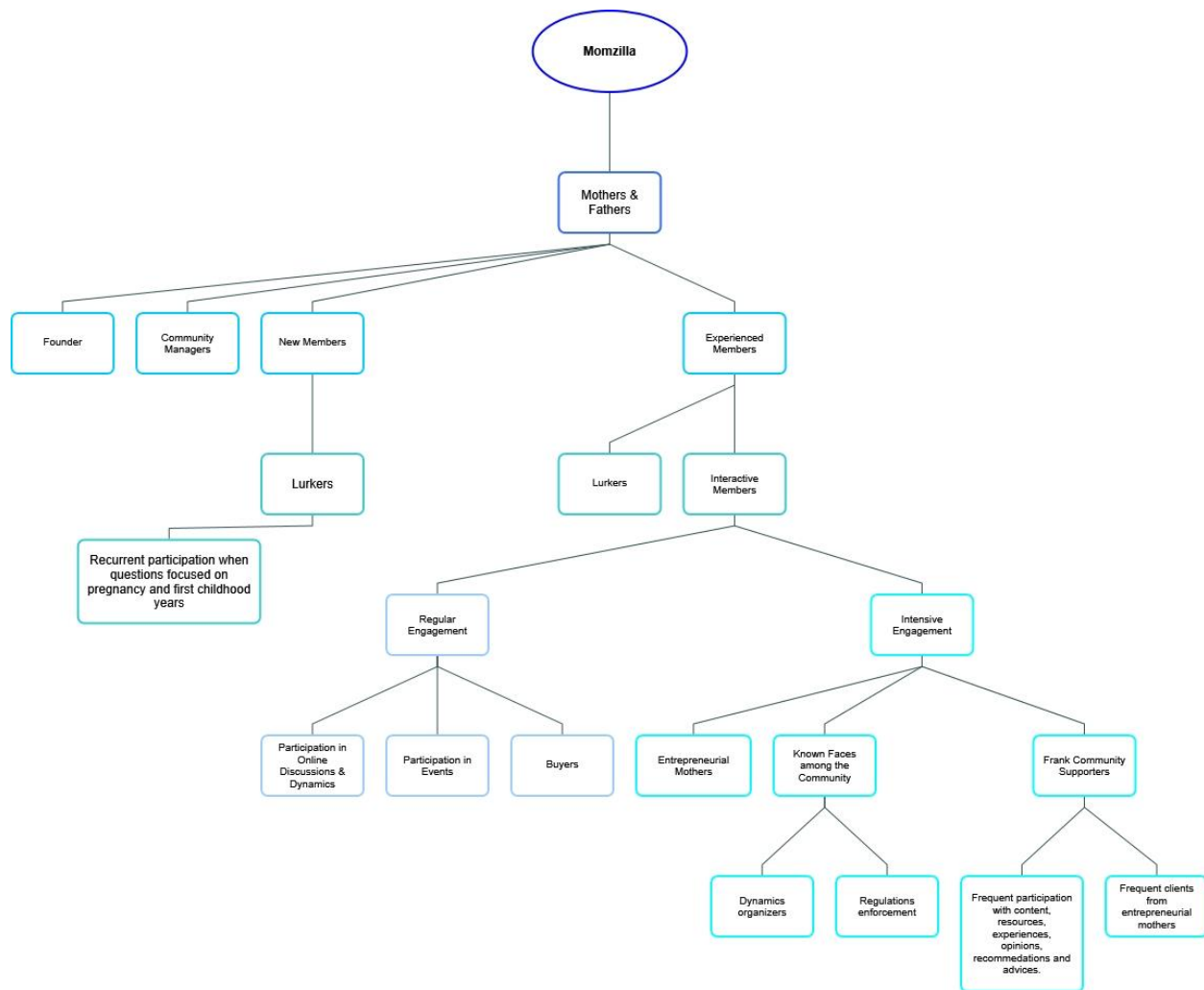
Just as we did with Cambridge in Colour, we categorized the actors in Momzilla according to their membership status: founder, community manager(s), new members, and experienced members. In Momzilla, the actors (see Figure 66) detected were mothers and fathers. Heike Söns, its founder, created and supervised the BIC concept in terms of its Internet presence and community management,<sup>79</sup> built partnerships with institutions and companies related to motherhood and coordinated the entrepreneurial networking concept for the members. Söns was supported by Maru Monroy and Olga Schiaffino -the community managers- in terms of community moderation and events' organization.

New members were included in Momzilla through invitation only and during our monitoring and data collection period we observed that they were quite active in terms of participation through questions about pregnancy or their first motherhood years. We also detected two kinds of experienced members. On the one hand, there were the lurkers. They engaged passively by reading the threads often but interacted little. However, they did invite friends to join the community, bought from the entrepreneurial mothers and assisted to events organized by Momzilla. On the other hand, there were the active experienced members. They posted or answered threads regularly; they participated, in online discussions as well as in face-to-face events; they shared life stories, personal experiences, recommendations, opinions and resources they found useful; they invited members to join their events, courses or online groups; they created and interacted in the community dynamics;<sup>80</sup> several were entrepreneurial mothers and/or bought from/recommended them openly. Moreover, we noticed that the high level of interaction of some members in terms of group dynamics and/or entrepreneurship threads made them “known” faces among the community and frank supporters of the BIC.

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<sup>79</sup> Some of the tasks performed in community management included content curation/generation for the website, newsletter and Facebook Fan page, administration of other social networks and administration of the online community.

<sup>80</sup> Some popular dynamics observed during the monitoring period were: “Lotería”(a monthly thread featuring a bingo that summarized through images the most funny threads of the month), Daily birthday-greetings thread and “Viernes de Memes” (a weekly thread for sharing all types of viral humorous images, videos or pieces of texts).



**Figure 66: Constituents - A visual representation of Momzilla’s community’s essence expressed through its actors.**

The second constituent of an OLC are the activities, understood as the members’ specific actions in terms of interaction, information, and learning. In the case of Momzilla, we detected ten topics through the netnography, and the thematic analysis conducted. These themes revealed distinctive aspects of the community’s identity and dynamics reflected in the particular activities that took place in this BIC during the data collection period (see Figure 67). In the next lines, we provide an overview of each of the uncovered themes and their specific activities:

*1) Benefits for members:* this theme included promotions obtained from brands, as well as advertisement threads for the entrepreneurial moms in the community. One example of these benefits could be found in the Mothers Day thread, which was a dynamic intended to celebrate the members during the national Mother’s Day in Mexico. Promotions from brands or from the entrepreneurial mothers within the group were posted and shared specifically for May the 10th.

2) *Community regulations*: Questions, mentions and reports related to the “Guía de Uso Momzilla”.

3) *Customs lending*: Dynamic created by a member of the group in order to show through a thread the available customs that could be lent among members. This theme included also threads with requests of members searching where to rent or buy disguises.

4) *Donations*: Requests of members or community managers to make material or monetary donations to institutions or parents with children in vulnerable situations.

5) *Idle time and anecdotes*: Dynamics created by members to spend a fun time together online such as the “Lotería” or the “Viernes de Memes”. Recommendations about television and streaming series. Funny parenthood life stories.

6) *Lynching and online fights*: Reports about behaviours towards other community members. Polemic opinions and heated discussions. Actions taken by the community managers with regards to these situations.

7) *Meeting other moms*: Face-to-face get-togethers from members. Creation of topic-specific online communities related to Momzilla. Identification through Momzilla’s logo in promotional products.

8) *Sales*: Community dynamics for selling buying online such as: threads, “Directorio” (Momzilla’s Yellow Pages), Momzilla in Kichink<sup>81</sup> and “Momzilla Fest”. The threads during the monitoring period for this theme covered recommendations, search for products or services, as well as complaints and questions about entrepreneurial matters. Other topics included house and apartment search and ads (for sale or rent), together with online and offline shopping tips.

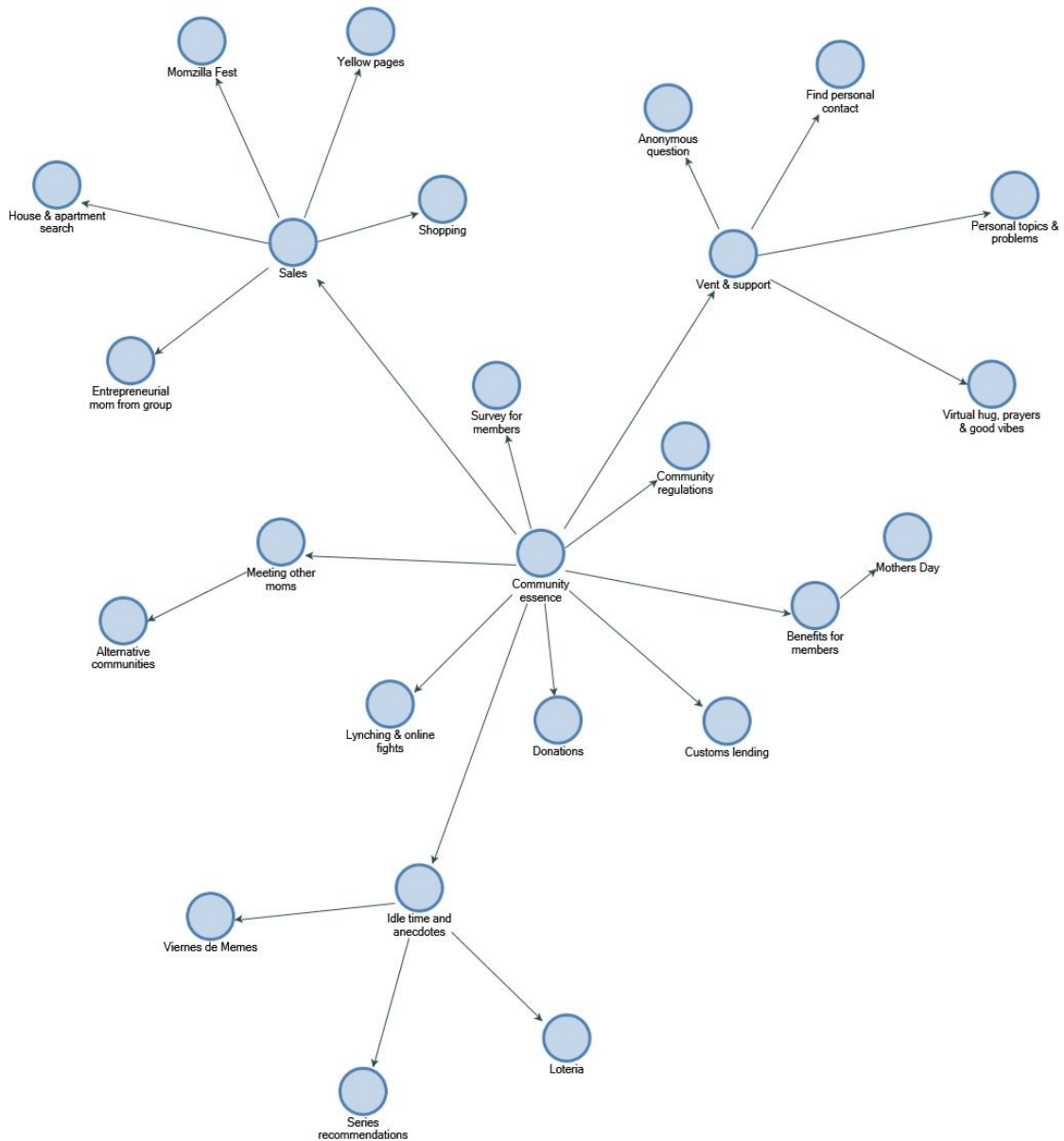
9) *Survey<sup>82</sup> for members*: Poll threads about products developed by the members to refine them or to obtain feedback from mothers that have used them. Academic survey conducted among the members of the community.

10) *Vent & support*: Threads from members seeking relief, emotional support, and advice. The topics included in this theme were anonymous questions, help to find personal references, recommendations and opinions about personal problems and requests to send virtual hugs, prayers, and good vibes.

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<sup>81</sup> E-commerce platform for entrepreneurs.

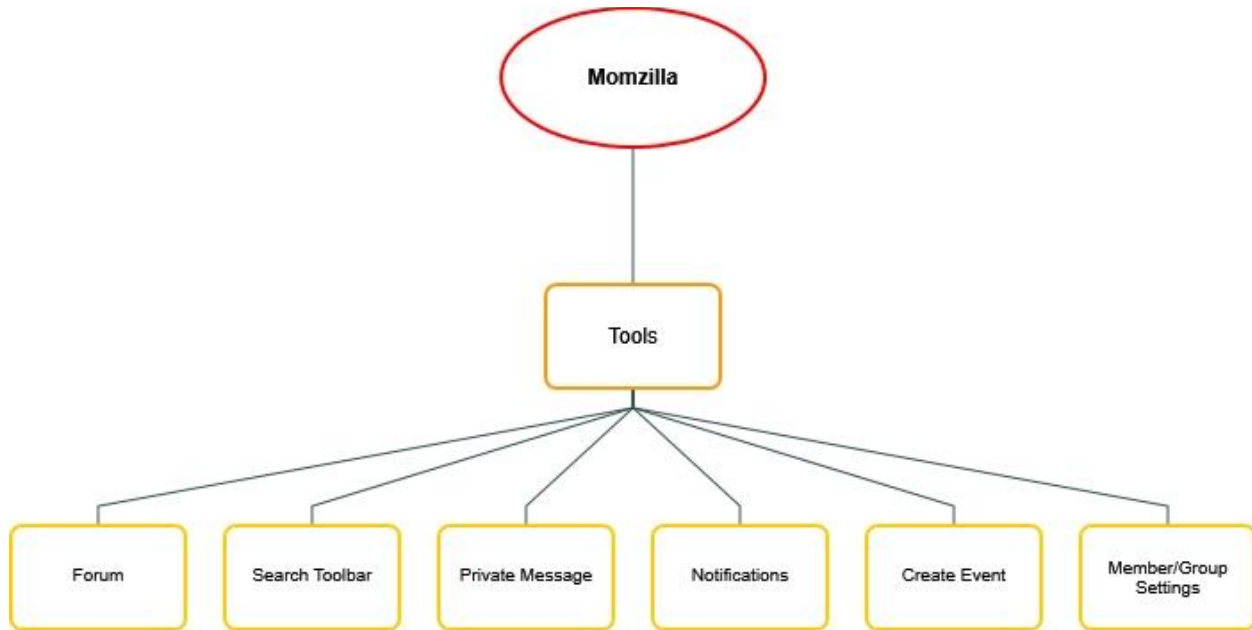
<sup>82</sup> Function offered by the Facebook Groups platform that allowed to create polls.



**Figure 67: Constituents - A visual representation of Momzilla’s community’s essence expressed through its activities.**

The third constituent of an OLC are its tools or utilities within the community that help actors to perform their activities within the community. In Momzilla, these tools (see Figure 68) are the

forum, the private message function,<sup>83</sup> the search toolbar,<sup>84</sup> the notifications<sup>85</sup> function, the create event function<sup>86</sup> and the member/group settings.<sup>87</sup>



**Figure 68: Constituents - A visual representation of Momzilla’s community’s essence expressed through its tools.**

The actors, the activities and the tools are the interrelated elements that set up the learning mechanics of OLCs. To explain how Momzilla’s constituents shape and foster lifelong learning within this young BIC, we will present the results of the qualitative and quantitative analysis conducted in it. For doing so, in the following sections we include an overview of the relevant themes for the BIC and a thorough discussion of how learning took place in this OLC during the data collection period.

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<sup>83</sup> This internal communication tool could be used to contact members and the community managers.

<sup>84</sup> Utility that helped to find and display all posts containing (a) specific term(s).

<sup>85</sup> Notifications could be customized in order to be informed when someone replied to a thread or comment, to follow all new threads posted or to deactivate the Facebook alerts from the group completely.

<sup>86</sup> Administrators and members could create and share public or private meetings with the members of the community through this function.

<sup>87</sup> Members/Group settings allowed the user to customize his/her experience within the online community (Facebook group) but also with regards to his/her activity on Facebook. In this regard, members could add users, stop following the group newsfeed, abandon the group, share a link to the group in their profile, add the group to favorites, report, hide or create a new group.

## 6.2 Relevant Themes for the Community

In this section we focus on the second category from our case study narrative, namely, the relevant themes for the community. Hence, we present the topics that were significant for the members of Momzilla during the netnography conducted in the months of April to July 2016. These main subjects emerged from the thematic analysis of the data collected from the newsfeed of the BIC during the monitoring period. Our familiarization with the daily threads posted allowed us to systematize the information by means of an open coding process. In a similar fashion to what we did with Cambridge in Colour, we reviewed our codes and detected patterns, singularities, and relationships among them, which led us to produce useful themes to categorize the codes found.

Through the analysis of the relevant themes for the community, we explored our research question: How does a public OLC (BIC) differentiate from other type of online communities? In this regard, each theme reflects the significant topics that made members engage actively in Momzilla. Therefore, through each theme we summarized the most recurrent subjects mentioned by the members of the community when they were looking for answers, discussing, sharing information and experiences, etc. The themes also reveal the type of interactions that the members had through their conversations in the threads and why the community was important for the members in terms of the information that could be found in it.

In the case of Momzilla, we defined five themes by means of the thematic analysis of the 600 threads obtained from the netnography conducted in the BIC. The five themes that were most meaningful for the community during the monitoring period were: (1) Children, (2) Being Mother, (3) Family, (5) Health and (6) Polemic Topics (see Figure 69). In the following lines we include a summary of each theme and the codes that compose it:

*1) Children:* Relevant topics concerning having and raising a child.

*1.1 Celebrations and gatherings:* advice and recommendations around gifts, party themes, restaurants, and event locations.

*1.2 Child development:* questions regarding different stages, experiences and needs from babies and children during their developmental years. Examples of topics mentioned during the monitoring period included baby carrying techniques, clothing, diapers, potty training, shower, sleep, teething and explaining death to children.

*1.3 Nursing, preschool, and school:* Common doubts about day-care and schooling, recommendations of educational institutions.

*1.4 Parent creativity:* improvised solutions for everyday challenges with children.

*1.5 Play and free time activities:* inquiries and advice about playing and spending free time with babies and children. Several discussions during the monitoring time centred around cartoons and play centers.

*1.6 Raising children:* advice, vent, and empathy regarding how to raise a child. Most mentioned topics included involved parenthood and tantrums.

*1.7 Second child:* questions regarding having or not a second child, how to introduce the new baby to the older sister or brother and recommendations about how to develop the siblings' relationship.



1.8 *Traveling & children*: inquiries and advice about making national and international trips with children. Most discussions included transportation and passport concerns.

2) *Being mother*: Topics regarding motherhood in the practice, female roles, motherhood nowadays and motherhood in Mexico.

2.1 *Apps*: questions about digital applications for children and family.

2.2 *Becoming a mother*: conversations regarding the physical and emotional changes, as well as the challenges related to the process of motherhood. Relevant threads included pregnancy, birth, breastfeeding, and the postnatal period.

2.3 *Female topics*: miscellaneous threads around being a woman. Discussions during the monitoring time centred in beauty/personal care, contraceptive methods, and menstrual cups.

2.4 *Household*: topics related to the home administration, maintenance, and organization. Most discussions were either about house helpers or household tips and appliances.

2.5 *Motherhood contexts*: individual and societal situations that influence motherhood. Relevant topics for the members that were reflected in the netnography focused on discussions about the challenges of the working mothers such as the balance between the professional and the motherhood roles, home-office, job offers, job search, labour rights, etc.

2.6 *Myths of motherhood*: everyday reality versus the social construction of what means to be a mom/how should a mom be. Vent, advice, information sharing about the invisible loads of women were the most important interactions observed around this topic during the monitoring period. Several discussions focused on the guilt felt by the members because their inability to achieve the ideal maternal model of the happy/successful mom.

3) *Family*: Topics regarding the family system, the meaning of the concept nowadays and the everyday experiences as a family.

3.1 *Different type of families*: family diversity questions and discussions.

3.2 *Events for families*: recommendations in terms of conventions, exhibitions, etc.

3.3 *Families vs. people without children*: vent and advice on how to deal with people and contexts that are not family friendly.

3.4 *Grandparents*: vent and recommendations on how to deal with grandparents' personal situations or advice regarding the relationship with them.

3.5 *Partners*: vent and advice for problems in relationships. Legal advice for divorce and child support were relevant topics.

3.6 *Pets*: recommendations, anecdotes, and questions about pets.

4) *Health*: Topics related to the individual, children and/or family health matters.

4.1 *Alternative medicine and natural remedies*: questions and discussions about homeopathy, essential oils, and organic countermeasures for common health conditions in adults and children.

4.2 *Blood donation*: requests for blood donations and information about blood banks.

4.3 *Children's Nutrition*: advice, information sharing, discussion and vent around topics related to children's food intake and nourishment. Relevant topics during the monitoring period included baby led weaning, food issues, healthy snacks, introduction to solids, maternal milk, milk formula,

healthy menus, and water consumption. Some members offered their consultancy services regarding the subject.

*4.4 Health concerns:* Discussions and questions about diverse health issues from the members, their children and/or their families. Most mentioned topics during the monitoring period included depression, first aid care, doubts about common sicknesses, weight loss after pregnancy, medical specialist references and medicaments. Members turned to the network searching for help to obtain further information about a specific condition, but also to ask where to buy or access a specific medicine or vaccine sold out in pharmacies, as well as to obtain specialist references and advice to deal with common sickness, those from their children.

*4.5 Lethal or life changing diseases:* vent, emotional support, advice, and donation/help for members of the group and their children. Relevant topics during the monitoring period included achondroplasia, cancer, down syndrome, and rare diseases.

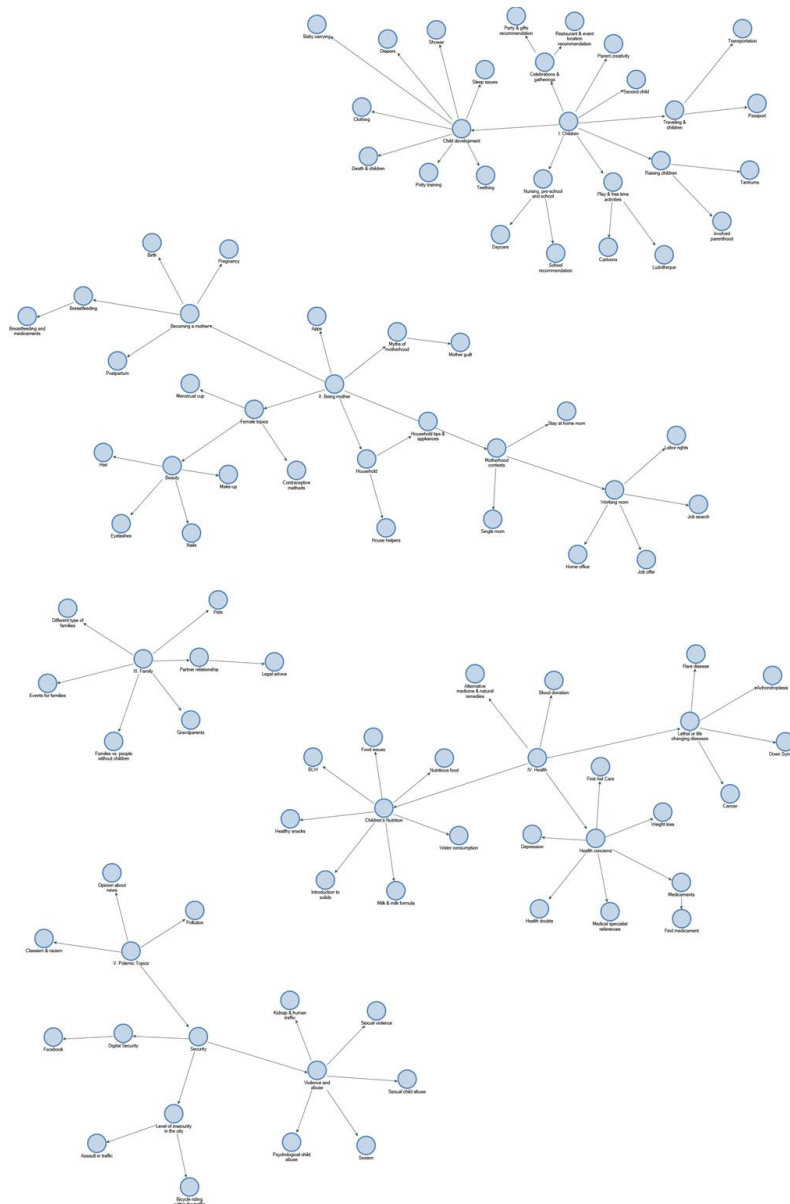
*5) Polemic topics:* Miscellaneous topics that were significant for the members during the monitoring period and that triggered discussions or caused controversy.

*5.1 Classism & racism:* vent and anecdotes about discriminatory situations lived in the everyday life in the Mexican society. Threads where members complained about house helpers or referred to them with questionable adjectives triggered discussions and online fights about the double moral of the members and the Mexican society in general.

*5.2 Opinion about news:* discussions on current news. Advice on how to share trustworthy information on social media.

*5.3 Pollution:* information inquiries, request to sign online petitions and invitation to a workshop about green house effect and contamination in Mexico City.

*5.4 Security:* threads and discussions about being/feeling safe in the public space. Relevant topics during the monitoring period included digital security, privacy on Facebook, insecure contexts, and places in different cities in the country and current violent situations in Mexico such as kidnapping, human trafficking, psychological child abuse, sexism, sexual child abuse and female sexual harassment and abuse. The case of the sexual abuse in the Matatena nursery school was thoroughly discussed during several weeks, as some members from the community were directly affected. Various Momzillas offered their support through counselling and legal services, but also invited members to inform themselves by sharing articles, organizing workshops, and taking part in demonstrations to protect their children and raise awareness. Members asked for information on this topic in particular and also shared their own experiences with their children, and in particular, about themselves when they were young.



**Figure 69: Netnography. A visual representation of the Thematic Analysis (Momzilla).**

In the same way we did with Cambridge in Colour, we decided to round off our analytical process with the word frequency query provided by the NVivo software, in order to see if there were similarities and differences in terms of the themes obtained through the thematic analysis that we made (see Figure 70). The fact that words such as support, information, experience, advice, help, and community were among the most frequent, led us to reflect about the purposes that the community might fulfill for its members in terms of learning and knowledge. Hence, in the next sections, we will explore in more in detail the ways through which members learn in Momzilla and the perceptions that they have about this learning process.



Figure 70: Momzilla - Word cloud of recurrent terms.

### 6.3 Learning in a Blended Interest Community

In this section, we elaborated the third category of our case study narrative, learning in community. Thus, we approached our main research question: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its members? In this regard, the analysis of Momzilla provided us with insights about the ways in which learning happens in an OLC of the type BIC.

For our analysis, we examined two main themes. The first one, “Elements that Foster Learning”, distinguished the role that the digital skills of the members play in terms of learning, as well as the specific practices that foment learning in the community. The second theme, “Perceived (Lifelong) Learning Value” considered different questions about information, learning and knowledge; the ways the OLC increased knowledge; as well as explicit references to the quality of learning and knowledge acquisition, together with arguments about the significance that the community had for its members in terms of lifelong learning.

We developed the analysis by taking into consideration the answers provided by the members in the online questionnaire and the online structured interviews that we conducted in Momzilla, together with the data collection from our netnography. Hence, we discussed the qualitative results obtained from the online survey as well as the thematic analysis applied to the interviews and the open questions from the survey. Where pertinent, we included extracts from interviews, open questions and/or threads obtained from the netnography, in order to exemplify the members’ points of view and the particular learning experiences that occurred or were referred to by the users during the monitoring period.

### ***6.3.1 Elements that Foster Learning***

In “Elements that Foster Learning”, the first theme of our category “Learning in Community”, we considered two main aspects. In the first aspect, “Role of digital skills”, we investigated if such skills influenced members’ engagement in the OLC. Therefore, this aspect addressed two research questions that focused on the particularities of each type of OLC analysed. In the case of Momzilla, the first question examined the specific set of digital skills that the members of this community had during the data collection period. The second question centred on the relevance that these skills had for the learning purposes of the members when using the environment and tools of the BIC.

The second aspect from our theme “Elements that Foster Learning” included a description of the activities that, according to our research, supported learning in Momzilla. We entitled this aspect “Practices that foment learning”. Through this exploration, we assessed which particular actions fostered the learning objectives of the members of the BIC.

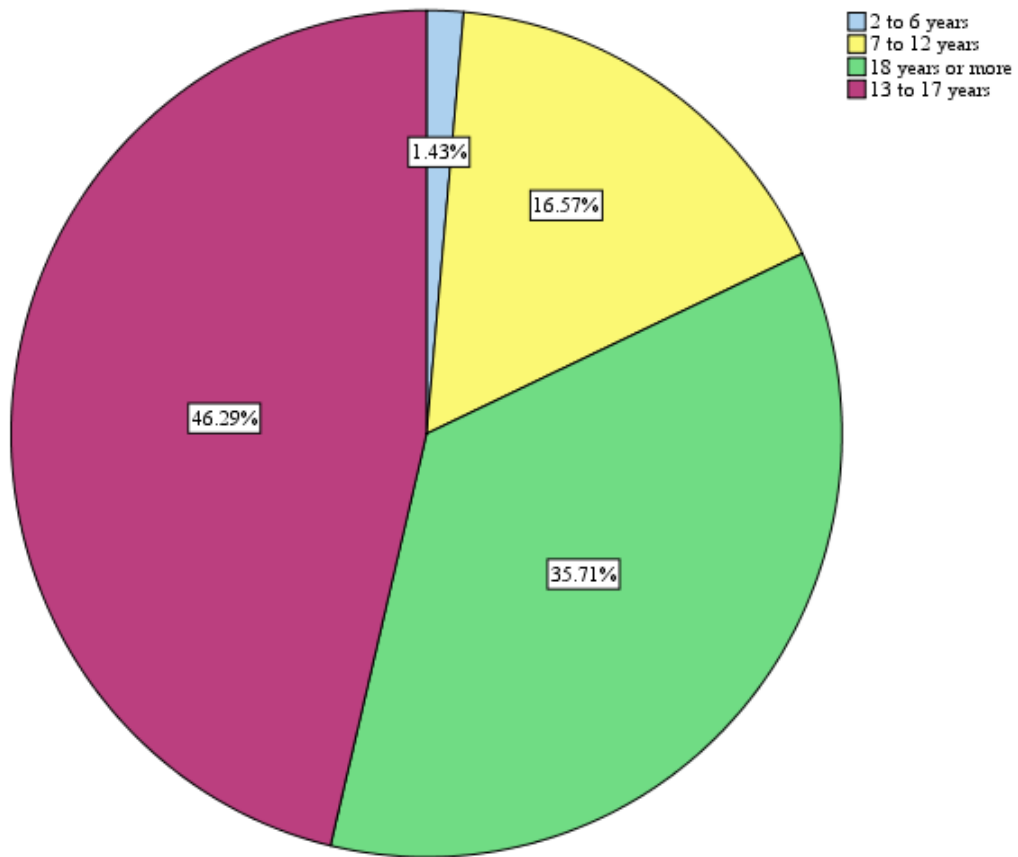
#### **I. Role of digital skills**

What role do digital skills play with regards to the members’ participation and interaction in OLCs? is an important research question to consider when determining which elements aid learning in learning communities. For approaching this question in Momzilla, our online survey and interviews included queries aimed to determine (a) the specific digital skills that members in the selected BIC had during the data collection period, as well as (b) the influence that their digital skills had in terms of learning when using the environment and the tools available in the community and if these skills experienced any change overtime, according to the opinion of the users.

##### ***a) Member’s digital skills***

In Figure 71, we can see that 82% of the interviewed Momzilla members had been using the Internet between 13 and up to 18 years or more. Moreover, and according to the data presented in Table 23, the respondents appeared to be experienced users. Most members had used Internet for gathering information, doing academic research, shopping, playing games, reading news, looking up/selling real estate, e-mail, chat, online calls, social networks, job hunting and searching/posting classifieds. Interviewees also mentioned that they used the Internet for the following tasks, in order of frequency: to access social networks, to use their e-mail, to make online calls or chat, to gather information, to shop, and to conduct academic research (see Table 24).

**How long have you been using the Internet?**



**Figure 71: Span of time using the Internet (Momzilla).**

**Have you used the Internet for any of the following activities?**

Activities		Count	Percentage
Information Gathering	No	20	5.6%
	Yes	334	94.4%
Academic Research	No	27	7.6%
	Yes	327	92.4%
Shopping	No	25	7.1%
	Yes	329	92.9%
Games	No	92	26.0%
	Yes	262	74.0%
News	No	18	5.1%
	Yes	336	94.9%
Real Estate	No	26	7.3%
	Yes	328	92.7%
E-mail	No	6	1.7%
	Yes	348	98.3%
Chat and online calls	No	16	4.5%
	Yes	338	95.5%
Social Networks	No	5	1.4%
	Yes	349	98.6%
Job Hunting	No	60	16.9%
	Yes	294	83.1%
Classifieds	No	96	27.1%
	Yes	258	72.9%
Stock Market	No	290	81.9%
	Yes	64	18.1%
Blogging	No	227	64.1%
	Yes	127	35.9%
Creation and/or administration of webpages, forums, communities, etc.	No	207	58.5%
	Yes	147	41.5%
Other	No	339	95.8%
	Yes	15	4.2%

**Table 23: Digital activities performed when using the Internet (Momzilla).**

**What do you use the Internet for?**

<b>Activities</b>	<b>Frequency of Internet Use per Activity (Mode)</b>
Information Gathering	4
Academic Research	5
Shopping	5
Games	9
News	5
Real Estate	9
E-mail	2
Chat and online calls	3
Social Networks	1
Job Hunting	11
Classifieds	11
Stock Market	14
Blogging	14
Creation and/or administration of webpages, forums, communities, etc.	14
Other	15

Ranked from 1-15, being 1 the most frequent and 15 the least frequent.

**Table 24: Most frequent digital activities in Internet (Momzilla).**

According to the survey results, Momzilla members seemed to have a good set of digital skills. From the data in Table 25, it can be seen that most mothers knew how to search for information online; read online articles, newspapers and blogs; used e-mail; could modify their browser’s homepage; knew how to fill virtual forms; had experience buying online; downloaded and uploaded content; knew how to customize online profiles in social networks and webpages; listened to podcasts; participated in chats; posted comments in websites, were active in discussion forums and online groups; could make online calls and knew how to store their information in cloud services. Around half of the respondents felt confident when using the settings options of their browsers such as choosing their cookies preferences or using bookmarks; they had taken webinars, online courses or even pursued online degrees. Interestingly, 28% of the interviewees blogged regularly and 33.3% created and administered webpages.



**Which of the following activities have you done?**

<b>Digital Activities Done</b>		<b>Count</b>	<b>Percentage</b>
Searched for information online	No	14	4.0%
	Yes	340	96.0%
Read an article, newspaper or blog post online	No	21	5.9%
	Yes	333	94.1%
Used e-mail services	No	24	6.8%
	Yes	330	93.2%
Changed your browser's homepage	No	88	24.9%
	Yes	266	75.1%
Changed your cookies preferences	No	201	56.8%
	Yes	153	43.2%
Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form	No	68	19.2%
	Yes	286	80.8%
Made a purchase online	No	41	11.6%
	Yes	313	88.4%
Customized a webpage and/or social network profile for yourself	No	50	14.1%
	Yes	304	85.9%
Downloaded content and/or information	No	28	7.9%
	Yes	326	92.1%
Uploaded content and/or information	No	91	25.7%
	Yes	263	74.3%
Created and used regularly an own blog	No	255	72.0%
	Yes	99	28.0%
Created and/or administered a webpage	No	236	66.7%
	Yes	118	33.3%
Listened to a radio broadcast / podcast online	No	86	24.3%
	Yes	268	75.7%
Participated in online chats	No	89	25.1%
	Yes	265	74.9%
Posted comments in webpages	No	79	22.3%
	Yes	275	77.7%
Participated in a forum discussion or online group	No	100	28.2%
	Yes	254	71.8%
Made a telephone call online	No	79	22.3%
	Yes	275	77.7%
Taken a webinar	No	212	59.9%
	Yes	142	40.1%
Taken online courses / study an online degree	No	196	55.4%
	Yes	158	44.6%
Saved my information in the „cloud“	No	97	27.4%
	Yes	257	72.6%
Used bookmarks or other services online for organizing information	No	139	39.3%
	Yes	215	60.7%

**Table 25: Digital activities performed by Momzilla members.**

Likewise, and as shown in Figure 72, Momzilla interviewees mentioned that they felt satisfied with their digital skills, as they could do most (54.4%) or everything they wanted to do when using the Internet (25.1%).

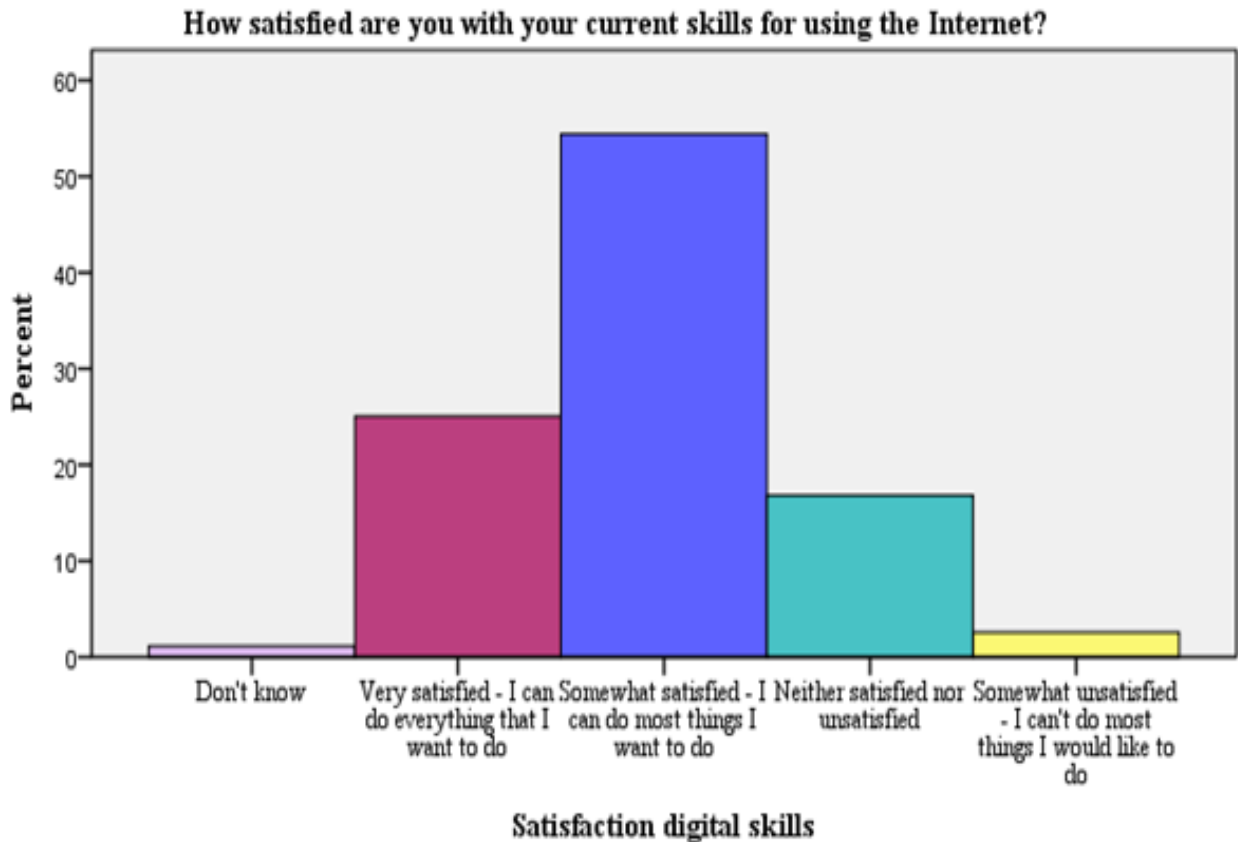


Figure 72: Degree of satisfaction with own online digital skills (Momzilla).

***b) Digital Skills and Use of Environment and Tools***

For this case study, our analysis showed that the digital skills of the members had a positive influence in relation to the constant use of the Momzilla OLC platform. Given the fact that members had very good digital skills and they used Internet to access, in the first place, social networks like Facebook, the results illustrated in the pie chart (Figure 73) above are not surprising: 66.93% took less than 30 minutes to become familiar with the virtual environment of the BIC, followed by a 17.32% that took 30 minutes to 1 hour. Interviewees also reported feeling very comfortable (60.08%) and somehow comfortable (37.94%) using the resources available in the community and interacting with others, thanks to their digital skills (see Figure 74).

How long did it took you to become familiar with the use of the virtual environment of the online community?

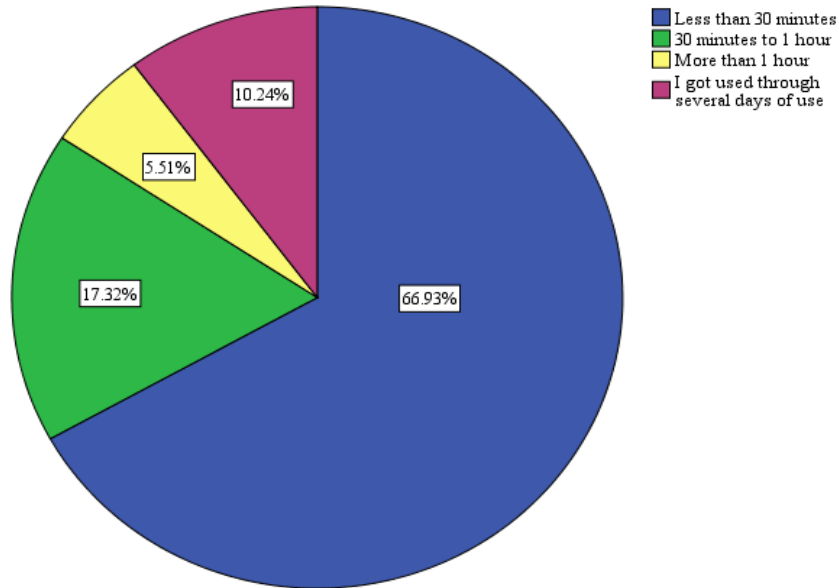


Figure 73: Time required to become familiar with the environment (Momzilla).

During your very first days as member in the online community, how did you felt with regards to the digital and informational skills you had for using the community, its resources and communicating or interacting with other members?

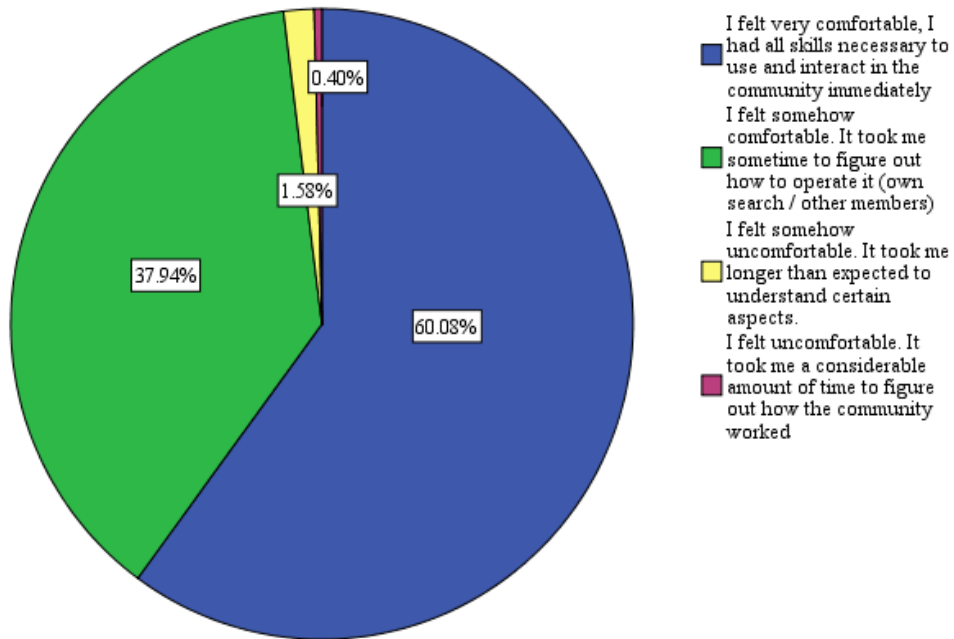


Figure 74: Digital skills and use of community (Momzilla).

As shown in Table 26, the forum and the comments on the threads/shared resources were the tools most frequently used for interacting with other members, followed by the chat and the private messages. 99.21% of the interviewees reported feeling comfortable using the communication tools available in Momzilla (see Figure 75). In terms of interaction, the forum (46.06%) and the comments in threads/shared resources (29.53%) had the fastest response time, according to the members of the BIC (see Figure 76).

**In order of importance and frequency (being 1 the most important and frequent and 4 the least important and frequent), which of the following tools in the community do you use to communicate and/or interact with other members:**

<b>Tools</b>		<b>Count</b>	<b>Percentage</b>
Chat	Rank 1	17	6.7%
	Rank 2	42	16.5%
	Rank 3	103	40.6%
	Rank 4	92	36.2%
Forum	Rank 1	117	46.1%
	Rank 2	49	19.3%
	Rank 3	33	13.0%
	Rank 4	55	21.7%
Private message	Rank 1	19	7.5%
	Rank 2	74	29.1%
	Rank 3	97	38.2%
	Rank 4	64	25.2%
Comments on competitions, stories and/or shared resources	Rank 1	101	39.8%
	Rank 2	89	35.0%
	Rank 3	21	8.3%
	Rank 4	43	16.9%

**Table 26: Importance and frequency of use from communication tools in the community (Momzilla).**

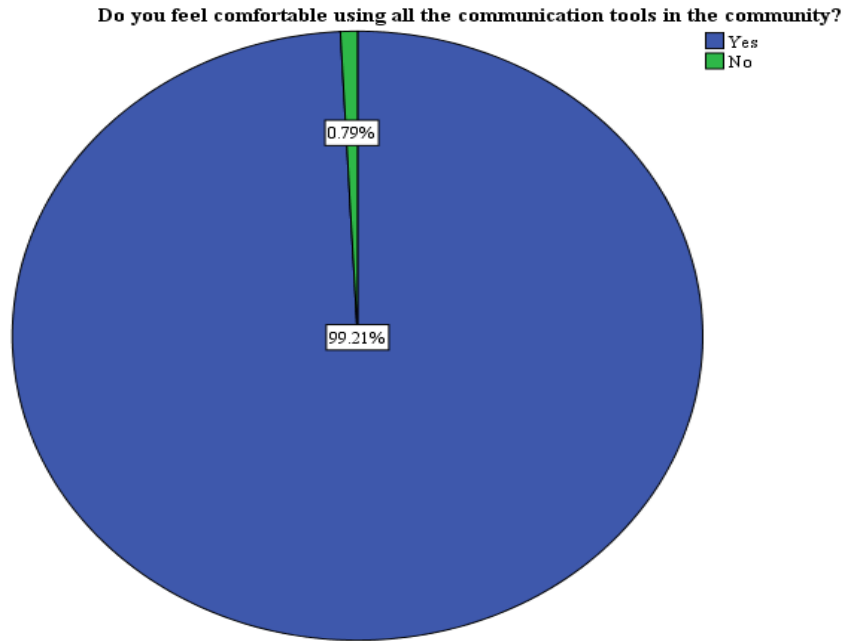


Figure 75: Satisfaction in terms of use of the communication tools in the community (Momzilla).

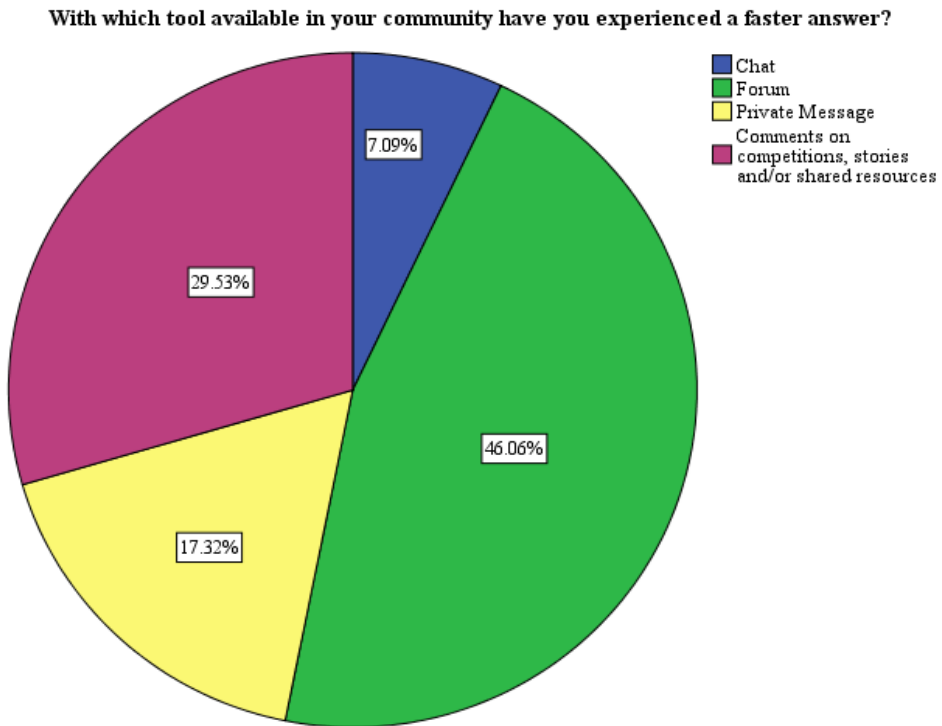


Figure 76: Communication tools and response time (Momzilla).

When interviewed, members in Momzilla also reported that the *speed, in terms of response*, is a distinctive characteristic from the environment and tools available in this BIC:

“(Momzilla) is a tool that generates direct and automatic information” (H.Y. personal communication, May 20, 2016).<sup>88</sup>

“It is quicker to consult the *Momz* than a book or a paediatrician” (G.R. personal communication, May 19, 2016).<sup>89</sup>

“(Momzilla) is direct, this is not a consultation you are paying, it is not a conference that finishes and that although it is useful, afterward you have doubts, and you can't do anything. Here you can always come back and ask and there will almost always be someone. It is like a 24/7 accompaniment, that sometimes is exactly what you need, someone there (just in case) but not on top of you. The downside is that many threads get lots due to the quantity of members” (L.A. personal communication, May 16, 2016).<sup>90</sup>

“I believe that information arrives quicker when it does it organically. We all as members have different interests and points of view and that makes that the information in the group richer, because it is curated by the members themselves and not by an editor” (H.Söns, Momzilla founder. Personal communication, May 17, 2016).<sup>91</sup>

In the case of Momzilla, 66.40% members mentioned that they considered that their user profile was a factor that contributed to their interaction with other members (see Figure 77). Among the information shared in their user profile, 77.4% of the interviewed members from this OLC included their real name. Between 30 and 45% of the survey respondents also included other private data such as nickname, e-mail address, work, and location information in their profiles. 26.5% shared other social network contact details (see Table 27).

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<sup>88</sup> Own translation. Original language from source: Es una herramienta de información directa y que se genera al momento.

<sup>89</sup> Own translation. Original language from source: Es mucho más rápido consultar a las Momz que un libro o al pediatra.

<sup>90</sup> Own translation. Original language from source: Es directo, no es una consulta que estás pagando, no es una conferencia que termina y aunque sirva después te quedan dudas y nada que hacer, aquí puedes volver y preguntar y casi siempre habrá alguien. Es un acompañamiento 24/7 intermitente que a veces es justo lo que necesitas, alguien allí (por si acaso) pero no encima de ti. Lo malo es que a veces ya se pierden muchas publicaciones por la cantidad de gente.

<sup>91</sup> Own translation. Original language from source: Creo que la información llega más rápidamente cuando lo hace manera orgánica. Todas tenemos diferentes intereses y puntos de vista y eso enriquece la información que fluye en el grupo, que es "curada" por los miembros mismos, y no por el punto de vista parcial de un editor.

Do you consider that your profile contributes to your interaction with other members?

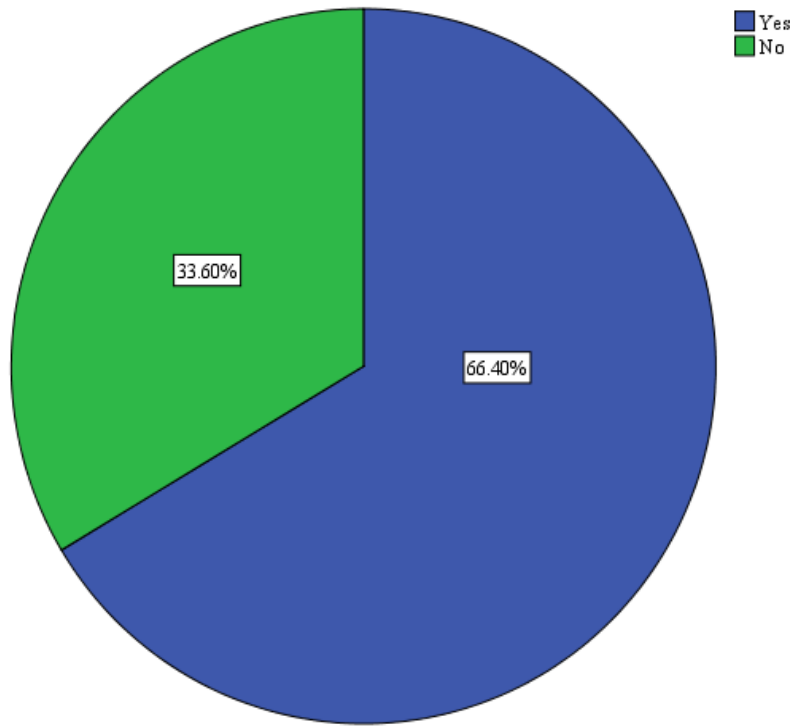


Figure 77: Profile contribution with respect to interaction (Momzilla).

Which of the following information can be found in your user-profile?			
Type of personal information		Count	Percentage
Nickname	No	154	59.9%
	Yes	103	40.1%
Real name	No	58	22.6%
	Yes	199	77.4%
E-mail	No	169	65.8%
	Yes	88	34.2%
Phone number	No	232	90.3%
	Yes	25	9.7%
Skype contact	No	252	98.1%
	Yes	5	1.9%
Social network contact details	No	189	73.5%
	Yes	68	26.5%
Webpage information	No	220	85.6%
	Yes	37	14.4%

Work information	No	144	56.0%
	Yes	113	44.0%
Location information	No	164	63.8%
	Yes	93	36.2%

**Table 27: User information visible in profile (Momzilla).**

While only a little more than the half considered that their user profile itself had an influence in terms of their interaction with other users, several interviewed members in Momzilla referred that the characteristics of the BIC's environment, allowed the existence of a sort of *anonymous online communication* among members:

“The identity behind a social network has its pros and cons. In face-to-face groups (family, friends, neighbours, etc.) one cannot be and represent whomever, but only who one is, in a social network you can be the one that always helps or the one that needs help, the personalities and the subconscious are more accessible from a safe side, in this case behind the phone or the computer” (C.B. personal communication, May 15, 2016).<sup>92</sup>

“The fact that people do not know each other in person makes you feel confident to ask or comment whatever. This would not be the case with family or friends. The anonymity is a social enabler, as well as the need to belong” (T.P. personal communication, May 16, 2016).<sup>93</sup>

In this regard, our analysis showed that the environment and the tools in the community, together with the speed in terms of response and the sense of trust brought through the anonymity were factors that favoured the development of a *tribe feeling*. Interestingly, it is this sense of belonging to the community what ultimately contributed greatly to the user engagement, as various of the interviewees shared:

“Momzilla has allowed the creation of an almost blind trust through which members provide support and help without knowing each other in person. There are cases of moral, emotional, and even economic support to members that have asked for it. It is like a support system that gives you security and trust” (C.B. personal communication, May 15, 2016).<sup>94</sup>

<sup>92</sup> Own translation. Original language from source: La identidad detrás de una red social tiene sus pros y contras. Con grupos presenciales (familia, amigos, vecinos, etc) no se puede ser y representar quien sea sino quien uno es, dentro de una red social se puede; ser siempre la que ayuda o la que necesita ayuda, las personalidades y el inconsciente es más accesible desde un lado "seguro" como detrás de un teléfono o computadora.

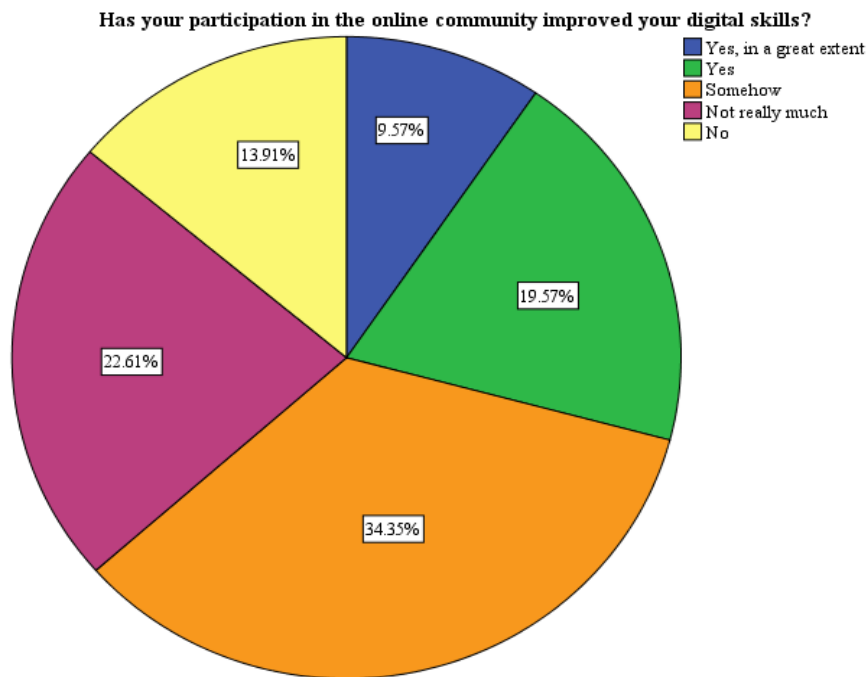
<sup>93</sup> Own translation. Original language from source: El hecho de que la gente no se conozca en persona hace que te de confianza preguntar o comentar lo que sea. Lo que no sería parecido con familiares o amigos. El anonimato es un facilitador social La necesidad de pertenencia.

<sup>94</sup> Own translation. Original language from source: se ha creado en Momzilla una confianza casi "a ciegas" que los



“I think it obeys to the empathy you experience when you become a mother, in particular for the first time. It is to live in community the pregnancy, the fears, the joys, the worries, it is to find mothers in similar circumstances that often have the same doubts as you, to find friends through the community, even if they are only cyberfriends or to reunite with others that you already knew, it is to feel supported and heard, to be able to express things that in your personal profile no one would care about or no one would advice you like in Momzilla, which is an open space precisely for this” (C.B2. personal communication, May 16, 2016).<sup>95</sup>

In terms of regular engagement and it’s influence on digital skills, respondents from Momzilla considered that their participation in the online community did have an effect on their digital skills. 9.57% of the interviewees reported that their digital skills improved importantly, 19.57% reported that their digital skills did improve and 34.45% mentioned a slight positive change in this regard (see Figure 78).



**Figure 78: Improvement of digital skills through OLC (Momzilla).**

integrantes dan apoyo y ayuda aún sin conocerse en persona. Han existido casos de apoyo, moral, emocional y hasta económico a integrantes que en algún momento lo han solicitado, como sistema de apoyo dan seguridad y confianza.

<sup>95</sup> Own translation. Original language from source: Yo pienso que es la empatía de convertirte en mamá, sobre todo primeriza, es vivir en comunidad el embarazo, los miedos, las alegrías, preocupaciones, en encontrar mamás en las mismas circunstancias que tú, que muchas veces tienen las mismas dudas que tú, en encontrar amigas a través de la comunidad, aunque sean solo cyber amigas o bien reencontrarte con otras que ya conocías, es sentirte apoyada y escuchada, en poder expresar cosas que en tu timeline personal a lo mejor a nadie le importaría o nadie te aconsejaría como en Momzilla, que es un espacio abierto precisamente para eso.

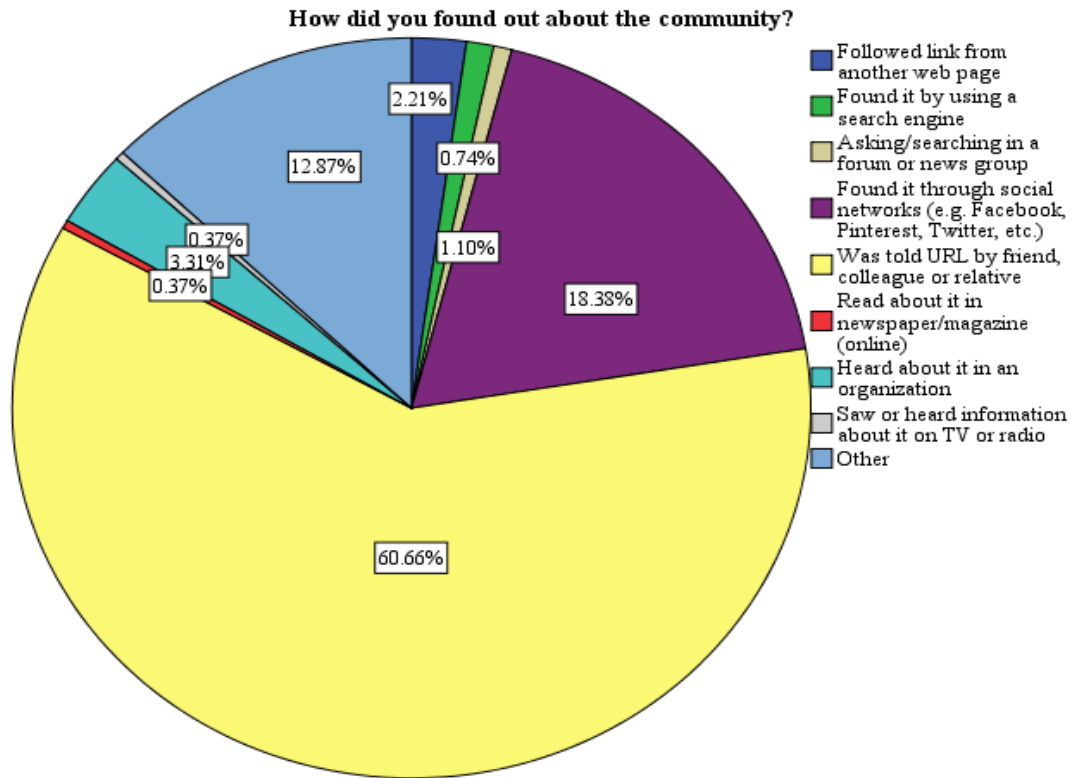
## II. Practices that foment learning

Which practices foster the learning objectives of the members of public OLCs? is the research question we used to guide our investigation of the specific actions and values that supported learning in each of our selected OLCs. Thereupon, we relied on specific queries directed to the members, that through our online data collection instruments, allowed us to report such practices in form of (a) the dynamics behind the participation and interaction in Momzilla and (b) the principles that oriented the learning environment of the BIC during the data collection period.

### *a) Dynamics of participation and interaction*

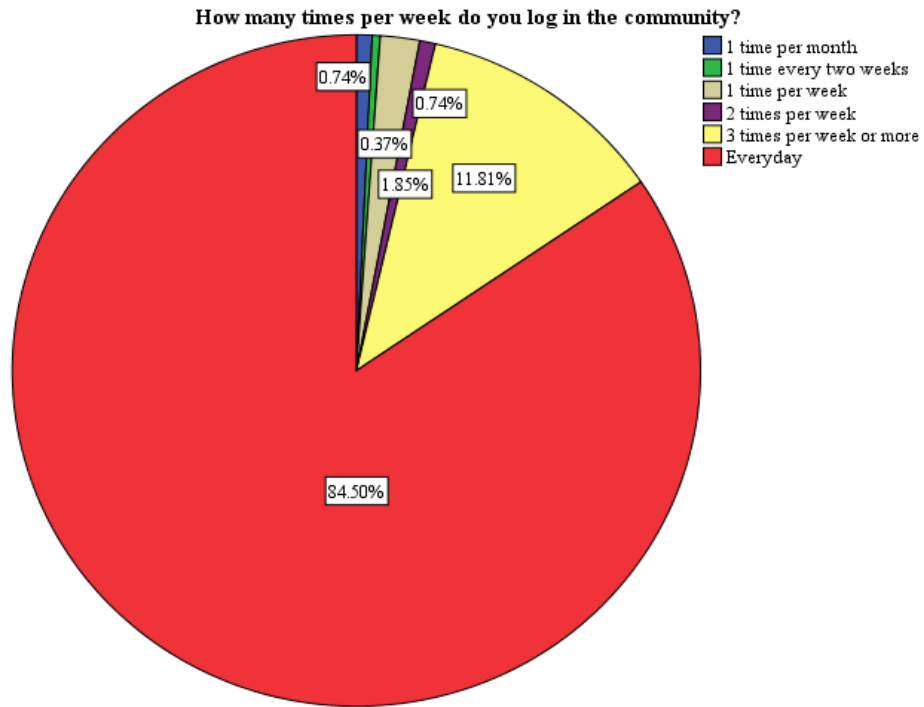
Through the combination of the quantitative and thematic analyses conducted in Momzilla, we detected five practices that fostered the participation and interaction of the members during the data collection period: (1) Access, (2) Entertainment, (3) Information dissemination, (4) Questions and answers format, and (5) Respectful and rule-oriented environment. These activities performed regularly in Momzilla were referred by the members of the community as enablers that allowed and reinforced their engagement in the BIC, while helping them to learn on a variety of topics around motherhood. In the following lines, we explain each of the aforementioned practices in more detail:

In terms of community discovery, 60.66% of the interviewees found out about Momzilla through friends, colleagues, or relatives. Another 18.38% got to know about the BIC through social networks (see Figure 79). These results reflected the *access* policy of the BIC mentioned in the “Contextual Information” section: new members could only enter through recommendation from members within the community and all the requests were reviewed by the community managers. These characteristics of the access policy contributed to generate trust, which influenced the dynamics of participation and interaction.

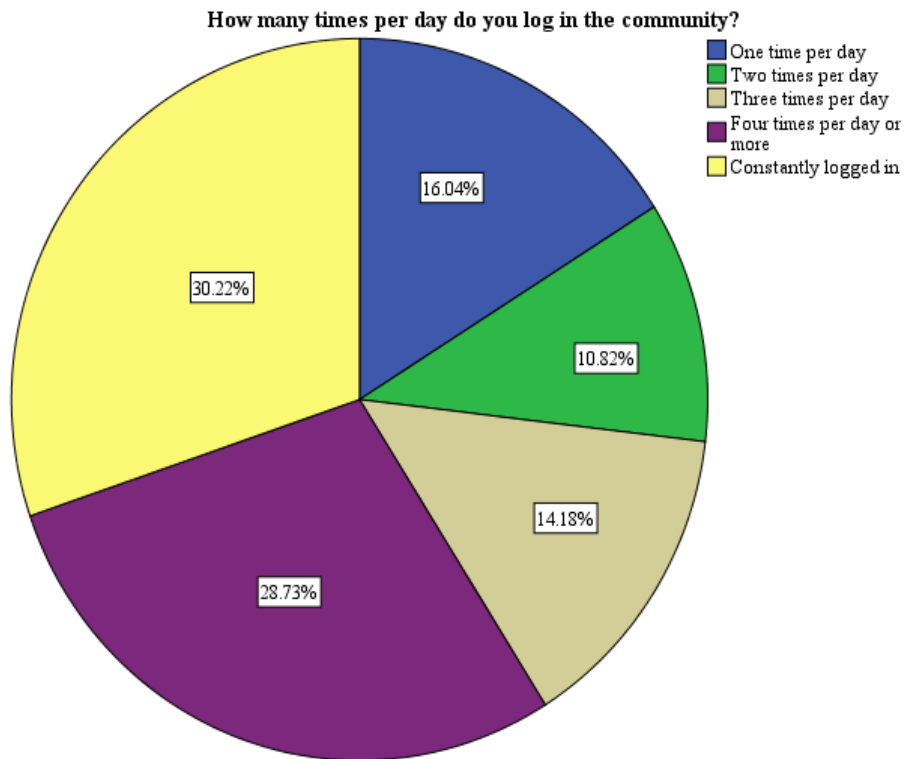


**Figure 79: Community discovery (Momzilla).**

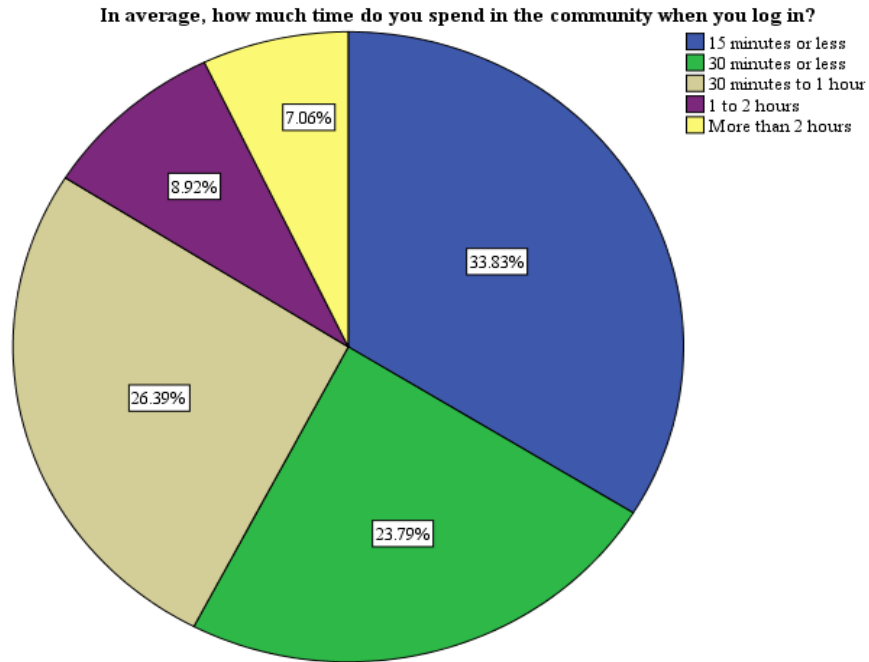
Moreover, 84.50% of interviewed members reported logging in Momzilla everyday (see Figure 80). As it can be seen from Figure 81, 30.22% of the members referred to be constantly logged in the community and 28.73% being logged in four times a day or more. 33.83% of the respondents said they spent 15 minutes or less in Momzilla every time they logged in; 26.39% spent between 30 minutes to 1 hour in every log in and 23.79% spent 30 minutes or less (see Figure 82).



**Figure 80: Weekly login frequency (Momzilla).**

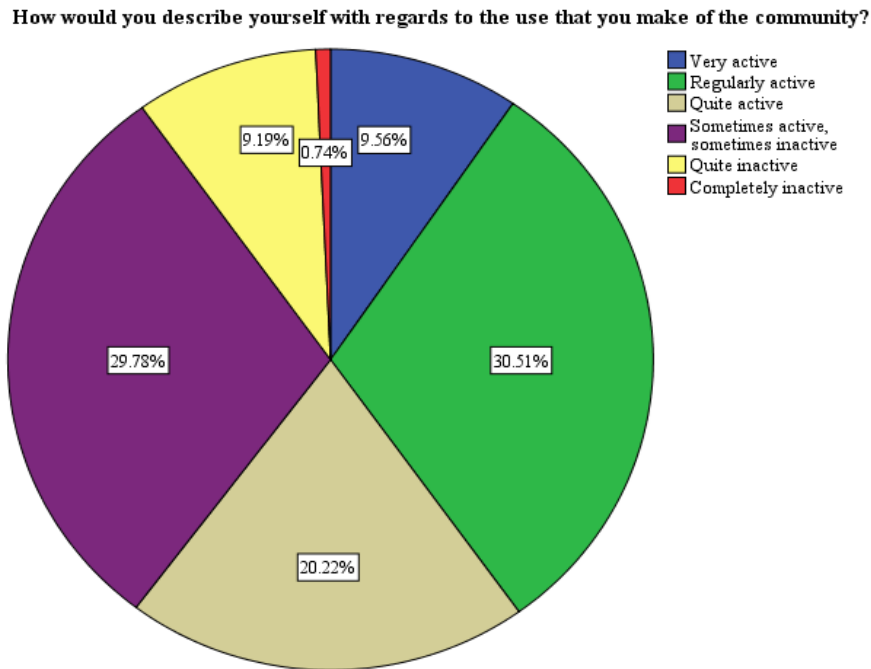


**Figure 81: Daily login frequency (Momzilla).**



**Figure 82: Span of time spent (Momzilla).**

In Momzilla, 30.51% of the respondents described themselves as regularly active users, 29.78% as sometimes active, sometimes inactive and 20.22% as quite active. Interestingly, 9.56% of the members considered themselves as very active users, while 9.19% mentioned they were quite inactive (see Figure 83).



**Figure 83: Level of activity (Momzilla).**

The active engagement in the community obeyed to the fact that interacting and participating in the BIC fulfills, foremost, an *entertainment* need, followed by the information, identification, company, and support requests that the members considered are satisfied through their participation in the community. These perspectives are reflected through the testimonials of two Momzillas:

“First of all, I (am here) because it entertains me, I like to read that other Momz go through the same as me, I like to be able to help or answer questions that catch my attention, I answer those in which I can bring something according to my own experience as mom, I like to support the entrepreneurial mothers buying there, etc.” (C.B., personal communication, May 16, 2016).<sup>96</sup>

“At first, I (participated) because I was really lost with being a new mom from twins and it really helped all the information and tips. Afterward, I continued because it was fun and because as I mentioned before, motherhood meant to me (still means) a semi drastic retire from my social life that always been very rich, and in a certain way, that you can speak about any nonsense of your babies that in none other place would be well understood creates a very strong connection, even in general between the ocean of members of the group, and little by little one starts to identify persons, you like them or not and then one gets addicted and it not only replaces the solution of problems or the need to be among others, but also new “needs” emerge that one cannot cover in other spaces” (A.C., personal communication, June 2, 2016)<sup>97</sup>

In terms of participation through content in the BIC, 35.3% of the survey respondents said they posted threads or resources sometimes, 29.8% did it regularly and 19.9% did it often (see Figure 84). As it can be seen from Table 28, 88% of the members have contributed with content by providing information or resources when replying to a thread; 76.4% have also posted own threads with questions about a topic or with the intention to foster a discussion; 65.5% have posted informative resources such as links, images or contact details; 21.5% have shared presentations, articles, e-books, infographics, videos and webinars and 12% have included self-created content.

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<sup>96</sup> Own translation. Original source: Primero porque me entretiene, me gusta leer a otras Momz que pasan por lo mismo que yo, me gusta poder ayudar o responder preguntas que me llaman la atención, respondo aquellas en las que yo pueda aportar algo acorde a mi experiencia como mamá, me gusta apoyar a mamás emprendedoras haciendo compras ahí, etc.

<sup>97</sup> Own translation. Original source: En un principio, porque realmente estaba yo muy perdida con el tema de ser madre primeriza de gemelas, y de verdad que me servía mucho toda la info y tips. Después, porque me divertía y como lo mencionaba antes, la maternidad me significó (todavía) un retiro medio drástico de mi vida social, que siempre ha sido muy nutrida, y de cierta manera el poder hablar de alguna tontería de tus bebés que en ningún otro lugar te entenderían tan bien, crea una vinculación muy fuerte, aun cuando sea en general en el mar de miembros del grupo, y poco a poco va uno identificando a personas, te caen bien o mal, y entonces ya es uno adicto y no solo reemplaza la resolución de problemas o de convivencia social, sino que nacen nuevas "necesidades" que no pueden ya cubrirse en otros ámbitos.

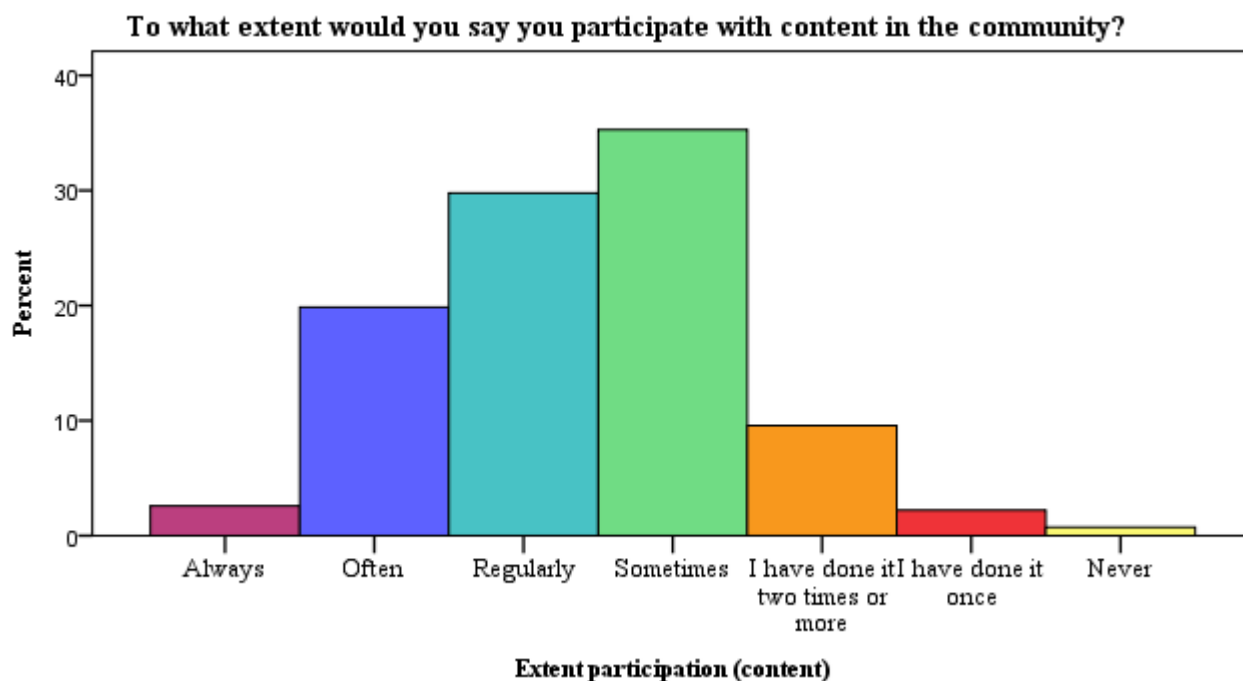


Figure 84: Extent of participation (Momzilla).

**With what type of content have you contributed?**

Type of content		Count	Percentage
Started a topic through a question or fostering a discussion	No	65	23.6%
	Yes	210	76.4%
Provided information or resources by replying to someone's petition/post	No	33	12.0%
	Yes	242	88.0%
Posted an informative resource (link, image, contact details, etc.)	No	95	34.5%
	Yes	180	65.5%
Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.)	No	216	78.5%
	Yes	59	21.5%
Contributed in the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.)	No	242	88.0%
	Yes	33	12.0%

Table 28: Content and type of contribution (Momzilla).

Very much related to the content sharing was the third practice detected as part of the dynamics that impulse learning in this OLC: the *information dissemination*. In Momzilla, the active participation of the members obeyed to the ways information disseminates in the BIC, which in words of the Momz, was one of the main practices that fostered learning in this community:

“I enjoyed all my pregnancy as well as my birth process (C-section). But I suffered a lot in the breastfeeding period, even when I had a consultant from La Leche League and all, I was really terrified when I had to feed my son and this provoked different emotions that my mom could not understand (She always fed us with milk formula from the beginning and she thought my stubbornness was nonsense). When I saw the different possibilities to deal with something that was so hard for me (physically, mentally, emotionally), I loved it. (Momzilla) helps me to learn about the different development that each child and family has. I fear less and I like to think that I can help others to fear less as well” (L.A., personal communication, May 16, 2016).<sup>98</sup>

“(In Momzilla) experiences are shared, information based on literature is shared, we speak with honesty and the community managers try to generate useful information” (H.Y., personal communication, May 20, 2016).<sup>99</sup>

With regards to their interaction with other members in Momzilla, 29.4% of the interviewees mentioned that they interacted regularly, 27.6% sometimes, 24.6% often, 10.3% had done it two times or more, 7% interacted always, 0.7% had done it once and 0.4% had never interacted (see Figure 85). Furthermore, 63.84% referred that their interactions were public, this is, in the forum of the BIC (see Figure 86). In terms of reaction and response to threads and messages, 33.2% of the Momz considered that other members replied to them regularly, 23.6% often, 22.1% sometimes, 16.6% had always gotten replies, 3.3% said members had answered back two times or more, 0.7% had never gotten replies and 0.4% had gotten answers only once (see Figure 87).

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<sup>98</sup> Own translation. Original source: Todo mi embarazo lo disfruté al igual que mi parto (cesárea). Pero cuando llegó la lactancia la sufrí espantosamente, por más que tuve asesora de la liga de la leche y demás de verdad estaba aterrada de la hora de comer de mi hijo, y eso me desencadenó muchísimas sensaciones que sé que mi mama no podía entender (siempre nos dio fórmula desde el principio y le parecían tonterías mis "necesidades"). Cuando vi la cantidad de posibilidades de lidiar con lo que para mí fue tan difícil (físico, mental, emocional) me encantó. Me ayuda mucho aprender sobre el desarrollo tan distinto de cada niño y familia. Me asusto menos y me gusta sentir que puedo ayudarle a alguien a asustarse menos también.

<sup>99</sup> Own translation. Original source: se comparten experiencias, se comparte información basada en literatura, se habla con honestidad, las administradoras procuran generar información de utilidad.



To what extent would you say you interact with other members of the community?

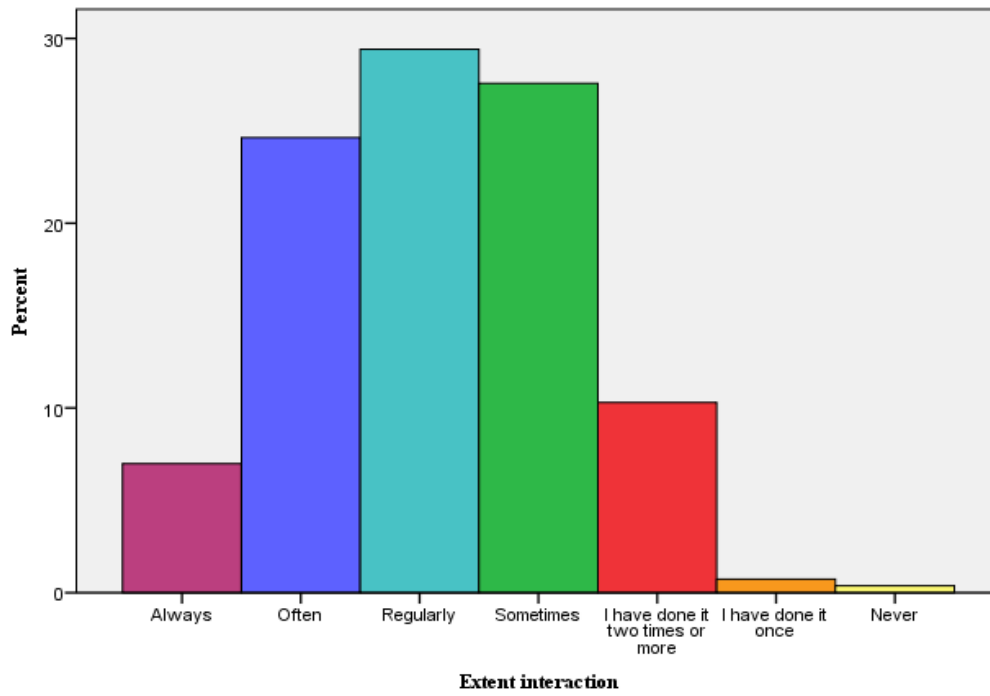


Figure 85: Extent of own interaction (Momzilla).

Your interaction with other members on the community is more:

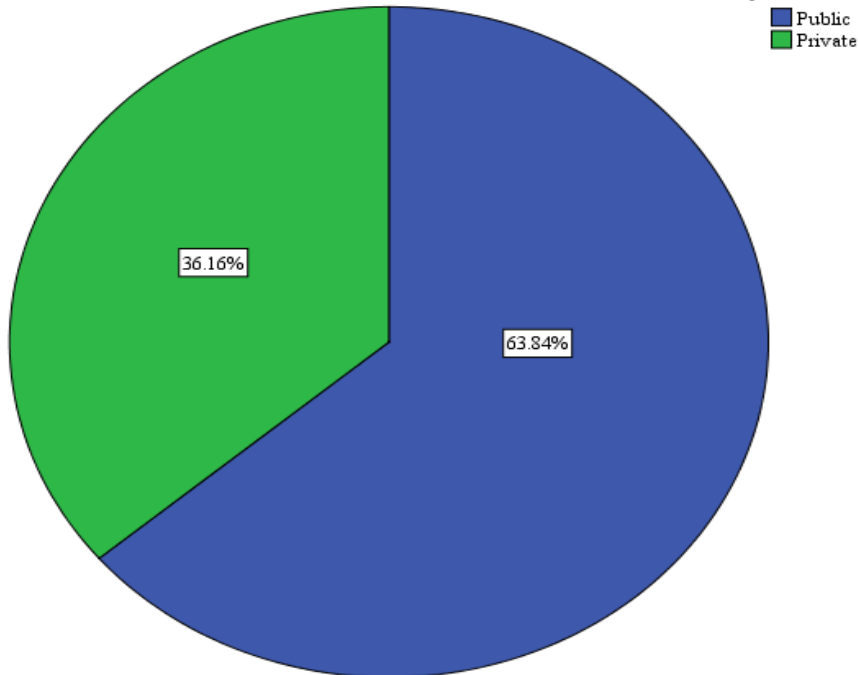
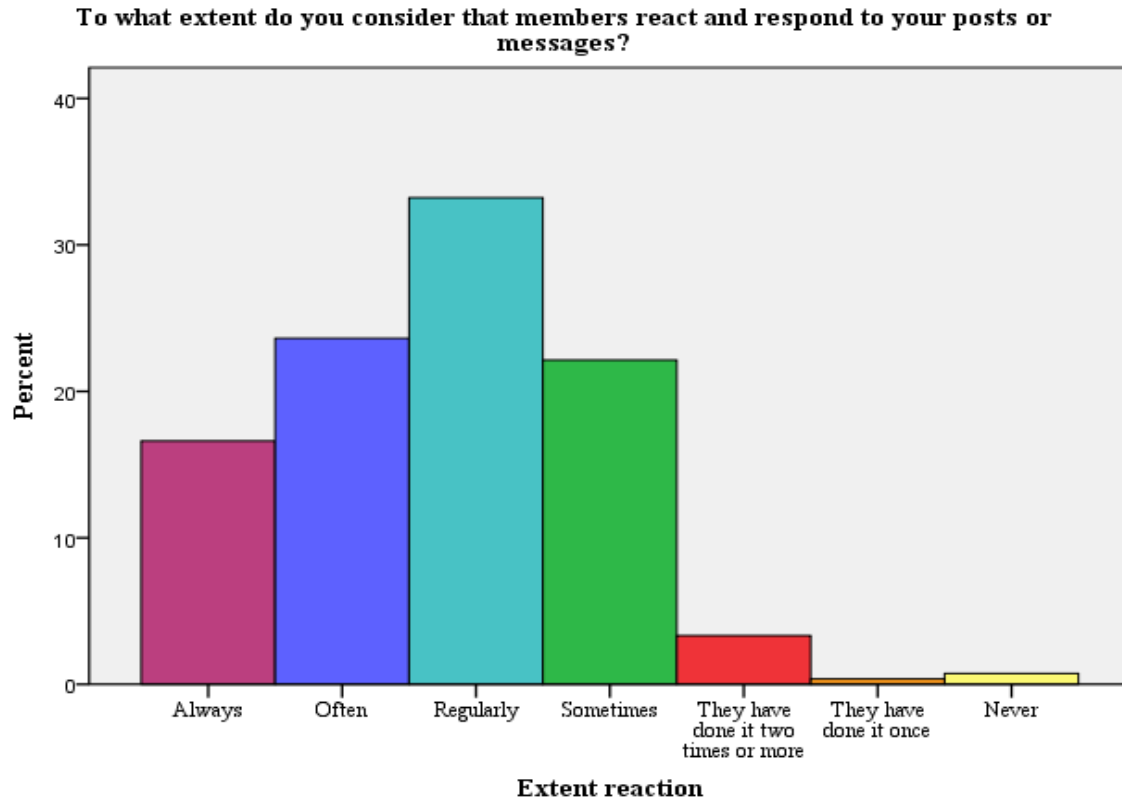


Figure 86: Type of interaction (Momzilla).



**Figure 87: Perception of members' interaction (Momzilla).**

While the interaction in Momzilla was depicted as rich in the online survey, different interviewed members also emphasized that the *questions and answers format* provided through the forum of the BIC was been essential for learning about motherhood:

“(I learn) in so far there are moms that write questions and others that answer them. I like that great diversity of comments and points of view. Many times, I have found posts about things that I had never thought about and that are very useful” (G.R., personal communication, May 19, 2016).<sup>100</sup>

“I think that for many of us, it is already an irreplaceable starting point for any topic related to motherhood. There are things that I have asked in Momzilla way before asking my mom or googling them! And this is a lot to say, because I have a good relationship with my mom, and because as I mentioned before, I have a background in topics related

<sup>100</sup> Own translation. Original source: En la medida en que mamás escriben preguntas y otras responden. Me gusta que hay una diversidad enorme de comentarios y puntos de vista. Muchas veces he encontrado post de cosas que no se me hubieran ocurrido y son muy útiles.

to virtuality, Internet, and all of that, so I am addicted to Google. I google everything...so in my case that is a lot to say.” (A.C., personal communication, June 2, 2016).<sup>101</sup>

Moreover, another element that we detected as instrumental to the active dynamics in Momzilla was the *respectful and rule-oriented environment* enforced and improved over time by the community managers:

“This is a community that is alive and that lives in a social network, which makes it evolve at the same speed as the network that hosts it. Evidently, the dynamic has changed due to the number of members, and we frequently must take a step back to stop, analyse what is happening, decide if we like the way things are going and if we do not like it, take the measurements that we consider necessary to go on. In terms of quality, which is related to the previous point, sometimes the dynamic in the group can be very heavy or there are members that instead of being conciliating decide more for the gossip or the disrespectful or out of place comments, in these moments is when we decide to eliminate from the group those who do not collaborate with the harmony in Momzilla” (M. Monroy, community manager. Personal communication, May 24, 2016).<sup>102</sup>

Several interviewed members agreed with the fact that Momzilla’s netiquette and community management have allowed a respectful, vibrant interaction as well as a connection among members:

“Undoubtedly, the community management has been fundamental, it has been an element of protection, company, guide and growth. One of the basic principles of Momzilla is the respect, to never judge if you are a good mother or not, this is about accompanying and advising, which creates a very strong bond that does not exist in other groups” (M.S., personal communication, May 17, 2016).<sup>103</sup>

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<sup>101</sup> Own translation. Original source: Creo que para muchas es ya un punto de partida irremplazable para cualquier tema relacionado con maternidad. Hay cosas que yo pregunto en Momzilla antes que incluso preguntar a mi mamá o googlearlas! Lo que es mucho decir, porquetengo muy buena relación con mi mamá, y por otro lado, ya te contaba de mis antecedentes del tema de la virtualidad, de internet, de todo esto, pues yo soy adicta a google. Todo lo googleo... entonces en mi caso concreto, si es mucho decir.

<sup>102</sup> Own translation. Original source: Es una comunidad viva que vive en una red social así que se mueve con la misma velocidad que la red que la aloja. Evidentemente la dinámica ha cambiado por el número de miembros y con frecuencia debemos dar un paso atrás para detenernos, analizar qué es lo que está sucediendo, decidir si nos gusta el camino que está tomando y si no nos gusta tomar las medidas que consideramos necesarias para seguir adelante. En cuanto a la calidad, está relacionada con el punto anterior, en ocasiones la dinámica del grupo se vuelve pesada o hay integrantes que en vez de ser elementos conciliadores se inclinan más por el chisme o los comentarios irrespetuosos o fuera de lugar, en esos momentos decidimos eliminar del grupo a quien no colabora con la armonía de Momzilla.

<sup>103</sup> Own translation. Original source: Sin duda alguna, la administración ha sido fundamental, ha sido un elemento de protección, de acompañamiento, de guía y de crecimiento. Uno de los principios básicos de Momzilla, es el respeto, el nunca juzgar si estás siendo buena madre o no, se trata de acompañar y de aconsejar; con esto se crea un vínculo muy fuerte que no se da en otros grupos.

“Comparing (Momzilla) with other groups in which I am, that have the same principle in common: (The factors that have made Momzilla cohesive and grow): -The dissemination (about the community) that we, as group, have made by adding friends and family. -The big participation and support of the members. - The coherence and attendance to the rules that the community administrators have establish and foster to sustain” (A.R., personal communication, May 15, 2016).<sup>104</sup>

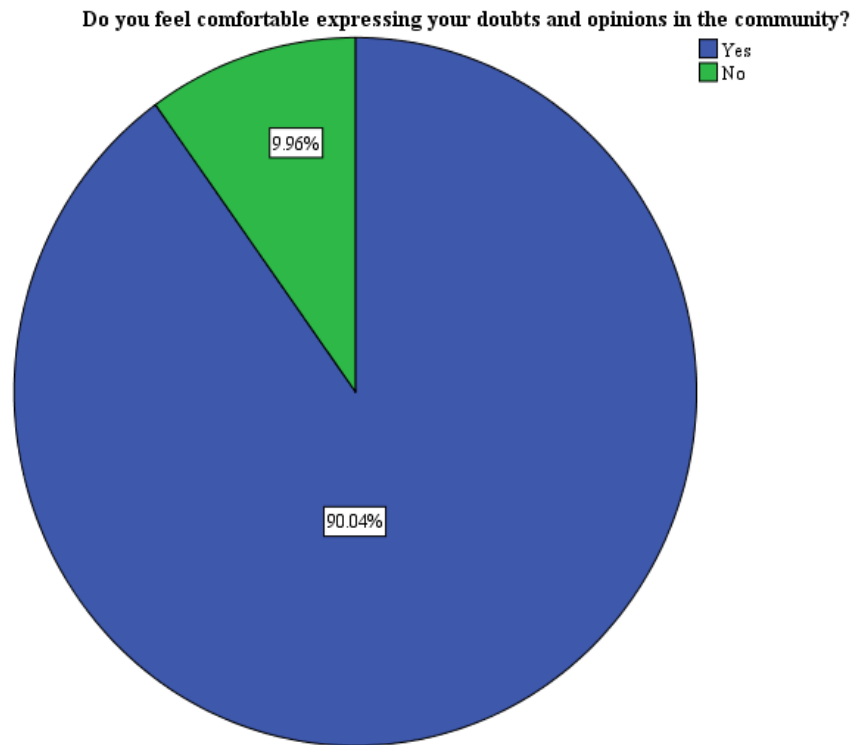
### ***b) Guiding principles***

From the results of our analyses, we could also detect two values that played an important role in terms of cohesion and engagement for the community: (1) Openness and diversity and (2) Sense of belonging. Both values led the dynamics of each of the aforementioned practices that drive learning in Momzilla. In the following lines, we discuss their influence as guiding principles in the BIC.

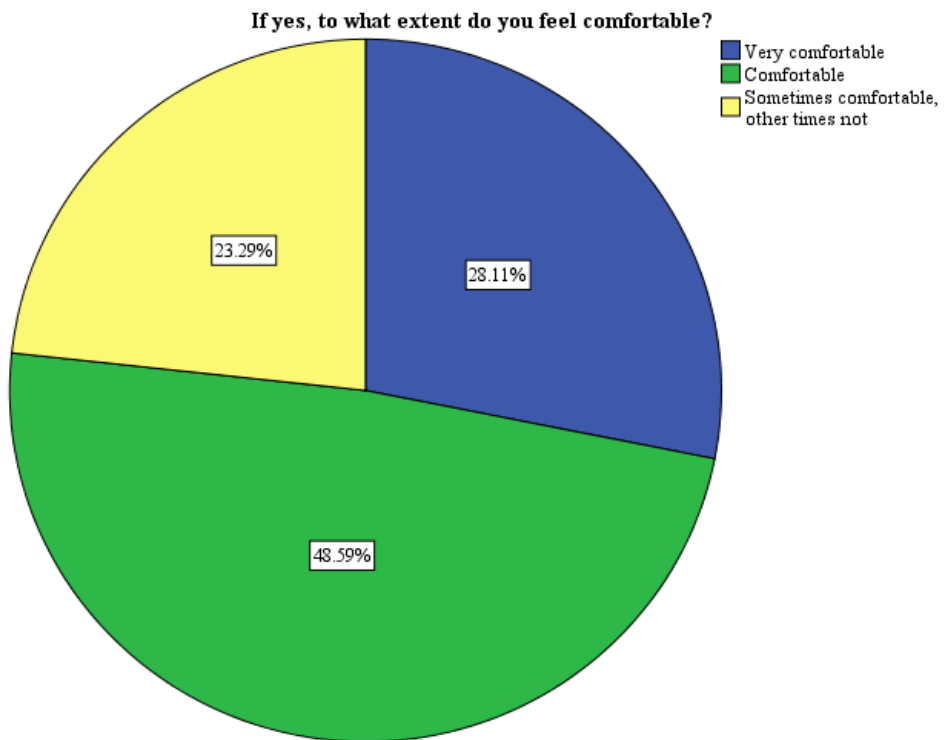
The first principle detected, *Openness and diversity*, is a maxim directly related to the value of trust. According to the survey results, 90.04% of the members felt comfortable when expressing doubts and opinions in Momzilla (see Figure 88). We included a control question in our questionnaire with the intention to find out the extent of trust in the community perceived by the respondents. From the results presented in Figure 89, we noticed a variability in the levels of trust: 48.59% expressed they felt always comfortable when expressing doubts and opinions, 28.11% felt very comfortable and 23.29% felt sometimes comfortable and other times not. It resulted particularly interesting to see that 83.46% felt comfortable expressing their opinions and ideas, even when they were opposite to their perspectives or when other members corrected them (see Figure 90). In this sense, we also considered a control question for the topics of openness and diversity. With regards to confronting interactions, 45.96% said they felt comfortable in these situations, while 20.85% mentioned that they felt very comfortable. Nevertheless, there was a 33.19% of the interviewees that mentioned that during discussions, they sometimes felt comfortable and other times not (see Figure 91).

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<sup>104</sup> Own translation. Original source: Comparándolo con otros grupos en los que estoy, con el mismo principio en común: - La difusión que nosotras mismas, como grupo, le hemos hecho, agregando a amigas y familiares. - La gran participación y aportación de los miembros. - La coherencia y seguimiento de las reglas que las administradoras han puesto y están atentas para mantener.

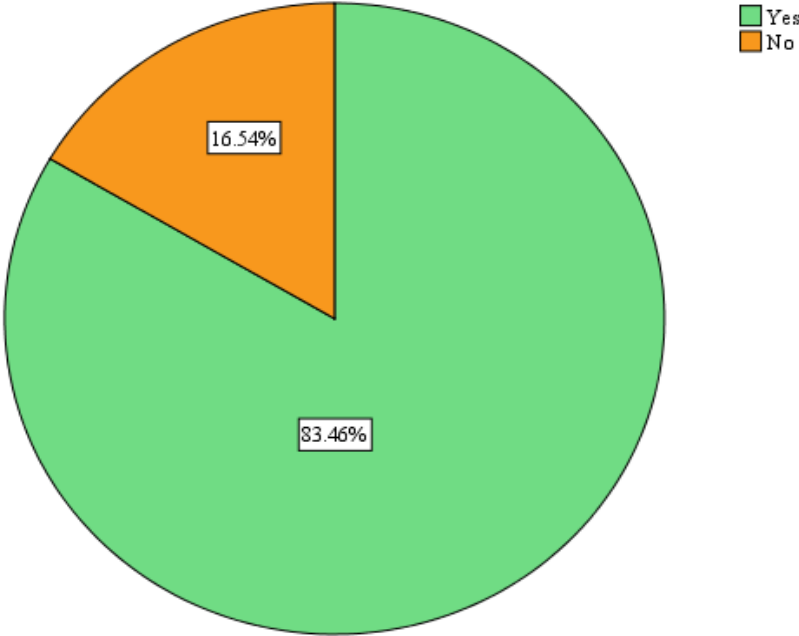


**Figure 88: Freedom of expression (Momzilla).**

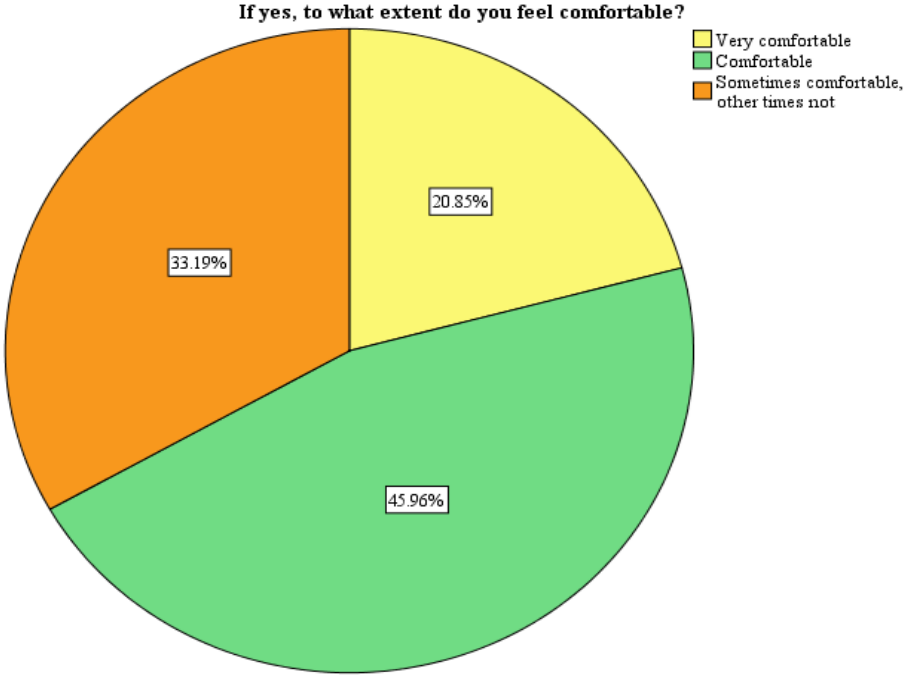


**Figure 89: Perception of the extent of freedom of expression (Momzilla).**

**Do you feel comfortable with the other members of the community during discussions or exchange of opinions and ideas, even when they are opposite to your own views or when they correct you?**



**Figure 90: Comfort during discussions and debates (Momzilla).**



**Figure 91: Perception of the extent of comfort during discussions and debates (Momzilla).**

The results of the control questions suggested the existence of disagreements, reflected in the fact that in communities members also experience heated discussions and fights during their interactions -something that was also reported in the “Community’s Essence” section of this chapter according to what we observed through our netnography in Momzilla.-. Nevertheless, and despite the existence of conflict, an interesting insight obtained through the interviews with the members of Momzilla and that explained why most members felt comfortable during their interactions was that they depicted this BIC as a space of *openness and diversity* for sharing information and experiences:

“(Momzilla) is a live model. There are no absolute truths. Before I gave birth, I read an encyclopedia about motherhood, I was subscribed to magazines that gave many opinions and ideal forms of how one should live motherhood. But this is real. There are no diapers covered with blue liquid, but diapers with real shit. There are irritated babies, rebel and crazy teenagers, babies that scream and you cannot calm down with anything, thoughts that are not accepted by society but that we all experience, and Momzilla is a safe place where we can share that and we will not be judged but we will get help and answers” (F.R., personal communication, May 16, 2016).<sup>105</sup>

“Precisely because (Momzilla) has not a rigid profile that accepts only women who agree with a specific upbringing style is what allows that we enter in contact with other ways of doing. If you had never heard about baby-led weaning (BLW), for example, and you discover it and you feel that it can work for you, you inform yourself, you apply it or you question it. It also works the other way around: the fundamentalism that is sometimes manifest (for example) through the attachment parenting style can have its structures questioned when you see other type of experiences that also have the value of respect as their maxim” (B.P., personal communication, May 17, 2016).<sup>106</sup>

“(Momzilla) allows you to get to know different points of view and information sources, from which each one can take the one that fits best according to their upbringing and motherhood styles” (I.A., personal communication, May 15, 2016).<sup>107</sup>

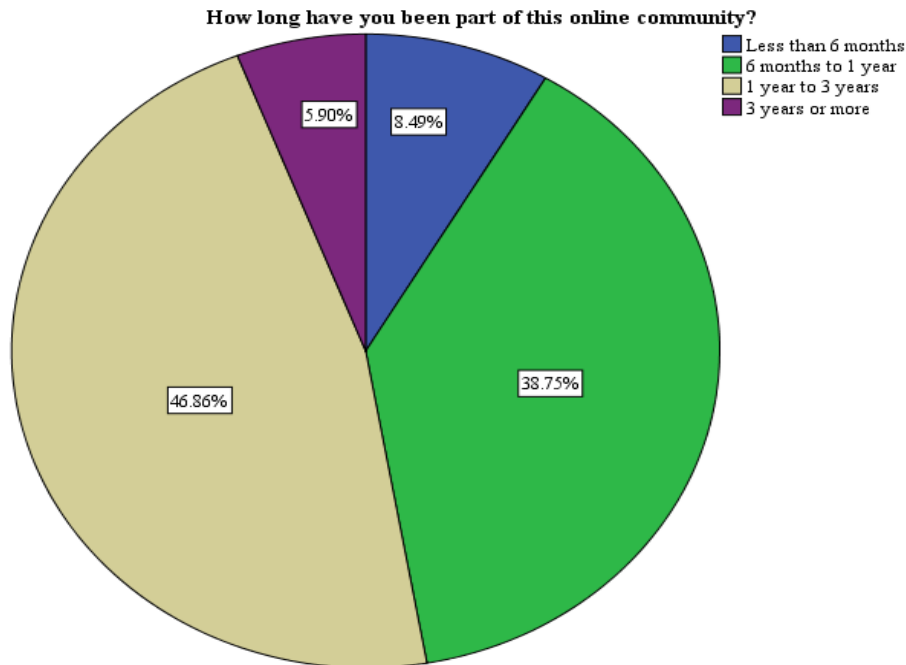
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<sup>105</sup> Own translation. Original source: Porque es un modelo vivo. No hay verdades absolutas. Antes de dar a luz leí una enciclopedia de maternidad, estaba suscrita a revistas y daban muchas opiniones y formas ideales de cómo debía vivir una la maternidad. Pero esto es real. No hay pañales cubiertos de líquido azul, sino pañales con caca. Hay bebés rozados, adolescentes rebeldes y locos, bebés berreando que no se calman con nada, pensamientos que no son aceptados por la sociedad, pero todas lo vivimos y Momzilla es un lugar seguro donde podemos compartir eso y obtendremos no un juicio, sino una ayuda y una respuesta.

<sup>106</sup> Own translation. Original source: Precisamente al no tener un perfil rígido que sólo acepte a mujeres que están de acuerdo con un estilo de crianza permite que entremos en contacto con otras formas de hacer. Si nunca habías oído de BLW, por ejemplo, y lo descubres y sientes que te puede funcionar, te informas y lo aplicas o lo cuestionas. A la inversa también funciona: el fundamentalismo que a veces manifiesta la crianza con apego puede ver cuestionadas sus estructuras al ver otro tipo de experiencias que también tienen al respeto como su máxima de acción.

<sup>107</sup> Own translation. Original source: Te permite conocer diferentes puntos de vista y fuentes de información, de las cuales cada quien toma la más adecuada para su estilo de crianza y de maternidad.

The second guiding principle we detected in Momzilla was the *sense of belonging* to the community. This is an impression that a user develops overtime through the active engagement. As seen in Figure 92, 46.86% of the interviewees have been members of Momzilla between 1 to 3 years, 38.75% are registered since the last 6 months to 1 year ago, 8.49% are members since less than 6 months and 5.90% since three years or more. This evidence suggested than a little more than the half of the active membership in Momzilla was constituted almost in its half by more experienced members, being the rest in its majority novel participants.



**Figure 92: Membership (Momzilla).**

Collaborative learning practices, such as helping members in the community to obtain information or to learn by sharing knowledge, generate a *sense of belonging* to the community. In Momzilla, 90.37% of the respondents reported aiding their peers through these actions (see Figure 93). When looking to the frequency of collaboration, 31.3% of the interviewees mentioned incurring in these cooperative practices sometimes; 26.8% did it often, 25.4% sometimes, 8.5% said they had done it two times or more, 6.6% commented they did it always, 1.1% never and 0.4% had only helped one time (see Figure 94). In addition, 88.24% mentioned that they received feedback from other members when they contributed with comments or resources in their threads (see Figure 95).



Have you helped other members in the community to obtain information or increase their knowledge on a topic?

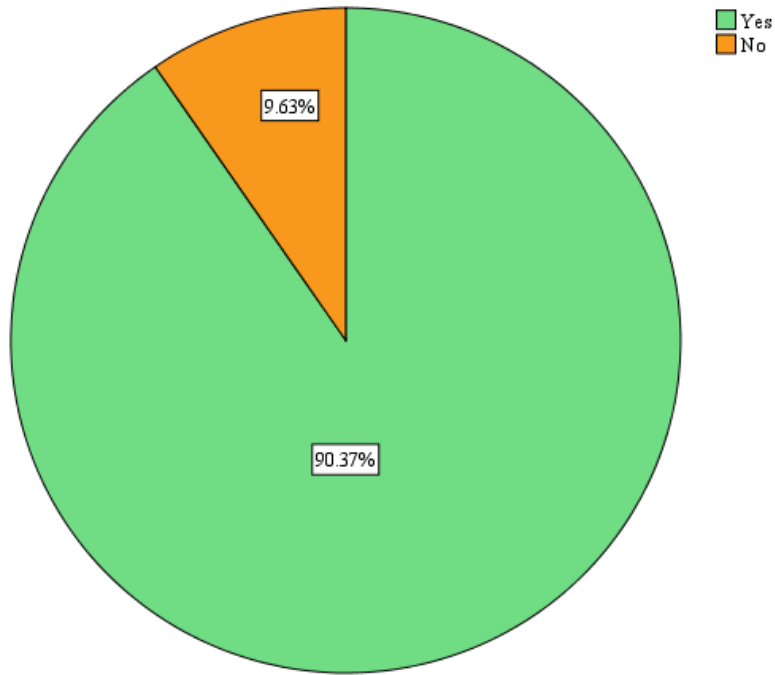


Figure 93: Cooperation in the community (Momzilla).

How often do you help other members in the community?

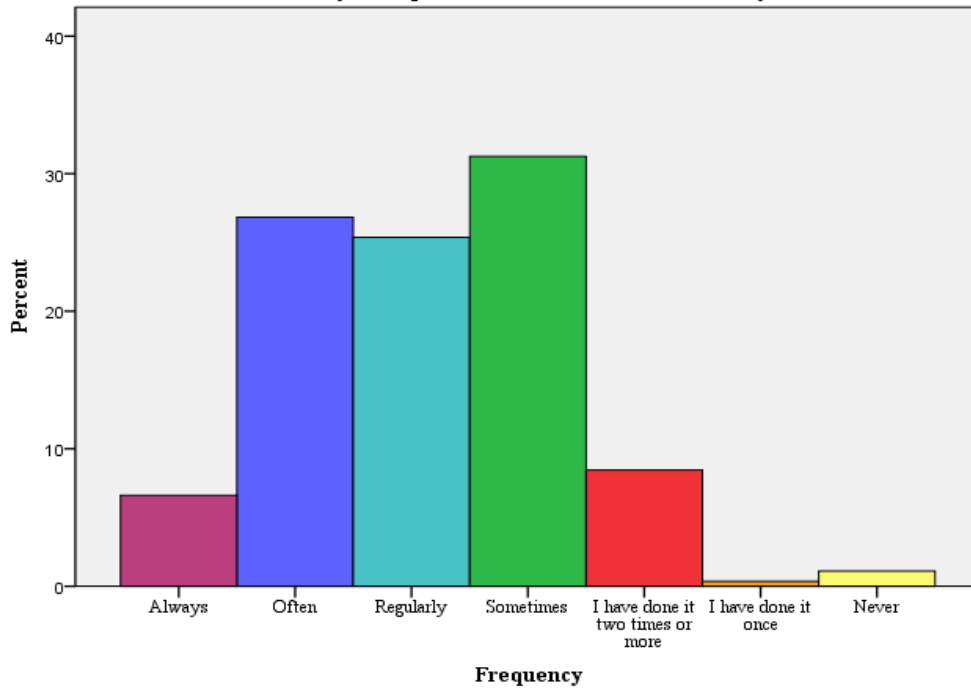


Figure 94: Frequency of cooperation (Momzilla).

Have you received any feedback from members in the community with regards to your help and/or contribution?

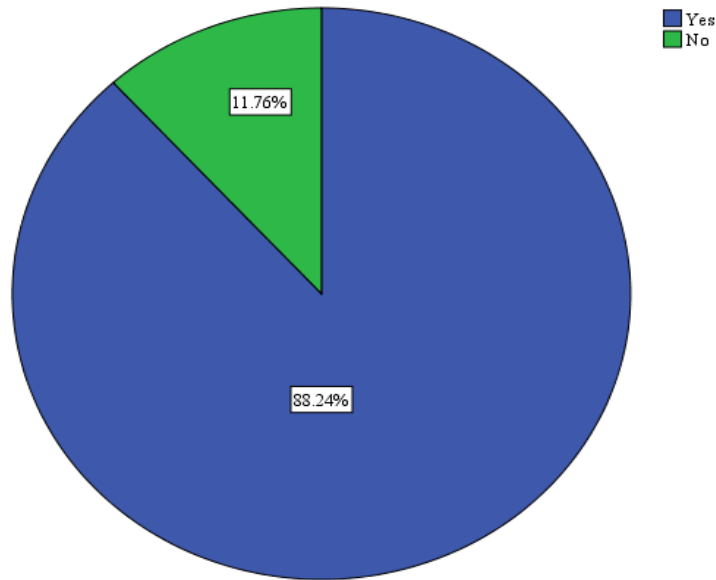


Figure 95: Cooperation and feedback (Momzilla).

According to 64.71% of the respondents, the frequency of interactions has led them to build relationships with certain members in Momzilla (see Figure 96). As seen in Table 29, the interviewees mentioned that through Momzilla they have mainly met people who shared their interests (73.1%), people in similar life situations (68.4%), friends/acquaintances (47.3%) and persons with similar hobbies (42.2%).

Have you built a virtual relationship with certain users due to your frequent interactions with them?

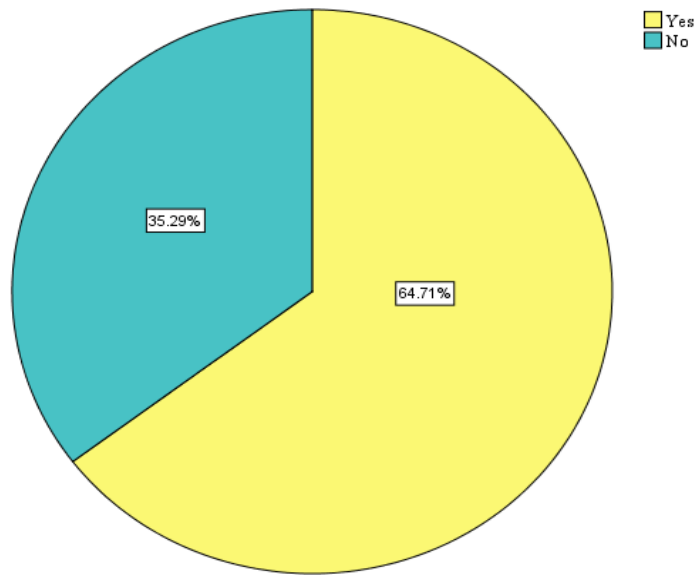


Figure 96: Virtual relationship among members (Momzilla).

**Which of these groups have you become more connected to through this community?**

Groups		Count	Percentage
People who share my interests (political, economic, social, health, academic/educational, etc.)	No	74	26.9%
	Yes	201	73.1%
People who share my hobbies / recreational activities	No	159	57.8%
	Yes	116	42.2%
People who share my religion or spiritual beliefs	No	254	92.4%
	Yes	21	7.6%
People in my profession	No	221	80.4%
	Yes	54	19.6%
People in my family	No	222	80.7%
	Yes	53	19.3%
Colleagues from my work place	No	254	92.4%
	Yes	21	7.6%
Friends or acquaintances	No	145	52.7%
	Yes	130	47.3%
People in similar life situations	No	87	31.6%
	Yes	188	68.4%
Other group	No	266	96.7%
	Yes	9	3.3%
None	No	268	97.5%
	Yes	7	2.5%

**Table 29: Contact with other groups (Momzilla).**

When questioned specifically about their *sense of belonging*, the members who participated in the online survey agreed to the fact that they felt a sense of community in Momzilla and that members of the BIC were responsive, as they read and answered threads with interest. Interviewees stressed that there were two or three members that posted and interacted more frequently in Momzilla, making them “known faces” in the BIC. However, they felt that the level of participation and interaction was not well balanced in the community. At the same time, they mentioned that they can access information with ease through Momzilla and that several members of the community have expertise in diverse topics. Respondents rated the information available in the community as trustworthy and of good quality. They also highlighted the fact that the community managers foster collaboration and respect among members, while being always available for them. (See Table 30).

**Indicate the degree of agreement  
with the following statements:**

<b>Sense of belonging</b>	<b>Perception (Mode)</b>
a) I feel a sense of community in my online community.	4
b) I feel members are interested in reading and answering my posts.	4
c) I feel members are interested in getting to know more about me after reading my posts or contributions.	3
d) I consider that the level of participation in my community is well balanced among its members.	2
e) I think that the level of interaction in my community is well balanced among its members.	2
f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members.	5
g) I feel confident that I can easily obtain the information I need from my online community.	4
h) The data and content shared by the members is trustworthy and of good quality.	3
i) Several members in my community are experts in their topic.	4

j) The information available in the community is trustworthy and of good quality.	4
k) The community manager promotes an atmosphere of collaboration and respect in the community.	5
l) The community manager is available for the members at all times.	5

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree
- 1 = don't know
- 9 = Not answered

**Table 30: Sense of belonging (Momzilla).**

Other factors that have strengthened overtime the *sense of belonging* in Momzilla are the support to entrepreneurship and the development of a network of support through the community. The case of the various entrepreneurial projects from the members has been a first cornerstone in terms of cohesion, according to the founder of the BIC:

“We are conscious that Momzilla has become a very important business platform for the moms of the group. To allow and foster the local commerce, so to say, has fortified the sense of being part of and the comradeship” (H. Söns, Momzilla founder. Personal communication, May 17, 2016).<sup>108</sup>

The need to find peers interested in exchanging honestly the know-hows and experiences of an informed upbringing for their children and the fact that Momzilla turned into a space that provided its members with this possibility is what allowed the BIC to turn into network of support, which is its' second cornerstone in terms of sense of belonging:

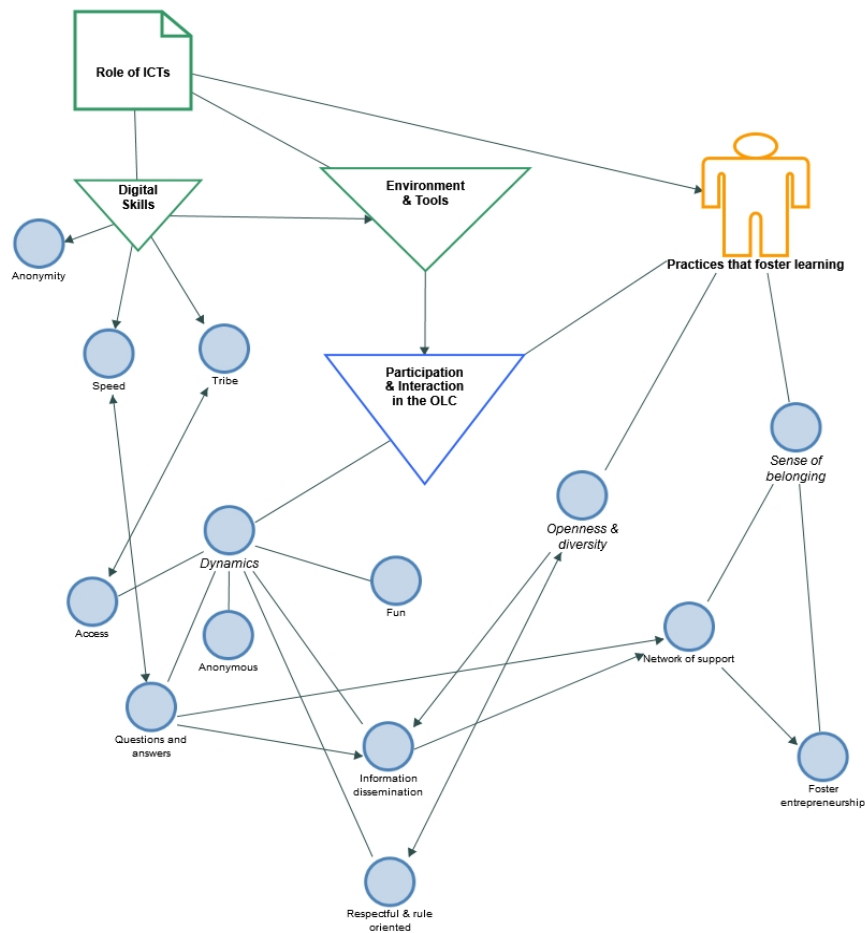
“Motherhood is a very dull way and when you become mother for the first time (in particular if you are the first from your family and friends to have children), you feel very lonely and you need a tribe that understands you, with whom you can share your fears,

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<sup>108</sup> Own translation. Original source: Estamos muy conscientes de que Momzilla se ha convertido en una plataforma de ventas muy importante para las mamás del grupo. Permitir y fomentar el comercio "local", por llamarlo de alguna manera, ha fortalecido la sensación de pertenencia y compañerismo.

frustrations and joys, and Momzilla accomplishes to provide this emotional support for its members. It is a tribe and a security net” (M. Monroy, community manager. Personal communication, May 24, 2016).<sup>109</sup>

The results discussed in this section suggest that the digital skills of the members of an OLC, together with the specific practices found to drive learning in a community are elements that configure the particular way through which an OLC can foster learning. Furthermore, we observed that the specific dynamics of participation and interaction of the community are interrelated to their guiding values. These principles and dynamics shape together the practices that impulse learning in an OLC. In this regard and to conclude this section, we provide an overview of the interdependence of each element considered to be of importance in fostering learning in Momzilla through the following figure:



**Figure 97: Conceptual map of the elements that foster learning in a Blended Interest Community: Momzilla.**

<sup>109</sup> Own translation. Original source: La maternidad es un camino muy árido y cuando te vuelves madre por primera vez (y si además eres de las primeras de tu familia o de tus amigas en tener hijos) te sientes muy sola y necesitas una tribu que te entienda, con quien puedas compartir tus miedos, frustraciones y alegrías, y Momzilla logra ese efecto de contención en sus miembros. Es una tribu y una red de seguridad.

### **6.3.2 Perceived (Lifelong) Learning Value**

For “Perceived (Lifelong) Learning Value”, the second theme from our category “Learning in Community”, we considered four main aspects. First, we investigated if members recognized their learning activities affected in any way, depending on the OLC’s type of environment (online or blended). For doing so, we explored different questions about information, learning and knowledge in the OLC. Second, we explained the ways public OLCs increase knowledge, according to the experiences of their members. Third, we reflected on the users’ point of view about the quality of learning and knowledge acquisition with respect to virtual and blended environments. Fourth, we elaborated on the significance that OLCs have for learning in different stages and settings by approaching this question in terms of the members opinions and engagement in their communities.

We delved into these four topics for each of the OLCs that we selected as case studies. Therefore, in this section we present a comprehensive explanation about the lifelong learning assets that online or blended learning communities provide (if any), based on our quantitative and qualitative evidence. In this regard, through Momzilla, we exemplify the lifelong learning value that the community, as BIC, provided its members with.

#### **I. Questions about information, learning and knowledge**

In which ways do members increase their knowledge in public OLCs? is an essential research question for exploring how users utilize the tools and resources of online communities for their lifelong learning purposes. Likewise, the question aids for understanding the dynamic of the triad information-learning-knowledge present in these communities. In this subsection, we present the results obtained from the online survey about the topics of information, learning and knowledge, from the perspective of the members consulted in Momzilla.

The series of queries included in the online survey aimed to describe the nature of the information found in the BIC and the way members perceived its usefulness for learning and building up their knowledge in matters of motherhood. In the case of Momzilla, 93.81% of the interviewed members considered that the BIC was a useful source of information (see Figure 98), be it by obtaining it through the forum, by accessing the resources available in the community’s repository<sup>110</sup> or by making use of the search engine within the Facebook Groups’ Platform.

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<sup>110</sup> At the time of the data collection, the Facebook Groups’ design included a “Files Section”, through which members could upload documents in .doc, .jpg and .pdf formats or create them in .txt format. During the netnography’s monitoring period in Momzilla, its’ repository included 70 files. The type of documents that could be found here was very diverse: sale ads, e-books, recompilations of information from various online sources, articles from professionals and experts, lists with resources, service/product recommendations and advice, etc. Nevertheless, what these files had in common was their focus on motherhood, family/household, and children’s topics.

Are you able to find suitable answers to your questions while browsing in the sections of the community?

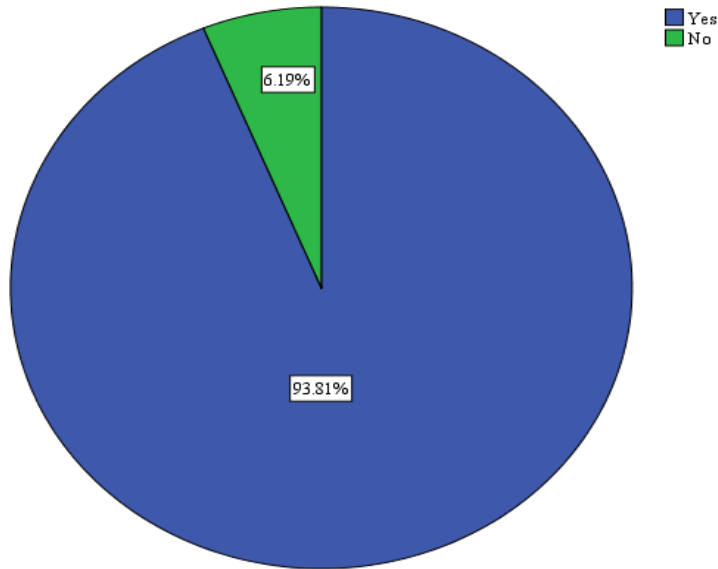


Figure 98: Community’s usefulness for searching and finding information (Momzilla).

More than the half of the interviewees reported that they took significantly less time in finding the information they needed through the community, in comparison with other ways available through the Internet (see Figure 99). 32.75% of the surveyed members mentioned they took about the time they expected when searching for information in Momzilla.

In comparison to other ways of accessing to information in internet, how much time did it took you to find answers to your questions in the community?

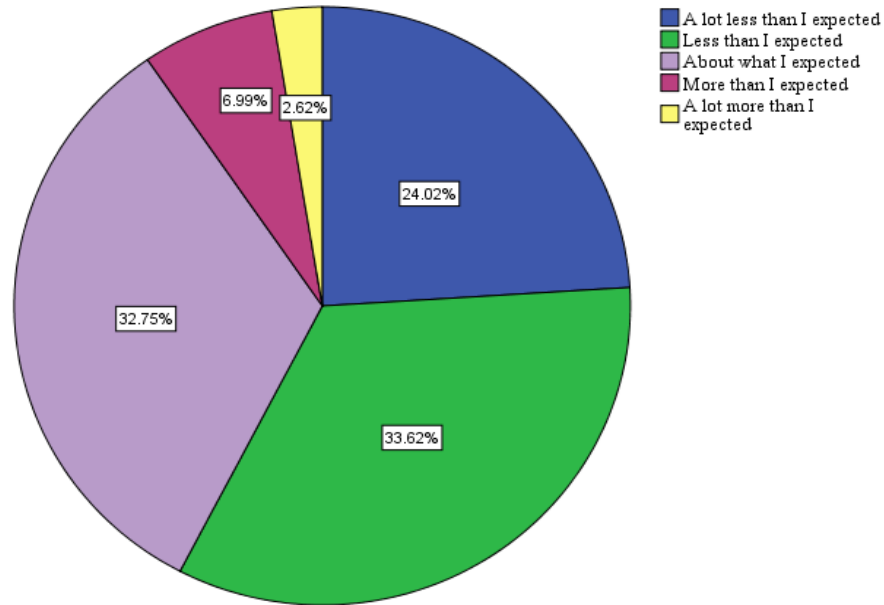
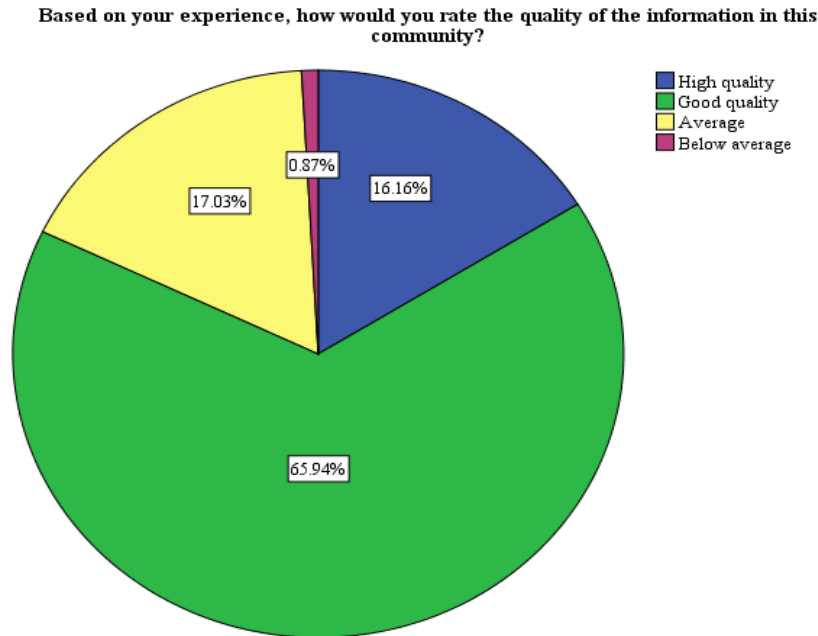


Figure 99: Span of time needed to search and find information (Momzilla).



It can be seen from the results reported through Figure 100 that the members rated positively the quality of the information found in Momzilla, with a 65.94% from the interviewees rating it as good and 16.16% as high quality respectively.



**Figure 100: Quality of information (Momzilla).**

In terms of learning and knowledge, the survey results showed that Momzilla is a positive source to learn and become knowledgeable in motherhood topics. As it stands out in Figure 101, 95.18% of the interviewed members considered that the BIC helped them to increase their knowledge. Interestingly, almost 70% of the interviewees acknowledged that their participation in the Momzilla has increased their knowledge more (49.55%) and a lot more (20.27%) than they expected (see Figure 102).

Do you consider that the online community has helped you to increase the knowledge in a topic of your interest?

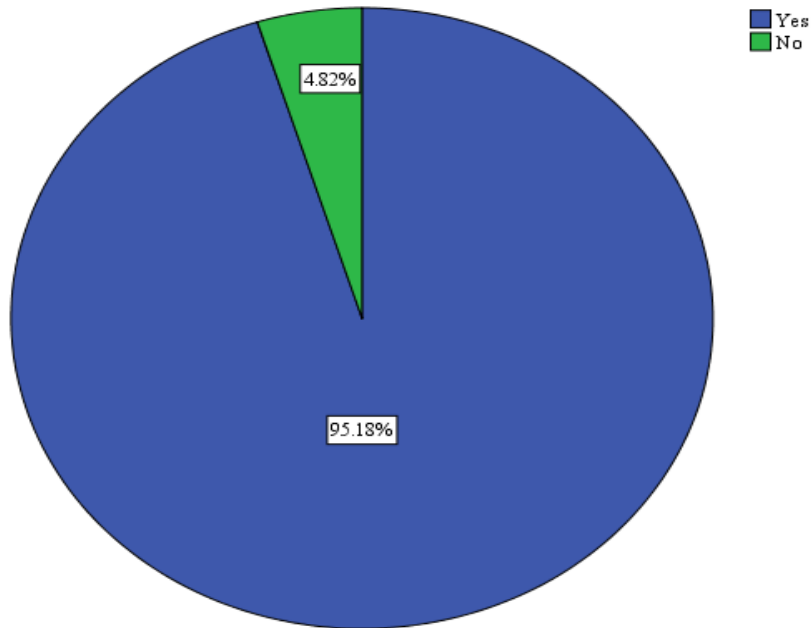


Figure 101: Contribution to knowledge (Momzilla).

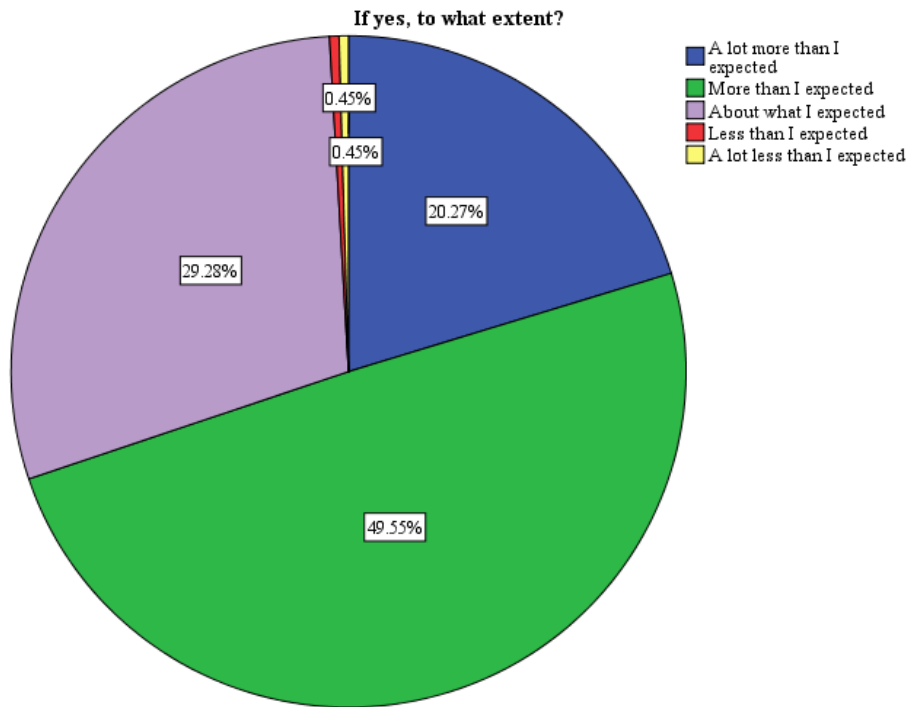


Figure 102: Extent of contribution to knowledge (Momzilla).

## II. Ways the OLC-BIC increases knowledge

In the first subsection, “Questions about information, learning and knowledge” we described the nature of these elements for the case of Momzilla. In this second subsection we complemented our research question In which ways do members increase their knowledge in public OLCs? with the results of the thematic analysis of our qualitative data and the correspondent queries of the online survey. Through the netnography conducted in the BIC and the interviews with members of Momzilla, we detected four main themes that illustrate the particular ways through which this type of OLC increased knowledge. These themes are: (1) Allowing the existence of diverse sources, (2) Giving room for self-reflection and discussion, (3) Providing a secure space and (4) Being a supply of up-to-date information. In the following lines, we explain in detail each of these four themes.

### *a) Allowing the existence of diverse sources*

When interviewed, various members from the BIC agreed on that a first way by which Momzilla increased their knowledge about motherhood was through the diverse information proved in the praxis available in the community. In other words, they learned by getting to know from other mothers what has worked and what has not for them in their everyday life. Consequently, this gave them the opportunity to choose between the answers provided, the one or more solutions that could help them best, based on their specific situation:

“One reads threads simply for the fact of reading fragments of the lives of other persons, and clearly, the information stays. You remember more what you read in a thread long ago about the experiences of a mom with regard to the problems she is experiencing, for example with the night diaper from her baby that does not hold enough and with all the answers and recommendations from other moms that solved it, that with something you read in a website with specific information about the topic” (A.C., personal communication, June 2, 2016).<sup>111</sup>

“In general (the resources I find in Momzilla) give me different perspectives and allow me to learn. This is because in a short thread I can get to know various things in comparison to reading a longer article, without saying that I do not read other sources of information, but (Momzilla) only complements it” (A.R., personal communication, May 15, 2016).<sup>112</sup>

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<sup>111</sup> Own translation. Original source: Uno lee posts simplemente por el hecho de estar leyendo trozos de vida de otras personas, y claro, la información se va quedando. Se graba más haber leído en un post hace siglos sobre las vivencias de una mamá respecto a los problemas que está pasando, por ejemplo, con que el pañal de noche de su bebé no es suficiente, y con todas las respuestas y tips de otras mamás que ya lo resolvieron, que algo que lea una en una página de información concreta con este tema.

<sup>112</sup> Own translation. Original source: En general me dan varias perspectivas y me enseñan. Porque en un post corto puedo enterarme de varias cosas a diferencia de leer un artículo más amplio, sin decir que no leo otras fuentes de información, sólo lo complementa

Some interviewees commented that the community had also broaden their perspective of how to exercise their motherhood due to the exposure to a polyphonic concert of experiences and testimonies, just as this member summarized in her answer:

“Each topic that has been touched about upbringing (in the community) I like to research it in detail, read all the comments, experiences, books, etc. Thanks to the fact that I entered Momzilla just in time I got to know about co-sleeping and free demand breastfeeding, I even decided to make a prolonged breastfeeding! Things like this have changed radically my way of thinking (which was different) before Momzilla!” (L.G., personal communication, May 19, 2016).<sup>113</sup>

As seen, a first way in which members increase their knowledge in Momzilla is through the access to a variety of informative resources. Nevertheless, while the forum and the data repository found in the BIC were the two modus to access information within the community, Momzilla developed its’ own social media channels in Facebook, Instagram, Pinterest, Twitter, and Spotify in order to share publicly carefully curated content:

“We have different social networks through which we recollect the most trustworthy contents, be it information that is shared in the group or data that reaches us through other means. We are already considered a mean of communication among mothers, that is why we are fortunate to receive newsletters and valuable data” (H. Söns, Momzilla founder. Personal communication, May 17, 2016).<sup>114</sup>

Despite the success of Momzilla in being an OLC that shares diverse sources with its members and the public, 65.49% of the interviewees did not considered Momzilla as a source that substituted the ways they had for informing themselves or learning about motherhood, according to the results shown by Figure 103. This outcome goes in line with the fact that 80.35% of the respondents perceived the BIC more as a complementary source of information, rather than a main one (see Figure 104).

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<sup>113</sup> Own translation. Original source: Cada tema que se ha tocado sobre crianza me gusta investigarlo a fondo, leer todos los comentarios, experiencias, libros, etc. Gracias a que entré a Momzilla (a tiempo) conocí el colecho y la lactancia a libre demanda, además de que decidí hacer una lactancia prolongada! Son cosas que han cambiado radicalmente en mi forma de pensar antes de Momzilla!

<sup>114</sup> Own translation. Original source: Contamos con redes sociales en las que recogemos los contenidos más confiables que se comparten en el grupo o que nos llegan por otros medios. Ya somos consideradas como un medio de comunicación entre mamás, así que tenemos la fortuna de que nos lleguen boletines y datos valiosos.

Has the community become a source that substitutes other ways of accessing information and learning about the subject of your interest?

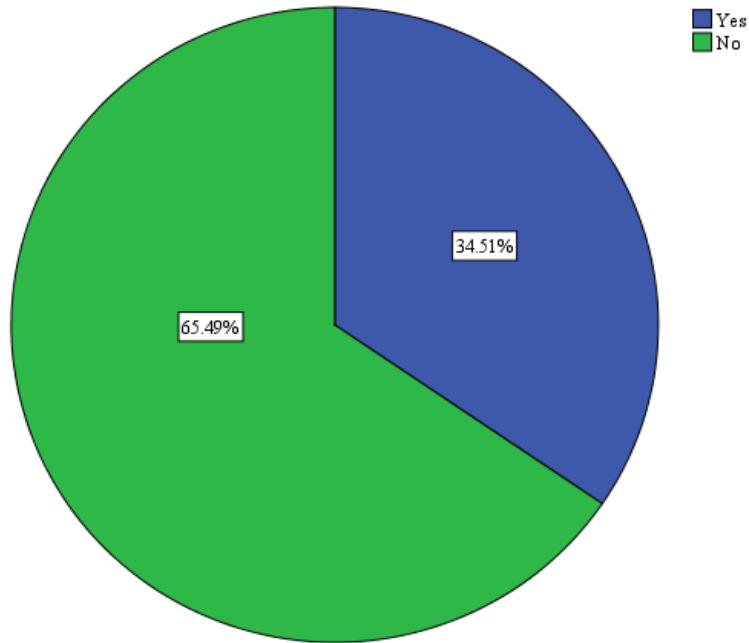


Figure 103: Substitute of information sources (Momzilla).

Is the community your main source for accessing information and learning about the topic of your interest?

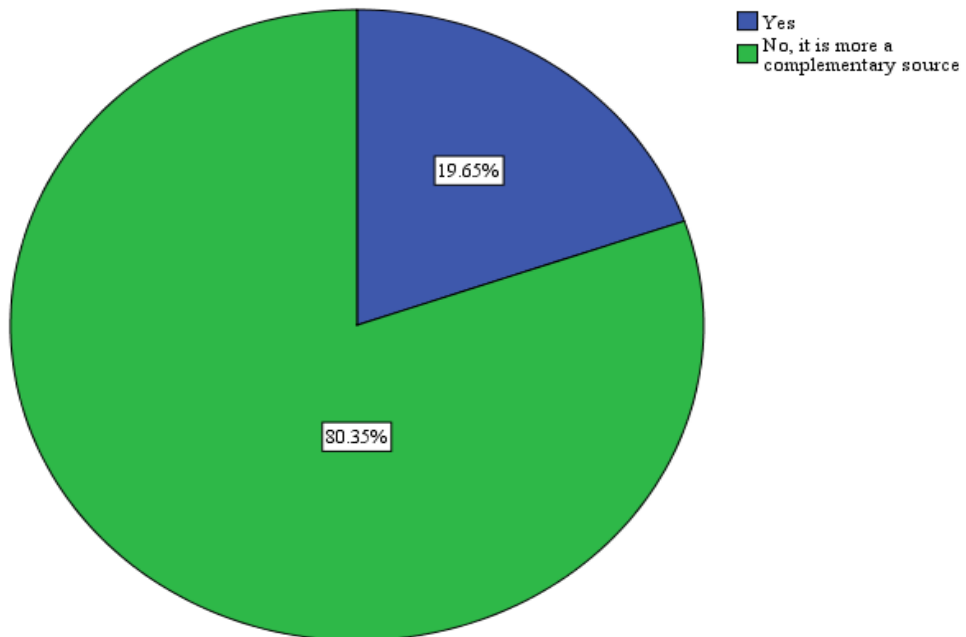


Figure 104: Main source of information and learning (Momzilla).

With respect to the specific resources available in Momzilla that are used for informational and learning purposes, respondents reported that the forum (newsfeed) and the text, image, or multimedia informative resources available in the community were the two most useful ones (see Table 31).

**Which of the following resources in your community have you found more useful for satisfying your informational and learning needs?**

Resources		Count	Percentage
Discussion group or forum	Rank 1	164	71.3%
	Rank 2	40	17.4%
	Rank 3	13	5.7%
	Rank 4	13	5.7%
	Rank 5	0	0.0%
Private message	Rank 1	14	6.1%
	Rank 2	75	32.6%
	Rank 3	72	31.3%
	Rank 4	35	15.2%
	Rank 5	34	14.8%
Webinar	Rank 1	3	1.3%
	Rank 2	9	3.9%
	Rank 3	29	12.7%
	Rank 4	61	26.8%
	Rank 5	126	55.3%
Recorded audio and video	Rank 1	3	1.3%
	Rank 2	17	7.5%
	Rank 3	46	20.2%
	Rank 4	101	44.3%
	Rank 5	61	26.8%
Text, image or multimedia resources available for self-study/information	Rank 1	46	20.1%
	Rank 2	89	38.9%
	Rank 3	69	30.1%
	Rank 4	18	7.9%
	Rank 5	7	3.1%

Rated according to their usefulness, being 1 the most useful and 6 the least useful.

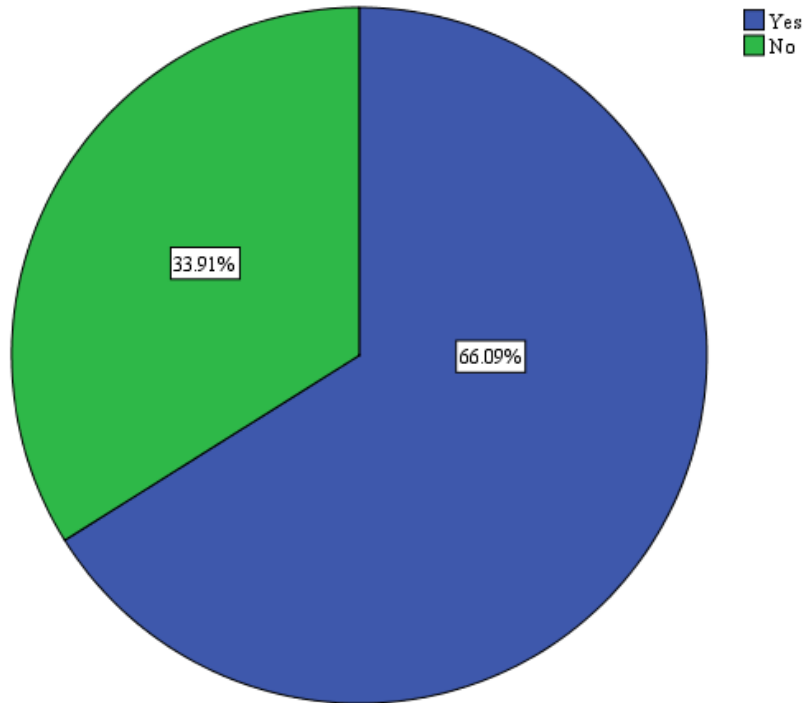
**Table 31: Usefulness of online learning resources (Momzilla).**

***b) Giving room for self-reflection and discussion***

66.09% of the interviewees considered that their presence in Momzilla -in terms of active participation- was important for building up both the informative resources and accessing learning possibilities through the community (see Figure 105). In this regard and as shown in Table 32,

active members assessed the BIC as important for obtaining specific information and learning about motherhood, be it by exercising their self-learning while scrolling through the platform, by interacting with other mothers and/or the community manager and by making use of the collaborative learning approach of Momzilla reflected in the members' questions, answers and contributions found in the forum.

**Do you think that your presence contributes to the information resources and learning processes in the community?**



**Figure 105: Presence contribution with regards to information resources and learning (Momzilla).**

**Please indicate your opinion to the following statements:**

	<b>Rate (Mode)</b>
a) How important do you consider the online community for obtaining specific information on your interest?	4
b) How important do you consider the online community for learning something new by yourself?	4
c) How important do you consider the contributions of the other members of the community for your own learning?	4
d) How important do you consider your interactions with the community manager for your own learning?	4
e) How important do you consider your interactions with other members of the community for your own learning?	4

Statements were rated using a scale of 1-5 (1 being not important at all, 5 being very important).

**Table 32: Perception of the role of the community with regards to information and learning (Momzilla).**

Moreover, and according to the results shown in Table 33, in Momzilla, lurking -understood as reading through the threads found in the newsfeed and the forum- was rated as the most important activity performed by the members in order to solve doubts or learn something new related to their journey as moms. Discussing in threads and interacting with knowledgeable members were also assessed, in second place of relevance, as important elements in terms of learning and knowledge build-up. The answers provided by other members to their own threads were mentioned in third place of importance.



Which of the following elements, in order of importance (1 being the most important, 6 the least important), have helped you to increase your knowledge?

		Count	Percentage
Reading posts	Rank 1	85	37.0%
	Rank 2	50	21.7%
	Rank 3	36	15.7%
	Rank 4	19	8.3%
	Rank 5	20	8.7%
	Rank 6	20	8.7%
Participation in discussions	Rank 1	43	18.7%
	Rank 2	51	22.2%
	Rank 3	46	20.0%
	Rank 4	34	14.8%
	Rank 5	37	16.1%
	Rank 6	19	8.3%
Answers of / Interaction with an expert when I have posted something	Rank 1	42	18.3%
	Rank 2	51	22.3%
	Rank 3	49	21.4%
	Rank 4	38	16.6%
	Rank 5	32	14.0%
	Rank 6	17	7.4%
Answers of / Interaction with members when I have posted something	Rank 1	34	14.8%
	Rank 2	44	19.1%
	Rank 3	62	27.0%
	Rank 4	65	28.3%
	Rank 5	23	10.0%
	Rank 6	2	0.9%
Answers of / Interaction with the community manager	Rank 1	0	0.0%
	Rank 2	1	0.4%
	Rank 3	10	4.4%
	Rank 4	33	14.4%
	Rank 5	59	25.8%
	Rank 6	126	55.0%
Educational and/or informative resources available in the community	Rank 1	26	11.4%
	Rank 2	33	14.4%
	Rank 3	27	11.8%
	Rank 4	40	17.5%
	Rank 5	58	25.3%
	Rank 6	45	19.7%

**Table 33: Activities in the community that help to increase knowledge (Momzilla).**

These quantitative results were supported when interviewing different members in Momzilla. They all agreed that the BIC could be considered as a space that allowed self-reflection and discussion for mothers. We include a testimonial from members of the community which gives an interesting insight in this respect:

“It has helped me more what I read and see, than what I participate. I try to provide answers when I know them or if this or that has worked for me, but I also question myself a lot and this questioning exercise also helps my motherhood. I will give you an example: I could not breastfeed, and I went to face-to-face groups, virtual groups and even ended up with one of the gurus from Alba Lactancia, who could also not give me a solution. This hurted me a lot and I kept carrying it with me. One day (in Momzilla), a pro-breastfeeding woman posted a meme that said something like “we all have milk” and that not breastfeeding was a pretext. To write her a well-argued response allowed me to put in order what I felt and to overcome that feeling of disdain from those who breastfeed their babies until they are 5 years old. Sometimes, to write about something in a forum obliges you to create answers for you, to look for external validation, but also to organize (your thoughts and feelings). It is not the same to write a blog or in a notebook, than to wait for the interaction to occur. Sometimes this is how it helps me to participate (in the community), other times, it is thought its’ most obvious sense: to ask concrete questions in order to obtain concrete answers. This helps me to see other realities, to be less rigid and more intuitive” (B.P., personal communication, May 17, 2016).<sup>115</sup>

### *c) Providing a secure space*

A third way through which the BIC helped members to increase their knowledge in terms of motherhood topics is by being a safe environment where mothers can express concerns and share their problems:

“(It has helped me to deal with) the expectations about the psychological development of my son and to feel understood in difficult moments” (C.B., personal communication, May 16, 2016).<sup>116</sup>

“I love (the possibility) of the anonymous vent, I have used it in a topic that made me feel very insecure as mom and the answers provided gave me thousands of possibilities and perspectives that I needed to know from someone that was not from my family, that was

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<sup>115</sup> Own translation. Original source: Me ha ayudado más lo que leo y veo que lo participo. Procuero dar las respuestas si las sé o si a mí me ha funcionado tal o cual cosa pero también cuestiono mucho y este ejercicio de cuestionar me sirve para mi propio ejercicio de la maternidad. Te voy a dar un ejemplo: yo no pude dar pecho y fui a grupos físicos, virtuales e incluso acabé con una de la gurús de Alba lactancia que tampoco me supo dar solución. Me dolió mucho esto y lo traía cargando. Un día una mujer prolactancia subió un meme que decía algo así como que "todas teníamos leche" y que no dar era un pretexto. Escribirle una respuesta argumentada me ayudó a poner en orden lo que sentía y a superar ese menosprecio de las que lactan a sus cachorros hasta los 5 años. A veces escribir en torno a algo en un foro te obliga a crear respuestas para ti, a buscar la validación externa pero también a ordenar. No es lo mismo escribir en un blog o cuaderno que esperar la interacción. A veces así me ayuda participar, y las otras veces, pues en su sentido más obvio: preguntar cosas concretas para buscar respuestas concretas. Me ayuda a ver otras realidades, a ser menos rígida y más intuitiva.

<sup>116</sup> Own translation. Original source: Expectativas en el psicodesarrollo de mi hijo y en el sentirme comprendida en momentos difíciles.

not subjectively blinded out of love. I cherish and thank this, and I participate every time I feel I can help someone feeling so vulnerable as I was...the infertility, the abortions, the mistakes, I like how these topics are handled with humanity” (L.A., personal communication, May 16, 2016).<sup>117</sup>

“In my concrete case, (Momzilla helps me to) not worry so much and to be less apprehensive. To see that these things are ‘normal’ or if they are problems and difficult experiences, the fact that all other mothers have gone through this, calms me down. It allows me to see that, at the end, everything will pass and will have an ‘easy’ solution. And to be honest, the fact that one is ‘exposed’ to so different people, with so varied values, with ways to do things that are the opposite of what I would do, opens your perspective in an important way. For me, at the beginning, (it was useful), in particular with practical topics related to health or security of my babies and long after with the topic of how to raise (or not to raise, hahahaha) my daughters” (A.C., personal communication, June 2, 2016).<sup>118</sup>

#### ***d) Being a supply of up-to-date information***

A fourth recurrent theme identified as a way that allowed learning was the sense of timeliness given by an OLC such as Momzilla. Members felt that the quick answer-question interactions and the continuous flow of information provided them with actualized and practical knowledge:

“To feel a direct identification with the people and the problems makes the sharing of information more effective, and also as these are empirical questions, one gives priority to them in their list of ways to solve something” (A.C., personal communication, June 2, 2016).<sup>119</sup>

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<sup>117</sup> Own translation. Original source: Me encanta el desahogo anónimo, lo he aplicado en un tema que me daba muchísima inseguridad como mamá y las respuestas me dieron mil posibilidades y perspectivas que necesitaba oír de alguien que no fuera mi familia, que no tuviera la ceguera subjetiva del cariño. Esto lo valoro y agradezco, y participo cada que siento que puedo ayudar a alguien que está así de vulnerable... la infertilidad, los abortos, los errores, me gusta cómo se trata la humanidad en estos temas.

<sup>118</sup> Own translation. Original source: En mi caso concreto, a no preocuparme tanto y ser menos aprensiva. A ver que es "normal" o que son problemas o experiencias difíciles pero que ya todas han pasado por eso, tranquiliza. Me permite saber que al final todo va a pasar y tendrá una solución "fácil". Y la verdad, pues también al estar "expuesta" a personas tan diferentes, con valores tan distintos y variados, con maneras de hacer las cosas tan opuestas a como lo haría uno, pues abre el panorama de una manera importante. Para mi, al principio, sobre todo con temas prácticos de salud o seguridad de mis bebés, y después mucho con el tema de cómo educar (o cómo no hacerlo, jajajaja) a mis hijas.

<sup>119</sup> Own translation. Original source: El sentir una identificación directa con las personas y los problemas, hace mucho más efectiva la información que se comparte, además de que como son cuestiones empíricas uno les da prioridad en su lista de maneras de resolver algo.

“Because I read (the Momz) every day, sometimes every three times a day, that allows me to get to know about different aspects (of motherhood) and to keep updating myself in topics or situations that others experience and that I can take as a learning” (A.R., personal communication, May 15, 2016).<sup>120</sup>

### III. Qualities of learning and knowledge acquisition

In this third subsection, entitled “Qualities of learning and knowledge acquisition”, we explored the singularities that members recognized in a BIC like Momzilla, when compared to other online or mixed format learning possibilities. For doing so, we approached our data collection guided by two of our research questions. The first question considered was: Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending on whether they participate in virtual or blended environments?

In the case of Momzilla, 75.65% of the interviewees referred that learning through an online community was different in comparison to other offline and online possibilities (see Figure 106). In addition, as Figure 107 illustrates, 77.43% of the respondents identified OLCs as a complementary source to obtain information and/or increase their knowledge.

Do you consider that learning through an online community is different in comparison to other ways of accessing information and learning about the subject of your interest?

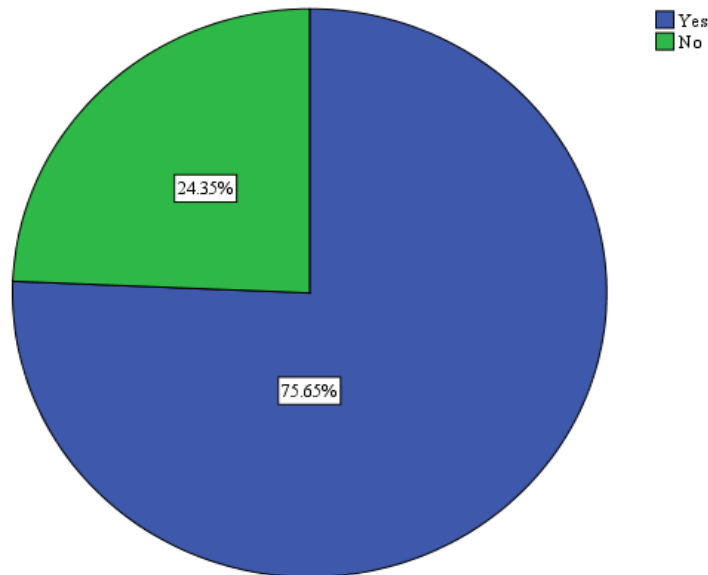
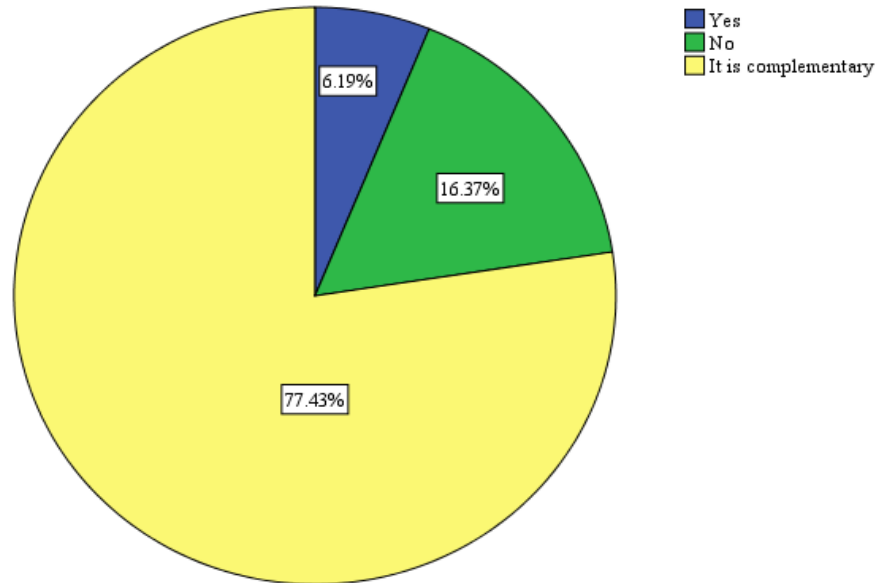


Figure 106: Perception of online community as source of information and learning (Momzilla).

<sup>120</sup> Own translation. Original source: Porque las leo diario, a veces hasta tres veces en el día y eso me permite enterarme de diferentes asuntos al respecto e irme actualizando en temas o situaciones que les pasan a otras y yo lo puedo tomar como aprendizaje.

**Do you think that your learning process through the online community is better off in comparison to other options that you could also use to obtain information/knowledge about the topic of your interest?**



**Figure 107: Perception of quality of learning through an online community (Momzilla).**

While our online survey revealed that a majority of members perceived OLCs as a distinct and counterbalancing alternative for learning, in comparison to other virtual and blended options, we considered necessary to explore the reasons behind these impressions. In this regard, it is important to emphasize that, from our observations, we noticed that such wherefores depend on the nature of each community and its membership.

In order to illustrate this finding, we considered relevant to examine in what ways was the learning and knowledge acquisition different and complementary in an OLC like Momzilla. We made a further exploration of this question by contrasting the survey results with our qualitative analysis. This allowed us to detect two specific characteristics that differentiated the BIC, according to its' users' perceptions: (a) Multiple experiences and points of view, and (b) Opinions from experienced members and experts.

#### ***a) Multiple experiences and points of view***

When asked about their learning experiences in Momzilla, 36.1% of the survey respondents agreed that their participation in the BIC made them modify their approach towards any problems faced in terms of motherhood or child upbringing, and 37.0% mentioned that their participation in the community also made them modify their learning objectives in that respect. 51.3% referred that they learned in a different way than expected, while 51.5% considered that their participation in

Momzilla allowed them to discover new means for learning about motherhood topics (see Table 34).

**Indicate your degree of agreement  
with the following statements:**

	<b>Rate (Mode)</b>
a) My participation in the online community has made me modify my approach towards problems.	3 (37.8%) 4 (36.1%)
b) My participation in the online community has made me modify my learning objectives.	3 (37.4%) 4 (37.0%)
c) My participation in the online community has made me learn in a different way than I expected.	4 (51.3%)
d) My participation in the online community has made me reflect on the existence of various ways of learning.	4 (51.5%)

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree
- 1 = Don't know
- 9 = Not answered

**Table 34: Participation and learning (Momzilla).<sup>121</sup>**

Heterogeneity was a first quality that distinguished the learning experiences and the knowledge acquisition made through the BIC. This multiplicity of user profiles and experiences generated interaction, discussion, and engagement at a community level, together with an individual assessment of the own perspectives when confronted with other points of view with regards to specific topics around motherhood. Moreover, different interviewed members agreed on the fact that this exposure through Momzilla to a variety of contexts, experiences and frames of reference was an element that differentiated their learning when compared to other virtual or blended opportunities:

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<sup>121</sup> We report the Mode values of the rating with percentages, because the two highest values obtained (3=Neither agree nor disagree and 4= Agree) in two of the four statements were very close.

“Due to the fact that there are women of all social status and professions, the richness (in terms of learning) is greater because it allows us to analyze each situation from many different angles” (A.R2., personal communication, May 17, 2016).<sup>122</sup>

“It’s the wisdom that comes directly as a product from experience, it does not stay in the theory. You can generate a dialogue where you can express concerns and doubts. There is not only one solution or answer, the possibilities are many” (T.P. personal communication, May 16, 2016).<sup>123</sup>

### ***b) Opinions from experienced members and experts***

The opinion-driven environment from Momzilla was the second quality that defined the learning experiences and the knowledge acquisition through the BIC. Through our netnography, we detected that the community did offer good quality learning possibilities such as a repository of online learning resources within the forum, an efficient community management that checked that the information sources shared were trustworthy, members that contributed with verified content, as well as live conversations with professionals and conferences in their face-to-face events. Notwithstanding, the need to read answers from a variety of experienced voices when having a question or concern was, without a doubt, the most popular way through which members learned about motherhood in Momzilla, as described by an interviewed member from the BIC:

“I think that there are still many ideas or false myths about important topics and that very few women educate themselves or research in the correct places about the baby development, the stages of growth, the children behaviour, or the capacity of the brain of the baby. Many expect to have children that behave like small adults and they loose control (from being surprised, angry up to being violent) when their child responds like a child in specific situations. I try to share interesting articles from trustworthy sources, but in general I believe that Momzilla is more a place of opinions rather than facts” (MC.G, Personal communication, May 17, 2016).<sup>124</sup>

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<sup>122</sup> Own translation. Original source: Al haber mujeres de todos los estratos sociales y de todas las profesiones, el enriquecimiento es mucho mayor ya que nos permite analizar cada situación desde muchos ángulos diferentes.

<sup>123</sup> Own translation. Original source: Es la sabiduría que viene tal cual de la experiencia, no se queda en lo teórico. Se puede generar un diálogo en donde puedo expresar mis inquietudes y dudas. No hay una única forma de solución o respuestas, las posibilidades son muchas.

<sup>124</sup> Own translation. Original source: Me parece que todavía se propagan muchas ideas o mitos falsos sobre temas importantes y que muy pocas mujeres se educan o investigan en los lugares correctos sobre el desarrollo del bebé, las etapas de crecimiento y el comportamiento infantil, y la capacidad del cerebro del bebé. Muchas esperan tener hijos que son como adultos chiquitos, y pierden el control (desde la sorpresa, el enojo hasta la violencia) cuando su hijo responde como niño ante determinadas situaciones. Yo trato de compartir artículos interesantes de fuentes confiables, pero en general Momzilla es un lugar más de opinión que de hechos.

It is precisely this exchange of opinions what allowed mothers to interact with other experienced and even expert members from Momzilla, which in return opened their understanding about motherhood. As two interviewed Momz mentioned:

“(I learn) through the contribution that each one of us make (questions, opinions, observations) and the guide of experts that are members of the group that can correct or verify the information, as well as through the experience of each of us” (A.R., personal communication, May 15, 2016).<sup>125</sup>

“I like the dynamic, I think there are many persons that truly know about certain topics and that has given me very good perspectives” (K.S., personal communication, May 15, 2016).<sup>126</sup>

Our first research question considered for this section, Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending whether they participate in virtual or blended environments? was important for exploring the distinctive nature of a BIC like Momzilla. Nevertheless, we pondered necessary to also reflect on the influence that participating in an OLC had in the learning experience, both when considering the actual participation in the community and also in comparison to other environments.

Thus, for this section we also analyzed our data collection based on a second research question: Do members feel that their learning activities are affected in any way depending on if they participate in a purely virtual or blended environment? In this case, the themes detected from the data analysis showed that the (a) Interaction through virtual and face-to-face contexts, the (b) Applicability based on experience and the (c) Relation to the Mexican context were the specific conditions that influenced the learning experience in this BIC.

#### ***a) Interaction in virtual and face-to-face contexts***

As shown in Figure 108, 65.94% of the respondents in Momzilla considered that, in general, they learned the best in blended environments. A 26.20% of the interviewed members said that they still learn better offline and only 7.86% replied that online was their preferred way for learning.

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<sup>125</sup> Own translation. Original source: Con la aportación que cada una hace (preguntas, opiniones, observaciones) y la guía de las profesionales que hay como miembros del grupo y que pueden negar o verificar la información, o la experiencia de cada quién.

<sup>126</sup> Own translation. Original source: Me gusta la dinámica, creo que hay mucha gente que verdaderamente conoce de ciertos temas y me ha dado muy buenos enfoques.



In your opinion and according to your different learning experiences throughout your life, in which environment do you think you have learned the best?

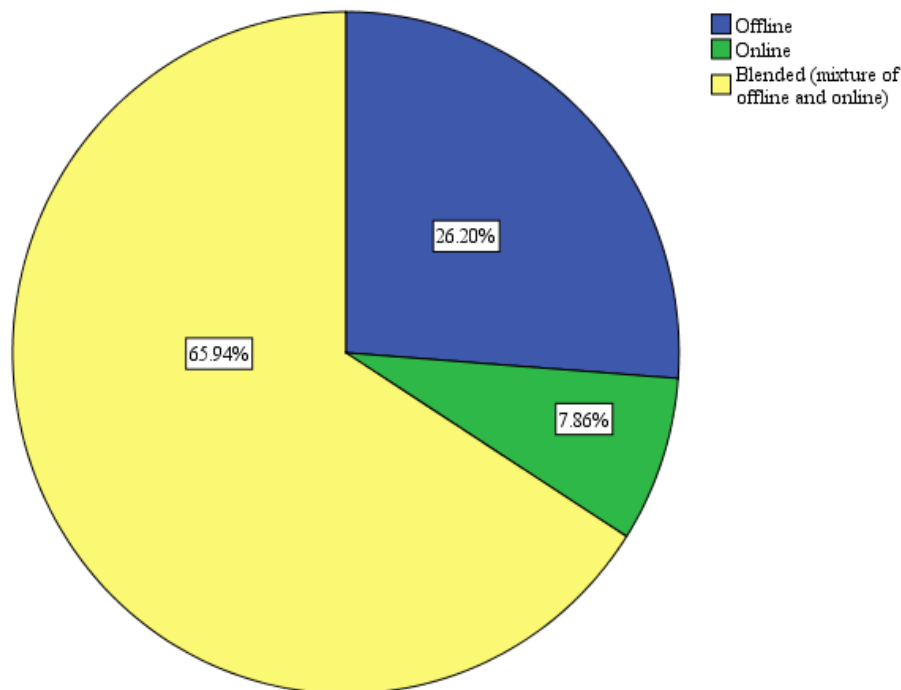


Figure 108: Best learning environment (Momzilla).

The choice for the blended learning preference is exemplified by the actual nature of Momzilla. Enabling the participation and interaction in virtual and face-to-face contexts such as the forum, the online talks with experts and the meetups through the Momzilla Fest facilitated different learning experiences and knowledge acquisition possibilities, as explained by one of the members of the community:

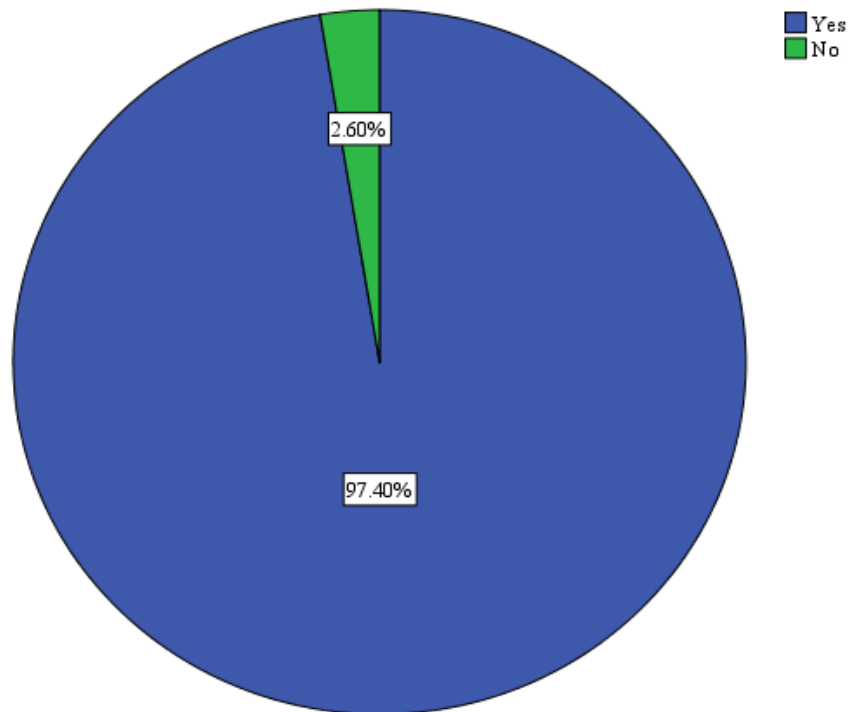
“(In the case of Momzilla) the resources available are very good (the books, for example), but honestly I think that the advices (for the cough, for the tantrums, etc.) are the preferred ones; it is as if you had that intuition (of what to do) but you just want to confirm it with other contemporaries, before searching a more scientific source. This is not wrong, we all need someone that understands us, even with our contradictions, but it is difficult for people to even read a complete article. What I truly think helps a lot are the conferences, because they are immediate during the Fest and they have the plus of the social gathering” (L.A., personal communication, May 16, 2016).<sup>127</sup>

<sup>127</sup> Own translation. Original source: Es bastante bueno el material a disposición (los libros, por ejemplo) pero la verdad me parece que los consejos (que si para la tos, los berrinches, etc) son los preferidos; es como si uno tuviera esa misma intuición pero nada más quisiera confirmarla con más contemporáneas, antes que buscar una base más científica. No está mal, todas necesitamos alguien que nos entienda hasta en nuestras incongruencias, pero cuesta que las personas lean hasta un artículo completo. Lo que sí creo es que las conferencias ayudan muchísimo, porque son

***b) Applicability based on experience***

According to the opinion of the surveyed members, Momzilla was perceived as a very useful OLC. As shown in Figure 109, 97.40% of the respondents considered that the knowledge they have obtained through it has been applicable for their daily activities and needs. Moreover, and when looking at Figure 110, it can be seen that the expectations regarding the information access and the learning possibilities about motherhood topics were exceeded. 18.42% mentioned that the knowledge obtained from the Momzilla was a lot more applicable that they had expected, while 56.58% referred that it was more applicable than they had expected.

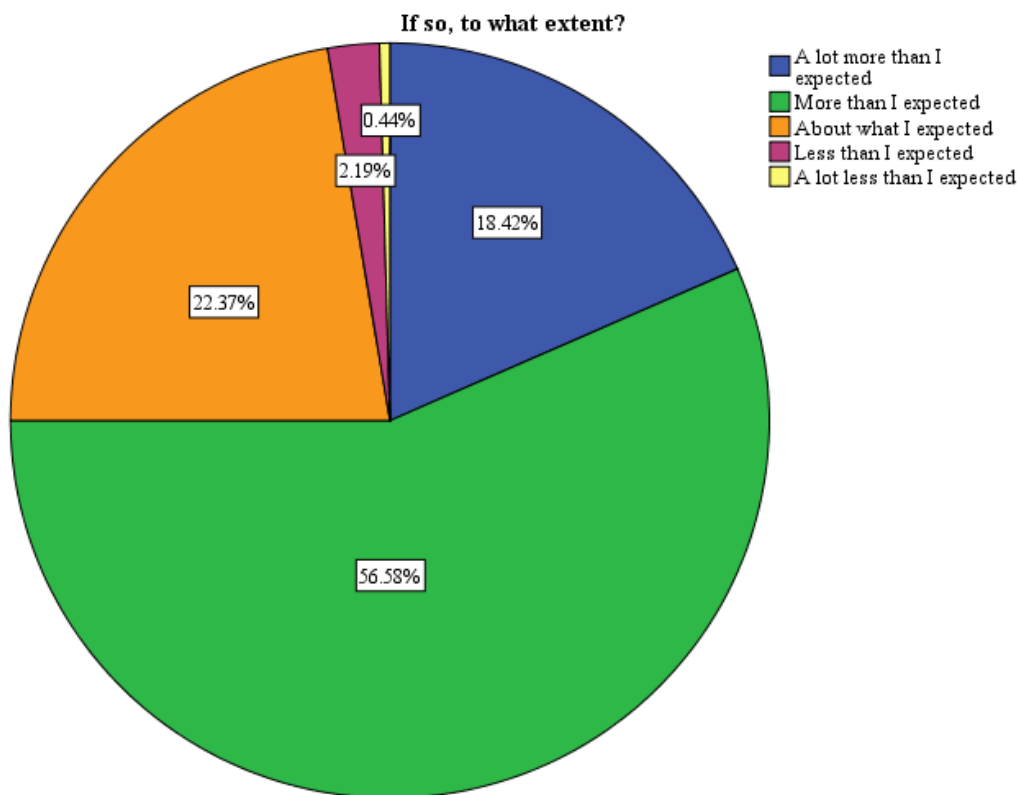
**Do you consider that the knowledge obtained through the online community is applicable to your daily activities/needs?**



**Figure 109: Community's knowledge applicability (Momzilla).**

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inmediatas durante el Fest y lleva el plus de la convivencia.



**Figure 110: Extent of community's knowledge applicability (Momzilla).**

Why was the knowledge obtained from Momzilla rated so positively in terms of applicability? In words from various members, learning through this BIC was different because as the knowledge was gained from contemporary women in similar life circumstances, it made it practical and near:

“Here we share experiences, as much as positive as negative. Is not the pink color information that we are used to listen to (L.G., personal communication, May 19, 2016)<sup>128</sup>”.

“(Learning in Momzilla) is real and honest, it brings examples of real women (H.Y., personal communication, May 20, 2016)<sup>129</sup>”.

“(In terms of learning, Momzilla is different because) it is basically like having a giant data base with problems/solutions that is already digested. Someone explains a problem, someone else offers solutions and everything are proven things, experimented, ‘in real

<sup>128</sup> Own translation. Original source: Aquí compartimos experiencias tanto positivas, como negativas. No es la información color de rosa que estamos acostumbrados a escuchar.

<sup>129</sup> Own translation. Original source: Es real y honesta, es ejemplo de mujeres verdaderas.

time as it happens’, that I considered much more valuable than all the information that could be compiled in books or other means, from which I might always doubt a bit because I do not know exactly who and why says this or that. But mostly because one can have in one single question, many opinions that can be different and from this you can, according to your personal criteria, consider options, compare information, ask more and finally take a decision (knowing that if this would not work, you can ask again and ten minutes later you will have again a great variety of options) (A.C., personal communication, June 2, 2016)<sup>130</sup>”.

### *c) Relation to the Mexican context*

An additional characteristic that made learning different in Momzilla when compared to other online or blended options, was the fact that the information was tailored according to the Mexican context. Current social, economic and gender situations lived in the everyday lives of Mexican women were presented and discussed. Traditions, language, and cultural aspects related to Mexico permeated the conversations. This particular Mexican identity from the BIC made members feel engaged to the discussions and the content and was, at the same time, an important factor that explained the close sense of belonging from the mothers, independently from their location in the country and even the world. As two interviewed members reflected:

“In Momzilla we talk with respect, we have a common interest, who participate here belong more or less to the same sociocultural circle from the country. It is a feminine group with experimented women who contribute with knowledge about the subject” (H.Y., personal communication, May 20, 2016).<sup>131</sup>

“A friend from the university invited me with the warning that ‘at the beginning you might be puzzled, but there are good tips’. And true was that, first, I was surprised. I was there with my postpartum depression and my anthropologist vices and now being confronted to a reality to which I had belonged and that I did not remember so clearly (because I live abroad): the Mexican classism, the traditions, the caring spirit and even the prayer to the Guadalupe Virgin. This was a fascinating experience to observe. But then this line became blurry and one day I just started to participate commenting. I stayed because I spend many

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<sup>130</sup> Own translation. Original source: Básicamente porque es como tener una base de datos gigantesca de problemas/soluciones que de alguna manera ya está digerido. alguien plantea un problema, alguien ofrece soluciones, y todas son cosas probadas, experimentadas y "en tiempo real" que yo considero mucho más valiosa que toda la información que podría recopilar en libros, o en otros medios, de los cuales siempre voy a dudar un poco pues no conozco exactamente quién y por qué dice tal o cual cosa, pero sobre todo porque tiene uno en una misma pregunta muchísimas opiniones que pueden ser diferentes y ahí mismo puede uno, a partir de su criterio personal, sopesar opciones, comparar información, preguntar más, y por lo tanto tomar una decisión (sabiendo que si ésta no funcionara, vuelve uno a preguntar, y en 10 minutos tendrá de nuevo una amplia gama de opciones).

<sup>131</sup> Own translation. Original source: Que se habla con respeto, que se tiene un interés común en las participantes, que quienes participan pertenecen al mismo círculo sociocultural del país. Es un grupo femenino y quienes aportan son mujeres experimentadas con conocimiento en la materia.

hours in front of the computer, and this is a fun way to procrastinate. But I have also learned things, I have applied tips, I have laughed a lot. Through motherhood (and in Momzilla) I reconnected with my Mexicanity and at the same time many known faces reappeared: friends from the university, friends from the school, friends from my sisters, friends from friends...so to say a “small world” (B.P., personal communication, May 17, 2016).<sup>132</sup>

#### **IV. Significance for lifelong learning**

In our fourth subsection, denominated “Significance for lifelong learning” we investigated the value that Momzilla had for its members in terms of lifelong learning. For doing so, we rested upon our research question: Is the knowledge acquired through the engagement in a public OLC significant for the individual development of the members, in different stages and settings? The data analysis conducted in our qualitative data collection, provided us with various elements to answer this question, which were summarized in four main themes: (a) Window to diversity, (b) Empathy and support, (c) Entrepreneurship pragmatic knowledge and (d) Causes and awareness. In the following lines, we discuss each theme with the intention to reveal aspects from the participation in the BIC that were detected as relevant for the members in terms of lifelong learning.

##### ***a) Window to diversity***

Parenthood changes the lives of women and men in small and big ways. It affects even the tiniest everyday routines. It shifts priorities, and objectives so much as relationships. To adapt to these transformations requires quick learning and adjustments. Hence, parenthood exemplifies well the significance of lifelong learning. In this stage of life, people need to acquire factual as well as practical information and knowledge in order to make sense and deal with this new event in their existence.

From the point of view of the interviewees, in this period of their lives, a first element that both differentiated and complemented their lifelong learning about motherhood and upbringing through an OLC in a relevant way, was the fact that Momzilla served as a window to diversity. The heterogeneous opinions, experiences and resources shared, fostered the interaction of the members in terms of the way they truly were, and not the way they were expected to be. Moreover, and reinforcing the evidence discussed in previous sections, this diversity fed greatly the sense of

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<sup>132</sup> Own translation. Original source: Una amiga de la universidad me invitó con la advertencia de que "quizá te saques de onda al principio pero hay buenos tips". En efecto, al principio me saqué de onda. Estaba ahí con toda mi depre postparto y mis vicios de antropóloga y sobre todo enfrentándome a una realidad a la que había pertenecido pero que no recordaba tan nítidamente: el clasismo mexicano, las tradiciones, el espíritu apapachador y hasta las oraciones a la Virgen de Guadalupe. Me resultó fascinante como experiencia a observar. Después esa línea se desdibujó y no sé cómo un día empecé a comentar. Me quedé porque paso muchas horas frente a la computadora y porque es una forma de procrastinación divertida. También he aprendido cosas, he aplicado tips, me he reído mucho. Con la maternidad volví a reconectar con mi mexicanidad y además empezaron a aparecer muchas conocidas: amigas de la universidad, amigas del colegio, amigas de mis hermanas, amigas-de-amigas... en fin "mundo pequeño".

belonging, the empathy, and the sorority in the community, due to the identification and the will to support each other:

“(Learning through an online community is different) because we talk about many topics, and we help each other. It provides me with knowledge and experiences that are different to mine” (A.R., personal communication, May 15, 2016).<sup>133</sup>

“(Learning through an online community about parenthood is different) because I believe in a feminist motherhood, and this is not possible without the support of other women. I believe in raising up my child together with my partner and in an upbringing in tribe and networks, in particular during the exogestation, which is one of the most vulnerable periods of the dyad mama-baby. I also believe that my experience can be useful for other mothers and (I believe) in the power of women when they join for a project, which is immense” (M.C.G, Personal communication, May 17, 2016).<sup>134</sup>

### ***b) Empathy and support***

According to various members, the practical knowledge obtained from an OLC is valuable for their lifelong learning due to the advice and the emotional uphold that members can give and get through their participation and interaction in these communities. Hereof, the instant access to information and contacts fostered by the ICTs and the Internet have undoubtedly played an important role in the flourishing of maternal communities, such as the BIC Momzilla. As one of the interviewed moms described, the personal circumstances of women, in addition to the number of social challenges faced when becoming a mother, have encouraged a bigger need to find answers and company outside the own circles through this type of communities:

“Nowadays, the children upbringing has become a very lonely task for many women due to the physical, generational, or ideological distance with our own mothers. The validation of knowledge comes through different venues than the traditional ones because now it's not enough with the ‘my mom told me so’ or ‘this is how they raised me’. To meet in a group of peers (because of age, experiences, ideology, or socioeconomic profile) encourages this community growth. If we add to that the wish to belong to a community, it is easy to understand the success” (B.P., personal communication, May 17, 2016).<sup>135</sup>

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<sup>133</sup> Own translation. Original source: Porque se habla de muchos temas y nos ayudamos mutuamente. Me aporta conocimiento y experiencias diferentes a las mías.

<sup>134</sup> Own translation. Original source: Porque creo en una maternidad feminista y esto no es posible sin el apoyo de otras mujeres. Creo en materner a la par que mi compañero y en una crianza de tribu y redes, especialmente durante la exogestación que es de los periodos más vulnerables de la diada mamá-bebé. También porque creo que mi experiencia puede resultar útil a otra mamá y en el poder de las mujeres cuando se unen alrededor de un proyecto, que es inconmesurable.

<sup>135</sup> Own translation. Original source: Para muchas mujeres hoy en día la crianza se ha vuelto una tarea en solitario por la distancia física, generacional o ideológica con nuestras madres. La validación del conocimiento tiene otras vías diferentes a las tradicionales porque ya no basta con que "mi mamá me lo dijo" o "así me criaron a mí". El encontrarse

In the case of Momzilla, mothers opened up and shared personal stories, at times painful and complex. This physical and emotional vulnerability that comes with becoming/being a mother and the empathy and support expressed by the members through advice and encouragement aided in the reflection, release and learning at an individual level, and reinforced the cohesion at a community level. In words of an interviewed mom, this was, without a doubt, one of the major contributions to lifelong learning that a BIC like Momzilla provided to its members:

“I believe a big influence (of these communities for the lifelong learning) is that when one joins, one is in a very difficult moment, socially speaking. With little time left for nothing that has nothing to do with babies, with thousands of problems that are common, but you cannot ask just to anyone. You think that your friends without babies are tired of listening only about diaper topics, but you still have the need to ask about diapers or to feel empathy because you don't sleep, to feel identified in everyday things or deeper topics around the life changes that motherhood implies, etc. In this type of topics, one appreciates the immediate answer for things that for the rest of the world can seem trivial but that when you are in the situation, they consume your life literally...for example...the teething discomfort. Or how comforting it is to read that the giant problems you are going through are normal, that other women could be experiencing something similar and that there are real solutions and that you are not crazy” (A.C., personal communication, June 2, 2016).<sup>136</sup>

In addition, through our data analysis we noticed that Momzilla also helped in building bridges among Mexican mothers belonging to the community but that lived outside Mexico City and even abroad. Our netnography revealed the active participation of members from 30 cities within the country, as well as from Mexican members living abroad and located in 17 different countries. We also identified foreign mothers from 7 diverse countries of origin who were actively engaged in the BIC during the monitoring period. Hereof, Momzilla resulted useful not only to solve doubts about motherhood, but also about the lifestyle, culture, and traditions for members in their new hometowns. The BIC has even served as a starting meeting point, according to the testimony of one of the mothers:

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en un grupo de "iguales" (por edad, por vivencias, por ideología, por perfil socioeconómico), alienta ese crecimiento comunitario. Si a eso le sumamos que hay un anhelo de pertenencia a la comunidad, es fácil entender por qué el éxito.<sup>136</sup> Own translation. Original source: Creo que influye mucho el hecho de que cuando uno entra, está en un momento difícil socialmente hablando. Con poco tiempo para nada que no tenga que ver con los bebés, con miles de problemas que si bien son muy comunes, no son cosas que se puedan preguntar a cualquiera. Uno supone que sus amigos sin bebés están medio hartos de escuchar sólo temas de pañales pero uno igualmente tiene necesidad de preguntar sobre pañales, o de sentir empatía por no dormir, poder encontrar identificación con temas cotidianos o más profundos respecto a todos los cambios de vida que implica la maternidad, etc. En este tipo de temas, uno agradece la inmediatez de respuesta en cosas que al resto del mundo pueden parecer triviales, pero que estando ahí consumen tu vida de manera literal... por ejemplo... las molestias de dentición. O bien, lo tranquilizador que resulta leer (al menos para mi) que los problemas gigantes por los que una está pasando, pues son normales, que todas las demás puede que pasen por algo similar y que por lo tanto hay solución real, y que no está una loca.

“It has been useful for expatriates like me to find each other and make community in the cities where they are living”. (M. Monroy, community manager. Personal communication, May 24, 2016).<sup>137</sup>

### *c) Entrepreneurship pragmatic knowledge*

Very much related to the empathy and support provided by OLCs is the fact that these communities often allow self-promotion of services and products of their members. During our netnographic monitoring in Momzilla, we observed that the community management implemented a well-regulated space within the environment to provide mothers with online and face-to-face opportunities in order to start a business and/or learn in the process through the entrepreneurship pragmatic knowledge available in the BIC. In a certain way, this represented a lifelong learning outcome for certain Momz derived from their active participation in Momzilla. Concurrently, we also noticed through our netnography during the monitoring period how members supported other members in their ventures creating win-win situations, as described in the following interview fragments:

“We are very conscious that Momzilla has turned into a very important business platform for several mothers in the group. To allow and foster this local economy -inside and outside Momzilla-, so to say, has also strengthen the sense of belonging and comradeship in the community” (H. Söns, Momzilla founder. Personal communication, May 17, 2016).<sup>138</sup>

“(Momzilla has become) a platform for business, in particular for mothers that find no possibilities to conciliate schedules and distances that regular, full-time jobs require. In addition, in Mexico the concept of handmade products and the direct contact between seller and buyer works out very well” (L.A. personal communication, May 16, 2016).<sup>139</sup>

### *d) Causes and awareness*

While OLCs usually focus on a main subject and its related topics, it can happen that due to the engagement, the sense of belonging and the trust developed overtime, members dare to share their private problems, ideology, and beliefs. In some cases, when a specific topic resonates within the

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<sup>137</sup> Own translation. Original source: Ha servido para que expatriadas como yo se encuentren y puedan hacer comunidad en las ciudades donde se encuentran

<sup>138</sup> Own translation. Original source: Estamos muy conscientes de que Momzilla se ha convertido en una plataforma de ventas muy importante para las mamás del grupo. Permitir y fomentar el comercio "local", por llamarlo de alguna manera, ha fortalecido la sensación de pertenencia y compañerismo.

<sup>139</sup> Own translation. Original source: Creo que principalmente lo que lo ha hecho crecer tanto es la posibilidad de ser plataforma de negocio; sobretodo para mamás que no encuentran como volver a encancharse en horarios y distancias que los trabajos regulares obligan. Además que creo que en México lo artesanal y el trato "directo" entre vendedor y comprador funciona muy bien.



members or is relevant in a particular context, the users may get from other members more than just advices in the form of organized help, trustworthy information for the victims/users and support to their causes. An aftereffect of such actions translates into members learning about a topic that they might have ignored completely or known only superficially about and thus, raising the individual and collective consciousness about the problem or situation in question.

Through our data collection analysis, we detected the existence of such situations in our selected BIC. Thereof, a fourth theme that resulted significant in terms of lifelong learning was precisely the awareness created by Momzilla among its members around a variety of causes:

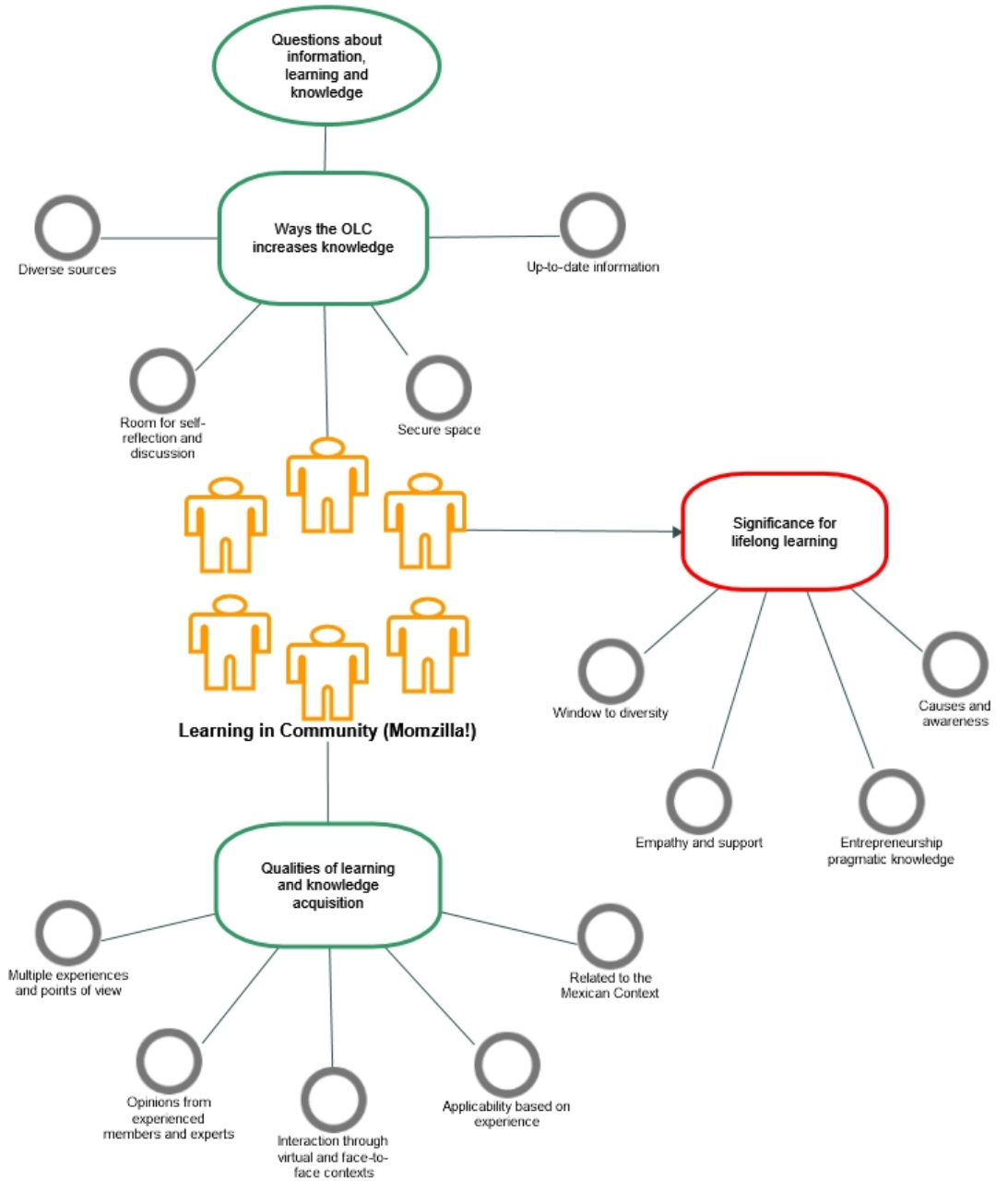
“(Momzilla has encouraged learning and helped also) in other senses: the participation or several of us in “The Bold Day” to accompany a mom with cancer and feel for just one day how she feels every day; at the end of February, we made a small campaign to raise awareness about rare diseases. The moms or their children that have one of the 2,500 diseases felt contained and even two of them whose daughters have one of this health conditions started to keep in contact. With #MyFirstHarrassment many members could share, anonymously, something that they had stuck inside of their souls for long. In all of these cases, each of the women recognized that they felt supported” (M. Monroy, community manager. Personal communication, May 24, 2016).<sup>140</sup>

Indeed, and as we reported in the section “Relevant Themes for the Community”, during the netnography’s monitoring period in Momzilla, a topic that dominated the threads and conversations several weeks was precisely, as mentioned by Monroy, the one of sexual mishandle from children and women. The conversations within the community revolved around this subject -from harassment, sexism up to psychological and sexual abuse-. Many anonymous and public testimonies were shared in the forum. Support, awareness, and education measurements were taken and offered by the community managers and different members of the Momzilla in form of counselling, legal services, informative articles, workshops and even demonstrations.

As a closing note for this chapter, we included a figure that outlines the different elements that fostered learning in Momzilla, which consisted of the questions about information, learning and knowledge; the ways that the OLC increased knowledge; and the qualities of learning and knowledge acquisition. Likewise, the diagram portrays how these elements related to the perceived lifelong learning significance that Momzilla, in its role of OLC-BIC, had for its’ members.

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<sup>140</sup> Own translation. Original source: En otros sentidos: la participación de varias de nosotras en "The Bold Day" para acompañar a una chica con cáncer y sentirnos por un día como ella; a finales de febrero hicimos una pequeña campaña de concientización sobre enfermedades raras, las chavas que padecen o que sus hijos presentan alguna de las más de 2,500 enfermedades se sintieron acompañadas e incluso coincidieron dos cuyas hijas tienen una de ellas y están en contacto. Con #MiPrimerAcoso muchas chicas pudieron sacar, de manera anónima, algo que tenían muy atorado. En todos estos casos las chavas reconocen que se han sentido ayudadas.



**Figure 111: Conceptual map of the value of a Blended Interest Community for Lifelong Learning, according to its members – Momzilla.**

## Chapter 7. Cross-Case Comparison & Discussion of Results

*“The more I live, the more I learn. The more I learn, the more I realize, the less I know”.*  
-Michel Legrand

### *Cross-Case Analysis Considerations*

The Case Study Research (CSR) approach (Harrison et al., 2017; Sandelowski, 2011) based on Robert K. Yin’s principles (2013) that we chose to integrate the results from our facilitative data collection and our mix method analysis, allowed us to present and discuss our findings through two complementary levels. First, we considered relevant to identify both the coincidental as well as the divergent aspects between the virtual and hybrid modalities of online learning communities (OLCs), following the definition, typology and rationale proposed by Urban Carlén and Ove Jobring (2005) that we are using as theoretical basis for the present study. Therefore, in Chapter 5 we portrayed Cambridge in Colour and Momzilla using an own developed Case Study Narrative (CSN), with the purpose to delve into detail in the contextual, thematic, learning dynamics and Lifelong Learning significance facets that distinguished each community. In this regard, the case studies were useful to illustrate in depth the features and conditions that foster Lifelong Learning in online and blended learning communities, according to the experience and voice of their memberships.

Second, we considered interesting to contrast as well if there were generalities and particularities among different types of OLC in terms of learning, given the findings that emerged from our in-depth case studies reports. As we stated in Chapter 3, our research is based on the OLC typology originally proposed by Carlén (2002), we selected and conducted our data collection in six communities that represented each modality and type of OLC: Momzilla, Cambridge in Colour, edWeb.net, NovaGob, Deutsch für Dich and Rare Connect. Hence, the intention of this chapter is to present a comparison among online and blended interest, educational and professional communities, so to recognize and discuss both the common and the unique attributes that fostered Lifelong Learning in the selected OLCs, independently of their modality or category. This comparison will be conducted based on Matthew B. Miles and A. Michael Huberman’s Cross-Case Analysis process (1994), which we explained in detail in Chapter 4, in the section “Methods Used for Data Analysis and Interpretation of Results”. Through this cross-case analytical exercise, together with our in-depth case studies, we consider we will have enough elements to answer the general research question that originated this study: How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its’ members?

Before discussing the results in terms of lifelong learning of the six case studies selected, we include the sections “Contextual Information” and “Relevant Themes for the Online Learning Communities” so to provide the reader with an overall background of the examples considered for our research. Our intention is to summarize, in a comparative way, topics such as the origin, the nature, the sociodemographic profile, the constituents, the life-stage and the significant thematic of discussion detected during the data collection period for each of the chosen communities.

## ***7.1. Contextual Information***

When approaching our selected communities through the CSR perspective, we considered the particular research question *How do public OLCs operate?* relevant for describing the elements that shaped and defined the identities of Momzilla and Cambridge in Colour. We believed that the careful report that we undertook in the previous chapter, allowed us to devise several elements that illustrate the nature of online and blended learning communities.

While it was expected that Momzilla and Cambridge in Colour would differ from each other given their topics (Motherhood vs. Photography), audience (Mexican mothers vs. Amateur and professional photographers from all over the world) and modality (Blended vs. Online), it resulted interesting to observe and illustrate in detail how contextual aspects such as the origins, hosting platform, vision or mission, objectives, identity traits, sustainability approach, language, membership size, age, gender, level of education, occupation and lifecycle stage of the community played a role in the definition and development of the two OLCs.

Moreover, and as we previously stated, the CSR approach allowed us to unveil not only the singularities of each community, but also to detect common elements and practices present in both OLCs that had an effect on their lifelong learning value, according to the perspective of their members. Given these results, we considered pertinent to analyze our six OLC through a comparative perspective and following the scheme we proposed in our CSN. This procedure is expected to allow us to contrast and verify the existence of shared traits and dynamics that foster lifelong learning, despite the differences and particularities given by the modality and type of OLC in question.

In this regard, when undertaking the research question *How do public OLCs operate?* from a cross-case perspective, we examined the contextual information by means of comparing and discussing the following points: (1) the relevant elements in terms of an OLC overview, (2) the sociodemographic questions, (3) the constituents and (4) the lifecycle stage for each of our communities.

Concerning the first point, we considered that, to provide an overview for each of the selected OLCs of our research, it was important to address the general attributes that were useful for describing their nature. Hereof, we examined these nine attributes: (a) type of community, (b) origins, (c) platform, (d) access, (e) vision/mission, (f) objective, (g) identity's notorious characteristics, (h) sustainability and (i) language. Each of these elements is summarized, per OLC, through the following matrix:

Contextual information						
OLC Overview	Communities					
	Cambridge in Colour	Momzilla	edWeb	NovaGob	Deutsch für Dich	Rare Connect
Type	Online Interest Community (OIC)	Blended Interest Community (BIC)	Online Professional Community (OPC)	Blended Professional Community (BPC)	Online Educational Community (OEC)	Blended Educational Community (BEC)
Origins	Created in March 2013 by Heike Söns	Founded by Sean McHugh and launched in 2005	Founded by Lisa Schmucki in July 2007 and launched in November of the same year. Constituted as a company in February 2008	Founded in December 2012 and launched in October 2013 by Francisco Rojas Martín, José Ignacio Criado, Rainiero Holgado and David Fernández	Launched in 2013 by Goethe Institut e.V.	Created in January, 2009 by the European Organization for Rare Diseases (EURORDIS) and launched in 2010.
Platform	Vbulletin	Facebook Groups	Hosted in own platform.	Elgg (open-source platform).	CONTENS relate	Hosted in own platform
Access	Semi-open access community, only forum requires to register (free)	Per registration (free) through invitation and subject to community management approval	Per registration (free)	Per registration (free)	Per registration (free)	Semi open access, registration required to participate in the community (free)
Vision/Mission	"There is a strong need for more permanent, reference-style content that readers can	"Be a trustworthy and diverse network of support and information about the beauty and	"Become a vibrant online community for exceptional educators, decision-makers,	Create an online community for people interested in innovating the Public Sector in the Spanish	Support Goethe Institute's online strategy to foster and promote Germany and the German language	Connect people living with rare diseases both online and face-to-face, for them to learn about their medical condition and how to live with it

	continue to benefit from time and again. Toward this end, our tutorials typically focus more on concept than procedure, are highly visual and often interactive, and cover each topic thoroughly but concisely. We also try to keep them as independent of the type of camera or software as possible. We feel it's of great benefit to readers who learn best from this type of approach"	challenges of motherhood"	and influencers who are on the leading edge of innovation in education"	speaking countries (Hispanoamérica)	through an international approach.	
Objective	Be "a learning community for photographers"	"Momzilla is a community for mothers and fathers that care about their families. We respect all ways of upbringing and education, from birth till the	Be "a place where educators who are looking for ways to improve teaching and learning can gather and share information and ideas with peers and thought	Be "the social network for Public Administration in Spanish that innovates the Public Sector through the collaborative effort of the	"Learn German together for free"	"Promote global conversation and collaboration to improve the lives of rare disease patients and assist the organizations that serve them"

		children are adults and leave home. We believe in diversity, and we respect how others decide to raise their children"	leaders in the industry”	people working for/in it”		
Identity's notorious characteristics	Cambridge in Colour's learning value lies in its synergy of content plus community. High quality tutorials, photographic tools, books based on tutorials and contributions from the community. Very active and specialized forum with a code of conduct and a FAQ section. Volunteer, but committed moderators and founder (engaged team). Experts within the community. Photography competitions and	Guía de uso Momzilla (netiquette). Committed founder and community managers. Own jargon. Subgroups. Informal learning through almost instantaneous questions/answers system. Shared content in terms of interests and needs both in the community and its social networks. Lively moderated discussions. Momzilla's learning value lies in the fact that it is an informative source about motherhood and	Allows educators to create a contact network and personal learning environment, as well as own professional learning communities which can be public, private, or hidden. Pioneer in live webinars and live chats for providing continuous education options for educators, as well as current information on uses of technology in education.	193 groups for discussing specific topics around Public Administration and Innovation in the Public Sector. A NovaGob Lab that develops a study repository and prototype projects for public innovation through collaborations. Monthly calendar of online and on-site events and conferences in Spain and Latin America. Annual Congress (Congreso NovaGob) and awards for best practices and	Encourages self learning (repository of resources/lurking in forum) and collaborative learning (learning partnerships & chat, forum, or topic specific groups). Privacy and data protection concerns. Deutsch für Dich's learning value lies in the high quality, topic-specific German contents presented through a good instructional design, which is available for free, worldwide. Practice of the	Moderators share/curate informative, scientific articles and resources about rare diseases. Moderators provide patients with contact information to specialized practitioners, medical centers and patient associations, in particular in Europe. Platform for patient associations. Possibility to ask for an automatic or human translation. Repository with a diversity of resources available in several languages. Multilingual threads in forums. Rare Connect's learning value lies in its' patient driven content, where the knowledge and resources available are tailored to the membership needs, as

	<p>Thematic Photography sections for commenting shots and receiving technical advice and recommendations.</p>	<p>child upbringing based on the current Mexican context, as well as a supportive environment for its' membership. Space for advertisement and empowerment for entrepreneurial mothers based on their presence in the community, be it in virtual form (through the Directorio) and face-to-face through the Momzilla Fest, which has led to create a local commerce among members.</p>	<p>Edweb's learning value lies in its instructional design with an innovative profile, which offers professional development possibilities. Continuous education certificates for attending live or recorded webinars and taking part of the evaluation quizzes. edWebbers are committed members be it as attendees, sponsors, moderators, or presenters of Edwebinars. Own jargon. Experts in the education industry and leaders of school districts are</p>	<p>innovative projects in the Hispanic public sector (Premios NovaGob Excelencia). Blog hosting for members. Collaborative documents and projects through Wikigobs (wikis). Membership includes experts and professionals from the private and academic sector, as well as public servants. Members are known as NovaGobers. Staff and advisory council composed of highly skilled professionals and experts. NovaGob's learning value lies in its collaborative approach that promotes non-formal learning as</p>	<p>language in different contexts and insider understanding of the German culture.</p>	<p>well as in the fact that it offers a supportive environment based on the experiences and information exchange between members living with a rare disease. Patients and/or their families turn to the community in different stages of their life journey with a rare disease (in particular at the diagnosis stage), when they are unable to obtain specialized medical care or further attention to their symptoms, as well as when looking for empathy and emotional support or for raising awareness be it by sharing content, expressing themselves or lurking. Possibility to connect and access current medical information through face-to-face informal meetings and official events (Rare Disease Conferences), as well as webinars. Privacy and data protection</p>
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			among its members. Edweb hosts 1,735 professional learning communities and a repository with 1,300 recorded webinars, podcasts, and specialized articles. Monthly webinar calendar. Collection of press releases, research reports and testimonials that endorse edWeb's success and continuous improvement philosophy. Engaged team constituted by staff, advisory board, and sponsors.	well as contact, expertise, and knowledge exchange among Hispanic professionals in the field of Public Innovation. Asynchronous communication. Reference, open access community based on a permanent beta model.		concerns. International membership.
Sustainability	Website traffic and subtle advertisement within the URL	Events provide a return of the investment in terms of logistic and organization,	Sponsors and partners that host webinars and professional online	Events sponsorships and partnerships with regional	Funded by the German Ministry of Foreign Affairs	EURORDIS grants and sponsorships, as well as Google Ad Words and Facebook advertisement

		but the community has not yet a sustainable revenue system	communities, e-mail marketing	organizations and institutions		
Language	English	Spanish	English	Spanish	German and English	German, English, Spanish, French, Italian, Portuguese, and Serbo-Croatian

**Matrix 1: Overview of relevant elements per OLC.**

Our OLC overview matrix depicts concisely the elements that characterized each community in its own and also in terms of learning community categorization, broadening with this the OLC conceptualization provided in Carlén and Jobrings' typology. We ponder that the examination of assets such as the hosting platform used, the vision/mission that provides a reason to be and a direction to the community, the objective, understood as the specific goal to achieve an OLC's vision/mission, the identity's notorious characteristics and the sustainability procedures help to distinguish better the interest, professional and educational learning communities in definition and practice.

For example, in interest learning communities, like Momzilla and Cambridge in Colour, we observed that members joined and participated in these OLCs with the intention to answer their questions and learn informally from subjects that were of importance for them for a variety of personal reasons. In these two communities, the engagement obeyed two completely different why and wherefores. In Momzilla members were experiencing a significant phase in their lives such as Motherhood, while in Cambridge in Colour the membership aimed to improve and/or express themselves through a creative activity they were passionate about such as Photography.

In professional learning communities, exemplified through edWeb and NovaGob, we noticed that the communities in question integrated innovative learning resources and interactive and/or collaborative practices. Through webinars with official certificates of attendance, wikis where multiple users could produce and share knowledge and user created topic-specific discussion groups, both OLCs showed their commitment in disseminating novel information and upgrading work-related competences in the fields of Education and Open Government respectively. Moreover, edWeb and NovaGob illustrate how this type of OLCs can provide their members with professional development and networking opportunities through a formal and non-formal scheme that fitted their job schedules.

Educational learning communities foster learning activities around subjects that have an instructive and informational value for their membership. These communities operated traditionally in formal educational contexts such as schools, colleges, and universities. Nevertheless, cases such as Deutsch Für Dich and Rare Connect portrayed how learning a language or learning about how to live with a rare disease can also be done through OLCs with an instructional design of the educational type. Furthermore, through these two examples, we could verify that educational OLCs can as well support non-formal and informal learning possibilities through high quality linguistic/scientific repositories of resources, learning partnerships, patient-centered medical databases, and rare disease associations.

Although the OLC overview matrix was useful for identifying distinctive characteristics for each of the case studies, it also allowed us to recognize similarities among communities, either when comparing them among each other in terms of type -interest, professional or educational- or in terms of modality -100% online or a mixture of virtual and in-person.

In our cross-case analysis, elements such as the access policy, the identity's notorious characteristics, and the language of use revealed indeed emblematic traits of each OLC. Notwithstanding, they also disclosed the assets shared among OLCs, independently of their type

or modality, namely: (1) Community engagement and privacy as exclusive benefits for members, (2) Netiquette, (3) Collaborative dynamics/practices aimed to share experiences and/or knowledge, (4) Experts (5) Own jargon and/or topic specific content, (6) Common language as mean of cohesion and understanding (7) Contact and support network and (8) Learning source.

During the data collection period, the six OLCs required users to register in order to access community features such as their repository of resources, their forums, their private messaging systems, etc. Just Cambridge in Colour and Rare Connect operated on a semi-open access modality, offering the opportunity to read the content of the tutorials, articles, or online discussions, but without the possibility of commenting on the texts or interacting with other users. In the case of Momzilla, users could only join if they were invited by other members and after a revision process of their membership request. This policy can be attributed to the fact that OLCs offer safe spaces where learning can take place at the members' own pace, needs and in interaction with persons with corresponding interests and objectives. In this sense, a significant quality of OLCs is the *regular community engagement and privacy* they can provide their membership with, which is a factor that can explain why people choose to register, stay, and even consider the community as a learning source.

In all six communities, we observed through our netnography how content participation and interactions were fostered and moderated through a set of regulations reflected in an explicit code of conduct and/or through the enforcement of a respectful environment fostered by the community managers in the forums and the webinars. In the case of Momzilla, Cambridge in Colour and Rare Connect, the community management efforts in enforcing the OLC's netiquette were highlighted as a factor that kept the learning community active and attractive for the membership. These results suggest that the existence and implementation of a *netiquette* is important for the operation of an OLC, because it provides a structure to keep the subjects of discussion on point and the interaction matters amicable.

Further interesting findings relate to the existence of characteristic *collaborative dynamics/practices aimed to share experiences and/or knowledge*, such as official events, informal meetings, online competitions, webinars, thematic threads to solve questions or to offer support, wikis, members' directory, etc. We noticed during the monitoring period that such activities propitiated not only the active participation in terms of interaction, but also helped to build up *topic specific content* overtime in form of a repository of threads or shared resources that could be searched, consulted, or reactivated at any given moment. Moreover, the demand and offer of information together with the interaction among members disclosed the presence of *experts* within the communities. These members provided valuable input and/or whose participation was requested due to their proficiency in certain subjects by other members.

Additionally, such collective dynamics and practices revealed the own jargon of each community as well in form of terminology and technical language employed, and in some of the OLCs even disclosed the use of idiomatic expressions and nicknames of the membership. In the same line of thought, we observed that the *common language* of the learning communities analyzed acted in all of them as a mean of cohesion and understanding, be it for regional reasons (e.g. Momzilla, NovaGob and Rare Connect), for the fact that it was a language that all members had a good command of (in the case of Cambridge in Colour and edWeb) or wanted to master (like in Deutsch

Für Dich). All of these common attributes mentioned in this, and the paragraphs above made OLCs function as *contact/support networks and/or learning sources* according to the members surveyed and interviewed. We will explain the results regarding these matters in more detail in the next sections “Cross-Case Analysis: Elements that Foster Learning in Online Learning Communities” and “Cross-Case Analysis: Perceived (Lifelong) Learning Value of Online Learning Communities”.

In terms of the sociodemographic characteristics of their memberships, the communities varied strongly among each other (see Matrix 2). These results provide information about the profile of the target audience of each OLC, but also relate to the concept of learning ecosystems for lifelong learning. We consider that both findings from the contextual OLC Matrix (see Matrix 1) and the Sociodemographic Matrix (see Matrix 2) evidence how the six communities satisfied, in different ways, the need for having OLCs as part of the individual learning ecologies with the purpose to cover various topics, through diverse spaces, in particular moments of life, for different contexts and for manifold reasons.

<b>Contextual Information</b>					
<i>Community</i>	<b>Sociodemographic Questions</b>				
	<i>Registered Members</i>	<i>Age</i>	<i>Gender</i>	<i>Level of Education</i>	<i>Occupation</i>
Cambridge in Colour	42,655	18-34 years: 2.74%; 35-49 years:10.96%; 50-64 years: 45.21% 65 or older: 41.10%	15.28% Female 84.72% Male	Secondary School: 2.70% High School Graduate: 8.11% College (unfinished/in process): 5.41% College Graduate:37.84% Postgraduate (unfinished/in process): 6.76% Postgraduate: 39.19%	Student: 1.37% Homemaker: 1.37 % Retired: 58.90% Unemployed: 4.11% Management: 6.85% Professional: 15.07% Sales: 1.37% Researcher/Professor: 1.37% Service Staff: 1.37% Freelancer: 2.74% Other: 5.48%
Momzilla	8,582	18-34 years: 46.90% 35-49 years: 52.65% 50-64 years: 0.44%	100% Female	High School Graduate: 1.77% College (unfinished/in process): 7.08% College Graduate:49.56% Postgraduate (unfinished/in process): 12.39% Postgraduate: 29.20%	Student: 0.88% Homemaker: 32.30% Unemployed: 0.88% Management: 3.10% Professional: 25.66% Sales: 3.98% Researcher/Professor: 6.19% Service Staff: 0.44% Freelancer: 15.93% Other: 10.62%
edWeb	216,292	Not available (N/A)	(N/A)	(N/A)	(N/A)
NovaGob	9,826	18-34 years: 12.35% 35-49 years: 38.27%	37.50% Female 62.50% Male	High School Graduate:1.23% College (unfinished/in process): 7.41%	Student: 6.10% Management: 3.66% Professional: 48.78% Researcher/Professor:

		50-64 years: 45.68% 65 or older: 3.70%		College Graduate:32.10% Postgraduate (unfinished/in process): 7.41% Postgraduate: 51.85%	12.20% Service Staff: 2.44% Freelancer: 6.10% Other: 20.73%
Deutsch für Dich	278, 660	13-17 years: 3.57% 18-34 years: 60.71% 35-49 years: 21.43% 50-64 years: 7.14% 65 or older: 7.14%	42.86% Female 57.14% Male	High School Graduate: 3.57% College (unfinished/in process): 17.86% College Graduate:42.86% Postgraduate (unfinished/in process): 21.43% Postgraduate: 14.29%	Student: 32.14% Homemaker: 7.14% Retired: 3.57% Unemployed: 10.71% Management: 7.14% Professional: 21.43% Freelancer: 7.14% Other: 10.71%
Rare Connect	9,117	18-34 years: 6.45% 35-49 years: 35.48% 50-64 years: 39.78% 65 or older: 18.28%	70.97% Female 29.03% Male	Elementary School: 2.15% Secondary School: 2.15% High School Graduate: 17.20% College (unfinished/in process): 11.83% College Graduate:34.41% Postgraduate (unfinished/in process): 8.60% Postgraduate: 23.66%	Student: 5.43% Homemaker: 3.26% Retired: 21.74% Unemployed: 4.35% Management: 5.43% Professional: 21.74% Sales: 2.17% Researcher/Professor: 2.17% Service Staff: 2.17% Freelancer: 2.17% Other: 29.35%

**Matrix 2: Sociodemographic questions per OLC.**

As we exposed in Chapter 5, in the section “Community’s Essence”, the actors, activities and tools present in each OLC are their constituents (Carlén et al., 2004). Through their interrelationship, the constituents set up the learning environment of the community in terms of structure and dynamics. When comparing these constituents in each of the six OLC (see Matrix 3), we can distinguish clear-cut (1) the profile of the participants (actors), (2) the specific actions that take place in the community and that have communication, information and learning purposes (activities) and, (3) the ICTs available in the community that support actors in the performance of their activities within the OLC (tools).

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<sup>141</sup> Quantitative data is not included for edWeb because we were not granted permission to conduct our online survey in this OLC due to their privacy policy. Nevertheless, we could make the qualitative data collection in this community through a netnography, an interview with the founder and the contextual information in form of secondary sources provided by her.



<b>Contextual Information (Community's Essence)</b>			
<i>Community</i>	<b>Constituents</b>		
	<i>Actors</i>	<i>Activities</i>	<i>Tools</i>
Cambridge in Colour	Amateur and professional photographers. Active membership: Founder, community managers (moderators), new members (lurkers & participation every now and then), experienced members (lurkers & users with regular or intensive engagement in forums and competitions / experts and moderation)	1. Instructional design with an explicit learning objective 2. Interactive learning through forums 3. Netiquette 4. Self-learning 5. Active moderators 6. International Membership	1. Books 2. Photographic software tools 3. Tutorials 4. Forums 5. Private messaging system 6. Community newsfeed
Momzilla	Mothers and fathers. Active membership: Founder, community managers (moderators and event organizers), new members (lurkers & recurrent participation when topics focused on pregnancy and early childhood years), experienced members (lurkers & users with regular or intensive engagement in the online community and the in-person events)	1. Benefits for members 2. Community regulations 3. Customs lending 4. Donations 5. Idle time and anecdotes 6. Lynching and online fights 7. Meeting other moms 8. Sales 9. Survey for members 10. Vent and support	1. Forum 2. Search toolbar 3. Private message 4. Notifications 5. Create event 6. Member/Group Setting
edWeb	Educators from preschool to grade 12 levels, school directors, administrative personnel, librarians, faculty researchers, associations, non-profit	1. Instructional design based on self and collaborative learning 2. Network with a diverse membership from the education sector 3. Worldwide reach	1. Virtual monthly webinar calendar 2. Subcommunities 3. Webinars (live and recorded) 4. Podcasts 5. Blog

	<p>organizations, and education companies.</p> <p>Active membership: Founder, moderators of each subcommunity, new members, experienced members (lurkers &amp; users with regular or intensive engagement in the forums and webinars)</p>	<p>4. Professional development</p> <p>5. Free and convenient access</p> <p>6. Presence in media and other social networks</p>	<p>6. Continuous education quizzes and certificates</p> <p>7. Articles about professional development and topics around technology in education</p> <p>8. Live chat at webinars</p> <p>9. Forum within subcommunities</p> <p>10. Private message</p>
NovaGob	<p>Public sector innovators and professionals.</p> <p>Active membership: Founder, community managers, moderators of each subcommunity, new members, experienced members (lurkers &amp; users with regular or intensive engagement in the forums of each subcommunity, wikis, blogs and online or in-person events)</p>	<p>1. Instructional design based on knowledge generation, co-construction, and dissemination</p> <p>2. Collaborative spirit</p> <p>3. Active community administration and netiquette</p> <p>4. Public sector innovators as group identity</p> <p>5. Hispanic professionals' membership</p> <p>6. Gender balanced participation</p>	<p>1. Community's newsfeed</p> <p>2. Subcommunities</p> <p>3. Forum</p> <p>4. Debates</p> <p>5. Blogs</p> <p>6. Wikis</p> <p>7. Monthly event calendar</p> <p>8. Private message</p>
Deutsch für Dich	<p>Students and teachers interested in the German language and culture. Active membership: community manager, new members, experienced members (lurkers &amp; users with regular or intensive engagement in the forum, groups, learning partnerships and the online learning resources available)</p>	<p>1. Instructional design based in self and collaborative learning</p> <p>2. Promotion of German language and culture</p> <p>3. German as main language</p> <p>4. Community management and netiquette</p> <p>5. Active female participation</p> <p>6. International membership</p>	<p>1. Repository of online learning resources organized by topic and level</p> <p>2. Forum</p> <p>3. Groups</p> <p>4. Learning partnerships</p> <p>5. Chat</p> <p>6. Private message</p>
Rare Connect	<p>Rare disease patients, their families, associations, and experts in the topic.</p>	<p>1. Instructional design based in scientific, curated information and a supportive, interactive</p>	<p>1. Forum with threads organized by recurrent themes and keywords</p> <p>2. Life stories</p>

	Active membership: community managers, new members, experienced members (lurkers & users with regular or intensive engagement in the groups, the meet section, the online learning resources available and the online and in-person events)	environment for patients 2. Strong sense of community for patients 3. Repository of learning resources 4. Multilingual and international 5. Privacy settings 6. Communication possibilities with experts, associations, and patients 7. Female presence	3. Private message 4. Scientific, up-to-date, multilingual, and curated information for each rare disease represented in the community 5. Automatic and human translation available in 6 languages
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**Matrix 3: Constituents per OLC.**

As seen in the Matrix 3 the actors, activities, and tools present in each of the selected learning communities illustrate how the learning environment is configured and adapted to a particular learning aim, as well as to the needs of the membership. While there are coincidences in terms of certain aspects of the actors, tools and activities present in the OLCs, their dynamic remains unique to each case. In this regard, the constituents also complement well the nine assets identified as relevant for depicting an OLC (see Matrix#), in the sense that they provide further information that helps to describe and understand the operation and the identity of a learning community.

Likewise, the lifecycle of online communities is an important element to take into consideration for understanding the way an OLC operates. As seen in the Matrix 1 “Overview of relevant elements per OLC”, each of the cases considered for our research was founded in different years. Hence, we have communities as novel as three years old (Momzilla) and elder ones with more than a decade of existence (Cambridge in Colour and edWeb). Notwithstanding, the lifecycle goes beyond a matter of age. This concept refers to the development and operation of the virtual communities, in the sense of information systems (Iriberry & Leroy, 2009). Therefore, it also considers the series of changes and the natural evolution that a community undergoes since its creation to its extinction. In this regard, the specific life stage of our case studies is reflected in the descriptive assets of the OLCs such as the identity’s notorious characteristics and their sustainability practices (see Matrix 1), as well as in the actions, processes and interactions expressed through their activities’ constituent (see Matrix 3).

According to this definition and based in the observations we made during the data collection conducted for each of the communities that part of our study, we obtained evidence that suggests that the stage of development of a learning community in terms of lifecycle is also an important indicator for understanding the way an OLC operates. Moreover, it is useful for recognizing the elements that make an OLC thrive or that hinder the engagement of its members. As seen in Table 35, each of our OLCs falls into one category of the community lifecycle spectrum.

<b>Contextual Information (Community's Essence)</b>	
<i>Community</i>	<i>Lifecycle-stage</i>
Cambridge in Colour	Mature
Momzilla	Young-Growing
edWeb	Mature
NovaGob	Young
Deutsch für Dich	Dying
Rare Connect	Young-Maturing

**Table 35: OLC's lifecycle-stage.**

The matrices in this contextual section provide an overall idea of the level of complexity in terms of activities and community management required for mature communities like Cambridge in Colour and edWeb, demonstrate the existence of innovative learning practices that explain the growing engagement in blossoming communities such as NovaGob or Rare Connect and give a hint of why the engagement is so high in our youngest community Momzilla. Nevertheless, we also encountered a case (Deutsch für Dich) where despite the high quality of the instructional design and the learning resources available, the community showed a frank decline in terms of engagement. In the next sections, we will explore the human factor in relation to learning and knowledge acquisition through OLCs, which we consider has an undeniable influence in terms of advancement and success in any life stage of learning communities.

## ***7.2. Relevant themes for the Online Learning Communities***

A complementary and necessary question for understanding the nature of OLCs as well as for contextual reasons is the particular research question How does a public OLC differentiate from other type of online communities?

As we explained in the previous section “Contextual Information” and with our selected communities as examples, public OLCs distinguish themselves from other virtual communities in so far, they offer users upon free registration, the opportunity to access and self-learn from different informative resources and to gain knowledge by interacting with like-minded members through a collaborative learning approach. In this regard, these communities provide members with the choice to use non-formal and informal learning possibilities to meet and satisfy their learning objectives and interests.

An additional but very relevant and differential characteristic of public OLCs, despite their modality or category, is their thematic. The ideas, conversations and resources shared mirror and express the community's objective, as well as the membership needs and interests at a given moment in time. As stated in Chapter 5, we detected in each community several recurrent subjects discussed that were of significance for the members and attested through their engagement during the monitoring periods. By means of conducting a thematic analysis, we defined these main themes, per community, which we outline<sup>142</sup> in Table 36:

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<sup>142</sup> In the same way we did for Cambridge in Colour and Momzilla in Chapter 5, we elaborated figures pertaining the relevant themes and their related topics for the other four communities, based on the Thematic analysis we conducted

<b>Relevant Themes for the Online Learning Community</b>	
<i>Community</i>	<i>Themes</i>
Cambridge in Colour	<ol style="list-style-type: none"> <li>1. Photographic Equipment</li> <li>2. Photography Shots Display</li> <li>3. Sense of community</li> <li>4. Software and hardware</li> <li>5. Tips and tricks</li> </ol>
Momzilla	<ol style="list-style-type: none"> <li>1. Children</li> <li>2. Being Mother</li> <li>3. Family</li> <li>4. Health</li> <li>5. Polemic Topics</li> </ol>
edWeb	<ol style="list-style-type: none"> <li>1. ICTs and new technologies in the classroom</li> <li>2. Members' introductions</li> <li>3. Preschool pedagogical tips</li> <li>4. Subject and discipline specific questions</li> <li>5. Trends in educational practice and curriculums</li> <li>6. Webinars' announcements and events</li> </ol>
NovaGob	<ol style="list-style-type: none"> <li>1. Academic literature and perspectives</li> <li>2. Collaborative studies</li> <li>3. ICTs in government</li> <li>4. Open government</li> <li>5. Innovation in public policies and governmental services</li> </ol>
Deutsch für Dich	<ol style="list-style-type: none"> <li>1. Debate topics</li> <li>2. Learning partnerships</li> <li>3. Online seminars</li> <li>4. Problems in/with the platform</li> <li>5. Questions about Germany</li> <li>6. Questions about learning German</li> </ol>
Rare Connect	<ol style="list-style-type: none"> <li>1. Diagnosis journey</li> <li>2. Specialized medical centers and practitioners</li> <li>3. Medicaments</li> <li>4. Life with a rare disease</li> <li>5. Empathy and support</li> <li>6. Medical information and research</li> </ol>

**Table 36: Relevant themes per OLC**

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for all OLCs considered for this research. Therefore, the figures for edWeb, NovaGob, Deutsch für Dich and Rare Connect can be found in the Appendices section of this dissertation (see Appendix 7 to 10). For Cambridge in Colour and Momzilla, the figures were included in Chapter 5 in the sections “Relevant Themes for the Community” of the case study report of each community. As we mentioned at the beginning of the current chapter, Cambridge in Colour and Momzilla were analyzed independently and in depth to portray them as exemplary cases of 100% virtual and blended OLCs.

As seen from the comparison among the relevant themes, it's clear that the learning communities chosen have indeed an interest, professional, or educational focus based on a central topic that corresponds to their OLC type: e.g. Motherhood (interest category), Photography (interest category), Trends and professional development for Educators (professional category), Innovation in Public Administration and the Public Sector (professional category), German language (educational category) and Rare Diseases (educational category). Nevertheless, and as mentioned previously, when analyzing and comparing the communities holistically, we observed that even in their diversity, the selected OLCs had all common practices that drove their operation and fostered the engagement. Interestingly, these practices were not limited to the objective or the OLC category, but had, in different extents, interest, educational, support and professional aims.

This phenomenon was triggered through the questions and answers format facilitated by the forums available in the communities, which derived in synchronous and asynchronous information and experience exchanges of all kinds. For example, in an interest community such as Momzilla, we observed how members interacted to solve their quotidian doubts about punctual topics like diapers or school choices. Notwithstanding, they also generated discussions around polemic topics such as digital security and sexual abuse in children, that derived in educational actions where different members made specialized legal and psychological information available for the community, incorporated expert advice and even organized and conducted workshops exclusively for the membership. During the data collection period in Cambridge in Colour, we detected that while the focus of the community prevailed mainly in providing recommendations about photographic equipment, tools and shooting techniques, the OLC also targeted professional concerns. Novel or amateur photographers aiming to make Photography their job, benefited from the advice, lessons, instructions and tutorials concerning being a professional photographer elaborated and shared by expert members from the community. In educational communities like Deutsch für Dich and Rare Connect, members could find threads with an indirect interest focus related to the main didactic purposes of these OLCs. For instance, in Deutsch für Dich members engaged in discussions and anecdotes regarding cultural differences in Germany, while in Rare Connect users found information and recommendations on insurances and alternative measurements for complementing a medical treatment.

Surprisingly, in the six learning communities selected for the study, we recognized an important component in the form of a support aim, which was present in all of them, independently from their OLC type. This trait was expressed in each learning community, through different ways of providing aid to the membership. During the data collection period, we observed straight-forward supportive actions such as the fostering of professional networking among members in the case of edWeb and NovaGob, when members motivated and recognized each other in their shooting progress and photographic expressions like in Cambridge in Colour, when users gave encouragement to practice the language by fomenting learning partnerships through language tandems as in Deutsch für Dich, and even when members provided emotional containment to “strangers” like in the case of Momzilla and Rare Connect.

Finally, and as a closing remark to this section, we verified that the learning communities analyzed displayed a non-static, but rather fluid identity. On the one hand, we observed how the data

collection<sup>143</sup> captured, like a photograph, a moment in the life of the community: its operative assets, identity particularities, maturity, constituents, sociodemographic profile, and relevant themes at a given period of time. On the other hand, we recognized how and why OLCs can start in a virtual format and evolve overtime to blended communities. This was the case of Momzilla, NovaGob and Rare Connect, where the desire and need of the members to meet, interact, and learn from each other face-to-face derived in the organization of informal meetings and up to more formal events such as bazaars, workshops, conferences, seminars, and congresses. All the above evidence suggests that OLCs cannot be classified as pure types, neither in terms of modality nor purpose.

### ***7.3 Cross-Case Analysis: Elements that Foster Learning in Online Learning Communities***

Following the same logic proposed in our CSN for developing the in-depth Case Study reports, in this section we present the results obtained from our data collection and analysis about the digital skills of the memberships and the activities found to promote learning in the public OLCs chosen for our study. In contrast to the individual analysis that we did for Cambridge in Colour and Momzilla, in this chapter the focus is placed, first and foremost, in comparing the role of digital skills and the practices that foment learning among all the communities. We found this cross-analysis useful for assessing how the aforementioned factors supported learning in OLCs with diverse purposes and modalities, as well as for determining the differences and similarities between them.

#### **I. Role of digital Skills**

Digital skills, understood as the set of competences required to perform activities online, are an important aspect to take into consideration when researching OLCs. These abilities are key for learning and knowledge acquisition because they aid members to define their information needs, to access diverse informative sources, to feel confident in digital environments, to manage, assess, integrate, communicate and/or share the knowledge obtained and also to create new information.

In this sense and for the purposes of our research we explored on a first instance, the question What role do digital skills play with regards to the members' participation and interaction in OLCs? through specific queries included in the online survey and the online interviews conducted in the selected OLCs of this study. Such questions were elaborated to determine the specific digital skills that members in the learning communities chosen had during the data collection period and to detect if their digital skills had any influence with respect to their learning experiences when using the environment and the tools available in the communities.

On a second instance, we considered important to address a related, important question: Are there any improvements in the digital skills of the users due to their engagement in public OLCs?

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<sup>143</sup> We explained the data collection process in terms of procedure, strategy, and timing per method and per community in detail in Chapter 4.

Therefore, we included a specific query in our online survey to investigate if these skills experienced any change overtime, according to the opinion of the users.

As we explained in Chapter 3, “Online Learning Communities and Lifelong Learning: Proposing a Framework of Analysis”, we operationalized the digital skills queries in our data collection instruments, based on the informational and digital competences measurement and analysis model from the Norwegian Agency for Lifelong Learning (Kompetanse Norge, 2011). While for the Case Study reports of Cambridge in Colour and Momzilla that we developed in Chapter 5 we provided graphs and tables to support the discussion of the results obtained through the online survey, the netnography and the online interviews conducted, for the Cross-case Analysis that we are performed in this chapter, we present the research outcomes for all OLCs considered for the study through comparative matrices and tables that portray and summarize the specific digital skills that members in the learning communities had during the data collection period.

### *a) Members’ digital skills*

In general terms, when comparing the OLCs among each other through Matrix 4, we observed that the members of the communities were experienced Internet users, as the majority of their users reported using the Internet between 7 and up to 18 years or more. Moreover, the respondents considered themselves competent, in diverse degrees, in online tasks such as gathering information, doing academic research, shopping, playing games, reading news, looking up/selling real estate, using e-mail and chat, making online calls, using social networks and searching/posting classifieds. From these digital activities, interviewed members from the OLCs used Internet most frequently for logging in to their e-mail accounts, gathering information, reading news, accessing social networks, shopping, conducting academic research, chatting, and making online calls.

Moreover, and according to our online survey results, the perception of the respondents in terms of their online competence corresponded to the solid set of digital skills they reported to have. In the communities, the majority of interviewees confirmed they knew and did regularly and in varying degrees activities that required good digital skills such as searching for information online; reading online articles, newspapers and blogs; using e-mail; modifying their browser’s homepage; using the setting options of their browsers; using bookmarks or other online services for organizing their information; filling in virtual forms; buying online; downloading and uploading content; customizing online profiles in social networks and webpages; listening to podcasts; participated in chats; posting comments in websites; and participating actively in discussion forums and online groups. Around half of the respondents in the OLC considered for our study mentioned that they habitually make online calls, store their information in cloud services, choose their cookies preferences; take webinars, online courses and/or pursue online degrees. Among the interviewees in the communities, we observed that several of their members were also content creators. In the case of Cambridge in Colour, Momzilla, Deutsch für Dich and Rare Connect between 16.7% and 28.0% of the interviewees blogged regularly. In the case of NovaGob, this percentage raised to 42.9% of the respondents. In terms of creation and administration of webpages, between 23.3% and 47.7% of the interviewed members of the different OLCs mentioned that they had this digital skill.



Given the good proficiency levels in terms of Internet use and digital skills found in the selected OLCs, it is not surprising that most of the interviewees reported feeling satisfied with their online competences. Between 32.6% and 63.9% of the respondents considered they could do most of the things they wished to do in terms of digital skills and online activities. Moreover, between 18.1% and 65.2% of the interviewed members mentioned they could do everything they wanted to when using the Internet. These results demonstrate that the Internet competence together with an adequate set of digital skills are relevant for participating and interacting with ease in OLCs. In the same manner, and when compared further to the sociodemographic profiles of the communities, these results also suggest that the proficiency levels in terms of Internet use and digital skills were closely related to the high levels of education reported by the memberships.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Members' digital skills</i>	<b>Role of Digital Skills</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Span of time using the Internet	2 to 6 years: 1.16% 7 to 12 years: 6.98% 13 to 17 years: 26.74% 18 years or more: 65.12 %	2 to 6 years: 1.43% 7 to 12 years: 16.57% 13 to 17 years: 46.29% 18 years or more: 35.71%	2 to 6 years: 1.20% 7 to 12 years: 14.46% 13 to 17 years: 24.10% 18 years or more: 60.24%	Less than 1 year: 3.33% 2 to 6 years: 13.33% 7 to 12 years: 46.67 % 13 to 17 years: 13.33% 18 years or more: 23.33%	Less than 1 year: 0.58% 2 to 6 years: 10.53% 7 to 12 years: 18.71% 13 to 17 years: 29.82% 18 years or more: 40.35%
Digital activities performed when using the Internet	Information gathering: 97.7% Academic research: 65.9% Shopping: 95.5% Games: 53.4% News: 90.9% Real estate: 53.4% E-mail: 96.6% Chat and online calls: 60.2% Social networks: 65.9% Job hunting: 42.0% Classifieds: 54.5% Stock market: 30.7% Blogging: 23.9% Creation and/or administrations of webpages, forums, communities, etc.: 46.6% Other: 6.8%	Information gathering: 94.4% Academic research: 92.4% Shopping: 92.9% Games: 74.0% News: 94.9% Real estate: 92.7% E-mail: 98.3% Chat and online calls: 95.5% Social networks: 98.6% Job hunting: 83.1% Classifieds: 72.9% Stock market: 18.1% Blogging: 35.9% Creation and/or administrations of	Information gathering: 96.4% Academic research: 84.5% Shopping: 88.1% Games: 41.7% News: 98.8% Real estate: 67.9% E-mail: 96.4% Chat and online calls: 83.3% Social networks: 96.4% Job hunting: 52.4% Classifieds: 42.9% Stock market: 19.0% Blogging: 56.0% Creation and/or administrations of webpages, forums, communities, etc.:	Information gathering: 96.7% Academic research: 86.7% Shopping: 83.3% Games: 63.3% News: 90.0% Real estate: 30.0% E-mail: 100.0% Chat and online calls: 80.0% Social networks: 90.0% Job hunting: 80.0% Classifieds: 43.3% Stock market: 30.0% Blogging: 36.7% Creation and/or administrations of webpages, forums, communities, etc.:	Information gathering: 89.6% Academic research: 61.2% Shopping: 84.2% Games: 54.6% News: 84.7% Real estate: 56.8% E-mail: 88.0% Chat and online calls: 72.1% Social networks: 82.0% Job hunting: 53.6% Classifieds: 50.3% Stock market: 24.0% Blogging: 26.2% Creation and/or administrations of webpages, forums, communities, etc.: 45.4% Other: 8.7%

		webpages, forums, communities, etc.: 41.5% Other: 4.2%	63.1% Other: 6.0%	30.0% Other: 3.3%	
Most frequent digital activities in Internet	Information gathering: 1 (41.9%) Academic research: 5 (1.4%) Shopping: 4 (3.6%) Games: 6 (2.8%) News: 4 (14.3%) Real estate: 9 (1.4%) E-mail: 1 (36.0%) Chat and online calls: 6 (1.3%) Social networks: 5 (2.5%) Job hunting: 10 (1.4%) Classifieds: 9 (1.4%) Stock market: 12 (1.4%) Blogging: 14 (1.4%) Creation and/or administrations of webpages, forums, communities, etc.: 14 (1.4%) Other: 15 (2.9%)	Information gathering: 4 (11.0%) Academic research: 5 (1.2%) Shopping: 5 (2.0%) Games: 9 (0.3%) News: 5 (2.3%) Real estate: 9 (0.6%) E-mail: 2 (28.9%) Chat and online calls: 3 (5.8%) Social networks: 1 (45.6%) Job hunting: 11 (0.9%) Classifieds: 11 (0.3%) Stock market: 14 (0.3%) Blogging: 14 (0.3%) Creation and/or administrations of webpages, forums, communities, etc.: 14 (2.1%) Other: 15 (1.2%)	Information gathering: 2 (28.0%) Academic research: 3 (3.8%) Shopping: 6 (1.4%) Games: 15 (2.9%) News: 3 (7.5%) Real estate: 9 (2.7%) E-mail: 1 (48.8%) Chat and online calls: 7 (1.3%) Social networks: 4 (4.9%) Job hunting: 12 (5.8%) Classifieds: 11 (3.0%) Stock market: 14 (3.1%) Blogging: 9 (1.4%) Creation and/or administrations of webpages, forums, communities, etc.: 10 (1.3%) Other: 15 (3.0%)	Information gathering: 1 (50.0%) Academic research: 7 (10.3%) Shopping: 6 (7.4%) Games: 8 (3.6%) News: 4 (6.9%) Real estate: 8 (4.3%) E-mail: 3 (10.0%) Chat and online calls: 6 (10.7%) Social networks: 5 (10.3%) Job hunting: 5 (3.8%) Classifieds: 9 (4.2%) Stock market: 13 (4.5%) Blogging: 12 (9.5%) Creation and/or administrations of communities, etc.: 14 (4.5%) Other: 15 (4.8%)	Information gathering: 1 (33.1%) Academic research: 4 (3.9%) Shopping: 5 (1.9%) Games: 10 (3.6%) News: 4 (7.2%) Real estate: 10 (0.7%) E-mail: 1 (34.5%) Chat and online calls: 8 (2.0%) Social networks: 2 (13.5%) Job hunting: 12 (1.4%) Classifieds: 9 (0.7%) Stock market: 14 (0.8%) Blogging: 13 (1.5%) Creation and/or administrations of webpages, forums, communities, etc.: 14 (3.6%) Other: 15 (0.8%)

Set of general digital skills	<p>Searched for information online: 96.6%</p> <p>Read an article, newspaper or blog post online: 93.2%</p> <p>Used e-mail services: 90.9%</p> <p>Changed your browser's homepage: 79.5%</p> <p>Changed your cookies preferences: 72.7%</p> <p>Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form: 79.5%</p> <p>Made a purchase online: 95.5%</p> <p>Customized a webpage and/or social network profile for yourself: 62.5%</p> <p>Downloaded content and/or information: 93.2%</p> <p>Uploaded content and/or information: 84.1%</p> <p>Created and used regularly an own blog: 19.3%</p>	<p>Searched for information online: 96.0%</p> <p>Read an article, newspaper or blog post online: 94.1%</p> <p>Used e-mail services: 93.2%</p> <p>Changed your browser's homepage: 75.1%</p> <p>Changed your cookies preferences: 43.2%</p> <p>Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form: 80.8%</p> <p>Made a purchase online: 88.4%</p> <p>Customized a webpage and/or social network profile for yourself: 85.9%</p> <p>Downloaded content and/or information: 92.1%</p> <p>Uploaded content</p>	<p>Searched for information online: 97.6%</p> <p>Read an article, newspaper or blog post online: 96.4%</p> <p>Used e-mail services: 94.0%</p> <p>Changed your browser's homepage: 85.7%</p> <p>Changed your cookies preferences: 48.8%</p> <p>Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form: 94.0%</p> <p>Made a purchase online: 86.9%</p> <p>Customized a webpage and/or social network profile for yourself: 85.7%</p> <p>Downloaded content and/or information: 96.4%</p> <p>Uploaded content</p>	<p>Searched for information online: 93.3%</p> <p>Read an article, newspaper or blog post online: 86.7%</p> <p>Used e-mail services: 83.3%</p> <p>Changed your browser's homepage: 66.7%</p> <p>Changed your cookies preferences: 43.3%</p> <p>Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form: 70.0%</p> <p>Made a purchase online: 76.7%</p> <p>Customized a webpage and/or social network profile for yourself: 66.7%</p> <p>Downloaded content and/or information: 86.7%</p> <p>Uploaded content and/or information: 73.3%</p> <p>Created and used</p>	<p>Searched for information online: 93.4%</p> <p>Read an article, newspaper or blog post online: 84.2%</p> <p>Used e-mail services: 77.6%</p> <p>Changed your browser's homepage: 45.9%</p> <p>Changed your cookies preferences: 35.5%</p> <p>Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form: 64.5%</p> <p>Made a purchase online: 74.9%</p> <p>Customized a webpage and/or social network profile for yourself: 56.3%</p> <p>Downloaded content and/or information: 84.2%</p> <p>Uploaded content and/or information: 64.5%</p> <p>Created and used regularly an own blog: 21.9%</p> <p>Created and/or administered a webpage: 39.3%</p> <p>Listened to a radio broadcast/podcast online: 62.3%</p> <p>Participated in online chats: 63.9%</p> <p>Posted comments in webpages: 67.8%</p> <p>Participated in a forum discussion or online group: 67.8%</p>
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<p>Created and/or administered a webpage: 47.7%</p> <p>Listened to a radio broadcast/podcast online: 65.9%</p> <p>Participated in online chats: 68.2%</p> <p>Posted comments in webpages: 87.5%</p> <p>Participated in a forum discussion or online group: 92.0%</p> <p>Made a telephone call online: 48.9%</p> <p>Taken a webinar: 58.0%</p> <p>Taken online courses/study an online degree: 50.0%</p> <p>Saved my information in the "cloud": 52.3%</p> <p>Used bookmarks or other services online for organizing information: 76.1%</p>	<p>and/or information: 74.3%</p> <p>Created and used regularly an own blog: 28.0%</p> <p>Created and/or administered a webpage: 33.3%</p> <p>Listened to a radio broadcast/podcast online: 75.7%</p> <p>Participated in online chats: 74.9%</p> <p>Posted comments in webpages: 77.7%</p> <p>Participated in a forum discussion or online group: 71.8%</p> <p>Made a telephone call online: 77.7%</p> <p>Taken a webinar: 40.1%</p> <p>Taken online courses/study an online degree: 44.6%</p> <p>Saved my information in the "cloud": 72.6%</p> <p>Used bookmarks or other services online for organizing information: 60.7%</p>	<p>and/or information: 90.5%</p> <p>Created and used regularly an own blog: 42.9%</p> <p>Created and/or administered a webpage: 47.6%</p> <p>Listened to a radio broadcast/podcast online: 82.1%</p> <p>Participated in online chats: 89.3%</p> <p>Posted comments in webpages: 84.5%</p> <p>Participated in a forum discussion or online group: 86.9%</p> <p>Made a telephone call online: 64.3%</p> <p>Taken a webinar: 73.8%</p> <p>Taken online courses/study an online degree: 90.5%</p> <p>Saved my information in the "cloud": 88.1%</p> <p>Used bookmarks or other services online for organizing information: 77.4%</p>	<p>regularly an own blog: 16.7%</p> <p>Created and/or administered a webpage: 23.3%</p> <p>Listened to a radio broadcast/podcast online: 63.3%</p> <p>Participated in online chats: 76.7%</p> <p>Posted comments in webpages: 70.0%</p> <p>Participated in a forum discussion or online group: 66.7%</p> <p>Made a telephone call online: 63.3%</p> <p>Taken a webinar: 26.7%</p> <p>Taken online courses/study an online degree: 46.7%</p> <p>Saved my information in the "cloud": 56.7%</p> <p>Used bookmarks or other services online for organizing information: 60.0%</p>	<p>Made a telephone call online: 59.0%</p> <p>Taken a webinar: 45.9%</p> <p>Taken online courses/study an online degree: 37.7%</p> <p>Saved my information in the "cloud": 50.3%</p> <p>Used bookmarks or other services online for organizing information: 53.0%</p>
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<p>Degree of satisfaction with digital skills</p>	<p>Very satisfied - I can do everything that I want to do: 65.1% Somewhat satisfied - I can do most things I want to do: 32.6% Neither satisfied nor unsatisfied: 1.2% Somewhat unsatisfied - I can't do most things I would like to do: 1.2%</p>	<p>Very satisfied - I can do everything that I want to do: 25.1% Somewhat satisfied - I can do most things I want to do: 54.4% Neither satisfied nor unsatisfied: 16.8% Somewhat unsatisfied - I can't do most things I would like to do: 2.6% Don't know: 1.1%</p>	<p>Very satisfied - I can do everything that I want to do: 18.1% Somewhat satisfied - I can do most things I want to do: 63.9% Neither satisfied nor unsatisfied: 16.9% Somewhat unsatisfied - I can't do most things I would like to do: 1.2%</p>	<p>Very satisfied - I can do everything that I want to do: 36.7% Somewhat satisfied - I can do most things I want to do: 56.7% Neither satisfied nor unsatisfied: 3.3% Somewhat unsatisfied - I can't do most things I would like to do: 3.3%</p>	<p>Very satisfied - I can do everything that I want to do: 34.9% Somewhat satisfied - I can do most things I want to do: 52.3% Neither satisfied nor unsatisfied: 7.0% Somewhat unsatisfied - I can't do most things I would like to do: 4.1% Very unsatisfied - I can't do most of the the things I would like to do: 0.6% Don't know: 1.2%</p>
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**Matrix 4: Members' digital skills.**

## ***b) Digital Skills and Use of Environment and Tools***

The prevailing good to high levels in terms of competence of Internet use, digital skills and confidence reported by the majority of the interviewed members in the learning communities were reflected in the overall absence of complications when using the OLC platforms. According to the results in Matrix 5, between 45.12% and 66.93% of the interviewees took less than 30 minutes to become familiar with the virtual environment of the OLC, while between 17.32 % and 32.93% % of the respondents mentioned they needed 30 minutes to 1 hour. In the cases considered, between 34.18% and 60.08% of the interviewed members reported feeling very comfortable when using the resources available in the community and when interacting with others in the community, while between 32.04% and 56.96% reported feeling somehow comfortable.

Regarding the existent tools for interacting with other members, and as shown in Matrix#, the most important and frequently used tool in Cambridge in Colour, Momzilla, NovaGob and Rare Connect was the forum, followed in second place by the comments function found on the competitions, stories and/or shared resources sections of the OLCs. In the case of Deutsch für Dich, the interviewees mentioned that the chat was their most relevant and used tool, followed by the forum of the community. Moreover, between 83.33% and 99.21% reported feeling comfortable using the communication tools available in the OLCs selected. The interviewees in Cambridge in Colour, Momzilla, NovaGob and Rare Connect rated the forum as the OLC tool with the fastest response time in terms of interaction. In Deutsch für Dich, the interviewed members assessed the chat as the tool that had the fastest response time, closely followed by the forum as well.

With regards to their user profile, between 51.32% and 66.40% of the respondents in our study considered it as a factor that triggered interactions with other members of the communities. In general, the members of the OLCs analyzed included in their user profiles their real name, their nickname, and their location information. In the case of Cambridge in Colour and Momzilla they included in their profiles other contact information details such as their work, their own website information, or their social network users, while in Deutsch für Dich and Rare Connect the members added their e-mail addresses as additional contact information.

When questioned about the improvement of their digital skills, there was a general perception from around half of the interviewed members of the communities that their participation in the OLCs did have a influence on their online competences, however in varying degrees. Between 17.81% and 34.35% of the respondents perceived a slight positive change in this regard, while between 10.87% and 28.77% of the interviewees considered that their digital skills improved. Between 6.33% and 13.70% referred that their digitals skills improved in a greater extent. By contrast, the other half of the respondents from the selected OLCs perceived barely to no improvement in their digital skills in relation to their participation in their communities.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Digital Skills and Use of Environment and Tools of the OLC</i>	<b>Role of Digital Skills</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Time required to become familiar with the environment	Less than 30 minutes: 48.65% 30 minutes to 1 hour: 29.73% More than 1 hour: 4.05% I got used through several days of use: 17.57%	Less than 30 minutes: 66.93% 30 minutes to 1 hour: 17.32% More than 1 hour: 5.51% I got used through several days of use: 10.24%	Less than 30 minutes: 45.12% 30 minutes to 1 hour: 32.93% More than 1 hour: 8.54% I got used through several days of use: 13.41%	Less than 30 minutes: 51.85% 30 minutes to 1 hour: 18.52% More than 1 hour: 11.11% I got used through several days of use: 18.52%	Less than 30 minutes: 46.6% 30 minutes to 1 hour: 26.3% More than 1 hour: 9.7% I got used through several days of use: 17.5%
Digital skills and use of community	I felt very comfortable, I had all skills necessary to use and interact in the community immediately: 51.35% I felt somehow comfortable. It took me sometime to figure out how to operate it (own search/other members): 47.30% I felt somehow uncomfortable. It took me longer than expected to understand certain aspects: 1.35%	I felt very comfortable, I had all skills necessary to use and interact in the community immediately: 60.08% I felt somehow comfortable. It took me sometime to figure out how to operate it (own search/other members): 37.94% I felt somehow uncomfortable. It took me longer than expected to understand certain aspects: 1.58%	I felt very comfortable, I had all skills necessary to use and interact in the community immediately: 34.18% I felt somehow comfortable. It took me sometime to figure out how to operate it (own search/other members): 56.96% I felt somehow uncomfortable. It took me longer than expected to understand certain aspects: 6.33% I felt uncomfortable. It took me a considerable	I felt very comfortable, I had all skills necessary to use and interact in the community immediately: 44.44% I felt somehow comfortable. It took me sometime to figure out how to operate it (own search/other members): 44.44% I felt somehow uncomfortable. It took me longer than expected to understand certain aspects: 7.41% I felt uncomfortable. It	I felt very comfortable, I had all skills necessary to use and interact in the community immediately: 47.57% I felt somehow comfortable. It took me sometime to figure out how to operate it (own search/other members): 32.04% I felt somehow uncomfortable. It took me longer than expected to understand certain aspects: 12.62% I felt uncomfortable. It took me a considerable



		I felt uncomfortable. It took me a considerable amount of time to figure out how the community worked: 0.40%	amount of time to figure out how the community worked: 2.53%	took me a considerable amount of time to figure out how the community worked: 3.70%	amount of time to figure out how the community worked: 7.77%
Importance and frequency of use of communication tools	Chat: 0.0% Forum: 89.5% Private message: 1.3% Comments on competitions, stories and/or shared resources: 9.5%	Chat: 6.7% Forum: 46.1% Private message: 7.5% Comments on competitions, stories and/or shared resources: 39.8%	Chat: 4.3% Forum: 68.0% Private message: 7.0% Comments on competitions, stories and/or shared resources: 26.7%	Chat: 46.2% Forum: 33.3% Private message: 11.1% Comments on competitions, stories and/or shared resources: 11.1%	Chat: 10.8% Forum: 51.0% Private message: 11.5% Comments on competitions, stories and/or shared resources: 32.6%
Satisfaction in terms of use of communication tools	Yes: 92.0% No: 8.0%	Yes: 99.21% No: 0.79%	Yes: 89.87% No: 10.13%	Yes: 88.89% No: 11.11%	Yes: 83.33% No: 16.67%
Communication tools and response time	Chat: 1.33% Forum: 73.33% Private message: 17.33% Comments on competitions, stories and/or shared resources: 8.00%	Chat: 7.09% Forum: 46.06% Private message: 17.32% Comments on competitions, stories and/or shared resources: 29.53%	Chat: 8.11% Forum: 51.35% Private message: 20.27% Comments on competitions, stories and/or shared resources: 20.27%	Chat: 48.15% Forum: 40.74% Private message: 3.70% Comments on competitions, stories and/or shared resources: 7.41%	Chat: 13.40% Forum: 42.27% Private message: 19.59% Comments on competitions, stories and/or shared resources: 24.74%
Profile contribution with respect to interaction	Yes: 51.32% No: 48.68%	Yes: 66.40% No: 33.60%	Yes: 56.41% No: 43.59%	Yes: 64.29% No: 35.71%	Yes: 57.29% No: 42.71%
User information visible in profile	Nickname: 63.6% Real name: 85.7% E-mail: 27.3% Phone number: 2.6%	Nickname: 40.1% Real name: 77.4% E-mail: 34.2% Phone number: 9.7%	Nickname: 34.5% Real name: 84.5% E-mail: 67.9% Phone number:	Nickname: 76.7% Real name: 60.0% E-mail: 53.3% Phone number: 0.0%	Nickname: 35.8% Real name: 67.9% E-mail: 59.6% Phone number: 10.1%

	Skype contact: 2.6% Social network contact details: 6.5% Webpage information: 29.9% Work information: 6.5% Location information: 68.8%	Skype contact: 1.9% Social network contact details: 26.5% Webpage information: 14.4% Work information: 44.0% Location information: 36.2%	9.5% Skype contact: 1.2% Social network contact details: 35.7% Webpage information: 20.2% Work information: 64.3% Location information: 50.0%	Skype contact: 3.3% Social network contact details: 6.7% Webpage information: 0.0% Work information: 23.3% Location information: 43.3%	Skype contact: 6.4% Social network contact details: 20.2% Webpage information: 13.8% Work information: 8.3% Location information: 40.4%
Improvement of digital skills through OLC	Yes, in a great extent: 13.70% Yes: 28.77% Somehow: 17.81% Not really much: 19.18% No: 20.55%	Yes, in a great extent: 9.57% Yes: 19.57% Somehow: 34.35% Not really much: 22.61% No: 13.91%	Yes, in a great extent: 6.33% Yes: 16.46% Somehow: 34.18% Not really much: 21.52% No: 21.52%	Yes, in a great extent: 11.11% Yes: 22.22% Somehow: 33.33% Not really much: 22.22% No: 11.11%	Yes, in a great extent: 9.78% Yes: 10.87% Somehow: 28.26% Not really much: 25.00% No: 26.09%

**Matrix 5: Digital skills and use of environment and tools of the OLC.**

As seen in the “Contextual Information” section, the specific characteristics of the instructional design and the learning environment of each OLC provided their memberships with diverse spaces to participate and interact through their written voices and to access diverse informative contents. From our netnography observations, we detected how this configuration was adapted to the user needs and interests, making the communities attractive to newcomers. We also recognized how each OLC had unique features developed to keep the memberships engaged.

In this respect, we noticed further distinctive characteristics pertaining the identity of each of our selected learning communities, based on the evidence obtained through the online interviews conducted in each of the communities. The perceptions shared by the interviewed members provided us with insights about the usefulness of the functions and tools available in each OLC platform. Furthermore, through the members’ experiences and opinions, we could understand better how they made use of the communities through their digital skills and why they resulted meaningful to them in comparison to other sources of information. We summarized such findings, per community, through the following table:

<b>Learning in Community (Elements that Foster Learning)</b>	
<b>Role of Digital Skills</b>	
<i>Community</i>	<i>Distinctive characteristics of OLC's platform and tools</i>
Cambridge in Colour	a) Access to specific informative sources b) Online communication with knowledgeable people worldwide c) Newsletter redirection to interesting content
Momzilla	a) Anonymity b) Speed in response c) Tribe feeling
edWeb	a) Social network format b) Online community and webinar hosting c) Convenience in terms of attendance d) Interactive and synchronous learning e) Asynchronous learning
NovaGob	a) Online community created by experts in the field b) Network for Hispanic public innovators
Deutsch für Dich	a) Connect with other people interested in learning German b) Access to topic specific forums c) Practical and free access to resources
Rare Connect	a) Global and local connection b) Direct response online c) Interaction with patients and patients’ associations d) Information concentrated and available to all

**Table 37: Distinctive characteristics of the OLC's platform and tools.**

Throughout the examination of the cases selected for our research, we have confirmed that there are indeed clear differences among learning communities given their OLC type, their modality, their objective, their sociodemographic profile, their life stage, their thematic focus, their environment configuration, and the engagement of their membership. All of the aforementioned elements provide the OLC with a unique and flexible identity. Nevertheless, through our cross-comparative analysis, we also recognized the existence of three common characteristics in terms of the features that the platforms and the tools of the learning communities considered for this study offered, and more specifically, why they resulted useful for their members. In the six cases, interviewees referred that their OLCs were (1) spaces that provided a convenient admission to varied informative sources and learning resources, while (2) allowing simultaneous and/or independent options for interacting and acquiring knowledge from (3) like-minded people, persons in similar life circumstances and experts.

## II. Practices that foment learning

As we stated in Chapter 5, we led our investigation endeavours about the actions and values that supported learning in each of our selected OLCs based on the research question Which practices foster the learning objectives of the members of public OLCs? For the purposes of this chapter, we present and discuss the results about this type of activities that were detected in each community. We do so by reporting, in comparative fashion, the learning communities' dynamics of participation and interaction, as well as their learning environment guiding principles.

### *a) Dynamics of participation and interaction*

Our data analysis revealed the existence of a series of specific actions within each OLC that were performed regularly by the members and that encouraged their participation and interaction in their communities. Moreover, and in the opinion of the OLC users, these activities were significant in so far, they supported their learning purposes. The following table shows the different practices detected during the monitoring period in each community:

<b>Learning in Community (Elements that Foster Learning)</b>	
<b>Practices that Foment Learning</b>	
<i>Community</i>	<i>Specific practices found in the OLC</i>
Cambridge in Colour	a) Lurking in website b) Interaction with peers c) Participation in competitions d) Community moderation
Momzilla	a) Regular access b) Fulfilment of an entertainment need c) Crosswise information dissemination d) Questions and answers format e) Respectful and rule-oriented environment

edWeb	Webinars supported by partners and sponsors
NovaGob	a) Curated content b) Dissemination through newsletters, social networks, and events c) Active community
Deutsch für Dich	a) Self learning b) Find answers to questions through interaction
Rare Connect	a) Collaboration and information exchange b) Community manager support c) Multiple language and global reach d) Translation e) Forum format

**Table 38: Specific practices found in the OLC that foment learning.**

Interestingly, while the activities reflected the ways in which learning took place in each community, we also found common practices shared among the chosen OLCs such as the questions and answers configuration given by the forum feature, the importance of an active community management, the performance of self-learning through lurking practices, and the information exchange through the interaction with other members.

As we referred in the “Contextual Information” section of this chapter, at the time of the data collection period, only Cambridge in Colour and Rare Connect operated on a semi-open modality for users to be able to view the instructional design, the forum threads, and the learning repositories of the community before taking the decision of registering as members. The dynamics of access in the six OLCs selected for our study required to follow a registration procedure so to become member and/or access the forums and the learning resources fully. What made these communities appealing for the potential members, if four out of the six OLCs analyzed did not portrayed openly their contents? In terms of community discovery, we noticed peculiar differences among the communities. On the one hand, in Momzilla and NovaGob, which are two OLCs with a local/regional focus, the members reported finding about them mostly upon recommendations, through social networks and through cause-related organizations. On the other hand, in Cambridge in Colour, Deutsch für Dich and Rare Connect, three communities with a worldwide approach, the interviewees referred, in a greater extent, finding about the OLCs by following a link from another website and through search engines (see Matrix 6).

The weekly login frequency varied from community to community. Cambridge in Colour and Momzilla were the most active OLCs from our sample in this respect, where between 53.33% and 84.50% of the interviewed members mentioned logging in everyday, while between 11.81% and 29.33% logged in 3 times per week or more. In the case of NovaGob, Deutsch für Dich and Rare Connect, the login frequencies were mixed. Respondents in these communities reported logging in longer intervals such as one time per month, one time every two weeks and up to one time per week. However, there was also a more active proportion among the interviewees of these three OLCs, where between 11.11% and 21.57% logged in 3 times per week or more, and between 11.21% and 28.6% who logged in everyday.

In terms of the daily login frequency, understood as the number of times that a user accesses the community during a day, the recurrence was more homogeneous among the communities analyzed. In Cambridge in Colour, NovaGob, Deutsch für Dich and Rare Connect between 35.53% and 78.67% of the respondents referred to log in to the community only once a day, while between 9.33% and 28.95% of the interviewees said they logged in two times per day. Momzilla was the exception to the norm. In this community, 30.22% of the interviewed members mentioned being constantly logged in, 28.73% four times per day or more and 14.18% three times per day. This frequent access can be explained partly through the fact that Momzilla was the only OLC from our sample which functioned through a social media platform (Facebook Groups).

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Dynamics in terms of access</i>	<b>Practices that Foment Learning</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Community discovery	Followed link from another webpage: 21.05% Found it by using a search engine: 56.58% Asking/searching in a forum or news group: 5.26% Was told URL by friend, colleague or relative: 6.58% Heard about it in an organization: 2.63% Other: 7.89%	Followed link from another webpage: 2.21% Found it by using a search engine: 1.10% Asking/searching in a forum or news group: 0.74% Found it through social networks: 18.38% Was told URL by friend, colleague or relative: 60.66% Read about in newspaper/magazine: 0.37% Heard about it in an organization: 3.31% Saw or heard information about it on TV or radio: 0.37% Other: 12.87%	Followed link from another webpage: 19.28% Found it by using a search engine: 6.02% Asking/searching in a forum or news group: 7.23% Found it through social networks: 15.66% Was told URL by friend, colleague or relative: 21.69% Read about in newspaper/magazine: 2.41% Heard about it in an organization: 15.66% Other: 12.05%	Followed link from another webpage: 20.69% Found it by using a search engine: 20.69% Asking/searching in a forum or news group: 10.34% Found it through social networks: 6.90% Was told URL by friend, colleague or relative: 13.79% Heard about it in an organization: 17.24% Found the information through a video: 3.45% Other: 6.90%	Followed link from another webpage: 25.00% Found it by using a search engine: 22.41% Asking/searching in a forum or news group: 3.45% Found it through social networks: 16.38% Was told URL by friend, colleague or relative: 7.76% Read about in newspaper/magazine: 0.86% Heard about it in an organization: 11.21% Other: 12.93%
Weekly login frequency	1 time per month:	1 time per month: 0.74%	1 time per month: 17.28%	1 time per month: 14.29%	1 time per month: 29.31% 1 time every two weeks:

	4.00% 1 time every two weeks: 2.67% 1 time per week: 2.67% 2 times per week: 8.00% 3 times per week or more: 29.33% Everyday: 53.33%	1 time every two weeks: 0.37% 1 time per week: 1.85% 2 times per week: 0.74% 3 times per week or more: 11.81% Everyday: 84.50%	1 time every two weeks: 12.35% 1 time per week: 29.63% 2 times per week: 13.58% 3 times per week or more: 11.11% Everyday: 16.05%	1 time every two weeks: 14.29% 1 time per week: 14.29% 2 times per week: 7.14% 3 times per week or more: 21.57% Everyday: 28.6%	15.52% 1 time per week: 12.93% 2 times per week: 13.79% 3 times per week or more: 17.24% Everyday: 11.21%
Daily login frequency	One time per day: 35.53% Two times per day: 28.95% Three times per day: 13.16% Four times per day or more: 15.79% Constantly logged in: 6.58%	One time per day: 16.04% Two times per day: 10.82% Three times per day: 14.18% Four times per day or more: 28.73% Constantly logged in: 30.22%	One time per day: 78.67% Two times per day: 9.33% Three times per day: 1.33% Four times per day or more: 2.67% Constantly logged in: 8.00%	One time per day: 59.26% Two times per day: 18.52% Three times per day: 7.41% Four times per day or more: 3.70% Constantly logged in: 11.11%	One time per day: 74.26% Two times per day: 10.89% Three times per day: 3.96% Four times per day or more: 2.97% Constantly logged in: 7.92%

**Matrix 6: Dynamics in terms of access.**



When analyzing and comparing the dynamics in terms of participation<sup>144</sup> in our learning communities, we noticed that the members of the OLCs tended to spend short amounts of time in the communities each time they accessed the platforms (see Matrix 7). In Momzilla, NovaGob and Rare Connect, between 33.83% and 45.61% of the interviewed members said that they spent 15 minutes or less in the community every time they logged in. In contrast, between 32.89% and 42.86% of the interviewees in Cambridge in Colour and Deutsch für Dich mentioned that they stayed between 30 minutes to 1 hour in the community. On a second instance, between 23.79% and 36.59% of all respondents in the selected communities referred spending 30 minutes or less in their OLCs.

In general, and as it can be seen in Matrix 7, between 29.78% and 41.33% of the interviewees in the selected communities described themselves, on the one hand, as sometimes active and sometimes inactive with regards to their participation in their OLC. Nevertheless, in Cambridge in Colour and Momzilla, between 24.00% and 30.51% of the interviewed members considered themselves more as regularly active, while in NovaGob and Deutsch für Dich between 12.05% and 35.71% mentioned that they were quite active. Surprisingly, in the case of Rare Connect 23.08% of the respondents referred that they were quite inactive. These mixed results suggest that the level of engagement of the memberships is divided and that in the case of the passive users this can obey to the intermittent periods of active participation and/or the lurking proceedings of the members.

With regards to the extent of active participation through content, between 24.6% and 35.7% of the survey respondents in the selected communities referred that they posted threads or resources sometimes, while between 9.6% and 40.8% said they did it on a regular basis, being Cambridge in Colour the most active of all OLCs considered in this respect.

When participating in the OLC, the interviewed members contributed with content in several ways. In order of frequency, respondents referred that they provided information or resources when replying to a thread (between 40.0% and 88.0%); posted their own threads with questions about a topic or with the intention to foster a discussion (between 39.3% and 76.9%) and posted informative resources such as links, images or contact details (between 30.0% and 67.9%). Interestingly, between 12.0% and 38.5% of the interviewees said they also included self-created content. On a lesser extent, (between 3.3% and 20.5%) of the members in the selected OLC shared presentations, articles, e-books, infographics, videos, and webinars.

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<sup>144</sup> We considered the participation in both passive (lurking) and active (content contribution) ways.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Dynamics in terms of participation</i>	<b>Practices that Foment Learning</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
<b>Span of time spent in the community</b>	15 minutes or less: 25.00% 30 minutes or less: 32.89% 30 minutes to 1 hour: 32.89% 1 to 2 hours: 5.26% More than 2 hours: 3.95%	15 minutes or less: 33.83% 30 minutes or less: 23.79% 30 minutes to 1 hour: 26.39% 1 to 2 hours: 8.92% More than 2 hours: 7.06%	15 minutes or less: 40.24% 30 minutes or less: 36.59% 30 minutes to 1 hour: 18.29% 1 to 2 hours: 3.66% More than 2 hours: 1.22%	15 minutes or less: 14.29% 30 minutes or less: 28.57% 30 minutes to 1 hour: 42.86% 1 to 2 hours: 10.71% More than 2 hours: 3.57%	15 minutes or less: 45.61% 30 minutes or less: 28.95% 30 minutes to 1 hour: 20.18% 1 to 2 hours: 4.39% More than 2 hours: 0.88%
<b>Level of activity</b>	Very active: 6.67% Regularly active: 24.00% Quite active: 21.33% Sometimes active, sometimes inactive: 41.33% Quite inactive: 6.67%	Very active: 9.56% Regularly active: 30.51% Quite active: 20.22% Sometimes active, sometimes inactive: 29.78% Quite inactive: 9.19% Completely inactive: 0.74%	Very active: 8.43% Regularly active: 4.82% Quite active: 12.05% Sometimes active, sometimes inactive: 32.53% Quite inactive: 32.53% Completely inactive: 9.64%	Very active: 3.57% Regularly active: 3.57% Quite active: 35.71% Sometimes active, sometimes inactive: 39.29% Quite inactive: 14.29% Completely inactive: 3.57%	Very active: 8.55% Regularly active: 12.82% Quite active: 11.11% Sometimes active, sometimes inactive: 36.75% Quite inactive: 23.08% Completely inactive: 7.69%
<b>Extent of participation through content</b>	Always: 9.2% Often: 11.8% Regularly: 40.8% Sometimes: 34.2% I have done it two times	Always: 2.6% Often: 19.9% Regularly: 29.8% Sometimes: 35.3% I have done it two times	Always: 1.2% Often: 9.6% Regularly: 9.6% Sometimes: 28.9%	Always: 7.1% Often: 7.1% Regularly: 17.9% Sometimes: 35.7%	Always: 8.8% Often: 10.5% Regularly: 16.7% Sometimes: 24.6%

	<p>or more: 1.3%</p> <p>I have done it once: 2.6%</p>	<p>or more: 9.6%</p> <p>I have done it once: 2.2%</p> <p>Never: 0.7%</p>	<p>I have done it two times or more: 10.8%</p> <p>I have done it once: 13.3%</p> <p>Never: 26.5%</p>	<p>I have done it two times or more: 7.1%</p> <p>I have done it once: 7.1%</p> <p>Never: 17.9%</p>	<p>I have done it two times or more: 10.5%</p> <p>I have done it once: 14.9%</p> <p>Never: 14.0%</p>
<p>Content and type of contribution</p>	<p>Started a topic through a question or fostering a discussion: 76.9%</p> <p>Provided information or resources by replying to someone's petition/post: 80.8%</p> <p>Posted an informative resource (link, image, contact details, etc.): 67.9%</p> <p>Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.): 20.5%</p> <p>Contributed in the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.): 38.5%</p>	<p>Started a topic through a question or fostering a discussion: 76.4%</p> <p>Provided information or resources by replying to someone's petition/post: 88.0%</p> <p>Posted an informative resource (link, image, contact details, etc.): 65.5%</p> <p>Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.): 21.5%</p> <p>Contributed in the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.): 12.0%</p>	<p>Started a topic through a question or fostering a discussion: 39.3%</p> <p>Provided information or resources by replying to someone's petition/post: 42.9%</p> <p>Posted an informative resource (link, image, contact details, etc.): 39.3%</p> <p>Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.): 17.9%</p> <p>Contributed in the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.): 26.2%</p>	<p>Started a topic through a question or fostering a discussion: 43.3%</p> <p>Provided information or resources by replying to someone's petition/post: 40.0%</p> <p>Posted an informative resource (link, image, contact details, etc.): 30.0%</p> <p>Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.): 3.3%</p> <p>Contributed in the community with self-created content</p>	<p>Started a topic through a question or fostering a discussion: 47.2%</p> <p>Provided information or resources by replying to someone's petition/post: 58.4%</p> <p>Posted an informative resource (link, image, contact details, etc.): 32.0%</p> <p>Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.): 16.0%</p> <p>Contributed in the</p>

				(article, presentation, blog entry, e-book, video, webinar, etc.): 16.7%	community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.): 24.8%
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**Matrix 7: Dynamics in terms of participation.**

The interaction dynamics among members of the OLCs were, in a similar way than the participation ones, irregular and divided (see Matrix 8). Between 27.6% and 40.7% of the interviewed members mentioned that they interacted with other users in their community sometimes. In the case of Cambridge in Colour and Momzilla, between 25.3% and 29.4% of the interviewees referred that they interacted regularly, while between 14.7% and 24.6% mentioned that they did it often. By contrast, in NovaGob, Deutsch für Dich and Rare Connect, an important proportion of their interviewees mentioned having low levels of interaction. In NovaGob, 15.7% have interacted only once with other members and 14.5% just two times or more. In Deutsch für Dich and Rare Connect the interactions reported were even lower. In both communities between 15.5% and 18.5% of the respondents mentioned that they had never interacted with other members.

Interestingly, just a bit more than half of the interactions in our selected OLCs were public. These interactions took place in the forums of the communities or in the comment sections of the resources, as referred by between 59.26% and 63.84% of the interviewees. In Cambridge in Colour, however, 92.0% of the interactions were reported to be mainly of public nature.

The opinion of the members with respect to the reaction and response rate was also divided. While in Cambridge in Colour and Momzilla around half of the interviewees considered that they always or regularly received answers from other members, there were still between 22.1% and 24.3% of the respondents that only got replies sometimes. In the case of NovaGob, Deutsch für Dich and Rare Connect the reaction and response rate was perceived as lower. Between 22.0% and 34.6% of the members in these OLCs mentioned that they obtained replies sometimes, while between 22.0% and 22.5% referred never getting any response. This lack of continuous interaction perceived by a considerable segment of the interviewees could be a potential factor that explains the intermittent periods of active participation and communication between members found in the OLCs selected for our study.

Learning in Community (Elements that Foster Learning)					
Dynamics in terms of interaction	Practices that Foment Learning				
	Community				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Extent of own interaction	Always: 10.7% Often: 14.7% Regularly: 25.3% Sometimes: 37.3% I have done it two times or more: 4.0% I have done it once: 5.3% Never: 2.7%	Always: 7.0% Often: 24.6% Regularly: 29.4% Sometimes: 27.6% I have done it two times or more: 10.3% I have done it once: 0.7% Never: 0.4%	Always: 1.2% Often: 6.0% Regularly: 9.6% Sometimes: 37.3% I have done it two times or more: 14.5% I have done it once: 15.7% Never: 15.7%	Always: 3.7% Often: 11.1% Regularly: 11.1% Sometimes: 40.7% I have done it two times or more: 11.1% I have done it once: 3.7% Never: 18.5%	Always: 6.9% Often: 5.2% Regularly: 19.0% Sometimes: 27.6% I have done it two times or more: 12.1% I have done it once: 13.8% Never: 15.5%
Type of interaction	Public: 92.00% Private: 8.00%	Public: 63.84% Private: 36.16%	Public: 65.82% Private: 34.18%	Public: 59.26% Private: 40.74%	Public: 63.30% Private: 36.70%
Perception of members' interaction	Always: 28.4% Often: 18.9% Regularly: 24.3% Sometimes: 24.3% They have done it two times or more: 1.4% They have done it once: 1.4% Never: 1.4%	Always: 16.6% Often: 23.6% Regularly: 33.2% Sometimes: 22.1% They have done it two times or more: 3.3% They have done it once: 0.4% Never: 0.7%	Always: 6.1% Often: 14.6% Regularly: 11.0% Sometimes: 22.0% They have done it two times or more: 6.1% They have done it once: 18.3% Never: 22.0%	Always: 7.7% Often: 15.4% Regularly: 15.4% Sometimes: 34.6% They have done it two times or more: 3.8% They have done it once: 3.8% Never: 19.2%	Always: 8.1% Often: 10.8% Regularly: 18.9% Sometimes: 27.0% They have done it two times or more: 5.4% They have done it once: 7.2% Never: 22.5%

**Matrix 8: Dynamics in terms of interaction.**

### ***b) Guiding Principles***

Throughout the analysis process in each of the OLCs, we detected several values that, in opinion of the interviewed members, kept the users interested in participating and staying in the community. In Table 39, we present, per community, the set of principles that oriented the OLC environments, as well as their learning practices:

<b>Learning in Community (Elements that Foster Learning)</b>	
<b>Practices that Foment Learning</b>	
<i>Community</i>	<i>Specific values that define the OLC</i>
Cambridge in Colour	a) Honest and respectful feedback b) Friendly atmosphere
Momzilla	a) Openness and diversity b) Strong sense of belonging
edWeb	Professional online collaboration for fostering continuous education & professional development options
NovaGob	a) Collaborative learning and joint working efforts for advancing knowledge about open government and public innovation b) Open access
Deutsch für Dich	a) Collaborative learning through tandems and online interaction b) Free access to high quality online learning resources
Rare Connect	a) Awareness of rare diseases b) Advocacy around rare diseases c) Privacy policy to protect patients' identity and information

**Table 39: Specific values that define the OLC.**

From the observations obtained through the netnography, as well as from the perceptions shared by the interviewed members, we noticed that the six cases selected for this study had unique values that distinguished them. Moreover, although diverse, these values reflected, each in their own way, three main principles of learning communities: freedom of expression, cooperation, and sense of belonging. In the next lines, we present and explain the outcomes of our online survey queries related to these common key values.

In terms of freedom of expression (see Matrix 9), between 77.82% and 95.95% of the interviewed members in the communities said they felt comfortable when expressing their doubts and opinions in their respective OLCs. The levels of trust reported in Cambridge in Colour, Momzilla, NovaGob and Rare Connect during the interactions considered for the monitoring periods were high. In these communities, between 30.56% and 53.42% of the interviewees mentioned feeling comfortable when expressing their doubts and opinions at all times, while between 28.11% and 56.94% said they felt very comfortable. However, this was not entirely the case for Deutsch für Dich. In this

community, 54.55% of the respondents referred feeling sometimes comfortable and other not during their interactions.

Moreover, during discussions and debates, between 83.46% and 97.30% of the interviewees highlighted feeling comfortable when expressing their opinions and ideas, even if they were opposite to the others' perspective or if they experienced being corrected by members in their community. In general, the respondents confirmed that their communities were spaces of respectful interactions. Between 42.47% and 62.29% said they felt very comfortable even in confronting interactions with other members and between 14.81% and 47.95% referred they felt very comfortable when they had been in such situations in their OLC. Nevertheless, there was also a proportion of interviewees in Momzilla (33.19%) and Deutsch für Dich (22.22%) that mentioned feeling sometimes comfortable during discussions and others not.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Guiding Principles: Freedom of expression</i>	<b>Practices that Foment Learning</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Comfortable expressing doubts and opinions	Yes: 95.95% No: 4.05%	Yes: 90.04% No: 9.96%	Yes: 86.59% No: 13.41%	Yes: 77.78% No: 22.22%	Yes: 88.29% No: 11.71%
Perception of extent of freedom of expression	Very comfortable: 56.94% Comfortable: 30.56% Sometimes comfortable, other times not: 12.50%	Very comfortable: 28.11% Comfortable: 48.59% Sometimes comfortable, other times not: 23.29%	Very comfortable: 36.99% Comfortable: 53.42% Sometimes comfortable, other times not: 9.59%	Very comfortable: 22.73% Comfortable: 22.73% Sometimes comfortable, other times not: 54.55%	Very comfortable: 35.58% Comfortable: 48.08% Sometimes comfortable, other times not: 16.35%
Comfort during discussions and debates	Yes: 97.30% No: 2.70%	Yes: 83.46% No: 16.54%	Yes: 93.59% No: 6.41%	Yes: 96.15% No: 3.85%	Yes: 90.65% No: 9.35%
Extent of comfort during discussions and debates	Very comfortable: 47.95% Comfortable: 42.47% Sometimes comfortable, other times not: 9.59%	Very comfortable: 20.85% Comfortable: 45.96% Sometimes comfortable, other times not: 33.19%	Very comfortable: 38.89% Comfortable: 52.78% Sometimes comfortable, other times not: 8.33%	Very comfortable: 14.81% Comfortable: 62.96% Sometimes comfortable, other times not: 22.22%	Very comfortable: 31.31% Comfortable: 51.52% Sometimes comfortable, other times not: 17.17%

**Matrix 9: Guiding principles - Freedom of expression.**



Cooperation is another guiding principle that our case studies had in common. This value was reflected in the particular collaborative learning practices detected in each OLC through the netnography, as well as through the experiences shared by the members in the online interviews. Our findings through the online survey about this topic showed mixed results (see Matrix 10). When comparing Cambridge in Colour, Momzilla, Deutsch für Dich and Rare Connect among each other, between 59.29% and 91.89% of the interviewees in these OLCs reported helping members in their community to obtain information they were requesting or by sharing knowledge about a subject the members wanted to learn about. Surprisingly, in NovaGob 60.26% of the respondents referred that they had not cooperated in such ways.

With regards to the frequency in terms of collaboration, between 31.0% and 40.7% of the interviewed members in Cambridge in Colour, Momzilla, Deutsch für Dich and Rare Connect mentioned that they incurred in cooperative practices sometimes. Moreover, the frequency of cooperation reported was higher in Cambridge in Colour and Momzilla, while it seemed low in comparison NovaGob, Deutsch für Dich, and Rare Connect. In the case of NovaGob, 35.9% of the interviewees even referred that they have never cooperated with other members.

Despite the variability in terms of cooperation, between 49.09% and 88.3% of the respondents in all the selected OLCs commented that they received feedback from other members whenever they contributed with comments or resources in their threads. Nevertheless, almost half of the respondents in NovaGob, Deutsch für Dich and Rare Connect also stated not getting feedback at all.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Guiding Principles: Cooperation</i>	<b>Practices that Foment Learning</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Cooperation in the community	Yes: 91.89% No: 8.11%	Yes: 90.37% No: 9.63%	Yes: 39.74% No: 60.26%	Yes: 69.23% No: 30.77%	Yes: 59.29% No: 40.71%
Frequency of own cooperation	Always: 6.7% Often: 14.7% Regularly: 20.0% Sometimes: 38.7% I have done it two times or more: 13.3% Never: 6.7%	Always: 6.6% Often: 26.8% Regularly: 25.4% Sometimes: 31.3% I have done it two times or more: 8.5% I have done it once: 0.4% Never: 1.1%	Often: 7.7% Regularly: 7.7% Sometimes: 26.9% I have done it two times or more: 10.3% I have done it once: 11.5% Never: 35.9%	Always: 3.7% Regularly: 25.9% Sometimes: 40.7% I have done it two times or more: 3.7% I have done it once: 3.7% Never: 22.2%	Always: 10.6% Often: 9.7% Regularly: 8.8% Sometimes: 31.0% I have done it two times or more: 6.2% I have done it once: 14.2% Never: 19.5%
Cooperation and feedback	Yes: 88.33% No: 10.67%	Yes: 88.24% No: 11.76%	Yes: 50.65% No: 49.35%	Yes: 59.26% No: 40.74%	Yes: 49.09% No: 50.91%

**Matrix 10: Guiding principles – Cooperation.**

According to the results of our online survey, the memberships of the selected OLCs were composed by a mixture of experienced and novice members (see Matrix 11). Furthermore, we observed that each OLC had a different proportion with regards to the time that the members have been part of their learning community. Cambridge in Colour had the biggest share of experienced members, with 61.33% of its users reporting participating in the community for three years or more. Momzilla and NovaGob had also an important quota of experienced members, however the highest proportions of interviewed members in these two communities referred participating between 1 to 3 years and less. Contrastingly, in Deutsch für Dich and Rare Connect between 35.34% and 44.85% of the respondents mentioned being part of the communities since less than 6 months.

The sense of community is “a spirit of belonging together, a feeling that there is an authority structure that can be trusted, an awareness that trade, and mutual benefit come from being together, and a spirit that comes from shared experiences” (Rotman & Wu, 2015, p.37). A common domain of interest, continuous interaction, emotional support, shared history/culture, and a virtually constructed identity are factors that define and shape the sense of community in virtual communities (Rotman & Wu, 2015). Hence, we included queries based on this definition in our online survey with the intention to investigate further on the sense of belonging present in our OLCs. We portray a summary of these results in Matrix 11.

When asked about the development of their connections with other users in their OLCs, between 58.67% and 73.49% of the respondents in Cambridge in Colour, NovaGob and Deutsch für Dich referred that they had not established any virtual relationship with members in their community. Nevertheless, in Momzilla and Rare Connect, more than the half of the interviewees mentioned that the frequency of their interactions in the community did lead them to build relationships with certain members.

Despite these variations with regards to the levels of closeness towards other users, the interviewed members did consider OLCs as access points for meeting people with related learning concerns based on their hobbies, interests, profession and/or similar life situations. As seen in Matrix#, the responses of the interviewees with respect to their contact with other groups through their learning community clearly reflected the particular focus of each of our selected OLCs.

When questioned specifically about their sense of community, the interviewees agreed to the fact that they felt a sense of belonging to their OLC, but with some nuances to bear in mind. In all the communities, the interviewed members considered that their membership was responsive, although in Momzilla the respondents referred that the levels of participation and interaction were not well balanced. Except for Deutsch für Dich, the surveyed members also indicated the existence of two or three “known faces” that interacted frequently in the community. In the opinion of the interviewed members, the information in the selected OLCs could be accessed with ease. Moreover, they rated the information available as trustworthy and of good quality and indicated that several members in the community had expertise in various topics related to the focus of the OLC. In Cambridge in Colour, Momzilla, NovaGob and Rare Connect, members highlighted the fact that the community managers fostered collaboration and respect among members, while being always available for them. This was not the case of Deutsch für Dich, where the members did not know if the community manager would help them in case of need.

<b>Learning in Community (Elements that Foster Learning)</b>					
<i>Guiding Principles: Sense of belonging</i>	<b>Practices that Foment Learning</b>				
	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
<b>Membership</b>	Less than 6 months: 9.33% 6 months to 1 year: 4.00% 1 year to 3 years: 25.33% 3 years or more: 61.33%	Less than 6 months: 8.49% 6 months to 1 year: 38.75% 1 year to 3 years: 46.86% 3 years or more: 5.90%	Less than 6 months: 28.92% 6 months to 1 year: 19.28% 1 year to 3 years: 37.35% 3 years or more: 14.46%	Less than 6 months: 44.83% 6 months to 1 year: 24.14% 1 year to 3 years: 24.14% 3 years or more: 6.90%	Less than 6 months: 35.34% 6 months to 1 year: 18.97% 1 year to 3 years: 23.28% 3 years or more: 22.41%
<b>Virtual relationship among members</b>	Yes: 41.33% No: 58.67%	Yes: 64.71% No: 35.29%	Yes: 26.51% No: 73.49%	Yes: 29.63% No: 70.37%	Yes: 33.04% No: 66.96%
<b>Contact with other groups</b>	People who share my interests (political, economic, social, health, academic/educational, etc.): 29.5% People who share my hobbies/recreational activities: 87.2% People who share my religion or spiritual beliefs: 0.0% People in my	People who share my interests (political, economic, social, health, academic/educational, etc.): 73.1% People who share my hobbies/recreational activities: 42.2% People who share my religion or spiritual	People who share my interests (political, economic, social, health, academic/educational, etc.): 63.1% People who share my hobbies/recreational activities: 1.2% People who share my religion or	People who share my interests (political, economic, social, health, academic/educational, etc.): 46.7% People who share my hobbies/recreational activities: 40.0% People who share my religion or spiritual beliefs: 3.3% People in my profession: 16.7% People in my family: 3.3% Colleagues from my	People who share my interests (political, economic, social, health, academic/educational, etc.): 34.4% People who share my hobbies/recreational activities: 4.8% People who share my religion or spiritual beliefs: 4.8% People in my profession: 9.6% People in my family: 11.2% Colleagues from my work place: 5.6%

	profession: 7.7% People in my family: 6.4% Colleagues from my work place: 2.6% Friends or acquaintances: 9.0% People in similar life situations: 7.7% Other group: 1.3% None: 10.3%	beliefs: 7.6% People in my profession: 19.6% People in my family: 19.3% Colleagues from my work place: 7.6% Friends or acquaintances: 47.3% People in similar life situations: 68.4% Other group: 3.3% None: 2.5%	spiritual beliefs: 0.0% People in my profession: 42.9% People in my family: 1.2% Colleagues from my work place: 15.5% Friends or acquaintances: 8.3% People in similar life situations: 0.0% Other group: 4.8% None: 7.1%	work place: 3.3% Friends or acquaintances: 13.3% People in similar life situations: 23.3% Other group: 13.3% None: 13.3%	Friends or acquaintances: 12.0% People in similar life situations: 56.8% Other group: 12.0% None: 12.8%
Perception of sense of belonging <sup>145</sup>	a) I feel a sense of community in my online community: 4 b) I feel members are interested in	a) I feel a sense of community in my online community: 4 b) I feel members are	a) I feel a sense of community in my online community: 4 b) I feel members are	a) I feel a sense of community in my online community: 4 b) I feel members are interested in reading and answering my	a) I feel a sense of community in my online community: 4 b) I feel members are interested in reading and answering my posts:

<sup>145</sup> The values shown have the following equivalences:

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree
- 1= Don't know
- 9= Not answered

<p>reading and answering my posts: 4</p> <p>c) I feel members are interested in getting to know more about me after reading my posts or contributions: 3</p> <p>d) I consider that the level of participation in my community is well balanced among its members: 4</p> <p>e) I think that the level of interaction in my community is well balanced among its members: 4</p> <p>f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members: 5</p> <p>g) I feel confident that I can easily obtain the information I need</p>	<p>interested in reading and answering my posts: 4</p> <p>c) I feel members are interested in getting to know more about me after reading my posts or contributions: 3</p> <p>d) I consider that the level of participation in my community is well balanced among its members: 2</p> <p>e) I think that the level of interaction in my community is well balanced among its members: 2</p> <p>f) There are two or three members that post more frequently and/or interact with others in comparison to</p>	<p>interested in reading and answering my posts: 3</p> <p>c) I feel members are interested in getting to know more about me after reading my posts or contributions: 3</p> <p>d) I consider that the level of participation in my community is well balanced among its members: 3</p> <p>e) I think that the level of interaction in my community is well balanced among its members: 3</p> <p>f) There are two or three members that post more frequently and/or interact with</p>	<p>posts: 4</p> <p>c) I feel members are interested in getting to know more about me after reading my posts or contributions: 3</p> <p>d) I consider that the level of participation in my community is well balanced among its members: 4</p> <p>e) I think that the level of interaction in my community is well balanced among its members: 4</p> <p>f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members: -1</p> <p>g) I feel confident that I can easily obtain the information I need from my online community: 4</p> <p>h) The data and content shared by the members is trustworthy and of</p>	<p>4</p> <p>c) I feel members are interested in getting to know more about me after reading my posts or contributions: 3</p> <p>d) I consider that the level of participation in my community is well balanced among its members: 4</p> <p>e) I think that the level of interaction in my community is well balanced among its members: 3</p> <p>f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members: 4</p> <p>g) I feel confident that I can easily obtain the information I need from my online community: 4</p> <p>h) The data and content shared by the members is trustworthy and of good quality: 4</p> <p>i) Several members in my community are experts in their topic: 4</p>
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	<p>from my online community: 4</p> <p>h) The data and content shared by the members is trustworthy and of good quality: 4</p> <p>i) Several members in my community are experts in their topic: 5</p> <p>j) The information available in the community is trustworthy and of good quality: 4</p> <p>k) The community manager promotes an atmosphere of collaboration and respect in the community: 5</p> <p>l) The community manager is available for the members at all times: 4</p>	<p>the rest of the members: 5</p> <p>g) I feel confident that I can easily obtain the information I need from my online community: 4</p> <p>h) The data and content shared by the members is trustworthy and of good quality: 3</p> <p>i) Several members in my community are experts in their topic: 4</p> <p>j) The information available in the community is trustworthy and of good quality: 4</p> <p>k) The community manager promotes an atmosphere of</p>	<p>others in comparison to the rest of the members: 5</p> <p>g) I feel confident that I can easily obtain the information I need from my online community: 3</p> <p>h) The data and content shared by the members is trustworthy and of good quality: 5</p> <p>i) Several members in my community are experts in their topic: 5</p> <p>j) The information available in the community is trustworthy and of good quality: 5</p> <p>k) The community manager</p>	<p>good quality: 4</p> <p>i) Several members in my community are experts in their topic: 4</p> <p>j) The information available in the community is trustworthy and of good quality: 4</p> <p>k) The community manager promotes an atmosphere of collaboration and respect in the community: 4</p> <p>l) The community manager is available for the members at all times: -1</p>	<p>j) The information available in the community is trustworthy and of good quality: 4</p> <p>k) The community manager promotes an atmosphere of collaboration and respect in the community: 5</p> <p>l) The community manager is available for the members at all times: 4</p>
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		collaboration and respect in the community: 5 l) The community manager is available for the members at all times: 5	promotes an atmosphere of collaboration and respect in the community: 5 l) The community manager is available for the members at all times: 5		
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**Matrix 11: Guiding principles - Sense of belonging.**

As a closing remark with regards to this section devoted to present the elements found to foster learning in OLCs,<sup>146</sup> our cross-case analysis provided us with several findings. First, it allowed us to verify the interdependence between the level of digital skills and the specific learning practices detected in the selected communities of our study. It resulted clear to us that the members had to have a good command of specific digital skills and Internet experience so to benefit from the activities aimed to inform or provide knowledge that were offered by their communities. Second, we realized that a set of guiding values, together with the active participation and interaction of the founders, the community managers and the members are fundamental assets to implement and shape the learning practices of an OLC. Likewise, the unique learning focus of each community is reflected precisely through its specific learning practices and principles. Last but not least, the freedom of expression, the cooperation among members and the sense of belonging developed overtime through the participation and interaction of the users are the elements that can guarantee a consistent and long-lasting engagement.

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<sup>146</sup> We include for edWeb, NovaGob, Deutsch für Dich and Rare Connect a figure summarizing in graphical form the elements that fostered learning as part of the Appendices of this dissertation (see Appendix 11 to 14). For Cambridge in Colour and Momzilla, the figures were considered as part of the closing remarks in Chapter 5 for the sections “Practices that foment learning” of the case study report of each community. As we mentioned at the beginning of the current chapter, Cambridge in Colour and Momzilla were analyzed independently and in depth to portray them as exemplary cases of 100% virtual and blended OLCs.

#### ***7.4 Cross-Case Analysis: Perceived (Lifelong) Learning Value of Online Learning Communities***

In this section, our cross-case comparison focuses on setting side by side the lifelong learning assets detected in the six public OLCs chosen for our research purposes. Hence, we examined the following four aspects in the selected communities, presenting them through comparative matrices and tables: (1) Specific questions about information, learning and knowledge; (2) General and particular ways through which the learning communities increased knowledge; (3) Qualities of learning and knowledge acquisition and (4) Significance for lifelong learning. Given the fact that the quantitative and qualitative evidence obtained from the OLCS are not only based on the netnography, but also on the replies and user experiences obtained through the online survey and the online interviews conducted in each of the communities, the discussion of these results reflects the members' perspective regarding the lifelong learning value that their communities provide them with.

##### **I. Questions about information, learning and knowledge**

In the same way we did for Chapter 5 but now through a comparative perspective, we examined the research question In which ways do members increase their knowledge in public OLCs? This inquiry provided us with a foundation for understanding how members use these types of communities to support their lifelong learning endeavours. Our cross-case analysis discloses the perception that members from our chosen OLC had about the usefulness of the information, learning and knowledge that they obtained through their communities.

According to our online survey results and as shown in Matrix 12, between 70.21% and 100.00% of the interviewees considered that their OLC was, in general, a useful source of information. In Cambridge in Colour, NovaGob, Deutsch für Dich and Rare Connect between 40.74% and 59.96% of the interviewed members mentioned that they could find the information required through the community in about the time that they had expected. Nevertheless, there was also a proportion of interviewees in the chosen OLCs that were surprised by the fact they could obtain data quickly through their communities. Between 23.40% and 27.85% of the respondents in Cambridge in Colour, NovaGob and Rare Connect referred that they took less time that they had expected when searching data about a topic of their interest through their OLC. In Deutsch für Dich, 25.9% of the interviewed members said they took a lot less time than they had expected for obtaining information. In the case of Momzilla, 33.62% of the respondents alluded taking less time than expected for this task, while 32.75% mentioned taking a lot less time. Moreover, the interviewees rated overall positively the quality of the information found in the learning communities selected for the study. In Momzilla, NovaGob, Deutsch für Dich and Rare Connect between 59.26% and 65.94% of the users rated the information obtained in these communities as of good quality. In the case of Cambridge in Colour the rating was even better: 63.38% of the respondents rated the information available in this community as of high quality.



In terms of how the community contributed to their learning, between 81.48% and 98.63% of the surveyed members referred that their OLC helped them to increase their knowledge. In Cambridge in Colour, Momzilla and NovaGob, between 41.67% and 49.55% of the interviewees mentioned that their participation in the learning community increased their knowledge more than they had expected, while in Deutsch für Dich and Rare Connect between 46.15% and 54.55% of the respondents found that their engagement in the OLC helped them advance their knowledge in about the way they had expected.

<b>Learning in Community (Perceived Lifelong Learning Value)</b>					
<i>Questions about Information, Learning and Knowledge</i>	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Usefulness for searching and finding information	Yes: 100.00% No: 0.0%	Yes: 93.81% No: 6.19%	Yes: 89.74% No: 10.26%	Yes: 85.19% No: 14.81%	Yes: 70.21% No: 29.79%
Span of time for finding information	A lot less than I expected: 13.70% Less than I expected: 26.03% About what I expected: 56.16% More than I expected: 4.11%	A lot less than I expected: 24.02% Less than I expected: 33.62% About what I expected: 32.75% More than I expected: 6.99% A lot more than I expected: 2.62%	A lot less than I expected: 5.06% Less than I expected: 27.85% About what I expected: 56.96% More than I expected: 6.33% A lot more than I expected: 3.80%	A lot less than I expected: 25.93% Less than I expected: 14.81% About what I expected: 40.74% More than I expected: 7.41% A lot more than I expected: 11.11%	A lot less than I expected: 7.45% Less than I expected: 23.40% About what I expected: 41.49% More than I expected: 17.09% A lot more than I expected: 10.64%
Quality of information	High quality: 64.38% Good quality: 31.51% Average: 4.11%	High quality: 16.16% Good quality: 65.94% Average: 17.03% Below average: 0.87%	High quality: 28.21% Good quality: 60.26% Average: 11.54%	High quality: 22.22% Good quality: 59.26% Average: 11.11% Below average: 7.41%	High quality: 21.28% Good quality: 61.70% Average: 9.57% Below average: 6.38% Unacceptable: 1.06%

Contribution to knowledge	Yes: 98.63% No: 1.37%	Yes: 95.18% No: 4.82%	Yes: 93.67% No: 6.33%	Yes: 81.48% No: 18.52%	Yes: 81.91% No: 18.09%
Extent of contribution to knowledge	A lot more than I expected: 19.44% More than I expected: 41.67% About what I expected: 38.89%	A lot more than I expected: 20.27% More than I expected: 49.55% About what I expected: 29.28% Less than I expected: 0.45% A lot less than I expected: 0.45%	A lot more than I expected: 17.57% More than I expected: 44.59% About what I expected: 35.14% Less than I expected: 2.70%	A lot more than I expected: 13.64% More than I expected: 31.82% About what I expected: 54.55%	A lot more than I expected: 24.64% More than I expected: 19.23% About what I expected: 46.15% Less than I expected: 5.13% A lot less than I expected: 3.85%

**Matrix 12: Questions about information, learning and knowledge.**

## II. Ways the OLC increases knowledge

The thematic analysis conducted for the qualitative data collection allowed us to detect the specific ways through which members increase their knowledge in the different public OLCs that composed our research sample. In Table 40 we portray the means that resulted useful in terms of learning and knowledge acquisition, as mentioned by the members during the online interviews. While each community had unique practices and methods, we also noticed two common trends among the OLCs, independently from their type and modality, that had a clear contribution for advancing knowledge. First, in all learning communities, interviewees highlighted the existence of different online learning resources and informative sources available through their OLC. Second, the exchange of know-how with peers and/or experts in the community was also referred to as a focal point for obtaining and expanding their knowledge on a given topic.

<b>Learning in Community (Perceived Lifelong Learning Value)</b>	
<i>Community</i>	<i>Specific ways the OLC increases knowledge</i>
Cambridge in Colour	a) Photography tutorials b) Sharing know-how c) Repository of user shared or self-generated content d) Photography books
Momzilla	a) Diverse sources b) Room for self-reflection and discussion about motherhood and child upbringing c) Secure space d) Up-to-date information
edWeb	a) Network of key actors in the education sector b) Online professional learning community organized per topic and need c) Extensive catalogue of topic specific webinars
NovaGob	a) Informal learning possibilities through topic specific groups b) Expertise and knowledge exchange among members c) Collaborative space for developing public innovation projects d) Annual Congress e) Online learning through own MOOC
Deutsch für Dich	a) Aids in the learning and the practice of the German language b) Helps to improve teaching skills c) Possibility to search for learning partnerships
Rare Connect	a) Specialized information for a wide variety of rare diseases b) Advancing scientific research for rare diseases c) Online learning resources for patients and their caregivers

**Table 40: Specific ways the OLC increases knowledge.**

Although the OLCs selected for this study were very well rated in terms of information and knowledge acquisition, between 61.54% and 70.51% of the interviewed members did not consider their learning communities as sources that substituted the ways they informed themselves or learned about the subjects of their interest. Notwithstanding, between 72.83% and 85.19% of the respondents did perceive their OLC as a complementary source of information (see Matrix 13).

Regarding the specific informational and learning resources available in the OLCs analyzed, interviewees rated the forum and the text, image or multimedia source created for self-learning and information purposes as the two most useful ones. Interestingly, the autodidactic resources and the recorded audio and video sources found in *Deutsch für Dich* got a higher appreciation in terms of usefulness from the point of view of the respondents, in comparison to the other OLCs where the forum was rated in first place. In the case of *Rare Connect*, interviewed members also highlighted the private messaging as beneficial for learning and obtaining knowledge.

Unexpectedly, only between 55.13% and 68.06% of the surveyed members referred that their active participation in their community was important for building up the informative resources and for accessing different learning possibilities through them. In general, interviewees assessed their OLC as very important to important sources for obtaining specific information and for learning about the topics of their interest, in order of relevance, through these actions: (1) by self-learning from the information and resources available in the community, as well as from the contributions made by the membership; (2) by interacting with the members of the OLC and, (3) by communicating regularly with the community manager.

Furthermore, and as shown in Matrix 13, lurking in the forums was rated as the most significant way through which the surveyed members solved their doubts or learn something new in their communities. In second place of relevance, the interviewees in *Cambridge in Colour* and *Momzilla* referred to the importance of discussing with other members and interacting with experts, while the educational and informational resources were placed by the interviewed members of these OLCs in third place of noteworthiness for increasing knowledge. Contrastingly, in *NovaGob*, *Deutsch für Dich* and *Rare Connect*, the respondents preferred to rely on the learning and informational repositories, before participating in discussions or interacting with members for the purpose of for increasing their knowledge.

<b>Learning in Community (Perceived Lifelong Learning Value)</b>					
<i>General ways the OLC Increases Knowledge</i>	<i>Community</i>				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
Substitute of information sources	Yes: 32.88% No: 67.12%	Yes: 34.51% No: 65.49%	Yes:24.49% No: 70.51%	Yes: 38.46% No: 61.54%	Yes:31.81% No: 68.82%
Main source of information & learning	Yes: 26.03% No, it is more a complementary source: 73.97%	Yes: 19.65% No, it is more a complementary source: 80.35%	Yes: 20.78% No, it is more a complementary source: 79.22%	Yes: 14.81% No, it is more a complementary source: 85.19%	Yes: 27.17% No, it is more a complementary source: 72.83%
Usefulness of resources	Discussion group or forum: 86.3% Private message: 2.9% Webinar: 1.6% Recorded audio and video: 1.6% Text, image, or multimedia resources available for self-study/information: 8.6%	Discussion group or forum: 71.3% Private message: 6.1% Webinar: 1.3% Recorded audio and video: 1.3% Text, image, or multimedia resources available for self-study/information: 20.1%	Discussion group or forum: 64.9% Private message: 5.7% Webinar: 1.4% Recorded audio and video: 1.4% Text, image, or multimedia resources available for self-study/information: 29.5%	Discussion group or forum: 33.3% Private message: 3.8% Webinar: 8.0% Recorded audio and video: 23.1% Text, image, or multimedia resources available for self-study/information: 34.6%	Discussion group or forum: 60.0% Private message: 13.1% Webinar: 6.2% Recorded audio and video: 3.7% Text, image, or multimedia resources available for self-study/information: 21.8%
Presence contribution	Yes: 68.06% No: 31.94%	Yes: 66.09% No: 33.91%	Yes: 55.13% No: 44.87%	Yes: 33.33% No: 66.67%	Yes: 56.52% No: 43.48%

<p>Role of the community in terms of information &amp; learning<sup>147</sup></p>	<p>a) How important do you consider the online community for obtaining specific information on your interest?: 5 (39.7%), 4 (37.0%)  b) How important do you consider the online community for learning something new by yourself?: 4 (42.5%)  c) How important do you consider the contributions of the other members of the community for your own learning?: 5 (41.1%)  d) How important do you consider your interactions with the community</p>	<p>a) How important do you consider the online community for obtaining specific information on your interest?: 4 (41.3%)  b) How important do you consider the online community for learning something new by yourself?: 4 (39.6%)  c) How important do you consider the contributions of the other members of the community for your own learning?: 4 (42.2%)  d) How important do you</p>	<p>a) How important do you consider the online community for obtaining specific information on your interest?: 5 (48.1%)  b) How important do you consider the online community for learning something new by yourself?: 5 (35.4%), 4 (26.6%)  c) How important do you consider the contributions of the other members of the community for your own learning?: 5 (50.6%)</p>	<p>a) How important do you consider the online community for obtaining specific information on your interest?: 4 (33.3%), 5 (33.3%)  b) How important do you consider the online community for learning something new by yourself?: 5 (44.4%)  c) How important do you consider the contributions of the other members of the community for your own learning?: 4 (33.3%), 5</p>	<p>a) How important do you consider the online community for obtaining specific information on your interest?: 5 (41.9%)  b) How important do you consider the online community for learning something new by yourself?: 5 (37.6%), 4 (24.7%)  c) How important do you consider the contributions of the other members of the community for your own learning?: 5 (38.7%), 4 (32.3%)</p>
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<sup>147</sup> The statements were rated using a scale of 1 to 5 (1 being not important at all, 5 being very important).

	<p>manager for your own learning?: 2 (30.11%)</p> <p>e) How important do you consider your interactions with other members of the community for your own learning?: 4 (41.1%)</p>	<p>consider your interactions with the community manager for your own learning?: 4 (28.3%)</p> <p>e) How important do you consider your interactions with other members of the community for your own learning?: 4 (42.6%)</p>	<p>d) How important do you consider your interactions with the community manager for your own learning?: 3 (31.6%), 4 (24.1%)</p> <p>e) How important do you consider your interactions with other members of the community for your own learning?: 4 (30.8%), 5 (30.8%)</p>	<p>(29.6%)</p> <p>d) How important do you consider your interactions with the community manager for your own learning?: 4 (29.6%), 5 (25.9%)</p> <p>e) How important do you consider your interactions with other members of the community for your own learning?: 4 (37.0%), 5 (29.6%)</p>	<p>d) How important do you consider your interactions with the community manager for your own learning?: 5 (33.3%), 4 (24.7%)</p> <p>e) How important do you consider your interactions with other members of the community for your own learning?: 4 (31.5%), 5 (27.2%)</p>
<p>Activities in the community that increase knowledge</p>	<p>Reading posts: 50.7%</p> <p>Participation in discussions: 13.9%</p> <p>Answers of/interaction with an expert when I</p>	<p>Reading posts: 37.0%</p> <p>Participation in discussions: 18.7%</p> <p>Answers of/interaction with an expert</p>	<p>Reading posts: 34.2%</p> <p>Participation in discussions: 19.4%</p> <p>Answers of/interaction with an expert</p>	<p>Reading posts: 44.0%</p> <p>Participation in discussions: 16.7%</p> <p>Answers of/interaction with an expert</p>	<p>Reading posts: 53.3%</p> <p>Participation in discussions: 10.0%</p> <p>Answers of/interaction with an expert</p>



	<p>have posted something: 12.9%</p> <p>Answers of/interaction with members when I have posted something: 9.6%</p> <p>Answers of/interaction with the community manager: 1.4%</p> <p>Educational and informational resources available in the community: 12.5%</p>	<p>when I have posted something: 18.3%</p> <p>Answers of/interaction with members when I have posted something: 14.8%</p> <p>Answers of/interaction with the community manager: 0.0%</p> <p>Educational and informational resources available in the community: 11.4%</p>	<p>when I have posted something: 10.4%</p> <p>Answers of/interaction with members when I have posted something: 5.9%</p> <p>Answers of/interaction with the community manager: 0.0%</p> <p>Educational and informational resources available in the community: 34.7%</p>	<p>when I have posted something: 8.7%</p> <p>Answers of/interaction with members when I have posted something: 4.5%</p> <p>Answers of/interaction with the community manager: 0.0%</p> <p>Educational and informational resources available in the community: 33.3%</p>	<p>when I have posted something: 6.2%</p> <p>Answers of/interaction with members when I have posted something: 4.9%</p> <p>Answers of/interaction with the community manager: 2.5%</p> <p>Educational and informational resources available in the community: 28.2%</p>
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**Matrix 13: General ways the OLC increases knowledge.**

### III. Qualities of learning and knowledge acquisition

In the sections “Questions about information, learning and knowledge” and “Ways the OLC increases knowledge” we addressed these topics by focusing only on the learning communities that we selected for our study. In this section, we centered our attention also in the singularities that OLCs, in general, have in terms of learning and knowledge acquisition when compared to other learning possibilities. Hence, we approached our data collection, both per case study and for comparative purposes, through the research question Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending on whether they participate in virtual or blended environments?

As shown in Matrix 14, in the communities considered for the online survey, between 62.96% and 84.93% of the interviewed members referred that learning through an OLC was different in comparison to other offline and online possibilities for accessing information and learning about a given topic. Notwithstanding, between 65.92% and 82.19% of the respondents believed that their OLC was not better when compared to other options they could use for learning, but that it was rather a complementary source for obtaining information and/or increasing their knowledge in a subject of their interest.

When we questioned the members about the influence that they thought their engagement in their community had on their learning experiences, we obtained several insights. In Cambridge in Colour, Momzilla, Deutsch für Dich and Rare Connect, between 24.2% and 36.1% of the interviewees agreed that their participation in the OLC made them modify their approach towards any problems faced concerning the topic of their interest. Moreover, between 16.5% and 38.0% of the respondents in all the surveyed communities mentioned that their participation in the community led them to modify their learning objectives, while between 29.7% and 51.3% of the interviewed members expressed that being active in the OLC made them learn in a different way than they had expected. Furthermore, between 32.9% and 51.5% of the interviewees highlighted that their active engagement in the community helped them to discover new means for learning about various subjects related to the main theme of their OLC. In the case of NovaGob and Deutsch für Dich there was even an additional proportion of respondents (20.3% and 14.8% respectively) that strongly agreed to the fact that their participation in their OLC made them reflect on the existence of various ways of learning.

When researching about learning and knowledge acquisition through learning communities, we were also interested in finding out if members perceived or not any effect on their learning experiences when engaging in an OLC. Hence, for this section we also contemplated the research question Do members feel that their learning activities are affected in any way, depending on if they participate in a purely virtual or blended environment? This second research question allowed us to develop quantitative and qualitative queries that considered the members’ impressions with regards to their actual participation in their community and in comparison, to other environments.

According to the results portrayed in Matrix 14, independently of the modality of the learning community analyzed, between 60.87% and 73.97% of the respondents agreed that, in general, they learned the best in blended environments. Regardless of this surprising result, between 79.47% and 97.40% the surveyed members still considered that the knowledge they got through their OLC

was applicable for their daily activities and needs. Moreover, the extent of applicability of the knowledge obtained through the OLCs was, overall, very well rated. For instance, in Cambridge in Colour, NovaGob, Deutsch für Dich and Rare Connect between 46.75% and 60.87% of the interviewees referred that the applicability of the knowledge obtained through their OLC was about what they had anticipated. In the case of Momzilla, 56.58% of the respondents referred that the knowledge they obtained from the community was more applicable than they had expected. By the same token, in Cambridge in Colour, NovaGob, Deutsch für Dich and Rare Connect, there was also a considerable proportion of surveyed members (between 26.09% and 37.66%) that mentioned that the knowledge obtained through their communities was more applicable than they had thought.

Learning in Community (Perceived Lifelong Learning Value)					
General qualities of learning and knowledge acquisition through OLCs	Community				
	Cambridge in Colour	Momzilla	NovaGob	Deutsch für Dich	Rare Connect
OLCs as distinct source of information and learning	Yes: 84.93% No: 15.07%	Yes: 75.65% No: 24.35%	Yes: 75.95% No: 24.05%	Yes: 62.96% No: 37.04%	Yes: 66.29% No: 33.71%
Quality of learning through the community	Better off: 8.22% Worse: 9.59% It is complementary: 82.19%	Better off: 6.19% Worse: 16.37% It is complementary: 77.43%	Better off: 16.25% Worse: 8.75% It is complementary: 75.00%	Better off: 7.41% Worse: 22.22% It is complementary: 70.37%	Better off: 24.72% Worse: 12.36% It is complementary: 65.92%
Participation in OLC and learning <sup>148</sup>	a) My participation in the online community has made me modify my approach towards problems: 3 (37.0%), 4 (35.6%) b) My participation in the online community has made me modify my learning	a) My participation in the online community has made me modify my approach towards problems: 3 (37.8%), 4 (36.1%) b) My participation in the online community has made me modify my	a) My participation in the online community has made me modify my approach towards problems: 3 (65.8%) b) My participation in the online community has	a) My participation in the online community has made me modify my approach towards problems: 3 (25.9%), 4 (24.2%) b) My participation in the online community has made me modify my learning	a) My participation in the online community has made me modify my approach towards problems: 3 (34.1%), 4 (24.2%) b) My participation in the online community has made me modify my learning objectives: 3 (38.5%), 2 (16.5%), 4 (16.5%)

<sup>148</sup> We reported the two highest percentages. The values shown have the following equivalences:

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree
- 1= Don't know
- 9= Not answered

	objectives: 3 (32.9%), 4 (31.5%) c) My participation in the online community has made me learn in a different way than I expected: 3 (35.6%), 4 (34.2%) d) My participation in the online community has made me reflect on the existence of various ways of learning: 3 (32.9%), 4 (32.9%)	learning objectives: 3 (37.4%), 4 (37.0%) c) My participation in the online community has made me learn in a different way than I expected: 4 (51.3%) d) My participation in the online community has made me reflect on the existence of various ways of learning: 4 (51.5%)	made me modify my learning objectives: 3 (41.8%), 4 (38.0%) c) My participation in the online community has made me learn in a different way than I expected: 3 (38.0%), 4 (31.6%) d) My participation in the online community has made me reflect on the existence of various ways of learning: 4 (39.2%), 3 (29.1%), 5 (20.3%)	objectives: 3 (25.9%), 4 (18.5%) c) My participation in the online community has made me learn in a different way than I expected: 4 (32.0%), 3 (24.0%) d) My participation in the online community has made me reflect on the existence of various ways of learning: 4 (44.4), 3 (18.5%), 5 (14.8%)	c) My participation in the online community has made me learn in a different way than I expected: 3 (35.2%), 4 (29.7%) d) My participation in the online community has made me reflect on the existence of various ways of learning: 4 (37.0%), 3 (30.4%)
Best learning environment	Offline: 24.66% Online: 1.37% Blended (mixture of offline and online): 73.97%	Offline: 26.20% Online: 7.86% Blended (mixture of offline and online): 65.94%	Offline: 21.52% Online: 10.13% Blended (mixture of offline and online): 68.35%	Offline: 18.52% Online: 18.52% Blended (mixture of offline and online): 62.96%	Offline: 11.96% Online: 27.17% Blended (mixture of offline and online): 60.87%
Community's knowledge applicability	Yes: 80.82% No: 19.18%	Yes: 97.40% No: 2.60%	Yes: 94.94% No: 5.06%	Yes: 80.77% No: 19.23%	Yes: 79.57% No: 20.43%
Extent of community's knowledge applicability	A lot more than I expected: 14.06% More than I expected: 26.56% About what I	A lot more than I expected: 18.42% More than I expected: 56.58% About what I	A lot more than I expected: 10.39% More than I expected: 37.66% About what I	A lot more than I expected: 8.70% More than I expected: 26.09% About what I expected:	A lot more than I expected: 15.58% More than I expected: 31.17% About what I expected: 46.75%

	expected: 56.25% Less than I expected: 1.56% A lot less than I expected: 1.56%	expected: 22.37% Less than I expected: 2.19% A lot less than I expected: 0.44%	expected: 48.05% Less than I expected: 2.60% A lot less than I expected: 1.30%	60.87% Less than I expected: 4.35%	Less than I expected: 3.90% A lot less than I expected: 2.60%
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**Matrix 14: General qualities of learning and knowledge acquisition through OLCs.**

While conducting the online interviews with various members of the selected OLCs, the interviewees shared their appreciations and opinions regarding the characteristics that they valued or criticized from their learning communities when seeking information and knowledge through them. Derived from these points of view and in reference to the results obtained through the netnography, we structured, through Table 41, the findings into categories that depict the qualities of learning and knowledge acquisition from each of the learning communities chosen for our study. Granting the fact that each community exhibited features that reflected their OLC type and nature, we also found three common characteristics among the communities of Cambridge in Colour, Momzilla, edWeb, NovaGob and Rare Connect that were deemed important by their memberships because they aided the learning process: (1) Trustworthy sources, (2) Experts available in the community that can provide valuable input given their professional background/competence or their life experience and, (3) Competent community management.

<b>Learning in Community (Perceived Lifelong Learning Value)</b>	
<i>Community</i>	<i>Specific qualities of learning and knowledge acquisition through OLC</i>
Cambridge in Colour	a) Referenced content b) High quality sources
Momzilla	a) Multiple experiences and points of view b) Opinions from experienced members and experts c) Interaction through virtual and face-to-face contexts d) Applicability based on experience e) Related to the Mexican context
edWeb	a) Expertise and practical experience in the educational field b) Valuable information over advertisement c) Professional development certificates
NovaGob	a) Editorial criteria for shared content b) Clear community regulations
Deutsch für Dich	a) Questionable collaborative learning standards b) Superficial interaction in terms of learning partnerships c) Unstructured collaborative learning due to the lack of moderator
Rare Connect	a) Verified information b) Up-to-date, scientific information c) Experienced community managers and moderators d) Disease specific groups

**Table 41: Particular qualities of learning and knowledge acquisition through the OLC.**

In addition to what has been stated, we noticed that in Cambridge in Colour, Momzilla, edWeb, NovaGob and Rare Connect each of the qualities presented in Table 41 reflected the main learning purpose of each OLC, stated in their vision, mission, and objectives<sup>149</sup>. However, this was not the

<sup>149</sup> Refer to the Matrix 1: Overview of relevant elements per OLC, which can be found in the “Contextual Information”

case in *Deutsch für Dich*. In this community, the interviewed members voiced openly their complaints about the actual implementation of this OLC's collaborative learning approach:

“I think the standard is very low. Many young people do not use the Forum to make serious questions, but rather because it serves them as a public platform to post. (...) There are some participants in the Forum that are really interested in the language and the culture and that really express their thoughts in this respect. This core group keeps the Forum alive, otherwise it would be full exclusively by requests for tandems: 'Who wants to chat in WhatsApp?' It is a shame that the Goethe Institut did not replace Sarah Brehm (as moderator), she had good leadership and provided good proposals and atmosphere” (G.T. Personal communication. February 5, 2017).<sup>150</sup>

“I used to be long to a Forum that was moderated by qualified teachers or native Germans and found it very useful. That Forum compared very well with traditional offline methods, however, in my opinion *Deutsch Für Dich* does not (...) How am I certain that the advice I am being given is correct as it seems to come from other participants? It just seems to be discussions without any reference or corrections to the Grammar or Spelling” (R.M. Personal communication. February 7, 2017).

It is important to note that when we set the interviewees' impressions side by side with the findings obtained through the online survey, we gained understanding about what members perceived valuable, useful, trivial, or questionable from their learning communities. These insights mirrored, at the same time, the lifecycle stage<sup>151</sup> in which each OLC analyzed was at the time of the data collection. From the results regarding the practices that foment learning, as well as from the outcomes regarding the triad information-learning-knowledge, we could acknowledge how the instructional design and the dynamic of each OLC in terms of the membership's participation and interaction influenced the growth and the development of the community. Within this interpretation, we were able to detect and portray several favourable and adverse factors that explained why mature learning communities like *Cambridge in Colour* and *edWeb* continue growing in membership and quality of resources; why a young OLC like *Momzilla* can thrive so quickly and create a strong sense of community; why well established communities such as *NovaGob* and *Rare Connect* have consolidated a solid identity and offer valuable resources to their memberships, but face the risk of becoming stagnant or even decline their levels of engagement and; why an OLC like *Deutsch für Dich*, which has an excellent instructional design and an

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section of this chapter.

<sup>150</sup> Own translation. Original source: Ich finde den Standard sehr niedrig. Viele junge Leute benutzen das Forum nicht, weil sie eine ernstgemeinte Frage haben, sondern weil es ihnen eine öffentliche Plattform gibt. (...) Es gibt einige Teilnehmer im Forum, die wirklich an der Sprache und Kultur interessiert sind und sich darüber Gedanken machen. Dieser Nukleus hält das Forum am Leben, ansonsten wäre es schon abgesackt in reine Partnersuche: „Wer will auf WhatsApp chatten?“ Es ist auch schade, daß das Goethe Institut Sarah Brehm nicht ersetzt hat, sie hatte eine führende Hand und hat viel zum guten Ton beigetragen.

<sup>151</sup> Refer to the Table 35: OLCs' lifecycle stage, which can be found in the “Contextual Information” section of this chapter.



outstanding repository of learning resources, is in danger of becoming a “ghost town”, as without an active and committed membership there is not potential to profit from any collaborative learning possibility.

#### IV. Significance for lifelong learning

For this last section, “Significance for lifelong learning”, we centered our attention in analyzing the ways through which each OLC proved to be (or not) relevant for their membership from a learning throughout life perspective. In this regard, our analytical endeavours, both per case and in a comparative fashion, revolved around the research question Is the knowledge acquired through the engagement in a public OLC significant for the individual development of the members, in different stages and settings? In Table 42, we provide an overview<sup>152</sup>, per community, of the different assets deemed as valuable in terms of lifelong learning, as referred by the interviewed members of the OLCs chosen for our study.

<b>Learning in Community (Perceived Lifelong Learning Value)</b>	
<i>Community</i>	<i>Significance for lifelong learning</i>
Cambridge in Colour	<ul style="list-style-type: none"> <li>a) Usefulness of advice based on feedback</li> <li>b) Articles cited in scholarly work</li> <li>c) Synergy of content and community</li> <li>d) Supportive community of photographers</li> <li>e) Window for creative expressions</li> </ul>
Momzilla	<ul style="list-style-type: none"> <li>a) Window to diversity</li> <li>b) Empathy and support for mothers</li> <li>c) Entrepreneurship pragmatic knowledge</li> <li>d) Causes and awareness</li> </ul>
edWeb	<ul style="list-style-type: none"> <li>a) Free professional online learning possibilities</li> <li>b) Professional development option through webinars that provide official continuous education certificates</li> <li>c) Information repository for educators</li> <li>d) Recognized and cherished in the educational sector</li> </ul>
NovaGob	<ul style="list-style-type: none"> <li>a) Permanent instructional design and content improvement through an OLC beta perspective based on the membership's feedback</li> <li>b) Reference community for public innovators</li> <li>c) Influence in public innovation policies and practices</li> </ul>

<sup>152</sup> We include for edWeb, NovaGob, Deutsch für Dich and Rare Connect a conceptual map portraying the value in terms of lifelong learning that each community provided to their members in the Appendices section of this dissertation (see Appendix 15 to 18). For Cambridge in Colour and Momzilla, the conceptual maps were included as part of the closing remarks in Chapter 5 for the sections “Significance for lifelong learning” of each of these OLC that were analyzed independently and in depth as exemplary cases to portray 100% virtual and blended OLCs.

Deutsch für Dich	<ul style="list-style-type: none"> <li>a) Opportunity to practice the German language through a multimedia resource repository</li> <li>b) Share explanations about German language and culture with others</li> </ul>
Rare Connect	<ul style="list-style-type: none"> <li>a) Learn to live with a rare disease</li> <li>b) Network of support</li> <li>c) Empowerment</li> <li>d) Curated, scientific and medical information</li> <li>e) Prevent isolation</li> </ul>

**Table 42: OLCs’ significance for Lifelong Learning.**

It is worth mentioning that we could corroborate the perceptions of the interviewees regarding the significance that the OLCs had in terms of life learning through different examples encountered in each community during the data collection and analysis phases. The netnography was especially useful because it supplied us with clear evidence about the benefits with respect to information access and learning possibilities that participating in each of the OLCs provided their memberships with, as we portrayed in the sections “Contextual Information” and “Relevant Themes for the Online Learning Communities” of this chapter. In this regard, we can affirm that all OLCs analyzed resulted significant in content and praxis for the lifelong learning purposes of the members, as they satisfied diverse interest, professional and educational concerns by illustrating their usefulness as informative and convenient sources for learning along different stages of life (Abukari, 2005).

Furthermore, throughout our research, we obtained evidence that exemplified how public OLCs also provided users with the opportunity to learn about a given topic at any time and any place, and thus, experience the life-wide dimension of lifelong learning through their communities (Jarvis, 2007; Reyes-Fournier, 2017). The different practices found to foment learning in the communities, as well as the variety of ways through which the chosen OLCs increased knowledge described in the discussion of results from our Case Studies and Cross-Case Analysis precisely illustrate this life-wide dimension. Undoubtedly, a fact that must be acknowledged is the merit that our selected learning communities had in aiding members to learn synchronously and asynchronously in formal<sup>153</sup>, non-formal at informal ways<sup>154</sup> (Colley et al., 2002), be it at times autonomously, at times in collaboration with others and at times even unexpectedly, all through condensed information delivered by different engaging formats and dynamics that made the process of obtaining knowledge quick and straightforward as all resources and features were concentrated in a single place. On this subject, the interviewed members also shared several experiences that portrayed these learning circumstances. We selected a few that we considered worth quoting for the purpose of depicting an additional facet regarding the significance that OLCs can have for embracing lifelong learning:

<sup>153</sup> In the case of edWeb, the learning process made through the OLC can be considered formal because the attendance to the webinars and the latter evaluation through a quiz allows members to obtain a continuous education (CE) certificate. In most states of the United States of America (USA), the certificates are officially recognized and accepted by schools and districts as proof for educators’ professional development hours.

<sup>154</sup> The definitions regarding the Lifelong Learning dimensions and the learning possibilities within them were elaborated in detail in Chapter 1.

“I learn a lot by looking at others’ images, and there is a constant stream of those appearing on the website from photographers who have amazing talents and skill levels, but also from those with less developed abilities. Not only can I look at the images objectively, but I can learn from the comments of those who have obviously had more technical experience than me. I have discovered the educational pages on the technologies and techniques associated with the digital medium (tutorials) and find them to be at a higher level than those that often appear in books available on the market. I have felt confident in submitting my own images knowing that they will be critiqued with respect and in their own right, not seen as better or worse than others’ work” (T.H. Personal communication. August 10, 2016).

“Here we talk about many topics, and we help each other. It provides me knowledge and experiences different from mine. I read the members daily, sometimes up to three times a day, and that allows me to find out about different issues regarding parenting and motherhood and to update myself on issues or situations that happen to others and that I can take as a learning. As many points of view of the same problem are contributed, in general they give me several perspectives and enlighten me. In a short thread I can find out several things unlike reading a longer article, without saying that I do not read other sources of information, it only complements it” (A.R. Personal communication. May 15, 2016).<sup>155</sup>

“Two years ago, I searched high and low for a specific class on building a working platform for the students that I tutor. After a long discussion and paying a lot of money, I took a class from a University Professor. It was exactly the opposite of what I was looking for, I wasted time and money. Last night I watched with my mouth open in awe and my pen racing taking notes as Shannon Holden in his Classroom Flipping webinar gave me exactly the information I was looking for. And, with great enthusiasm. I did not even complete the class that I paid for as it was so mundane” (D.W. Testimonial provided by Lisa Schmucki, edWeb founder. April 4, 2017).

“Although I hardly participate in the conversations, I do read practically all of them (I am in half a dozen groups), as well as the documents that are exposed. This helps me in my work and makes me find myself less alone, when sometimes in your administration you propose some improvement; you think that either someone else has already done it or someone else has the same problem. It helps me channel my concerns and my desire for

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<sup>155</sup> Own translation. Original source: Aquí se habla de muchos temas y nos ayudamos mutuamente. Me aporta conocimiento y experiencias diferentes a las mías. Las leo diario, a veces hasta tres veces en el día y eso me permite enterarme de diferentes asuntos al respecto de crianza y maternidad e irme actualizando en temas o situaciones que les pasan a otras y que yo lo puedo tomar como aprendizaje. Como se aportan muchos puntos de vista de un mismo problema, en general me dan varias perspectivas y me enseñan. En un post corto puedo enterarme de varias cosas a diferencia de leer un artículo más amplio, sin decir que no leo otras fuentes de información, sólo lo complementa.

knowledge. It is not the only way, but it is one of the best. I learn a lot from reading the comments and contributions of colleagues in the different groups. It makes me not feel so 'obsessed' with the improvement of the internal and external procedures of my administration. Living on an island makes it difficult to share experiences, knowledge, good practices, etc. In addition, the strong crisis of recent years has caused, among other things, the diminishing of the budget for attendance at training, congresses, etc. outside of the island" (M.F. Personal communication. April 7, 2017).<sup>156</sup>

"The online process gives me time to think about and fine-tune my answer. When a question is asked in class, the teacher must answer quickly, and the answer is not always to one's satisfaction" (G.T. Personal communication. February 5, 2017).<sup>157</sup>

"The ability to ask questions in your own language and receive them similarly despite where you are and despite your level of knowledge is extraordinary. (...) Hereditary spastic paraplegia (HSP) is so rare that neurologists around the world are unaware or choose to diagnose people with much more common maladies without being more thorough. This community allows the patients in any rural area in any part of our planet to obtain the information that would only be available to them otherwise if they lived next to one of the best neurological hospitals in the world. It is a huge step forward to benefit Rare Diseases" (F.D. Personal communication. April 22, 2014).

Besides what has been stated in the paragraphs above, and as shown in Table 42, while each learning community exhibited a lifelong learning significancy of their own, we also found similarities among them through the cross-case comparison. In addition to their informative and learning value, the chosen OLCs had in common the fact that they all offered (1) Support in the form of encouragement, emotional containment, or aid for their members, (2) Free access to varied sources of information and knowledge through the repositories of learning resources and the forums available in each community, (3) Personal or professional development opportunities and, (4) Contact and possibility of interaction with peers. Hence, a further finding from our research lies upon the evidence of how the OLCs in our study functioned as learning sources and/or

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<sup>156</sup> Own translation. Original source: Aunque apenas participo en las conversaciones, sí las leo prácticamente todas (estoy en media docena de grupos), así como los documentos que se exponen. Ello me ayuda en mi trabajo y me hace encontrarme menos solo, cuando a veces en tu administración propones alguna mejora; piensas que u otro ya lo ha hecho u otro tiene el mismo problema. Me ayuda a canalizar mis inquietudes y mis ganas de conocimientos. No es la única vía, pero es una de las mejores. Aprendo bastante de la lectura de los comentarios y aportaciones de los compañeros en los diferentes grupos. Hace no sentirme tan "obsesionado" con la mejora de los procedimientos internos y externos de mi administración. Al vivir en una isla, se hace difícil compartir experiencias, conocimientos, buenas prácticas, etc. Además, la fuerte crisis de los últimos años ha hecho, entre otras cosas, desaparecer el presupuesto para la asistencia a formación, congresos, etc. fuera de la isla.

<sup>157</sup> Own translation. Original source: Der online Prozess gibt mir Zeit, meine Antwort zu überlegen und daran herumzufeilen. Wenn in der Klasse eine Frage gestellt wird, dann muß man als Lehrer schnell antworten, und die Antwort fällt nicht immer zur eigenen Befriedigung aus.

networks of contacts/support that nurtured the individual learning ecologies (Jackson, 2012b)<sup>158</sup> of their members.

### ***7.5 CoI Framework for OLCs: Social, Cognitive and Teaching Presences. Distinctive Features, Conditions and Factors in Successful Public Online Learning Communities***

As we previously contended in the third chapter<sup>159</sup> of this dissertation, a greater number of the research conducted in the field of OLCs focuses on learning communities of private nature, mostly found in educational settings such as schools, colleges, or universities. Nevertheless, there exist also public OLCs on a myriad of topics that are also available to a broader audience mostly just upon registration and that are actively used to search for specific information and human connection. Hence, we considered important to focus our research on this type of learning communities and investigate if participating in them could enhance the opportunities to embrace lifelong learning for different life stages and contexts.

Hereof, our general research question How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its' members? lies at the heart of the purpose of this study. Based on the assumptions that the sociability demeanour is a principal characteristic of these type of virtual environments, we considered that the answers to our main research question could inform well our general hypothesis: If members engage in a public OLC through active levels of participation and interaction, then they leverage the collaborative learning approach fostered by this type of online communities, which in turns contributes to the follow up of their particular lifelong learning aims. Furthermore, the findings obtained through our research would also allow us to verify or reject our two related working hypotheses: (a) Public OLCs contribute to lifelong learning because they engage their users in collaborative, non-formal and informal learning practices that they can adapt to their needs, paces and interests and, (b) Digital skills are relevant in terms of a better engagement to the different lifelong learning schemes supported by public OLCs.

To answer our general research question and corroborate our hypotheses contrasting the theory about lifelong learning and OLCs with our data collection, we developed a common Case Study Narrative (CSN) based on the Case Study Research (CSR) approach principles<sup>160</sup>. The CSN was adequate for incorporating both quantitative and qualitative results via a mix-method analysis and expressed through two individual, in-depth case studies and a cross-case report. Our CSN<sup>161</sup> considered interrelated categories, themes and aspects that informed our nine particular research questions, which in turn allowed us to integrate and discuss the findings and thus, provide an answer to our main research inquiry.

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<sup>158</sup> An explanation of the concepts and the relationship between the terms learning ecology and OLC can be found in Chapters 1 and Chapter 2.

<sup>159</sup> Refer to the sections “Research Problem” and “Focus of the study”.

<sup>160</sup> We elaborated on the principles of CSR as well as about the methodological considerations applied to our research in the section “Case Study Research for Investigating Online Learning Communities” of Chapter 4.

<sup>161</sup> We presented and explained in detail our CSN in the section “Introduction” of Chapter 5.

The first inquiry that we considered for approaching our main research question was How do public OLCs operate? Through this question, we could elaborate the contextual information that allowed us to explain the underlying conditions behind the functioning and dynamics present in virtual and blended communities, based on the examples we selected for our study. In this regard, we presented the nine attributes we thought provided us with an overview of the OLC (type of community, origins, platform, access, vision/mission, objective, identity's notorious characteristics, sustainability, and language), the sociodemographic questions, the constituents and the lifecycle stage details of the communities chosen for the study. The comparison and discussion of such information obtained through our data collection allowed us to present a scheme of important elements to consider for understanding the nature of each learning community.

How does a public OLC differentiate from other type of online communities? was the second inquiry that we included for portraying the relevant themes that identified each of our case study as pertaining to specific kind of learning community in the praxis and differentiated them from any other virtual learning tools. The thematic of each OLC chosen for our study did reflect every community's objective, but at the same time it revealed the memberships' informational needs and learning interests during the data collection period. Moreover, while the relevant themes of each community clearly corresponded indeed to the interest, professional or educational categories contemplated in Carlén and Jobring's typology (Carlén, 2002), we also observed how our selected communities displayed, in different degrees, discussions and practices derived from their central topics that went beyond the main objective of the OLC. Thus, a very surprising finding from our research lies in the fact that OLCs cannot be classified as pure types, neither in modality or purpose, because they can exhibit, at the same time although in different extents, interest, educational, professional and support aims.

When investigating about learning through public OLCs, we thought important to explore two elements that we thought were pivotal in fostering learning through this type of communities. The first of these elements was the digital skills of the members. We approached this topic through the questions What role do digital skills play with regards to the members' participation and interaction in the OLC? and Are there any improvements in the digital skills of the users due to their engagement in public OLCs?

According to our online survey results, most of the interviewed members were experienced Internet users and referred having both solid online competences and digital skills. Furthermore, most respondents mentioned feeling satisfied and confident with their online skills, which was reflected in the overall lack of complications reported by the interviewees when questioned about their use of the resources and the interaction tools available in their OLC platforms. Moreover, we observed that the features and tools of their community were also elements that shaped the unique identity of our case studies and, in opinion of their users, help them to configure as spaces with varied informative sources, learning resources and options for interacting and acquiring knowledge from like-minded people, persons in similar life circumstances and/or experts. In light of this, the findings of our research with respect to the digital skills of the memberships allowed us to verify one of our working hypotheses: Digital skills are certainly relevant in terms of a better engagement to the different lifelong learning schemes supported by public OLCs. Notwithstanding, in relation

to the improvement of their digital skills, just around half of the interviewees reported that such abilities had a positive change through their participation in the learning communities.

The second element that we considered essential for understanding how public OLCs impulse learning was to unveil the specific practices associated to this purpose. Hence, we examined this subject through the question Which practices foster the learning objectives of the members of public OLCs? Throughout our research we observed and reported the specific activities taking place in each community that showed the different ways through which members learned in them. In addition, we detected common practices in our case studies that were determinative for advancing learning such as the questions and answers configuration of the forums, the active community management, the performance of autonomous learning through lurking and the information exchange through the interaction with other members. However, we also noticed that an attractive offer of learning activities is not sufficient to foster learning overtime. The implementation and shaping of the learning practices in an OLC, as well as the establishment of consistent and long-lasting engagement levels require the active participation and interaction of the founders, community managers and members in order to develop and guarantee the freedom of expression, the cooperation among users and the creation of a sense of belonging to the community.

Once we delineated the elements that fostered learning in our six case studies, we focused our analysis in determining the different assets in the communities that their memberships considered of high value for learning through out life. Within this frame of reference, we examined specific questions about information, learning and knowledge and defined the general and specific ways through which the learning communities helped in building up knowledge. We did so guided by the question: In which ways do members increase their knowledge in public OLCs?

As seen throughout the cross-comparative results presented in this chapter, most interviewed members considered that their OLCs were useful sources of information that did contributed to their learning as they could obtain the knowledge required in a quick way through sources of good to high quality. Although none of the learning communities selected for our study was considered by the majority of the respondents as a source that substituted other means they used for informing themselves or for learning about the topics that interested them, the surveyed members did recognize their OLCs as important complementary sources of information and for learning.

An unanticipated finding from our study lies in the fact that a greater number of members learned and increased their knowledge by lurking in the forum threads and the repositories of learning resources and informative sources, rather than by relying on a higher degree on the interactive nature of their OLCs. Although we noticed that the collaborative learning approach was indeed present in all our selected learning communities, lurking as a form of autonomous learning was also considered relevant for learning in the six OLCs, according to the opinion of their memberships. To our surprise, the surveyed members in NovaGob, Deutsch für Dich and Rare Connect tended to gravitate more towards using this self-learning perspective in comparison to the collaborative approach. When self-learning through their communities, members of the six analyzed OLCs reported scrolling through the threads found in the forums, in the newsfeeds and in the contents available in the learning repositories, selecting the information according to their informative/learning needs, recalling the knowledge obtained through their communities, and

applying it for their educational, professional and interest purposes. Moreover, they mentioned that they kept participating in their communities, even when it was only through lurking, because they reflected on the learning value obtained through them, in terms of convenience and applicability<sup>162</sup>. In view of these results, we had evidence enough for rejecting our second working hypothesis and instead assert that public OLCs can contribute to lifelong learning insofar they effectively engage their users through both self-determined learning and collaborative, non-formal and informal learning practices that they can adapt to their needs, paces, and interests.

We were also interested in obtaining insights concerning the opinion that the memberships had, in general, about the use of public OLCs as sources for learning. Therefore, and with this perspective in mind, as a first instance, we based our research endeavours on the question Do members perceive a difference in terms of quality of learning and knowledge acquisition, depending on whether they participate in virtual or blended environments? In this respect, a majority of the online survey respondents referred that learning through OLCs was a different experience when compared to other offline and online modalities, mostly because their engagement in these environments made them learn in an unlike way to the one they had expected or because it led them to discover new means for learning.

Do members feel that their learning activities are affected in any way depending on if they participate in a purely virtual or in a blended environment? was an additional research question that we considered for deepening our understanding about the perceived qualities of public OLCs with regards to learning and knowledge acquisition. On this subject, more than half of the surveyed members mentioned that they learned the best in blended environments. Nevertheless, most respondents considered that the knowledge they obtained through their learning communities, independently of their modality, was applicable for their daily activities to the extent or more of what they had anticipated when joining them. Despite this impression, our selected public OLCs were still considered by a predominant number of interviewees more as complementary sources of information and knowledge. Furthermore, and regardless of being perceived as quicker sources to obtain information or increase the knowledge on a given topic, the OLCs were not assessed as more effective for learning in comparison to other traditional and virtual options.

Undoubtedly, the online interviews and the netnography we conducted in our six selected learning communities led us to valuable insights that complemented our quantitative results. A very significant finding from our study, in this respect, was the identification of three common features in our OLCs pertaining the human factor within the instructional design of the communities. We observed that the diverse memberships from the learning communities analyzed deemed the existence of trustworthy sources, the availability of experts in their community and a competent community management as important attributes for enhancing learning and knowledge acquisition through their OLC. Furthermore, we could identify favourable and adverse factors which were particular to each of our case studies and that explained their growth and engagement, as well as the decline in terms of participation and interaction in the chosen learning communities.

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<sup>162</sup> As we explained in Chapter 1, when the learner autonomously identifies his/her learning needs and knowledge gaps, selects the learning resources to address them, implements them and reflects upon the learning process we refer to an exercise of self-determined learning.



On this account, we estimated that we had elements enough to transfer our findings into a comprehensive scheme that outlined the factors found to enhance and support the learning experiences through public OLCs. For developing our graphic constellation, we based ourselves on the premises of Randy D. Garrison's Community of Inquiry (CoI) Framework (2016), which we considered an adequate analytical standpoint<sup>163</sup> for encompassing the conditions present in a purposeful and engaging learning community.

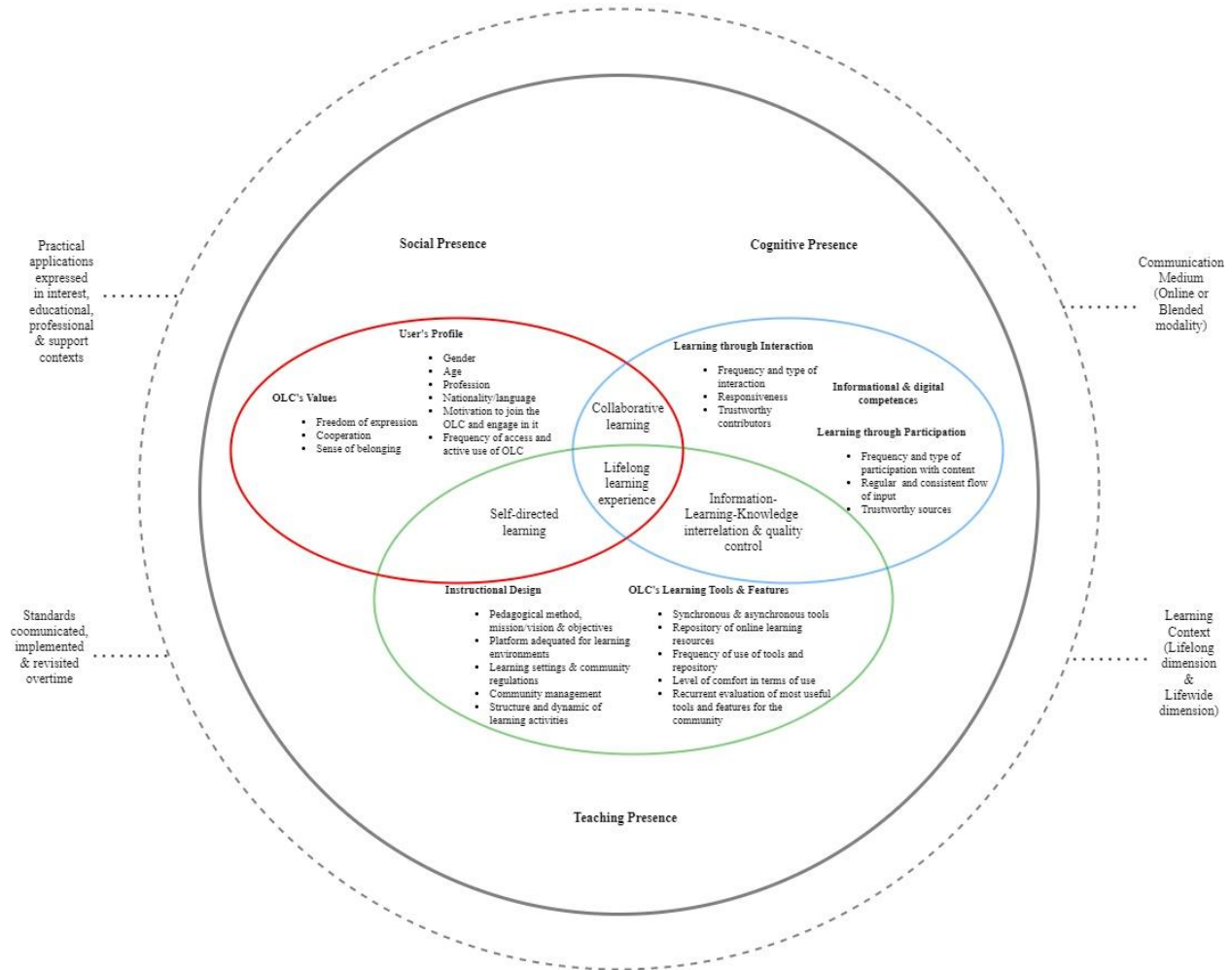
The CoI Framework explains the process of creating meaningful learning experiences triggered and fostered by means of the interrelation of the Social, Cognitive and Teaching Presences existent in learning environments, in this case, public OLCs<sup>164</sup>. Given what has been stated, the Social Presence in public OLCs considers the way members identify, communicate, and develop relationships within the community. The Cognitive Presence refers to the extent to which users can build and confirm a formal, non-formal and/or informal learning experience through reflection and dialogue. The Teaching Presence includes the design, facilitation, direction, and resources that help learners engage and guide their learning process. In the following figure, we portray the interrelation of these presences and the correspondent factors found to foster lifelong learning through public OLCs:

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<sup>163</sup> We provided an overview of the definition, the approach, and the analytical elements of the CoI Framework, as well as more thorough explanation for the choice of it for our analytical endeavours in the section "Our Framework of Analysis", found in Chapter 3.

<sup>164</sup> In the section "Our Framework of Analysis" of Chapter 3, we also present our Lifelong Learning - OLC Conceptual Model and the Informational and Digital Competences Model from the Norwegian Agency for Lifelong Learning, which were the two frames of reference that we associated and operationalized in order to adapt the CoI Framework to our research purposes.

## Evaluating Lifelong Learning Experiences in Public OLCs



**Figure 112: Model for evaluating lifelong learning experiences in public OLCs (own elaboration).**

Through our adaption of Garrison’s CoI Framework (2016) to assess lifelong learning experiences in public OLCs, we were able to understand and present in a graphical way the successful features and conditions that enhance learning in these communities and that, at the same time, aid in the growth and development of the learning community by increasing and sustaining the users’ engagement overtime. Moreover, our adapted framework also displays, once more, the role and importance that autonomous learning has in public OLCs, which led us to reject our initial, general hypothesis: If members engage in a public OLC through active levels of participation and interaction, then they leverage the collaborative learning approach fostered by this type of online communities, which in turns contribute to the follow up of their individual lifelong learning aims. As seen in Figure 112, (1) lurking as a mean for conducting self-determined learning; (2) interacting with users and/or participating through content as a way for exercising collaborative learning; and (3) the existence of a series of asynchronous and synchronous tools, together with a

growing content-curated collection of resources targeted to fulfill the information, knowledge and learning needs of the membership are the three underlying factors that, together, can truly contribute to create a significant lifelong learning experience.

Finally, we contemplated the particular question Is the knowledge acquired through the engagement in a public OLC significant for the individual development of the members, in different life stages and settings? Through our analysis we could detect and list the specific assets, per community, which were regarded by the interviewed members as important enablers for learning throughout life. Moreover, and concerning the overall perception about the significance that participating in public OLCs had with respect to lifelong learning, the communities chosen for our study were appraised as important by their memberships because they provided a convenient information access and learning possibilities to a plentiful of topics through useful sources and features that were integrated in their platforms, reflecting with this the interest, professional and educational purposes of the communities, as well as their specific focus.

Furthermore, we consider that our study provided solid theoretical and empirical evidence for answering our main research question How and in which conditions are public OLCs useful environments for facilitating the achievement of the individual lifelong learning objectives of its' members? The results from our research indicate that public OLCs are helpful for supporting Lifelong Learning insomuch as they are effective tools that aid members to obtain knowledge about a given topic along different stages of life and across any time and any place. A remarkable finding, in this respect, lies in the fact that the instructional design and the platforms of all the different learning communities analyzed allowed members to learn synchronously and asynchronously in formal, non-formal and informal ways either through self-learning or a collaborative approach.

By the same token, our study results also suggest that public OLCs can function as Lifelong Learning sources for three interrelated reasons. First, these communities can give free access to varied sources of information and knowledge through the repositories of learning resources and the forums available in them. Second, public OLCs can provide personal or professional development opportunities. Third, learning communities can function at the same time as networks of support through the contact and the possibility of interaction with peers, as well as the encouragement, emotional containment and aid that can be found through them.

Notwithstanding, it is important to highlight that, as shown through the Figure 112, for public OLCs to become and operate as Lifelong Learning sources there must exist a correspondence between the CoI Framework presences and their elements. Insofar these features, conditions and factors are implemented, stimulated, and strengthen overtime, public OLCs can have better chances in advancing different lifelong learning endeavours and thus, become purposeful instruments essential for any learning ecology.

## Conclusions

*“We now accept the fact that learning is a lifelong process of keeping abreast of change. And the most pressing task is to teach people how to learn.”*  
– Peter Drucker

Our complex and fast-changing world demands more than ever that individuals acquire competences related to information and knowledge acquisition and management, so to adapt better to any challenging circumstances ahead. Lifelong Learning, in theory and in practice, is therefore key for covering the full range of learning demands, extending beyond formal education through the adoption of a variety of non-formal and informal learning options, from early childhood to old age.

The importance of the non-formal and informal learning with respect to formal learning has been recognized and validated gradually. Notwithstanding, there is still a long way ahead in terms of research, discourse, and implementation of these learning possibilities. The enhancement of non-formal and informal learning can provide individuals with better chances to embrace and cultivate Lifelong Learning actively in this digital age.

In this respect, the collaborative and learner-centered approach of online learning communities (OLCs) makes these learning environments stand out as interesting options for supporting Lifelong Learning within different life contexts and with no limitations of place or time. Nevertheless, as we stated earlier in this dissertation, OLC research has focused to a greater degree in the use of these communities in educational settings and for formal learning purposes. However, OLCs also emerge and flourish outside of these private spheres of action as people actively use them to address commonly shared problems and interests. Members of this type of communities that are accessible to the general public and cover an ample spectrum of topics, engage in them to tackle issues in their lives and/or become better in what interests them by learning with and through others. Moreover, increasingly we can find public OLCs that also look for ways to acknowledge and even officially certify the non-formal and informal practices that take place in them.

Thus, public OLCs have an important potential for supporting non-formal and informal learning that should not be neglected. With this premise in mind, we decided to focus our study on public OLCs with the objective to analyze, through theoretical and empirical evidence, the influence that such communities have on the learning objectives of its members. Therefore, we oriented our research endeavours to answer the main question How and in which conditions are public OLC useful environments for facilitating the achievement of the individual lifelong learning objectives of its' members?

The public OLCs contemplated as case studies for this study were chosen based on the OLC concept, typology and rationale developed by Urban Carlén & Ove Jobring. These authors categorize OLCs according to their learning purpose (educational, professional or interest oriented) and their modality (100% virtual online or blended). Following this criteria, Deutsch für Dich (online educational community -OEC-), RareConnect (blended educational community -BEC-), edWeb.net (online professional community -OPC-), NovaGob (blended professional community -BPC-), Cambridge in Colour (online interest community -OIC-) and Momzilla

(blended interest community -BIC-) were the six communities that we chose and analyzed for the purposes of our study.

The outcomes of the investigations conducted in the public OLCs that we used as our case studies were thoroughly depicted, integrated, and discussed in Chapters 5 to 7 of this dissertation through two in-depth case study reports to exemplify the virtual and the blended modalities of this type of communities, as well as through a cross-case analysis to compare the common and particular characteristics that were identified to be useful for supporting Lifelong Learning in the six OLCs. As a closing note for our dissertation, in this section we offer the reader a synthesis of the general findings of the study, as well as of the scientific contributions that we consider our doctoral thesis delivers to the research fields of OLCs and Lifelong Learning. Moreover, we discuss the limitations of the present study, and reflect upon some questions and lines of academic exploration that can be approached in future research ventures.

### ***I. Summary of general findings***

How and in which conditions are public OLC useful environments for facilitating the achievement of the individual lifelong learning objectives of its' members? was the main research question that we established to guide our investigations regarding public OLCs and their influence on Lifelong Learning. We started our research endeavours with the presumption that knowledge can be constructed through social negotiation, collaboration, and discussion with others, as this way of learning encourages co-created understanding and critical thinking. On this account, we set up as our general hypothesis the assumption that if members engage in a public OLC through active levels of participation and interaction, then they leverage the collaborative learning approach fostered by this type of online communities, which in turn contributes to the follow up of their particular lifelong learning aims.

Thereupon, we pondered as our first working hypothesis the premise that public OLCs contribute to Lifelong Learning because they engage their users in collaborative, non-formal and informal learning practices that they can adapt to their needs, pace, and interests. While we were expecting to verify the hypothesis that users can fulfill their lifelong learning objectives through active collaboration and interaction with other members of the community, we were surprised to detect that:

- 1) Members mentioned that (1) they did benefit from interacting with other users, but also from (2) the content shared by peers and experts in their communities, as well as from (3) the curated learning resources available. Furthermore, in terms of content, the members emphasized that the richness of the personal experiences, know-how, recommendations, and specialized, practical information provided by other users through their threads and comments made them learned in important and unexpected ways.
- 2) Through public OLCs, users learned from other people they wouldn't have access to otherwise. Through the regional, national, and international connections, members could communicate and/or learn with/from experts in a particular field, with/from colleagues, and with/from peers with the same interests or in similar life conditions.

3) Members reported to participate passively, though regularly in the OLCs analyzed by reading and recalling the content found in the learning repositories, together with the know-how information and the experiences found in the discussion forums and the newsfeed of their community. Moreover, they mentioned that the knowledge obtained through the community was highly implementable with respect to their educational, professional and interest learning objectives, which led them to reflect, at the same time, on the learning value that they found through their community in terms of convenience and applicability, even if their engagement in the community was done more through lurking than through interacting. Hence, lurking, as a way of self-determined learning, stood out as another way to acquire specialized information and knowledge through OLCs, in addition to collaborative learning.

4) The synchronous and asynchronous tools such as e-books, software tools, private messaging systems, discussion forums, newsfeeds, search toolbars, notifications, calendars, webinars, blogs, wikis, podcasts, live chats, tandems/groups creation functions within the community and automatic or human translation functions, together with the repositories of resources available in the communities were noteworthy features of the technological and instructional design of the public OLCs because they enhanced the learning process of the members in two ways. On the one hand, these features supported the collaborative learning approach of the selected OLCs by providing means for interaction and communication, being the discussion forums the most useful feature in this respect. On the other hand, they facilitated self-determined learning practices by allowing users to access, search and lurk through the threads and resources of the community. Furthermore, these features enabled the exercise of non-formal and informal learning through practices as diverse as the communities analyzed, reflecting how the members used them for their particular learning purposes.

5) The technological and instructional design of an OLC can be excellent, but it is only a facilitator for the learning experience. Without a community management that incites/moderates the exchange among members and curates the content, the motivation of the members to participate regularly, either through interactions, information/knowledge sharing or passive engagement, decreases. Consequently, both the collaborative and the self-determined learning processes are not fostered, but rather frustrated.

6) The unfortunate choice of words and the strong, inflexible opinions can cause misunderstandings and conflicts among members, which if not handled adequately have the potential to damage the trust of the members and the authenticity of the interactions if the community is not perceived as a respectful, safe space.

7) The implementation and adherence to a netiquette; the use of a common jargon; the scheduled, interactive dynamics organized by the community managers or the members and the habitual, respectful communication among regular members through the discussion forums disclosed the existence of values such as freedom of expression, cooperation, and a sense of belonging, which influenced positively the learning experiences of the memberships.

8) Users, in particular in blended public OLCs, mentioned they were able to build connections through their genuine, regular interactions with other members. This fact was perceived as an

added value from public OLCs in the form of having a trustworthy community to turn to when in need, not only information-wise but also as a network of support with emotional benefits for the members. An atmosphere of trust motivates members to participate, interact, collaborate with, and help each other in a greater degree, which in turn (1) contributes to the achievement of the individual learning objectives through first-hand information and experiential knowledge that is applicable to the member's life context, and at the same time (2) keeps the OLC active through the engagement of its' users.

9) While we selected the six public OLCs considered for this study according to their explicit educational, professional, or interest-oriented purpose, our analysis revealed the organic and dynamic nature of these communities, together with the variety of learning practices that can occur in them. The analyzed communities did have a main educational, professional or interest learning focus, however, in the practice all these three traits were present in the form of learning practices that converged at the same time within the community, just to different extents. Hence, this evidence suggests that public OLCs cannot be classified as pure types in terms of their modality nor their learning purpose, given the transformations that they face due to the human factor in form of the membership's fluidity and the gradual evolution of the community itself derived from its' lifecycle. In this regard, the natural variability of OLCs should be taken into consideration when designing and evaluating this type of communities.

10) Learning through public OLCs was qualified as easy and convenient from a learner's perspective. Members referred that the digital information is quickly accessible and free or has a very low cost in comparison to other ways to acquire knowledge. Although members considered that public OLCs do not substitute other forms to access information and acquire knowledge, they do complement them in so far they can act as environments with a constant, up-to-date, useful information and knowledge flow of a significant learning value, but also as spaces to connect with peers with similar learning interests and/or in similar life circumstances.

The findings listed above summarize the series of insights obtained through our investigations in the six selected case studies with regards to the design and information/learning/knowledge facilitation in public OLCs. This evidence allowed us to reject our first working hypothesis, which stated that public OLCs contribute to Lifelong Learning because they engage their users in collaborative, non-formal and informal learning practices that they can adapt to their needs, pace, and interests. While we verified that this type of communities do foster non-formal and informal learning practices and engage their memberships through their collaborative approach, they also foment Lifelong Learning through the self-determined learning performed by lurking in the threads, the newsfeed and content shared by the membership, as well as across the learning resources available in the public OLC's repositories. Given what has been said, self-determined learning plays an equally important role for meeting the learning purposes and needs of the members in public OLCs as that of collaborative learning.

As a second working hypothesis we assessed the assumption that digital skills are relevant in terms of a better engagement to the different lifelong learning schemes supported by public OLCs. This particular hypothesis was tested through the results obtained from our online survey. Through the survey we were able to determine that the interviewed members of our selected OLC had an adequate set of digital skills in terms of information and knowledge management. Likewise, the users referred feeling comfortable with the level of proficiency with respect to this set of digital

skills, which allowed them to use the synchronous and asynchronous tools and the repositories of resources available in their communities with ease for supporting their learning purposes.

Moreover, it was precisely these digital competences which led users to share not only their perception in terms of the benefits obtained through their participation in their public OLCs, but also their critical opinions with respect to their experiences when learning through this type of communities. By means of the conduction of our netnography in each of the selected case studies, we could corroborate the extent of these critical impressions in each of the analyzed communities. In this regard, the following factors were identified as obstacles for the learning process in public OLCs:

1) An excess of links to external sources and/or of shared information that do not follow the community's content regulation or that are not revisited, confuse and overwhelm users. This, in turn, lowers the consistency, trustworthiness and efficiency of the posted content and the learning resources available through public OLCs. Furthermore, members' valuable contributions can get easily lost amid a multitude of irrelevant threads, comments and/or shared resources.

2) While it is easier to obtain information by starting a thread, by lurking and/or by searching for it in the learning repositories of the public OLCs, there is a general perception that it is time consuming to be an active contributor to the community due to the demand for constant reciprocity in terms of content and interactions.

Through the findings regarding the informational and knowledge management digital competences of the memberships, we verified our second working hypothesis, which stated that digital skills are relevant in terms of a better engagement to the different lifelong learning schemes supported by public OLCs. Moreover, we also detected that the members of our analyzed learning communities had a high proficiency in terms of the aforementioned digital skills, which allowed them not only to use with ease the features available in their communities for their learning purposes, but also to be critical about the quality of the content found in their communities and the implications of being an active contributor to the community.

The general findings presented above provide an overview of the features and the conditions that were detected to influence the way through which the OLCs analyzed fostered informal and non-formal learning, in addition to the collaborative learning approach that drives these communities. The features recognized as influential in our analysis were the instructional design, the community's synchronous and asynchronous tools used for interaction and communication, together with the resources available through the learning repositories. In terms of conditions, we identified the user's profile, the freedom of expression, the cooperation, the sense of belonging, the practices that facilitated learning either through participation or interaction, the community management, the netiquette and, the informational and digital competences as circumstances that played a relevant role for the learning process. In this regard, our research provided us with enough theoretical and empirical evidence to inform our main research question - how and in which conditions are public OLC useful environments for facilitating the achievement of the individual lifelong learning objectives of its' members? - through the identification of the specific features and circumstances that supported and enhanced learning in the six public OLCs analyzed. Moreover, through our analysis we could also conclude that the interrelation among these features



and conditions revealed the three underlying factors that, when converging, contributed to create a significant lifelong learning experience in these communities. Thus, public OLCs are useful environments that facilitate the lifelong learning purposes of their memberships through (1) lurking as a mean for conducting self-determined learning; (2) interacting with users and/or participating through content as a way for exercising collaborative learning; and (3) the existence of a series of asynchronous and synchronous tools, together with a growing content-curated collection of resources targeted to fulfill the information, knowledge and learning needs of the membership were.

## ***II. Research contributions***

To investigate OLCs and their influence on Lifelong Learning resulted to be an intricate venture. As a blueprint to conduct our research, we formulated a theoretical framework based on an intensive literature review that served as a conceptual foundation in our approximation to the definition of the terms Lifelong Learning and OLC and the relation among them. In this regard, we consider the soundness of our theoretical framework, which we developed in Chapters 1 and 2, to be the first important contribution from the present study. In our theoretical framework, we discussed Lifelong Learning as an overreaching concept through its' dimensions and learning possibilities, we situated OLCs as sources for Lifelong Learning within the context of learning ecologies and we traced the roots of the notion OLC while distinguishing it from other virtual learning possibilities and.

The second contribution of our study lies in the revision that we made of Urban Carlén & Ove Jobring's OLC Rationale, which included the incorporation of the Lifelong Learning axis to it. Besides the solid theoretical frame of reference that we provided for the concepts of Lifelong Learning and OLC as a starting point for our research, this graphic metaphor resulted useful to illustrate how educational, professional and interest OLCs contribute to foster Lifelong Learning across the length dimension, from cradle to grave, as well as across the width dimension, through the access to formal, non-formal and informal ways of learning. The general categorization of OLCs in educational, professional and interest learning purposes and practices adequately encompasses the multiplicity of subjects that they can cover throughout the course of our existence. However, with the inclusion of the Lifelong Learning dimensions axis, we wanted to reflect the dynamic and heterogeneous nature of OLCs and how they can function as spaces to learn through different modalities, at any given moment of our life about a particular topic of interest and according to our current learning needs. Moreover, this model provided us with a solid foundation for assessing the participants characteristics, the learning objectives, the features and the dynamics of the environment modality and the constituents of the community as expressed through its' actors, activities, and tools. We consider that this adapted model that considered the integration of the Lifelong Learning axis to the OLC Rationale can be used to analyze further the ways through which OLCs function as learning environments to search for and contribute information and knowledge, but also to assess how they can best serve as formal, non-formal and informal sources for embracing learning throughout life.

We believe the third contribution of our study resides on the way we portrayed the use of the Case Study Research (CSR) approach for investigating public OLCs. Our choice for this methodological

perspective, following Robert K. Yin's principles, provided us with enough flexibility to include a comprehensive framework of analysis, which included a facilitative mix-method data collection, as well as a mix-method analysis procedure. This allowed us to develop a rich account of our selected communities through the quantitative and the qualitative feedback obtained from the members by means the conduction of the online survey and the online interviews, as well as through the on-field evidence gathered via the netnography. In this regard, we ponder the CSR approach as an adequate method for exploring extensively online human phenomena such as OLCs. It can supply the researcher with a high quality of insight and methodological versatility, as shown through the two in-depth case study reports and through the cross-case comparisons that we were able to produce through the CSR perspective.

The fourth contribution from our research is displayed through the model we elaborated for evaluating lifelong learning experiences in public OLCs. We conceived it by adapting Randy G. Garrison's Community of Inquiry (CoI) Framework to portray the features, conditions and factors that based on our research results, were identified as effective for fostering Lifelong Learning in these communities and that, at the same time, supported their growth and development by increasing and sustaining the users' engagement overtime. In our model, these features, conditions, and factors are allocated according to the social, cognitive, and teaching presence that they represent. In this regard, we consider that our model is useful for describing the elements that integrate the social, cognitive, and teaching presences of any public OLC and thus, assess the interrelationship and correspondence among them, which in turn can reflect the quality of the lifelong learning experience that the community is delivering at the moment of the evaluation.

### *III. Limitations of the study*

Conducting online research in virtual communities has practical and ethical considerations in terms of the data collection process that the researcher needs to address in collaboration with the community managers. Factors such as the workload of the gatekeepers and the privacy policy of the community in question can influence greatly the data collection's itinerary and procedures.

In our case, the concurrency of such factors acted as first limitation for the conduction of our study. We faced delays in the data collection schedule for all our case studies because we depended on the authorization from the community managers and the founders for conducting and launching our online survey, as well as for making the online interviews and for carrying out the netnography. Given the fact that our study was an external, academic research, the authorization was conditioned to the choice of each founder and/or gatekeeper to grant us the permission to include the community as a case study, as well as to their timing, because they had to find a space in their agenda to coordinate with us the data collection strategies and the duration of the process. Furthermore, the data collection in one of our selected OLCs was limited with respect to that of the other communities because we could not conduct the online survey nor the online interviews with the members due to its' privacy policy with respect to external researchers.

A second important aspect to take into consideration when conducting online research in virtual communities, is that these research objects are similes to organisms because they change overtime and have a lifecycle. Hence, what we capture through an online survey, a netnography or an

interview portrays a specific moment of the phenomenon under study, like a photography. In the case of the opinions and the impressions of the participants, they can be unstable in the sense that they reflect their perception at the time of the data collection, which can be influenced by a series of internal and external factors. In the case of our study, the participation in the online survey and the interviews was completely voluntary, which we consider was an additional shortcoming for our research endeavours. In this regard, while our data collection and analysis provided interesting empirical evidence, as well as unexpected insights from our selected case studies, nevertheless, our research still portrayed just a limited, temporal overview of the lifelong learning processes within each community.

#### ***IV. Suggestions of questions and future lines of research***

As demonstrated through our study, public OLCs can be effective for supporting the lifelong learning purposes of their memberships if they meet certain conditions and display a number of features, but moreover, if users also take hold of the combination of the self-determined learning and collaborative learning possibilities that they can exert through them, as well as of the series of tools and repositories of learning resources that these environments offer. Moreover, they are useful non-formal and informal learning sources because they enable the access and sharing of specialized, practical information, know-how and personal experiences, targeting a variety of topics of educational, professional, and interest-oriented nature. In this regard, public OLCs are not only good complements to formal education and other traditional forms of learning and but also relevant elements for any person's learning ecology.

Embracing Lifelong Learning means to be intentional with what we learn, how we learn and with what sources. Public OLCs can be an integral and powerful force for Lifelong Learning in so far they can provide learning environments where learners are motivated to learn, through which learners obtain knowledge that they can apply in their daily lives and where they can share with others what they have learned. Given the potential that public OLC have for individuals to cultivate Lifelong Learning, some questions and future lines of research in this respect to consider could be the following:

a) Which digital skills are most relevant for distinguishing valuable information and knowledge obtained through public OLC? Which role do digital literacies play in the optimization of the non-formal and informal learning experiences fostered by public OLCs? We need to reflect further on the technological, informational and knowledge management competences required to select and organize multiple sources of information, for learning from experiential knowledge, etc. Furthermore, we should consider how digital literacies help us for learning to learn, for applying knowledge and even for unlearning.

b) CSR resulted to be an ideal approach for studying the selected OLCs in a cross-sectional way, this is at a specific point in time. We ponder that it could also be an adequate methodological perspective for investigating public OLC and their influence on Lifelong Learning over longer periods of time. Thus, a future line of research could contemplate the possibility of engaging in longitudinal studies.

c) Are blended learning communities better off in terms of engagement than purely virtual ones? If so, what consequences can this have in the long run in terms of their lifelong learning significance? Through the analysis of the selected public OLCs that exemplified the virtual and hybrid modalities, we did not detect any advantage in terms of learning. However, we did notice that the blended OLC had a better interaction performance and a greater sense of belonging. Therefore, it would be interesting to compare, for example, several virtual and blended OLCs through a longitudinal study, so to detect the existence of any variations regarding their learning potential.

d) Test our model for evaluating lifelong learning experiences in public OLCs in a wider set of learning communities (e.g., with the same learning focus, with the same modality in terms of environment, etc.). Examine if it is effective as an instrument for assessing this type of communities and thus, detect any flaws or improvements that could be made to the model, and by the same token, determine if its' intended use for OLC that support formal and non-formal learning is appropriate and if it can be used as a complement or gate to advance research and innovation in virtual and blended learning communities.

This study explored the ways and circumstances through which public OLCs contribute to the lifelong learning purposes of their users, informed by the opinions and perceptions of their memberships. Through our investigations, we identified the features, conditions, and factors that, when interrelated, foster lifelong learning experiences in OLCs. We consider that the insights in this respect can be useful for developing indications in terms of design, implementation, and evaluation of public OLCs. It is also our hope that the findings, contributions, and suggested questions/lines of research of our study inspire and help to advance both the OLC and Lifelong Learning research fields through a better understanding of public OLCs as subjects of research and their value as sources of non-formal and informal learning possibilities.

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## Appendices

### *Appendix 1: Format Field Note*

#### I. Description of the community

- a) Overall instructional design (sections within the community)
- b) Overall participation and interaction tools
- c) Users' profile configuration
- d) Demographics

#### II. Make a daily report during a three-month period, per group selected, about the activities noticed in each community

- a) Participation of members (e.g. new posts)
- b) Interaction among members
- c) New members registration
- d) Most active members at the end of the month and at the end of the three months data collection period
- e) Personal impressions on how participation and interaction help to build information and knowledge among members

### *Appendix 2: Sample Calculation*

- 1) Formula for small or finite populations (less than 100, 000 members)

$$n = \frac{N \cdot Z_{\alpha/2}^2 \cdot \pi \cdot (1 - \pi)}{(N - 1) \cdot e^2 + Z_{\alpha/2}^2 \cdot \pi \cdot (1 - \pi)}$$

- 2) Total number of monthly active members:

RareConnect: 2,500 active members (as of April, 2014)

Deutsch für Dich: information not available.

Cambridge in Colour: 7,500 active members (as of June, 2016)

edWeb.net: 6,736 active members (as of April, 2017)

NovaGob: 2,831 active members (as of January, 2017)

Momzilla: 6,028 active members (as of June, 2016)

- 3) Substitution

n = Sample size

N = 10, 000 (One should substitute this value depending on the sample that is going to be calculated)

$\pi = p = 0.5$

( $1 - \pi = q = 0.5$ ) This number refers to predefined level of confidence of 95,5% and a situation of maximum uncertainty of  $p=q=0,5$ .

$e = 0.05$  We are considering a margin of error of  $\pm 5.0$

$\alpha = 1 - 0.95 = 0.05$

$Z_{\alpha/2}^2 =$  the square of the critical value for a normal distribution  $N(0,1)$  that leaves a probability of  $\alpha/2 = 1.96$  (for a margin of error of  $\pm 10.0$ )

4) Sample results per online group, with a 95.5% confidence level and a margin of error of  $\pm 10.0\%$

RareConnect: 93 questionnaires

Deutsch für Dich: the number of monthly active users is unknown. Therefore, we conducted a non-probability sampling.

Cambridge in Colour: 95 questionnaires

edWeb.net: although we have the number of monthly active users required to calculate the sample, authorization for conducting the online survey was not granted due to privacy policy restrictions.

NovaGob: 93 questionnaires

Momzilla: 95 questionnaires

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## ***Appendix 3: Online Survey Questionnaire (English version)***

### **Welcome!**

This study is part of a graduate project concerned with online communities and their influence in lifelong learning and takes between 20 to 25 minutes to complete.

Before you start, here is some important information:

- Please answer the questions honestly and according to your personal assessment. There are no right or wrong answers.
- If it is difficult to choose one of the answer alternatives, please select the answer that is the closest match.
- In order to preserve the integrity of the questionnaire, please try to complete all the survey and try to not leave any question unanswered.
- Your answers will be treated anonymously and with strict confidentiality. In no part of this study will you be asked to disclose your name or provide any information that can reveal your identity. A transmission of data to third parties is excluded.

Thank you for your participation!

Platform for conducting the survey: <https://www.soscisurvey.de>

## ONLINE SURVEY

### Digital skills questions

1. Which of the following have you done? Please check *all* that apply:

- Searched for information online
- Read an article, newspaper or blog post online
- Used e-mail services
- Changed your browser's homepage
- Changed your cookies preferences
- Ask for information and/or ordered a product/service from a business, government or educational entity by filling out a virtual form
- Made a purchase online
- Customized a webpage and/or social network profile for yourself
- Downloaded content and/or information
- Uploaded content and/or information
- Created and used regularly an own blog
- Created and/or administered a webpage
- Listened to a radio broadcast / podcast online
- Participated in online chats
- Posted comments in webpages
- Participated in a forum discussion or online group
- Made a telephone call online
- Taken a webinar
- Taken online courses / study an online degree
- Saved my information in the „cloud“
- Used bookmarks or other services online for organizing information

2. How long have you been using the Internet? Select the option that applies to your case:

- Less than 1 year



- 2 to 6 years
- 7 to 12 years
- 13 to 17 years
- 18 years or more

3. Have you used the internet for any of the following. Mark *all* that apply.

- Information Gathering
- Academic Research
- Shopping
- Games
- News
- Real Estate
- E-mail
- Chat and online calls
- Social Networks
- Job Hunting
- Classifieds
- Stock Market
- Blogging
- Creation and/or administration of webpages, forums, communities, etc.
- Other \_\_\_\_\_

4. What do you use the internet for? By moving the boxes from left to right, *order* the options from 1-15 according to the frequency of use, being 1 the most used and 15 the least used.

- Information Gathering
- Academic Research
- Shopping
- Games
- News
- Real Estate
- E-mail
- Chat and online calls
- Social Networks

- Job Hunting
- Classifieds
- Stock Market
- Blogging
- Creation and/or administration of webpages, forums, communities, etc.
- Other \_\_\_\_\_

5. How satisfied are you with your current skills for using the internet? Please select one option:

- Very satisfied – I can do everything that I want to do
- Somewhat satisfied – I can do most things I want to do
- Neither satisfied nor unsatisfied
- Somewhat unsatisfied – I can't do most things I would like to do
- Very unsatisfied – I can't do most things I would like to do
- Don't know

6. What actions do you take to assess the quality and novelty of the information you find online?

### **Questions about the community, the participation and the interactions**

1. What specific interest motivated you for joining the community?

2. How did you found out about the community?

- Followed link from another web page
- Found it by using a search engine
- Asking/searching in a forum or news group
- Found it through social networks (e.g. Facebook, Pinterest, Twitter, etc.)
- Was told URL by friend, colleague or relative
- Read about it in newspaper/magazine (online)
- Heard about it in a meeting, organization or association I participate in
- Found out the information through a video (e.g. Youtube)
- Saw or heard information about it on TV or radio
- Other \_\_\_\_\_

3. Which of these groups have you become more connected to through this community? Select *all* that apply to your case.

- People who share my interests (political, economic, social, health, academic/educational, etc.)
- People who share my hobbies / recreational activities
- People who share my religion or spiritual beliefs
- People in my profession
- People in my family
- Colleagues from my work place
- Friends or acquaintances
- People in similar life situations
- Other group \_\_\_\_\_
- None

4. Why have you stayed in the community?

5. How long have you been part of this online community?

- Less than 6 months
- 6 months to 1 year
- 1 year to 3 years
- 3 years or more

6. How many times per week do you log in the community?

- 1 time per month
- 1 time every two weeks
- 1 time per week
- 2 times per week
- 3 times per week or more
- Everyday

7. How many times per day do you visit the community?

- One time per day

- Two times per day
- Three times per day
- Four times per day or more
- Constantly logged in

8. In average, how much time do you spend in the community when you visit it?

- 15 minutes or less
- 30 minutes or less
- 30 minutes to 1 hour
- 1 to 2 hours
- More than 2 hours

9. How would you describe yourself with regards to the use that you make of the community? In my community I am (check one that best applies for your case):

- Very Active
- Regularly Active
- Quite Active
- Sometimes active, sometimes inactive
- Quite inactive
- Completely inactive

10. What would you say are your usual activities in the community?

11. Why did you decide to participate in the online community?

12. To what extent would you say you participate with content in the community?

- Always
- Often
- Regularly
- Sometimes
- I have done it two times or more

- I have done it once
- Never

13. With what type of content have you contributed? Check *all* that apply.

- Started a topic through a question or fostering a discussion
- Provided information or resources by replying to someone's petition/post
- Posted an informative resource (link, image, contact details, etc.)
- Uploaded a more complex informative resource (presentation, article, e-book, infographic, video, webinar, etc.)
- Contributed in the community with self-created content (article, presentation, blog entry, e-book, video, webinar, etc.)

14. To what extent would you say you interact with other members of the community?

- Always
- Often
- Regularly
- Sometimes
- I have done it two times or more
- I have done it once
- Never

15. Your interaction with other members on the community is more

- Public
- Private

16. Have you built virtual relationships with certain members due to your frequent interactions with them?

- Yes
- No

17. If yes, could you specify a span of time since you started to have stronger virtual relationships with other members of the community?

18. To what extent do you consider that members react and respond to your posts or messages?

- Always
- Often
- Regularly
- Sometimes
- They have done it two times or more
- They have done it once
- Never

19. Do you feel comfortable expressing your doubts and questions in the community?

- Yes
- No

20. If yes, to what extent do you feel comfortable?

- Very comfortable
- Comfortable
- Sometimes comfortable, other times not

21. Do you feel comfortable with the other members of the community during discussions or exchange of opinions and ideas, even when they are opposite to your own views or when they correct you?

- Yes
- No

22. If yes, to what extent do you feel comfortable?

- Very comfortable
- Comfortable
- Sometimes comfortable, others not

23. Have you helped other members in the community to obtain information or increase their knowledge on a topic?

- Yes
- No

24. How often do you help other members in the community?

- Always
- Often
- Regularly
- Sometimes
- I have done it two times or more
- I have done it once
- Never

25. Have you received any feedback from members in the community with regards to your help and/or contribution?

- Yes
- No

26. Indicate the degree of agreement with the following statements

*5 - Strongly agree 4 - Agree 3 - Neither agree/disagree 2 - Disagree 1 - Strongly disagree*

- a) I feel a sense of community in my online community. \_\_\_\_
- b) I feel members are interested in reading and answering my posts. \_\_\_\_
- c) I feel members are interested in getting to know more about me after reading my posts or contributions. \_\_\_\_
- d) I consider that the level of participation in my community is well balanced among its members \_\_\_\_
- e) I think that the level of interaction in my community is well balanced among its members. \_\_\_\_
- f) There are two or three members that post more frequently and/or interact with others in comparison to the rest of the members. \_\_\_\_
- g) I feel confident that I can easily obtain the information I need from my online community. \_\_\_\_
- h) The data and content shared by the members is trustworthy and of good quality. \_\_\_\_
- i) Several members in my community are experts in their topic. \_\_\_\_
- j) The information available in the community is trustworthy and of good quality. \_\_\_\_
- k) The community manager promotes an atmosphere of collaboration and respect in the community. \_\_\_\_
- l) The community manager is available for the members at all times. \_\_\_\_

### **Questions about environment and tools**

1. How long did it take you to become familiar with the use of the virtual environment of the online community?

- Less than 30 minutes
- 30 minutes to 1 hour
- More than 1 hour
- I got used through several days of use

2. During your very first days as member in the online community, how did you feel with regards to the digital and informational skills you had for using the community, its resources and communicating or interacting with other members?

- I felt very comfortable, I had all skills necessary to use and interact in the community immediately.
- I felt somehow comfortable. It took me sometime to figure out how to operate it, but I could manage to obtain the information I needed or to contact the members.
- I felt somehow uncomfortable. It took me longer time than I expected. I did not know how to use some tools or sections. I did not understand the logic of the organization of the information or the way to start a discussion or conversation with the members.
- I felt uncomfortable. It took me a considerable amount of time to figure out how the community worked, how to use its communications tools and how to retrieve, save or share information.

3. In order of importance and frequency (*being 1 the most important frequent and 4 the least important and frequent*), which of the following tools in the community do you use to communicate and/or interact with other members:

- Chat
- Forum
- Private message
- Comments on competitions, stories and/or shared resources

4. Do you feel comfortable using all the communication tools in the community?

- Yes
- No

5. If you answered no, why?

6. With which tool available in your community have you experienced a faster answer?



- Chat
- Forum
- Private message
- Comments on competitions, stories and/or shared resources

7. Do you consider that your profile contributes to your interaction with other members?

- Yes
- No

8. Why do you consider that your profile contributes (or not) to your interaction with other members?

9. Which of the following information can be found in your user-profile? Mark *all* that apply.

- Nickname
- Real name
- E-mail
- Phone number
- Skype contact
- Social network contact details
- Webpage information
- Work information
- Location information

**Almost there! Thank you for taking the time to come so far in the survey. Just a few more questions to go...**

### **Questions about information, learning and knowledge**

1. Are you able to find suitable answers to your questions while browsing in the sections of the community?

- Yes
- No

2. In comparison to other ways of accessing information on the internet, how much time did it take you to find answers to your questions in the community?

- A lot less than I expected
- Less than I expected
- About what I expected
- More than I expected
- A lot more than I expected

1. Which of the following resources in your community have you found more useful for satisfying your informational and learning needs? Rate them according to their usefulness, *1 being the most useful and 6 the least useful.*

- Discussion group or forum
- Private message
- Webinars
- Recorded audio and video
- Text, image or multimedia resources available for self-study/information

4. Based on your experience, how would you rate the quality of the information in this community?

- High quality
- Good quality
- Average
- Below average
- Unacceptable

5. Please indicate your opinion to the following statements. Rate the statements using a scale of 1-5 (*1 being not important at all, 5 very important*)

- a) How important do you consider the online community for obtaining specific information on your interest?\_\_\_\_\_
- b) How important do you consider the online community for learning something new by yourself?\_\_\_\_\_
- c) How important do you consider the contributions of the other members of the community for your own learning?\_\_\_\_\_
- d) How important do you consider your interactions with the community manager for your own learning? \_\_\_\_\_
- e) How important do you consider your interactions with other members of the community for your own learning? \_\_\_\_\_

6. Do you think that your presence contributes to the information resources and learning processes in the community?

- Yes
- No

7. If yes, name 2 contributions you consider that you make to the community?:

8. Do you consider that the online community has helped you to increase the knowledge in a topic of your interest?

- Yes
- No

9. If yes, to what extent?

- A lot more than I expected
- More than I expected
- About what I expected
- Less than I expected
- A lot less than I expected

10. Which of the following elements, in order of importance (*1 being the most important, 6 the least important*), have helped you to increase your knowledge?

- Reading posts
- Participation in discussions
- Answers of / Interaction with an expert when I have posted something
- Answers of / Interaction with members when I have posted something
- Answers of / Interaction with the community manager
- Educational and/or informative resources available in the community

11. Can you provide a specific example of how the online community has helped you to increase your knowledge?

12. Do you consider that the knowledge obtained through the online community is applicable to your daily activities/needs?

- Yes
- No

13. If so, to what extent?

- A lot more than I expected
- More than I expected
- About what I expected
- Less than I expected
- A lot less than I expected

14. Has your participation in the online community improved your digital skills?

- Yes, in a great extent
- Yes
- Somehow
- Not really much
- No

15. Is the community your main source for accessing information and learning about the topic of your interest?

- Yes
- No, it is more a complementary source.

16. Has the community become a source that substitutes other ways of accessing information and learning about the subject of your interest?

- Yes
- No

17. In relation to other means for obtaining information, what do you think is the contribution and role of online communities?

18. In relation to other ways for learning something, what do you think is the main advantage of online communities?

19. In the same line of thought, in your opinion, which is the main disadvantage that online communities have for learning something new?

20. Indicate your degree of agreement with the following statements

*5 - Strongly agree 4 - Agree 3 - Neither agree/disagree 2 - Disagree 1 - Strongly disagree*

- a) My participation in the online community has made me modify my approach towards problems. \_\_\_\_
- b) My participation in the online community has made me modify my learning objectives. \_\_\_\_
- c) My participation in the online community has made me learn in a different way than I expected. \_\_\_\_
- d) My participation in the online community has made me reflect on the existence of various ways of learning. \_\_\_\_

21. In your opinion and according to your different learning experiences throughout your life, in which environment do you think you have learned the best? Indicate the one that best applies to your specific case:

- Offline
- Online
- Blended (mixture of offline and online)

22. Do you consider that learning through an online community is different in comparison to other ways of accessing information and learning about the subject of your interest?

- Yes
- No

23. If yes, why do you consider that learning through an online community is different in comparison to other ways of accessing information and learning about the subject of your interest?

24. Do you think that the way you learn through the online community is better off in comparison to other virtual or offline options?

- Yes
- No
- It is complementary

25. If yes, why do you think that your learning process through the online community is better off in comparison to other options that you could also use to obtain information/knowledge about the topic of your interest?

### **Sociodemographic questions & Contact details**

1. What is your age?

- Under 13
- 13-17
- 18-34
- 35-49
- 50-64
- 65 or older

1. What is your gender?

- Male
- Female

2. What is your level of education?

- Elementary School
- Secondary School
- High School Graduate
- College (unfinished / in process)
- College Graduate
- Postgraduate (unfinished / in process)
- Postgraduate

3. What is your current occupation?

- Student
- Homemaker
- Retired
- Unemployed
- Management

- Professional
- Sales
- Researcher / Professor
- Service Staff
- Freelancer
- Other \_\_\_\_\_

5. What is your nationality?

1. Which is your user name? (I need this information for the raffle of 2 Amazon gift cards worth 25 EUR each)

7. OPTIONAL: I would appreciate your help for a 10 minute online interview (via Skype or e-mail), in order to obtain further details about your learning experience in this online community. If you wish to be contacted, please leave me your e-mail in the space below and I will contact you. Thank you very much!

---

You have now reached the end of this questionnaire. Thank you for taking the time to complete this survey!

\*\*\*\*\*

For any questions or comments regarding this study, please send an e-mail to [iroeniger@uoc.edu](mailto:iroeniger@uoc.edu)

You can now close the browser window. *For when survey is due: This survey is completed. It ended on (date). Thank you for your interest!*

***Appendix 4: Online Survey Invitation (English version)***

**Survey: Your learning/teaching experiences in Community X - PhD Study**

\*\*\* This post was authorized by the "Community X" Project Manager \*\*\*

Dear "Community X" members,

Through this message, we would like to invite you to take part in a study concerning online communities and their influence on lifelong learning. It is part of a doctoral research supported by the Internet Interdisciplinary Institute, at the Universitat Oberta de Catalunya.

"Community X" is one of the case studies considered for the analysis. In this regard, your participation is very important for obtaining specific information about the digital skills and general profile of the "Community X" users, your learning/teaching experience in "Community X" and for helping to advance the research in the area of online communities.

As a way of appreciation for taking part in the survey, the participants will have the right to take part in a raffle of two vouchers from Amazon worth 25 EUR each (or the equivalent currency in your country). The questionnaire takes between 20 to 25 minutes to be answered. The extension of the questionnaire obeys to the fact that we want to analyze the following:

1. Digital skills of the users
2. Participation and interaction in the community
3. Platform and tools in the community
4. Questions about information, learning and knowledge obtained through the community
5. Sociodemographic data of the users

Therefore, it is recommendable to use a laptop or desktop computer to answer it comfortably.

Please note that only the questionnaires that are answered completely will be taken into consideration, this in order to be fair with all the persons that take their time to answer and also as a way to guarantee the most number of responses possible. For your convenience, the survey is available in English, German, French, Italian, Portuguese, and Spanish. It will be available for its response during one month time.

You can begin the survey by clicking the following link:

<https://www.soscsurvey.de/OCommunitiesLLL/?q=CommunityX>

All data provided will be kept anonymous and will be used for the academic purposes of this study only.

Thank you for participating. If you have any questions or comments, please do not hesitate to contact:

Inge Roeniger Desatnik  
Phd Student at IN3-UOC  
Universitat Oberta de Catalunya  
E-mail: [iroeniger@uoc.edu](mailto:iroeniger@uoc.edu)

*Call to participate reminder:*

Please remember that your collaboration in the study through a totally fulfilled questionnaire entitles you to participate in a raffle of 2 Amazon gift certificates worth 25 EUR each.

For the survey to be representative with a 95% of confidence level and a margin of error of +/- 10%, we need xx responses. Thank you for your collaboration with the study.

The survey can be responded until next Date x. We would be very happy if in these last 7 days many members could participate in the study. Many thanks again to all of you who have taken the time to respond the survey completely. This is very helpful for us!



## ***Appendix 5: Interview Questions for Members (English version)***

### *Questions about the member's motivation and experience*

1. Why did you decided to stay and participate in the community?
2. How has your participation in the community helped you in your own learning process about the topic?
3. How is your learning process in the community different in comparison to traditional (offline) or other virtual ways to learn about this topic?

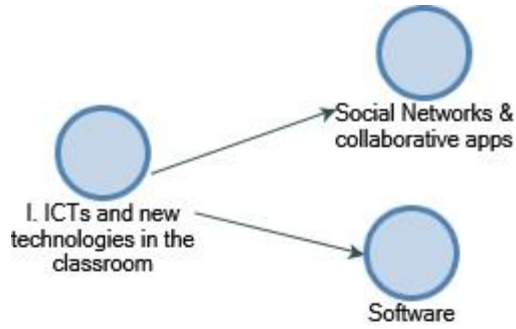
### *Questions about the community*

1. What factors have lead to its growth?
2. How does the community help in generating and disseminating information about the topic?  
Examples/evidence

## ***Appendix 6: Interview Questions for Founders and Community Managers (English version)***

1. When was the community officially launched?
2. What context lead to the foundation of this online community?
3. How many members belong to this community at the moment? (Traffic statistics if possible too)
4. How many members belong to each group selected for the study?
5. In general terms, what are the current vision and objectives of the online community?
6. How would you describe the development of the online community throughout the years in terms of the quantity and the quality of relations among its members?
7. What factors have lead to its growth?
8. How has the community helped in generating and disseminating information about the topic?  
Examples/evidence
9. Have you received direct feedback from members on how the community has helped them?  
Examples.
10. How is learning about this topic in an online community different to traditional (offline) or other virtual ways to learn about this topic?
11. What current challenges or difficulties is the community facing?
12. How does the community finance itself?

*Appendix 7: Netnography. A Visual Representation of the Thematic Analysis (edWeb)*



II. Members' introductions

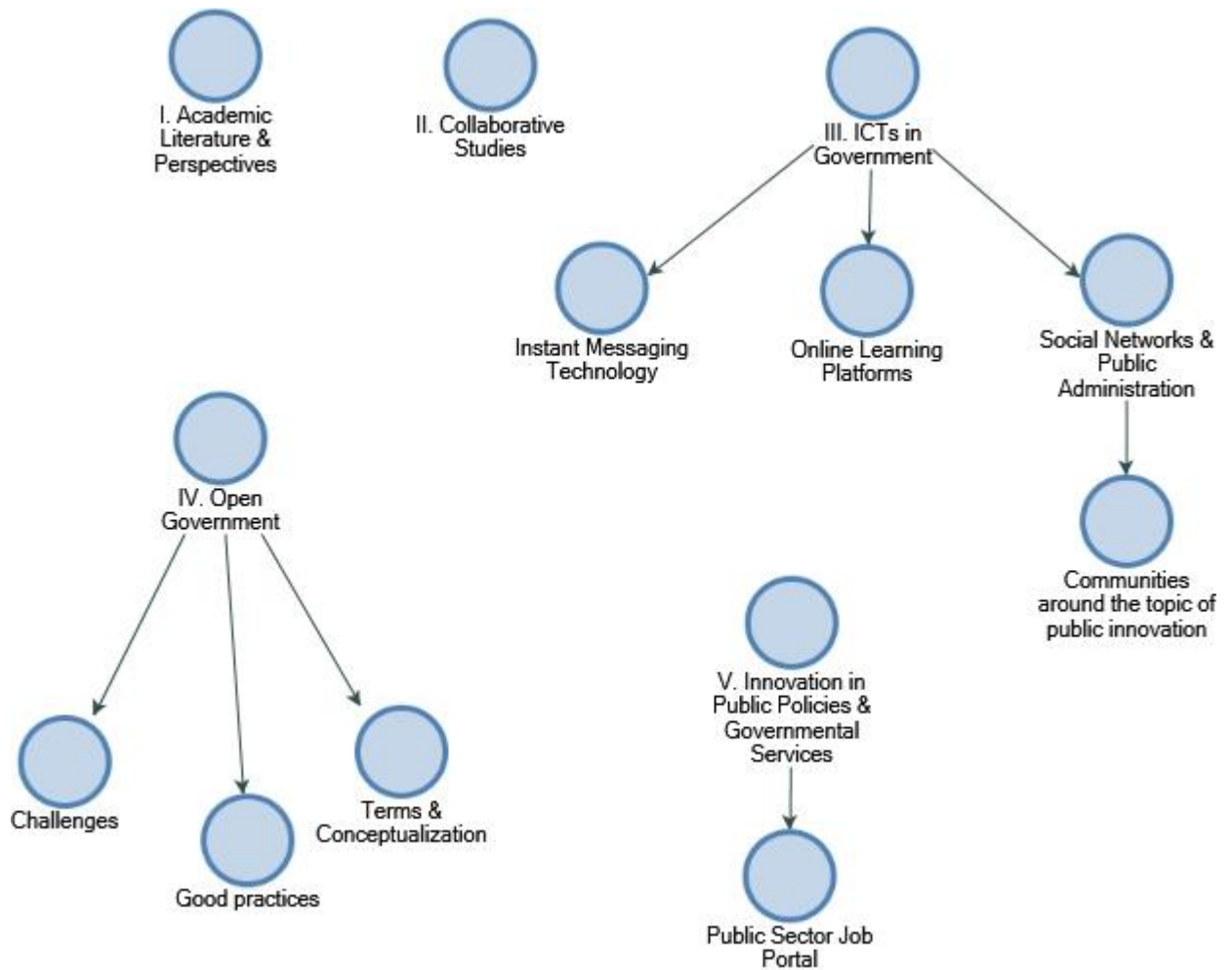
III. Preschool pedagogical tips

IV. Subject and discipline specific questions

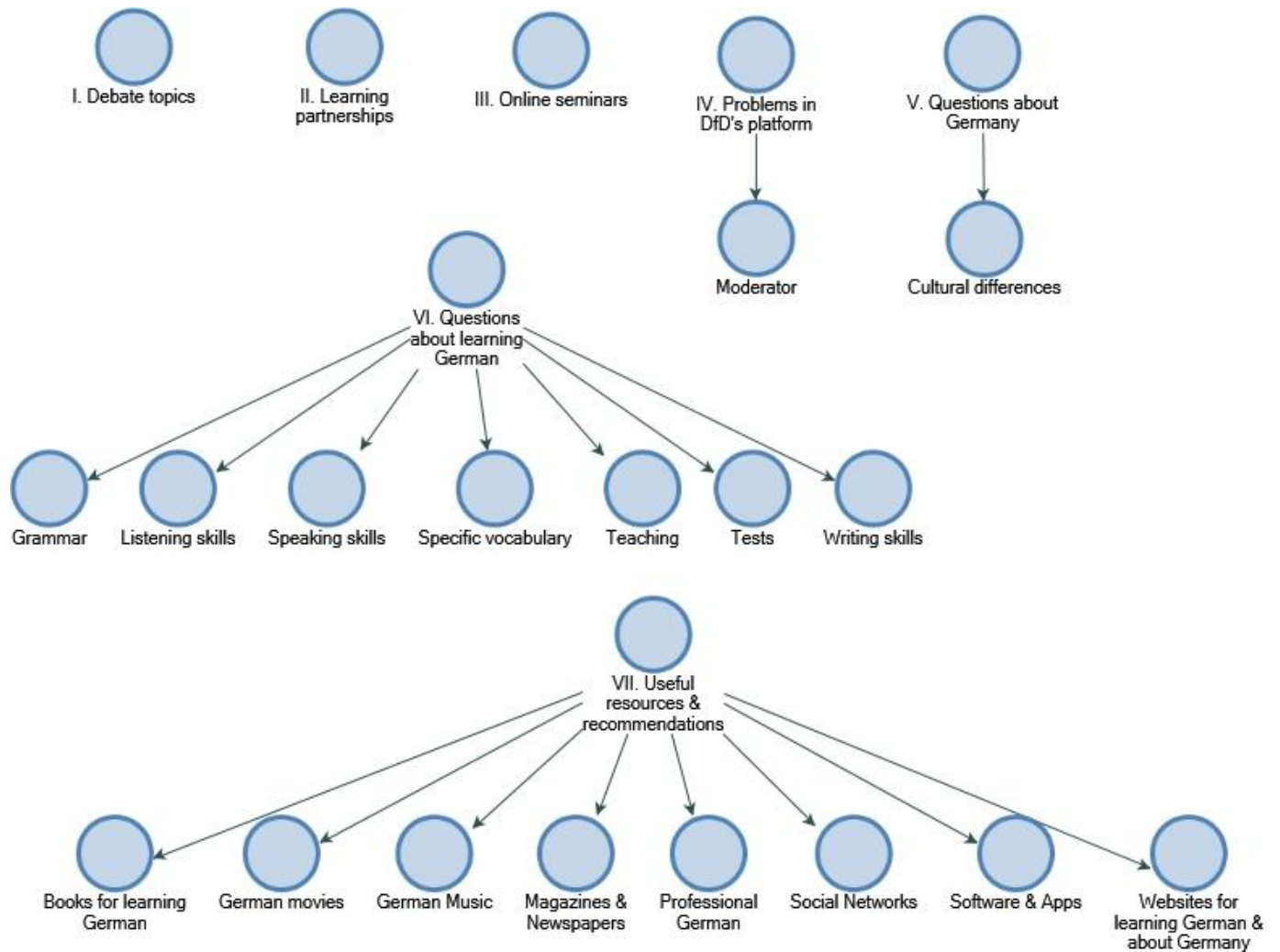
V. Trends in educational practice and curriculums

VI. Webinars' announcements & experiences

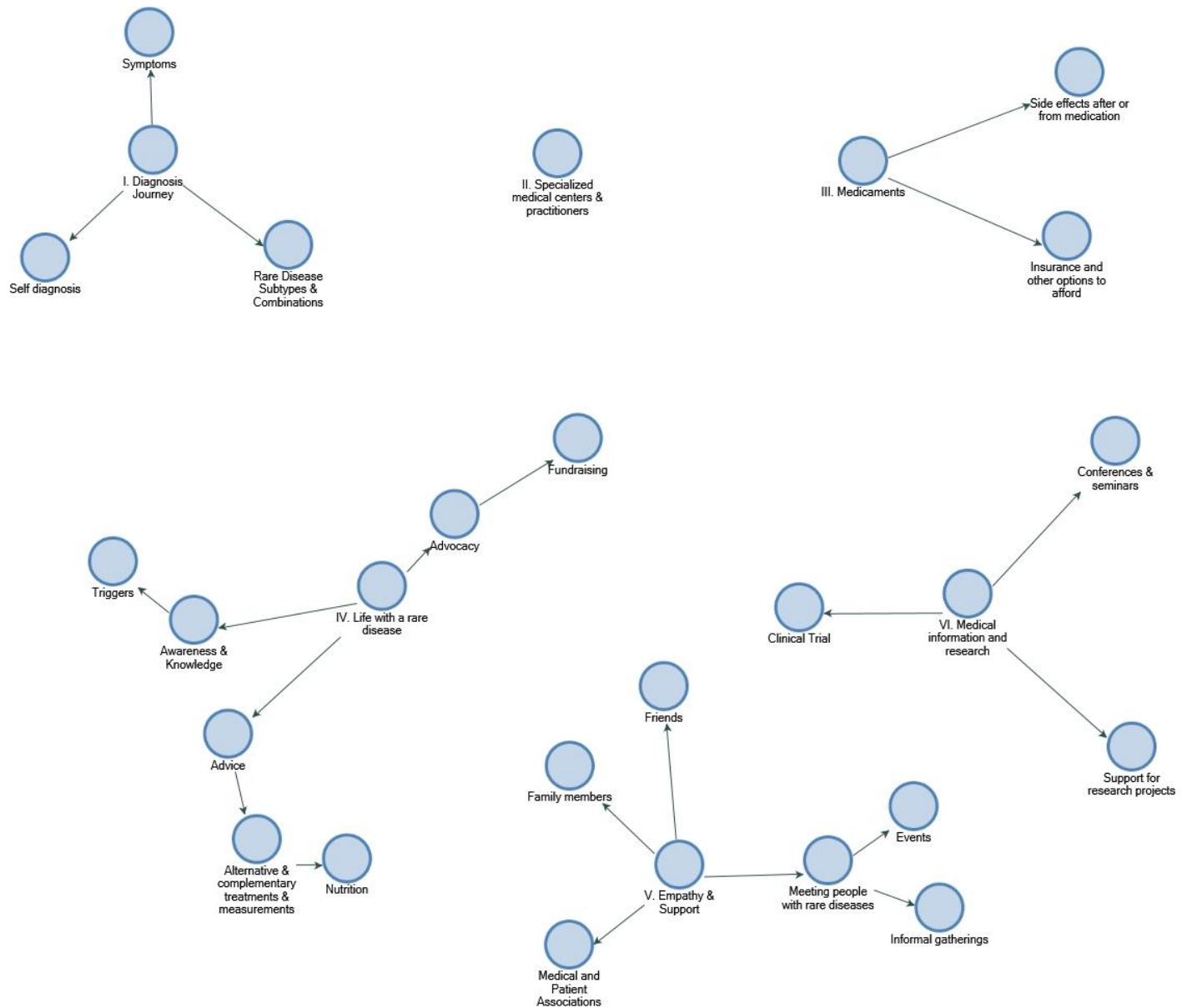
*Appendix 8: Netnography. A Visual Representation of the Thematic Analysis (NovaGob)*



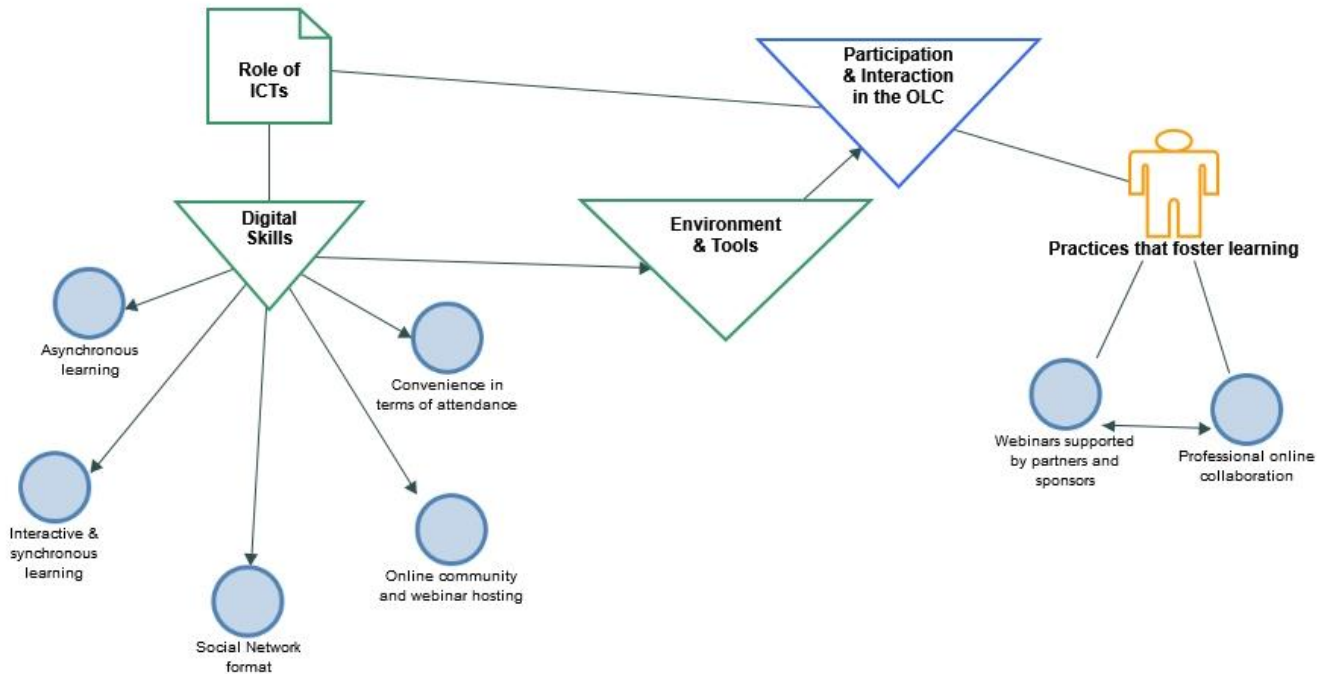
*Appendix 9: Netnography. A Visual Representation of the Thematic Analysis (Deutsch für Dich)*



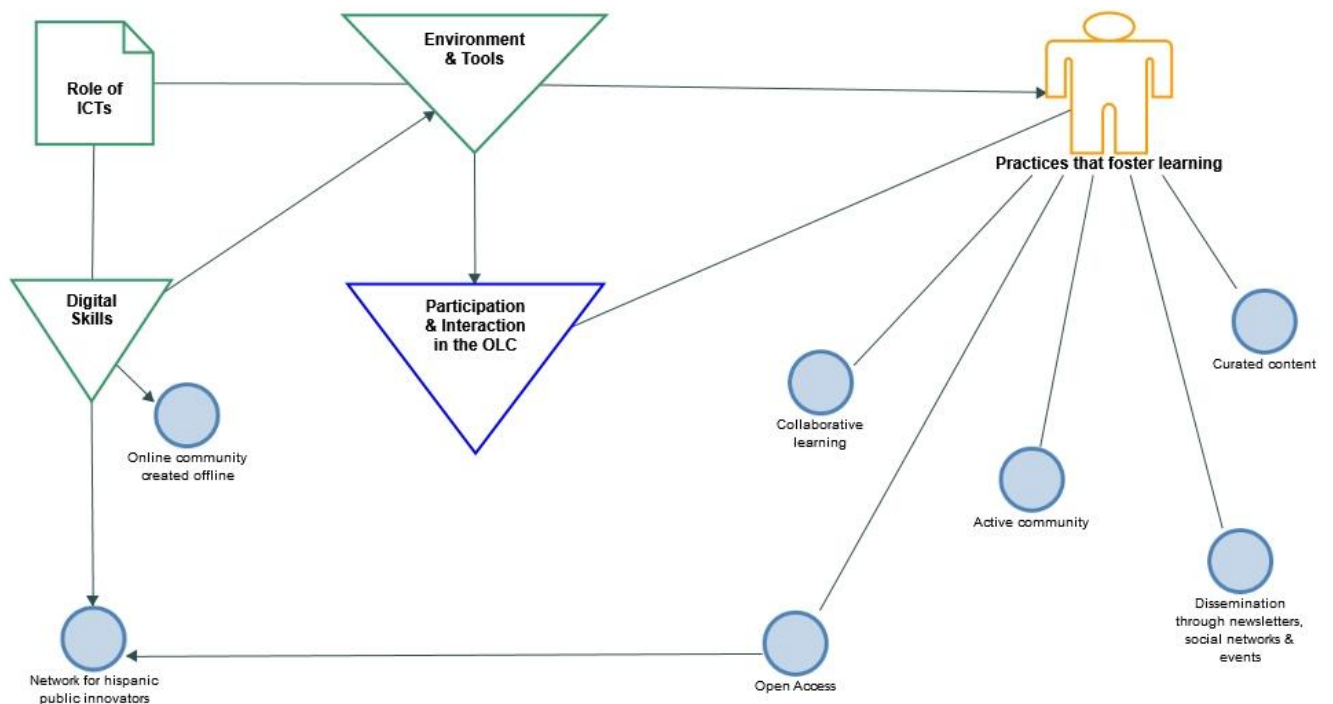
**Appendix 10: Netnography. A Visual Representation of the Thematic Analysis (Rare Connect)**



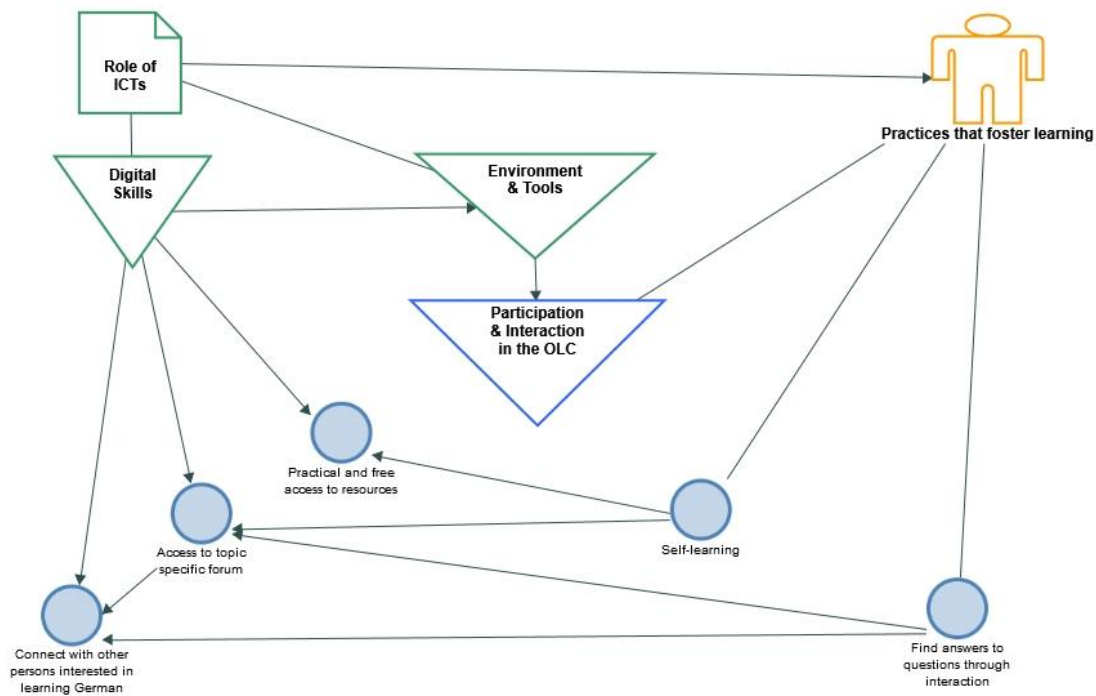
**Appendix 11: Conceptual Map of the elements that foster learning in an Online Professional Community: edWeb**



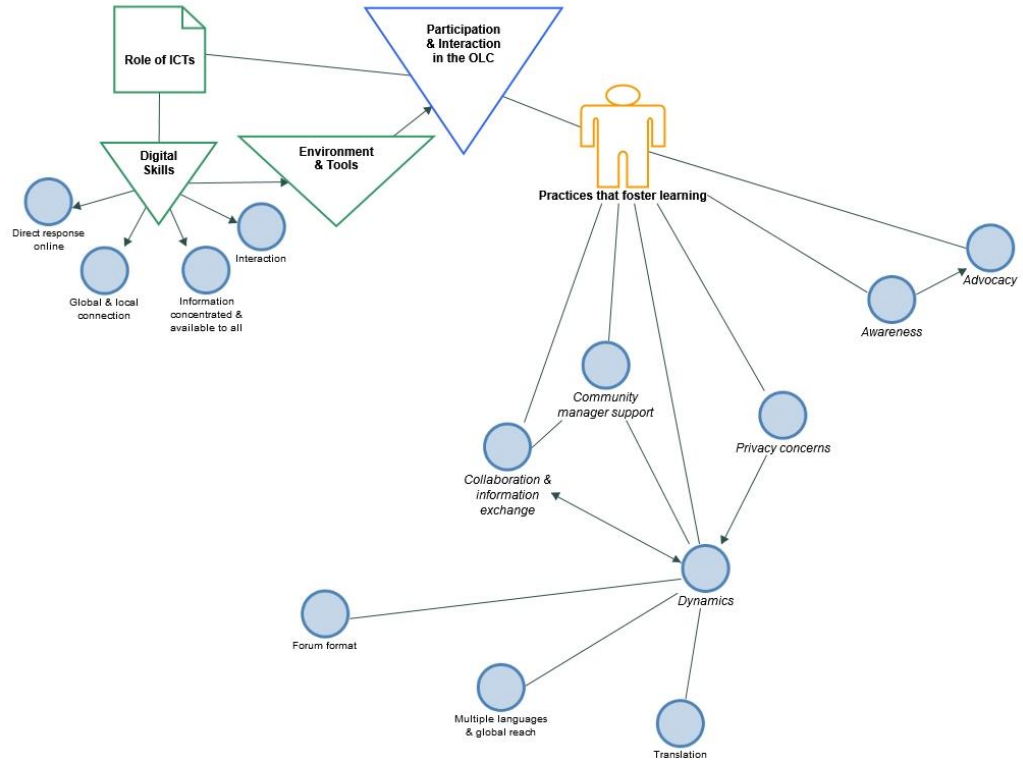
**Appendix 12: Conceptual Map of the elements that foster learning in a Blended Professional Community: NovaGob**



**Appendix 13: Conceptual Map of the elements that foster learning in an Online Educational Community: Deutsch für Dich**

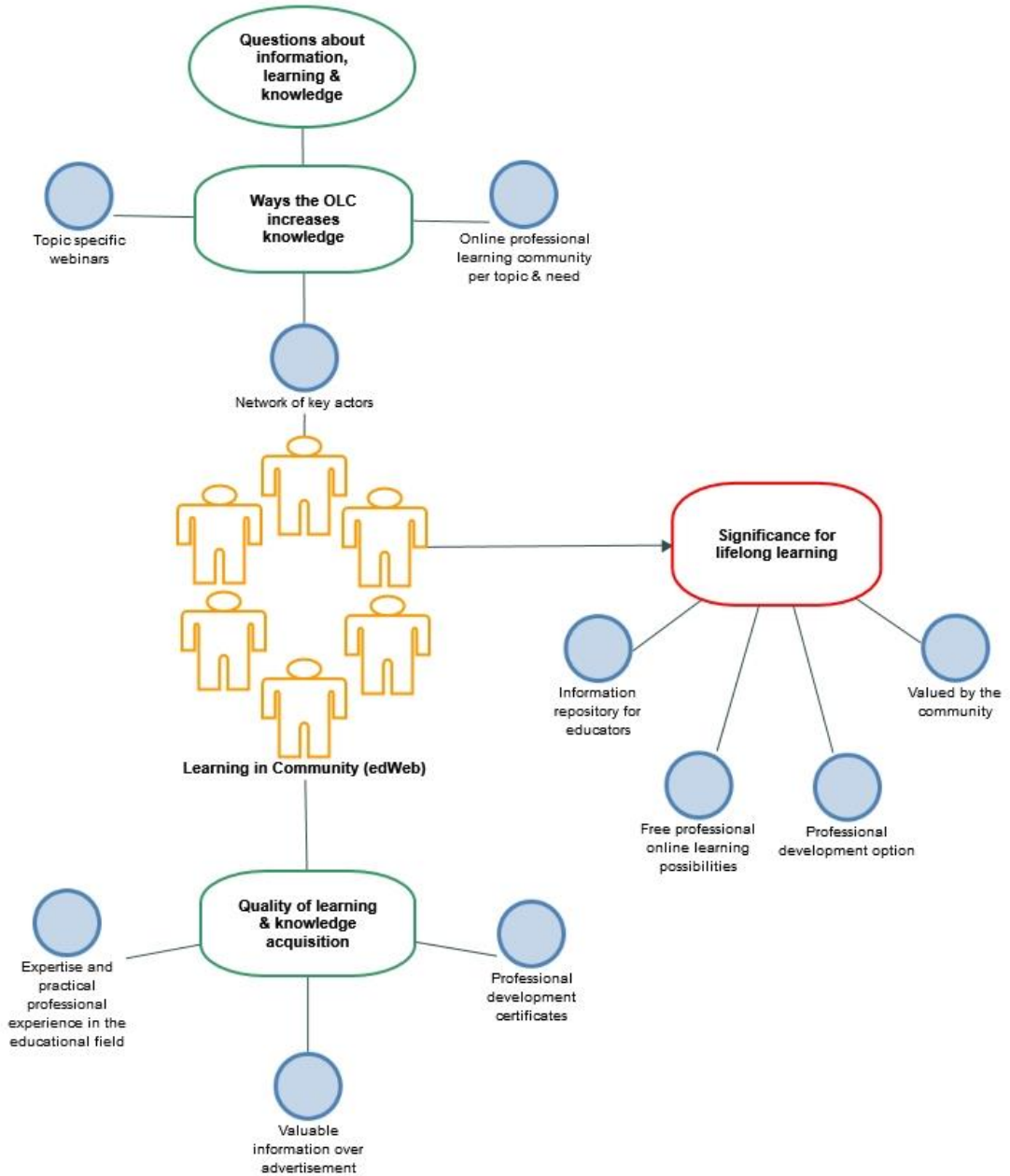


**Appendix 14: Conceptual Map of the elements that foster learning in a Blended Educational Community: Rare Connect**

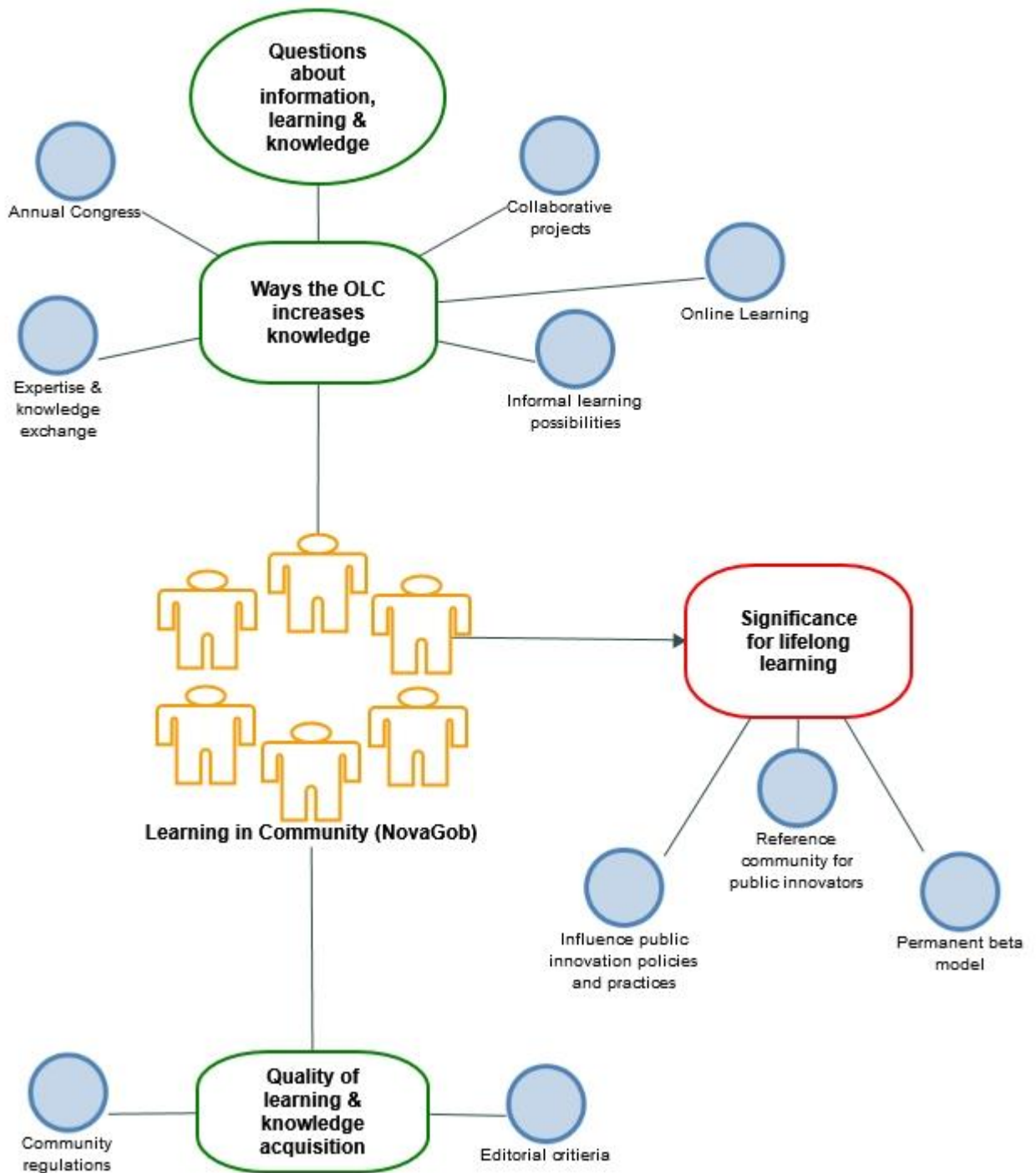




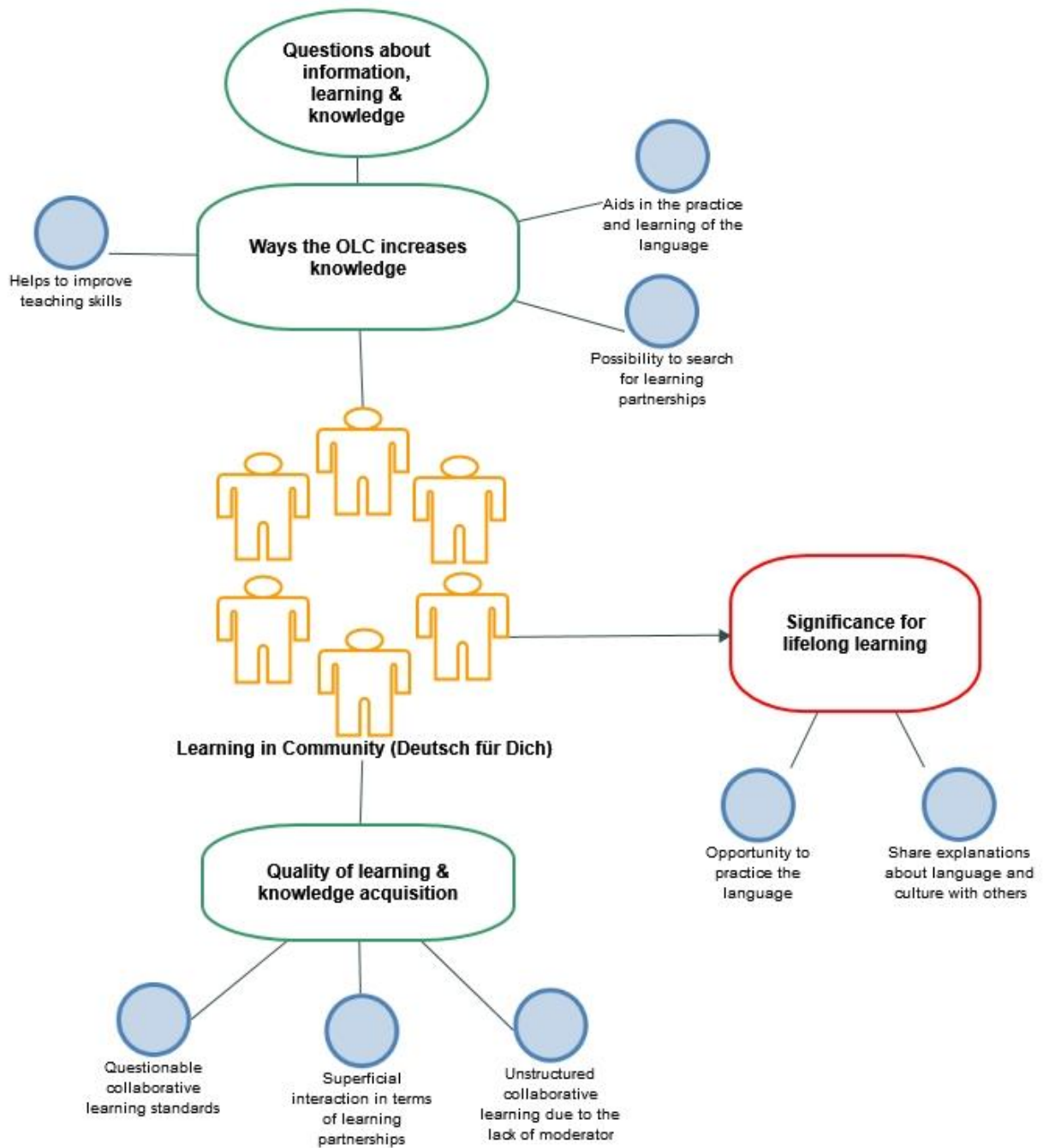
*Appendix 15: Conceptual Map of the Value of an Online Professional Community for Lifelong Learning, according to its Members: edWeb*



*Appendix 16: Conceptual Map of the Value of a Blended Professional Community for Lifelong Learning, according to its Members: NovaGob*



*Appendix 17: Conceptual Map of the Value of an Online Educational Community for Lifelong Learning, according to its Members: Deutsch für Dich*



*Appendix 18: Conceptual Map of the Value of a Blended Educational Community for Lifelong Learning, according to its Members: Rare Connect*

