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Social Presence and Educational Technologies in an Online Distance Course in Finnish Higher Education

A Social Constructivist Approach

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Abstract

Educational technologies are increasingly integrated into higher education, in the form of distance online education for instance. This is an example of how globalization reconfigures education (Carnoy & Rothen, 2000, as cited in Peters, Besley, & Besley, 2006, pp.50). However, the development of online distance education is not without challenges, including the lack of sense of belonging and the feeling of isolation among students, leading to dropouts. Even if there is no deterministic effect of online environments on social interactions, being online undoubtedly reshapes social behaviors. These issues are addressed in this study by examining social presence, defined as the sense of being there with others in a mediated environment (Heeter, 1992), taking an online distance course on Global Education Development in Finland as a study-case.

The research aims to analyze how social presence is performed and negotiated through educational technologies. It is grounded in social constructivism to circumvent determinism that prevails in many research works on social presence and educational technologies. Social constructivism brings out human agency while recognizing the effect of the "socio-historical norms, values, beliefs, and perspectives that individuals bring into online learning environments" on the way educational technologies are used and social presence performed (Öztok, 2016, as cited in Öztok, 2013, pp.1). This research pursues a qualitative comparative methodology complemented with basic descriptive statistics. It draws from multiple data sources as it analyzes observations of interactions, survey questionnaires, course material, learning diaries, and six semi-structured interviews with students.

The findings explore three dimensions of social presence: subjective, physical, and collective presence. They reveal that broader academic norms, more than educational technologies themselves, shape the representations of subjective presence. The results also verify that text-based online discussions provide more space for students to participate in discussions than webinars using online video-based technologies, but are also paradoxically negatively perceived by students. The analysis of collective presence demonstrates that it emerges from a shared group identity among students and instructors, rather than from sharing sensory inputs, developing interpersonal relations, or sharing personal background information at a group level.

Key Words: Online distance course, educational technology, social constructivism, social presence

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List of abbreviations

EU – European Union

GDPR - General Data Protection Regulation

GED – Global Education Development

ICT – Information Communication Technology

LMS – Learning Management System

MOOC – Massive Open Online Course

OECD - Organization for Economic Co-operation and Development

UIS - UNESCO Institute for Statistics

UNESCO - United Nations Educational, Scientific, and Cultural Organization

UniPID - Finnish University Partnership for International Development

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Chapter 1 Introduction

1.1. Motivation of the study

The current Covid-19 pandemic and the lockdown policies imposed in most countries bring new evidence to ontological and philosophical questions, about what it means to shift most of our social interactions online. Especially in the higher educational sector, all the courses have been moved online, for several months. In many universities, the fall 2020 is more likely to continue online. Suffice it to say that the future trends in higher education are riddled with uncertainties, especially concerning whether these changes are here to stay. The crisis has accelerated in unprecedented ways an already ongoing process.

In the last decades, the online distance education market for higher education has risen. It reflects how globalization and information and communication technologies (ICTs) reshape education (Marginson & Mollis, 2001). Several arguments constitute the bedrock of online distance education's optimism (Charbonneau, 2018), such as increasing economic competitiveness by producing skilled students for the knowledge economy or expanding access to education by operating everywhere and at any time (Bates, 2005).

While distance online (and even more so offline) education has a long tradition, it has profoundly changed in the last decades. The development of ICTs and the massification of the internet access have given rise to online distance education. Online distance education is defined as education that uses the internet and in which students can study "at the place of their choice without face-to-face contact with a teacher" (Bates, 2005, pp.5). Online distance education, traditionally confined in specialized universities, is now vastly implemented in on-campus universities, to diversify their educational provision while cutting costs (Peters, 2003).

This study investigates social presence, defined as the sense of being there with others in a mediated environment (Heeter, 1992). This concept sheds light on online social behaviors (Biocca, Harms & Burgoon, 2003). Social presence is multi-dimensional and can be categorized in physical, subjective, and collective presence, as done in this research. Social presence informs how producing visual cues, by using the camera in a video-conference for instance, sharing personal background information, as in online students' profiles, can create a sense of being there with others. In online distance education, it is particularly important as concerns are recurrently expressed about students feeling isolated and lacking a sense of belonging.

Many research works that examine social presence and educational technologies, may be critically read in regard to the tendency to decontextualize education from the given material, pedagogical and social context. Some of these works hereby contribute to a perception of technologies as "autonomous [forces], beyond social agency" (Batteau & Jazayeri, 2018, pp.2). Similarly, in some studies, social presence is conceptualized as the projection of an essentialized and authentic self, determined by technological attributes. This way of framing discourses downplays the "roles played by psychological, social, and pedagogical factors in the perception, experience and understanding » of educational technologies and social presence (Öztok et al., 2014, pp.154).

Therefore, this study intends to apply social constructivism to the analysis of social presence in its multiple dimensions and in relation to educational technology. Social constructivism highlights the way social presence and educational technologies are constructed dialogically, through subjective and culturally-situated meanings, social interactions and the

"socio-historical norms, values, beliefs, and perspectives that individuals bring into online learning environments" (Öztok, 2016, as cited in Öztok, 2013, pp.1).

To do so, this research implements a contextualized case study design, taking an online distance course on global education development (GED) as its case. The online distance course was organized by the University of Oulu, in Finland, in Spring 2020 and offered by UniPID (Finnish University Partnership for International Development). The course aimed to discuss global education development using decolonial studies. Students were invited to "critically reflect on power structures in policy, practice, research, and knowledge(s) at the global and local levels" (Charbonneau & Menon, 2020). This course was an example of how university curriculum adapts to internationalization occurring within Finnish higher education. Students were from European and non-European countries and enrolled in one of the nine Finnish universities composing the UniPID network. The Finnish context is interesting because it embodies wider processes occurring in higher education, such as internationalization, competitiveness, and branding strategies while presenting specificities, such as high-quality internet infrastructures, and an international fame (Kaplan & Haenlein, 2016; Haapakoski & Stein, 2018; Moonen et al., 2004; Schatz, Popovic & Dervin, 2017; Niemi, 2003). Moreover, online distance education is very likely to continue to grow in Finland, to serve its policy of internationalization and to support the efficiency of its education system. These elements motivated the choice of Finland as a context for this study. Besides, it was chosen because the researcher was familiar with it, as several months were spent in the University of Oulu as an exchange student.

This research project pursues a qualitative comparative methodology complemented with basic descriptive statistics, thus introducing some elements of mixed-methods. It draws from multiple data sources as it analyzes data from the course material and from twenty-one student participants, out of the sixty-five students enrolled in the course. The data sources include observations of interactions and learning activities, survey questionnaires, learning diaries, six semi-structured interviews with students.

1.2. Aims, objectives and research questions

The thesis aims to analyze how social presence, in its physical, subjective, and collective dimensions, is performed and negotiated through students' and instructors' uses of educational technologies. It has the following objectives: (1) to discuss social presence in relation to educational technologies from a social constructivist perspective; (2) to use qualitative comparison to analyze the way contexts influence how social presence in relation to educational technologies is socially constructed. To guide the research, the following research question was developed: how is social presence socially constructed through technologies across different online learning activities by instructors and students in an online distance course?

The research question is based on the social constructivist approach. It states that phenomena, such as social presence or educational technologies, are socially constructed. The term "across" coins the use of comparative methods. The qualitative comparative methods elaborated by Palmberger and Gingrich (2014) is used. Qualitative comparative methods enable us to acknowledge the complexity of each comparative element and to avoid dismissing contextualization (ibid., pp.3). This study will also compare the use of educational technologies and the performance of social presence, across learning activities. Brown (2009) emphasizes the potentialities of comparative methods to contextualize the use of technologies and explore "the pedagogic, social, and cultural dynamics of embedded educational and cultural practices" (pp.1160).

1.3. Relevance

The study relates to the field of international and comparative education (ICE), as it focuses on online distance education and educational technologies, both instances of global processes, with concrete implications at national levels, depending on country's and university's prioritization and funding options. Moreover, this study fills the gap in research on educational technologies in ICE scholarship (Brown, 2009). Commenting on comparative education research, Brown notes that:

> *Most commonly the capacity to enable rapid international communication and networking is invoked as a facilitating factor in the process of globalization, or more generally as a key component in the formation of contemporary societies, be they identified as postmodern, late-modern, post-industrial, knowledge-centred or some variant of these. Very rarely, however, is sustained attention given to the characteristics and uses of these technologies themselves.*

<div align="right">(ibid., pp.1159).</div>

Despite educational technologies being regularly referred to as a contextual element in research in ICE, they are rarely analyzed for their own sake and further problematized. Furthermore, this study's context is international. As already mentioned, the course gathered national and international students enrolled in different Finnish universities. During the course, participants were invited to share their views on global processes, drawing from their specific contextual experiences. It positions this course as an example of international and comparative education in that sense as well. In particular, this research examines the way students performed and negotiated the international aspects of their identity and the way the group as-a-whole represented itself as international.

Methodologically, this thesis contributes to research in ICE, by utilizing qualitative comparative methods at micro-levels to draw differences and similarities between different learning activities occurring during the online distance course. This method is seldom used in the field, despite its potentialities to give justice to the context and complexity of the case (Palmberger & Gingrich, 2014, pp.3). Comparing learning activities is also rare in ICE. Indeed, ICE developed mostly cross-national comparisons (Bray, Adamson & Mason, 2014). Bray et al. (2014) urge ICE researchers to challenge the national comparative frame, and call for multi- and micro-level comparisons. By undertaking micro-level qualitative comparisons, this thesis offers a new set of data in line with their methodological proposition.

This study theoretically contributes to research on educational technologies and social presence, by studying them from a social constructivist perspective. Social constructivism moves away from positivistic and deterministic stances that prevail in mainstream accounts of social presence and educational technologies. Besides, this study opens methodological avenues in these areas of study by utilizing qualitative comparison. This method is rarely used in these fields, except when comparing and evaluating educational technologies. However, it is a relevant methodology as it "grounds and contextualizes activity" (Brown, 2009, pp.1159). It has the potential to "protect against the collapse into any single unitary perspective" (ibid.).

This paper further aims to contribute to practice. The research was conveyed in collaboration with the instructors. The course design was informed by the principles of decolonial theory, both in its form and content. To inform further improvements, I reflect on the findings in the light of the decolonial theories (see *Conclusion*). I then hope to contribute to the dialogue opened by the course's instructors on the "challenges and possibilities of using decolonial theory in an online course in Finnish higher education" (Menon et al., 2020, pp.1).

1.4. Organization of the thesis

This thesis is composed of seven chapters. In *Chapter 1*, the rationale for researching educational technologies and social presence, using the social constructivist theory and a case study design is established and specific aims, objectives, and research questions are formulated. *Chapter 2* provides the background of the case - an online distance course in Finnish higher education. In *Chapter 3*, I review the main concept of the study and the related literature to argue for the need of a social constructivist approach. The case is presented in *Chapter 4*. The methodology of the research is defined in *Chapter 5*, summarized as a contextualized case study with embedded comparative elements. *Chapter 6* presents the findings. They are later discussed in *Chapter 7* in the light of previous research and the theoretical framework. Finally, *Chapter 8* concludes with practical implications and adopts a reflective lens on the research process.

Chapter 2 Background

In this study, I analyze an online distance course implemented in Finnish higher education. This context has its specificities, as Finland currently positions itself as a leader in education by capitalizing on its positive image internationally (Schatz et al., 2017). However, Finland also relates to a broader context in which educational technologies are increasingly used in higher education. This section is structured in two parts. It focuses first on the arising of educational technologies. It then appraises the development of online distance education in higher education. These contemporary educational movements are related to other social, economic, and historical evolutions.

2.1. Technologies in education

Technologies are an expanding phenomenon. They reconfigure education practices. Technological changes in the last decades have led to broader access to and use of technologies. They have been adopted in education, where they took multiple forms: wikis, e-learning, blogs, learning management systems (LMS), videos, virtual worlds, e-portfolios, social media, MOOC (Massive Open Online Course), artificial intelligence, and the list goes on (Weller, 2018). They did not all have the disruptive power they were expected to have. Some remained, others vanished (ibid.). This reflects how technological changes throughout history are not determined by the technology itself but by social processes, such as perceived advantages, innovators' decisions, and mass popularity (Griesbaum, 2017). The development of educational technologies was accompanied by the growth of the Edtech industry. It refers to companies designing and distributing electronic devices used in education. Big educational companies were accompanied by a profusion of start-ups (Selwyn et al., 2020). Some multinationals also adapted their products for educational purposes (Microsoft Education, Google Classroom, Zoom).

The influence of educational technologies has differed locally, depending on existing resources and infrastructures. For instance, Nordic countries are often described as pioneers in educational technologies (Cerratto-Pargman, Järvelä & Milrad, 2012). In the 1990s, these countries invested in infrastructures and technologies, such as computers in classrooms or internet connection across the territory (Niemi, 2003). As a consequence, they now benefit from one of the best internet infrastructures (OECD, 2017; McGrath & Åkerfeldt, 2019).

Parallel to these technological developments, a set of discourses and theories has bourgeoned which connected globalization, new education's purposes, and technologies. These discourses circulate globally. They yield new definitions of what education should be, by emphasizing the need to train skilled students for the knowledge economy. Besides, they generate new visions regarding how education should be implemented by advocating for the use of technologies. The knowledge economy rationale is that industrial capitalism shifted to information and knowledge capitalism (Peters, 2003). Due to the emergence of the knowledge economy, skills, and knowledge acquired today are obsolete for future workforces (OECD, 2016). To remain internationally competitive, national workforces must be educated to acquire so-called "21st-century skills". They are deemed to be necessary for students to meet the challenges of the new global context and they comprise problem-solving, ICT skills, critical thinking, and innovation, among others.

Thereby, the development of education technologies is entangled with international and national discourses promoting them. These discourses have impacts on national policies. For instance, Finnish investment in educational technologies since the mid-1990s has been an effort

to build up the information society (Niemi, 2003). In 1995, the Information Society Strategy was formulated. Investments resulted in educational technologies being integrated into higher education.

Discourses promoting educational technologies are similar to many discourses on globalization. They often create meta-narratives and rhetorical myths about what the future will be, on which they base current policies (Papastephanou, 2005; Peters, 2003; Clegg, Hudson & Steel, 2003). For instance, in discourses promoting educational technologies, changes are interpreted in a deterministic way and the power of globalization is pictured as irresistible (Clegg, Hudson & Steel, 2003). However, these accounts do strongly influence contemporary policies, as shown with the example of Finland. In that sense, they have a performative dimension, as they contribute to making happen the future they envision.

These discourses rely on the knowledge economy as a rationale for the use of technologies in higher education systems. It is not the only rationale that supports the promotion of educational technologies. More practical concerns also motivate the integration of technologies in higher education. For instance, technologies are encouraged because they can facilitate academic labor intensification (ibid.) and expand access to education while reducing costs. This intensification is encouraged by a decrease in public funding and an upsurge of students in universities. These trends even affect Nordic countries. Reforms have decreased core public funding, based on incremental allocation, and increased competitive funding based on research performance (Schmidt, 2012). The implementation of educational technology at institutional levels is also facilitated by the adoption of "new forms of governance and managerialism" (Clegg et al., 2003, pp.47). For instance, Ursin (2019) argues that the welfare state model co-exists with "elements of marketization and corporatization of higher education" in Nordic countries (pp.9).

2.2. Online distance courses in higher education

The course taken as a case in this study is an instance of online distance courses. Online distance courses exemplify how technologies affect education. While having old historical roots, they have only recently proliferated in higher education.

Distance education emerged in the late 19th century in the United States, way before new technologies became popular in education. Originally, it relied on pedagogical printed materials transmitted through postal service (Harting & Erthal, 2005). There was no direct interaction between the student and the institution (Bates, 2005). The second generation of distance education integrated printing, broadcast, radio, and later TV. Mass production, standardized products, cost-efficiency, and reliance on tutors characterized the second generation (ibid.). In the 1980s, computers started to be used as the medium of instruction (Bari, Djouab & Hoa, 2018). In the current third generation, the internet is used to facilitate interactions with instructors and among students (Bates, 2005). Distance education has become what is now known as online distance education. Among its characteristics, it often implements "constructivist approaches to teaching and learning, dependent on student dialogue and discussion" (ibid.). Moreover, it is "characterized by economies of scope – customized courses, quickly produced, for relatively low initial investment" (ibid., pp.7). In addition, LMSs are used to combine different technologies in one central interface (Weller, 2018). They considerably contribute to the industrialization and standardization of online course making (ibid., pp.39). Besides, online distance education has also surfed on the wave of the social media boom. Finally, modes of delivery have multiplied with the development of mobile devices and MOOCs. The distinction between face-to-face and distance learning is now blurred.

As for educational technologies, the development of distance online education is backed up by a rhetoric highlighting its advantages (Bates, 2005). For instance, its cost-efficiency can train more students at a lower cost. It is also a "knowledge-based industry" that can contribute to national competitiveness by marketing educational services internationally. According to some, it enhances learning, although dropout can also be high. Finally, it is a more flexible way of learning for students. These arguments are not always backed up with clear-cut evidence. Interestingly, they overlap with those supporting the implementation of educational technologies. They largely tap into economical rationales around the notion of the knowledge economy. However, they are also marked by concerns related to pedagogy and social equity, for example regarding access. Various rationales coexist and sometimes compete for the definition of what online distance education should be: "administrators facing budgetary constraints might favor technologies that enable the distributed delivery of educational commodities, while educators espousing constructivist pedagogy might require systems that enable student-driven interaction guided by expert facilitators" (Hamilton & Friesen, 2013, pp.13).

The fad for online distance education has led to the emergence of new actors. Distance education first emerged in universities providing solely distance courses and in adult education institutions (Harting & Erthal, 2005). It then expanded in company settings (Bari et al., 2018, pp. 99). Recently, traditional on-campus universities have started to develop online distance courses along with their face-to-face courses (Kaplan & Haenlein, 2016). Along with universities, the private sector is increasingly involved in online distance education (Griesbaum, 2017). There is a phenomenon of commercialization (and massification) of online distance courses, particularly connected to MOOCs (ibid.). As for educational technologies, online distance education's popularity among universities must be understood in the context of profound changes in higher education. Online distance education is "a potential money-maker" (Bates, 2005, pp.12). It can attract new students and augment revenues without pressuring existing on-campus infrastructures.

In Finland, distance education first developed for a national audience in company-training settings (Mikkelä, 2001, as cited in Moonen et al., 2004, pp.13). There was long no national university operating only at distance. However, each university had its open university that delivered online courses (Moonen et al., 2004). Moreover, the use of the internet in distance education was long limited in favor of other media. It is only in 1999 that the project of creating a Finnish virtual university was launched (ibid.). Internationally, Finnish universities were not traditional players in online distance education, compared for instance to the United Kingdom. Indeed, internationalization in higher education was limited. Recently, Finland has entered the market of international students (Haapakoski & Stein, 2018). For instance, the country became part of the European Union (EU) mobility programs and joined the EU in 1995. Nowadays, developing online distance education could be part of its internationalization and branding strategies (Kaplan & Haenlein, 2016). This supports the interest of studying an online distance course in a Finnish context.

In this section, the case study background was presented. Relating the case to broader processes enables us to go beyond the "the irreducibility of context" in appraising case-studies. Based on Bekele's (2018) framework, I reviewed the context both at global and Finnish scales. Furthermore, I examined context as a discursive construction by looking at how discourses shape these processes. Discourses are understood in the sense of ideoscapes, theorized by Appadurai (1996), and defined as "the ideologies and other political images that circulate globally" (Bartlett & Vavrus, 2016, pp.38).

Chapter 3 Key concepts and literature review

3.1. Key concepts

This study analyzes the concepts of educational technology and social presence in the context of an online distance course. In the corresponding literature, a handful of terms and definitions are used to designate them. They often overlap and lack consistent definitions. This section offers a guide to foray into this lexical field and report the way terms are used in this research.

3.1.1. Social presence

Social presence is a multi-dimensional concept. No clear consensus exists among researchers on a unique definition, which complicates conceptualization. Some works do not state a clear definition or rely on multiple ones (Lowenthal & Snelson, 2017). This lack of clear definition can complicate research as it prevents the development of appropriate measurements and systematic studies (Öztok & Brett, 2011; Öztok & Kehrwarld, 2017). This study does not aim to advance the conceptualization of social presence but to apply a social constructivist lens to this concept. Therefore, it was chosen to simply define social presence as the sense of being there with others in mediated environments and to explore its multiple and inter-related dimensions: physical, subjective, and collective presences, the rationale for which I will later turn to.

But first, social presence and presence should be distinguished. Social presence stems from presence, which originally refers to the experience of being there in technology-mediated contexts (Floridi, 2005). The concept of presence penetrated different fields of research: mass communication and human-computer interaction studies, psychology, and education (Beck et al., 2011). In education research, social presence, rather than presence, was adopted as the main concept (ibid.). Therefore, this study uses the term social presence, even if it sometimes overlaps with presence. Social presence, compared to presence, emphasizes the experience and the impact of being there with others. A simple, thought useful, definition is a sense of being there with others in mediated environments (Heeter, 1992).

From the initial definition of social presence as being there with others, various definitions flourished in education research (Lowenthal & Snelson, 2017; Öztok & Kehrwald, 2017). They emphasize different dimensions of social presence, which are classified by Lowenthal & Snelson (2017) as being there, being salient, being real, projecting oneself, connection, belonging, and community. *Table 1* gives an overview of the way these dimensions are tackled in the definitions of social presence found in the literature.

Table 1: Overview of the dimensions of social presence in the literature and in this research (drawn from Lowenthal & Snelson, 2017)

Dimensions of social presence in the literature	Example of definitions, as cited in Lowenthal & Snelson, 2017	Dimensions of social presence in this study

Being Salient	"The degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship" (Short et al., 1976, pp.65)	Physical Presence
Being there	"The sense of 'being there in a mediated environment' (Rogers & Lea, 2005, pp.151)	
Being real	"The degree to which a person is perceived as a 'real person" in a mediated communication" (Gunawardena, 1995, pp.151)	Subjective Presence
Being there	"The potential of participants to project themselves socially and emotionally (i.e., their personality) within the medium of communication." (Garrison, Anderson & Archer, 2000, pp.94)	
Connection	"The degree to which learners feel socially and emotionally connected with others in an online environment" (Swan et al., 2008, pp.1)	Collective Presence
Belonging	"A student's sense of belonging in a course or group and the ability to interact with others, although physical contact is not available" (Piciano, 2002, pp.25)	
Community	"A measure of the feeling of community that a learner experiences in an online environment" (Tu & McIsaac, 2002, pp.131)	

In this study, the dimensions found in the literature are combined into three dimensions: physical, subjective, and collective presence. Each dimension is defined from a social constructivist perspective, based on Mantovani and Riva's (1999). The two authors argue that

the experience of being there with others, that is social presence, not only means that "individuals can perceive themselves, objects, and other people (…) as situated in an external space » but also as "immersed in a socio-cultural web connecting objects, people, and their interaction" (Beck et al., 2011, pp.5).

In *Table 1*, social presence as being there and being salient are related to the concept of physical presence. The latter is used in some research works to define the sense of being immersed or transported somewhere, with others, in a technologically-enhanced environment (Beck et al., 2011). Physical presence is achieved through the share of sensory inputs. Sensory inputs deemed to increase physical presence are tactility, smell, audio, vision, and time synchronicity. In environments with low sensory inputs, such as forum discussions, physical presence is linked to participation as it is only perceived through observable demonstrations of one presence, thus participation (Kehrwald, 2010). In this study, physical presence is defined as the way and the extent to which sensory inputs are shared and interpreted in interactions with others and based on subjective and culturally situated meanings. It is analyzed as a dimension of social presence by looking at (1) the extent and the way one shares and interprets sensory inputs (2) the extent and the way one demonstrates and interprets active presence through participation.

However, physical presence is not sufficient to understand social presence. Being there with others is not only about perceiving one's body but perceiving one's as a social actor as well (Biocca et al., 2003). It leads to the second dimension: subjective presence that comprises social presence as being real and projecting oneself, in *Table 1*. It interprets "being there with others" as being an authentic and unique person, thus linking it to identity, subjectivity, personality, or persona (Lowenthal & Snelson, 2017). Alternatively, it is defined as the awareness of and access to the others' identity, subjectivity, personality, or persona. Cues are provided that inform perceptions of others as subjects. These perceptions influence behaviors, thus the intersubjective nature of subjective presence. In this study, subjective presence is defined as the extent to which one provides access to its subjectivity and interpreted others' subjectivities in interactions with others based on subjective and culturally situated meanings. Subjective presence is analyzed in this study as a dimension of social presence by looking at (1) the way individuals presented their self, based on their subjective meanings and in interactions with others (2) the extent to which personal background information is shared in discussions.

Subjective presence is not sufficient because it is not able to grasp the effect of being there with others, in terms of connection, belonging, and community (ibid.). In this study, this dimension is not defined in such terms but as collective presence. Though common in the literature, belonging and community convey emotional meanings. They describe what should be rather than what is and produce idealized models rather than descriptive ones (ibid.). Connection was not used because it tends to emphasize interactions over representations. Collective presence is understood as the extent to which the group-as-a-whole forms a cohesive and consensual whole. According to Lea and Roger (2004), different elements can play for group cohesion, such as creating interpersonal bounds, relations, and interactions; sharing interpersonal background information; and a building shared group identity. These elements will be analyzed in the findings.

Subjective, physical, and collective presences can illuminate one-to-one, one-to-many, and many-to-many communication (Lowenthal & Snelson, 2017, pp.143). These different configurations are analyzed in this study. The three dimensions of social presence are intricately linked. For instance, perceiving one's sensory cues can engendered perceptions of a person as a subject, which has consequences for subjective and collective presence. A very simplified example would be an online class on information technology composed mostly of men where

Person A, a man, perceives Person B as a female from the visual cues. This influences Person A's perceptions of Person B as a subject. For instance, Person B can be seen by Person A as a nerd, because she studies information technology, or, on the contrary, as less knowledgeable in that field, based on gender stereotypes. Consequently, Person A can either be perceived as fitting the group (here the information technology students, that are mostly men) or in discordance with it.

To summarize, in this study, social presence is defined as the sense of being there with others in a mediated environment (Heeter, 1992) and holistically analyzed by looking at its three dimensions: physical, subjective, and collective presences.

3.1.2. Educational technology in online distance education

This study analyzes the use of educational technologies in an online distance course, that is the GED course.

Technology has a long history, way before ICTs were invented (Batteau & Jazayeri, 2018). Etymologically, it depicts what is made by humans, as opposed to nature (Carroll, 2017). In the last decades, ICTs have emerged. In this study, for more clarity, ICTs are simply named technologies. When applied in an educational context, technologies are often referred to as educational technologies. It is simply defined as "electronic tools used for teaching" (Pretto & Curro, 2017, pp.74). Educational technologies are not necessarily designed for educational purposes. In this study, they are qualified as educational because they were used in the GED course for educational purposes.

This study focuses on online educational technologies, as it takes an online distance course as its context. The term "online" refers to technologies using the internet and the web, in opposition to technologies using only a computer for example. "Online" thus qualifies the condition of being connected to a network of devices, such as the internet, as opposed to offline. The education field has its array of concepts to refer to educational technologies contributing to greater confusion:

> *Over the last decades, terms to describe the use of computers to assist people to learn have ebbed and flowed in terms of popularity. Terms such as educational technology, learning technology, technology-enhanced learning, computer-facilitated learning, and e-learning have been in use in the last decade, without clear definitions of their scope and meaning.*

> (Phillips, Kennedy & McNaught, 2012, pp.1104).

Once again, for clarity, this study simply refers to educational technologies, to refer to the tools used in the GED course. Educational technologies comprise also social media, as the course also utilized a social network site. Educational technology and social media are overlapping concepts. Media refers to the way information carried by technologies is transmitted, through image, audio, or video format, for instance (Ardèvol, 2018). In particular, social media have emerged with the incorporation of the internet within the media industry (ibid.). Social network sites are examples of social media. They are defined as "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 these made by others within the system » (Boyd & Ellison, 2007, pp.211). Media and social media are composed of technologies, making their distinction difficult. For instance, a photograph can be used as a medium but it is produced through the technology of photography. Therefore, it was decided to refer to all of them as educational

technologies in this study. However, to acknowledge the specificity of social media, educational technologies are distinguished based on their audience, that is the people who can witness online interactions and artifacts. In particular, this study distinguishes technologies with closed and open audiences. The former is found in LMSs and the latter in social network sites. In the study, technologies are also differentiated based on their media, such as text, audio, video, images (Pretto & Curro, 2017).

This study takes an online distance course as its context. Online distance education uses online technologies to operate at distance. An online distance course is one example of what is nowadays called "e-learning". "E-learning" refers to any course which incorporates "any form of telecommunication and computer-based learning" (Bates, 2005, pp.8). It also encompasses blended courses incorporating both face-to-face and online instruction. Therefore, e-learning was not the term used in this study, as the GED course is fully online.

3.2. Literature review

This section points to existing literature on educational technologies and social presence. It shows how these two research fields are underpinned by positivistic assumptions. This literature review does not seek to give a comprehensive overview of current issues in research but rather focuses on prevailing theoretical considerations and existing alternatives in these two research fields.

3.2.1. Social presence in online distance education

Social presence is an important field in online learning research. It is seen as central to promote social interactions in online learning (Kehrwald, 2010; Lowenthal & Snelson, 2017; Öztok & Brett, 2011). It is also instrumental to avoid the feeling of isolation experienced by online students (Aragon, 2003).

Social presence literature stems from Short et al. (1976). They were inspired by the media richness theory. They conceived social presence as a quality of the communication medium. They compared the affordance of different media in enabling communication. They were later criticized for their technological determinism. Generally, research on social presence is often oriented towards finding strategies to increase it, by changing the course design or instructors' and students' behaviors (Aragon, 2003). Moreover, research usually focuses on the impact of social presence on students' achievement. However, there is still no clear evidence that social presence contributes to better performance (Picciano, 2002). In addition, many research works build idealized model of social presence and as such portray what online learning should be rather than what it is (Lowenthal & Snelson, 2017). Finally, researchers within the field criticize the lack of theorization in research on social presence (Öztok & Kehrwald, 2017; Lowenthal & Snelson, 2017).

More importantly for this study, research on social presence is characterized by positivist and instrumental traits. Physical presence is defined in positivistic terms, as the degree to which an "illusion of direct experience" is created (Kehrwald, 2010, pp.40). From this perspective, physical presence should be increased to afford "a mediated experience that looks, sounds, and feels like truly natural and real" (Öztok & Kehrwald, 2017, pp.262). Positivism and realism disregard realities as social constructions, whether online or not. As for subjective presence, traditional approaches consider it as the projection of "an authentic and unique person" (Lowenthal & Snelson, 2017, pp.149). Positivistic accounts also judge collective presence as socially neutral, as if students formed utopian borderless virtual communities

(Brown, 2009). Finally, in research on social presence, educational technologies are not problematized but seen as tools enabling affordances and determining social presence.

Some authors distinguish themselves and carry out alternative empirical works. Against a positivist approach of physical presence, Mantovani & Riva (1999) revendicate that all environments are constructed by social actors: ""reality" is not "outside", escaping social interchange and cultural mediation" (pp.4). On the contrary, it is "continually being negotiated and filtered by artifacts" (pp.4). Another trend considers subjective presence as the degree to which students share identity traits. Identity is viewed as fluid, contextual, and negotiated through interactions (Lowenthal & Snelson, 2017). These research works argue that there is no essential self because people develop multiple selves through their lives and the contexts they navigate into (ibid.). They are inspired by the impression management theory, in which individuals "adjust their behavior in an ongoing dynamic relationship with other players" by giving out details, such as personal background information (Houtman, Makos & Meacock, 2014, pp.422). According to the impression management theory, subjective presence is not neutral because individuals often aim to produce idealized selves based on what they perceive as the required role in a specific context (Houtman, Makos & Meacock, 2014).

Other authors, such as Kehrwald (2010), do not emphasize identity but address the link between social presence and subjectivity. Subjectivity encompasses perspective - the way our current position affects ourselves and our perception of the world - agency, and intersubjectivity. From a social constructivist perspective, Kehrwald centers his argument on subjective meaning, rather than the impact of structures on the way social realities are shaped. Finally, some pieces of research look at the impact of invisible audiences in online environments on the performance or exhibition of the self. Audiences are those who have access to one's exhibition of the self in online environments (Hogan, 2010). One's presence being disclosed to an unintended audience raises issues of privacy and creates risks of context-collapses (Hogan, 2010; Dennen & Burner, 2017).

Finally, some researchers discuss whether collective presence emerges from developing interpersonal relations, sharing personal background information, or building a shared group identity (Lea & Rogers, 2004). Building collective presence implies group norms, and values to be established at a group level (Postmes, Spears & Lea, 2000). They thus examine social influences and group effects on individual behaviors in online communication (Spears & Lea, 1992). Some studies highlight the paradoxical effects of collective presence. Collective presence implies norms, values, consensus, and shared identity. However, these norms can dismiss differences (Hodgson & Reynolds, 2005). In a group, certain values can be favored, because of power asymmetries and used as a base for the group's shared identity. This can isolate those who do not identify with those values.

I will now move to the literature on educational technologies in online distance courses. Though characterized by different research developments, it also shares some of the same positivist assumptions.

3.2.2. Educational technologies in online distance education

As listed by Hamilton & Friesen (2013), research on educational technologies comprises various issues, focusing, for instance, on instructional design, pedagogical theories, cognitive issues, students' and instructors' relationship, or technologies' implementation at institutional levels. However, many pieces of research on educational technologies share positivistic traits and a lack of theorization (Jones & Czerniewicz, 2011; Issroff & Scanlon, 2002; Bennett & Oliver, 2011; Phillips et al., 2012). Several authors carried out systematic literature reviews to

demonstrate how most empirical works did not refer to any theory in the field (Hew et al., 2019; Bulfin, Henderson & Johnson, 2013). This state-of-the-art can be explained by several factors. Firstly, many research works in educational technologies are oriented towards pragmatic rather than theoretical goals, such as improving practices and solving problems (Phillips et al., 2012; Bennett & Oliver, 2011). Secondly, research relies mostly on governments' funding. It thus focuses on governments' interests, for instance assessing impact (Conole, Smith & White, 2007, as cited in Bennett & Oliver, 2011, pp.180).

Several methods are used to study educational technologies: hard quantitative methods in experimental or quasi-experimental designs, basic and descriptive quantitative methods, or descriptive and interpretive qualitative studies (Reeves & Oh, 2017). Comparative methods are common (Hew et al., 2019). Indeed, there is a tradition of comparing modes of learning or technologies to find the most efficient one (Reeves & Oh, 2017; see, for example, Hashim & Hammood, 2015; Yengin & et al., 2011). Such research efforts are driven by market trends (Oliver, 2011). The apparition of novel technologies produces new research comparing them to previous tools (Miller, 2018). It has been demonstrated that the majority found "no significant difference" (Hattie, 2008). There is a lack of qualitative comparisons of educational technologies that go beyond technical and pedagogical aspects, to incorporate social aspects (Brown, 2009).

There is also a lack of conceptualization of technologies themselves, often conceived in deterministic terms (Oliver, 2013). For instance, in the affordance theory, determining effects on learning processes are allocated to specific technological features (Oliver, 2011). Similarly, Hamilton & Friesen (2013) criticize the common assumptions in essentialist and instrumentalist accounts of technology. They are the "depictions of technology as an independent force or a set of artifacts", the "separation of technology and society", the "dehistoricisation of technology", and the "externalization of human values from technical things" (pp.8).

Inspired by sciences and technology studies and the social construction of technology, some authors argue against the dominant determinism in research on educational technologies (Oliver, 2011; Hamilton & Friesen, 2013). However, they do not agree on an alternative social constructivist framework to address educational technologies. Heterogeneity remains among the alternatives, that include the activity theory, the communities of practice theory, the actor-network theory, and the social construction of technology (Oliver, 2011). According to Oliver (2011), none are fully satisfactory. They move away from technological determinism but often understand the context in a limited way.

To complicate this lack of unified theory among opponents of technological determinism, social constructivism does not have a specific *modus operandi* (Pouliot, 2007). Empirical studies using this approach are scarce because social constructivism has been poorly applied in online education (Hamilton & Friesen, 2013). However, some studies have applied social constructivism to specific educational technologies. Oliver (2013) illustrates how technologies can be analyzed using social constructivism, with the analysis of *Second Life* - a virtual world. He conducts a textual analysis of a technological feature in *Second Life*. He shows how the feature's materiality, temporality, and spatiality impose technical structures. Meanwhile, he highlights how this materiality is readapted by students and instructors, depending on their norms and expectations, in a process of culturally situated meaning-making. Similarly, Öztok et al. (2014) reflect on the dialogic construction of time in online learning, by challenging the opposition between synchronous and asynchronous technologies. They demonstrate that the distinction is not clear-cut because the same technology deemed to be asynchronous can also be used in a synchronous manner. This shows that time is not determined by technologies but by social practices. Finally, other research examines the broader effects of online environments' characteristics, such as persistence, searchability, replicability, and

invisibility (Houtman et al., 2014). For instance, they examine the impact of anonymity produced by the lack of visual cues or identifiability in some online environments (Luppicin & Lin, 2012). Anonymity can be taken advantage of to avoid discriminations but can also threaten trust in a group (ibid.). It can have toxic effects because individuals are less accountable to others (Suler, 2004). Those research works are not specific to online distance education, yet relevant because online learning environments are often microcosms of larger trends in the digital world (Luppicin & Lin, 2012).

Based on existing criticisms and alternatives drawn from the literature, I argue for the need for social constructivism to introduce a shift in the way educational technologies and social presence are analyzed.

Chapter 4 Presentation of the case

This section presents the GED online distance course, taken as a case study. It covers details about the course organization, design, objectives, and activities. My observations on the course design and implementation, as well as analysis of the course materials are used to inform this overview.

4.1. Course design

At an organizational level, the online course was designed and implemented by the University of Oulu. It was financially supported and promoted by a network of Finnish Universities (UniPID) brought together to advance research collaboration on international development. For this network, developing the course helped to promote activities on international development and collaboration among Finnish universities.

The course design was typical of distance courses from the third generation as a small organization team was managing the course (Bates, 2005). In the course materials, the organization team was officially composed of a professor and a junior research assistant. The junior research assistant worked from September 2019 to May 2020 to design and facilitate the course. She was referred to as the course coordinator. The professor was consulted during the design process. During the course implementation, she oversaw some of the gradings and participated in learning activities. Another Ph.D. researcher regularly participated in the course, by attending meetings with the organization team and taking part in learning activities. These three persons are named instructors in the findings. Moreover, other academics were consulted during the design process and participated in learning activities. Those who participated in the webinars are referred to as panelists in this study. The task division in the organization team epitomizes the increasingly collaborative nature of academic projects and the academic labor intensification. Universities use strategies, such as relying on interns or multiple actors, to carry out projects while cutting cost and not overburdening academics.

In terms of students, the course was open to anyone enrolled in a UniPID member university. It was thus not an open course, but it was free of charge. It targeted mostly master's students, from any faculty and any major. Sixty-five students were primarily enrolled. The course was in English and thus made available to national and international students. International students were exchange students or students enrolled in international programs. Students collaborated at distance, even if some of them were studying in the same university. In addition, some students were in Finland while others were studying at distance, from another country. This course was emblematic of the recent process of internationalization in Finnish higher education. One current strategy for internationalization is to develop courses in a foreign language of instruction, in this case English (Ursin, 2019). Finally, this course is typical of the rise of on-campus universities as providers of online distance education to diversify their offer and promote blended forms of learning. Those elements motivated the choice of this course as a case study.

Besides, this course was interesting because it adopted a decolonial perspective on global education development, as indicated by the learning objectives:

Recognize the various perspectives on Global Education Development.

Reflect on global education development and education in society using the decolonial framework.

Discuss, compare and critique country-specific data on SDG 4 to demonstrate a nuanced understanding of trends, challenges and issues related to global education development in specific contexts.

Explore key global education policy documents to recognize and analyze the role of organizations and different stakeholders at global, national and local levels.

Develop research skills to critique and reflect on SDG 4 and global education development.

Demonstrate collaborative learning and critical thinking to explore decolonial options in global education development.

<div align="right">(Extract from the course materials)</div>

The course encouraged students to adopt a critical stance and to reflect on the continuous prevalence of colonial patterns in education development. The decolonial theory used was based on Mignolo's work, to challenge the Eurocentric thought and encourage "the enunciation and expression of non-Western" representations (Mignolo, 2000, as cited in Zavala, 2016, pp.2). According to these theorists, the decolonial project does not only deconstruct the idea of modernity by highlighting its link with colonialism but also allows "new ways of seeing and being in the world" (Zavala, 2016, pp.2). It aims to dismantle colonial relations of power and conceptions of knowledge (Maldonado-Torres 2007, as cited in Adam, 2019, pp.370). From the instructors' perspectives, decolonial theories were not only used in the course content, but also in its design and pedagogical approaches (Menon et al., 2020). Through its focus on education development, the course also drew on the traditional field of development aid cooperation. It is an older form of current internationalization patterns (Haapakoski & Stein, 2018).
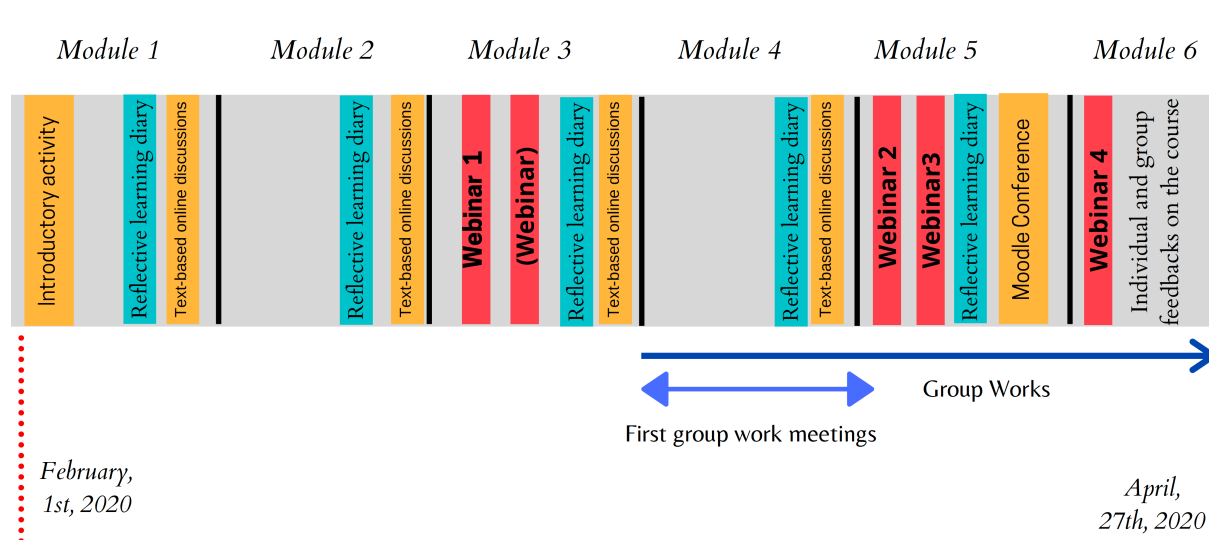
4.2. Course activities

Figure 1: Summarized overview of the course activities

As shown in *Figure 1*, the course was organized in six modules, running every two weeks. In total, the course ran twelve weeks in Spring 2020 (February 2020 – April 2020). Each module had specific course contents and ended with a list of specified tasks.

The course was composed of individual and collaborative activities. The first half of the course mostly focused on individual tasks: readings articles, watching videos, or submitting individual tasks. However, a few activities involved interactions with other students using online discussions during this first half of the course. For instance, during Module 1, students were asked to introduce themselves in a forum. It is referred to as the "introductory activity". Besides, students were asked to answer questions on the course content every two weeks. They could either publish their posts on a forum in Moodle, the LMS used for the course, or on the course's Twitter page. In *Figure 1*, they are referred to as "online text-based discussions". After each module, throughout the course, students had to write an entry in their personal reflective learning diaries. During Module 3, two webinars were organized. The first one was a panel, in which the instructors and five panelists participated. The second one gathered students and instructors and was not observed (see *Data collection*).

The second half of the course (Module 4 to 6) was based on group tasks, supplemented by individual reflective learning diaries. The first group work meeting, analyzed in this research, occurred during Module 4. Out of this meeting, groups had to publish on a Moodle forum or on Twitter a summary of what they discussed. In the findings, webinars and group meetings are referred to as "online video-based discussions".

In Module 5, an online text-based conference, referred to as the "Moodle Conference" in the course, was organized. Working groups had to prepare a presentation on the course content. Each group was allocated a time during the day to post it on the forum on Moodle. They then needed to review two other groups' presentations by the end of the day. What is more, two webinars were organized during Module 5. They occurred on the same day to enable more students to join in. Finally, the learning diary for Module 5 was different from previous learning diaries. Students were encouraged to reflect from a personal perspective on the impact of Covid-19 and on their experiences of the course activities.

Finally, during Module 6, students gave individual and group feedback about the course. A final webinar was organized. Three instructors then addressed the questions and remarks of the students.

From this outline, it follows that the course combined traditionally-called online synchronous and asynchronous interactions, thus enabling flexible learning to a certain extent. There was no face-to-face interaction. It removed some geographical and time constraints from participants (Bates, 2005). Students could "learn at their own pace, in accordance with their schedule" (Kaplan & Haenlein, 2016, pp.443). However, students had regular deadlines. Therefore, the course was not a self-paced independent study. Moreover, from the third module onwards, online synchronous interactions were regularly organized. This course is typical of the third generation of distance education characterized by "two-way communication media such as the Internet or video-conferencing" for interactions with the instructors and among students (Bates, 2005, pp.7).

The course used a complex set of technologies. The course had a platform on Moodle, provided by the University of Oulu. It was used to provide content in multimedia forms (text, link, videos, interactive image), to communicate on organizational aspects between students and coordinators, to discuss course topics between students in forums, and, last but not least, for students to submit tasks. Moodle is a free and open source LMS composed of a complex combination of technologies, including discussion forums. Etymologically, forum refers to a marketplace in Ancient Roma, where, among other things, public discussions used to occur

(Encyclopaedia Britannica Editors, 2020; History.com Editors, 2018). Forums were later used with referral to the internet, as a space for online discussions. In the Moodle, forums enable students and instructors to interact by postings comments, images, and media. Several posts in a row form a thread. During the course, texts, videos, and pictures were published.

Besides, Twitter was used in the course as an alternative way to organize bi-weekly online discussions. The course had its own Twitter page. Twitter is a micro-blogging and social network site. Twitter is largely an open platform as anyone can see the content if they have an account on the platform.

In addition, Zoom's video-conferencing tool was used in the course to organize online webinars and meetings. Zoom is commercialized by a company from the United States. It provides software for video and audio calls and online chat. It can be used at a smaller scale for meetings or with more participants. Zoom is a complex combination of technologies. Among the basic functionalities relevant to this analysis, participants can switch on and off their camera and their audio. They can also use a chatbox, which is a text-based synchronous interactive technology, to communicate with each other and the group. Participants appear in the screen in boxes, with their username and their face is they have the camera on. All participants can see the number of participants. Only one person can speak and appear on the main screen at a time.

Chapter 5 Methodology

This chapter discusses the methodological approach of this research. It starts with an explanation of the social constructivist and qualitative foundations of this study. It then describes the case study research design, a case study with embedded comparative elements, and the research strategy: a mainly qualitative study, with elements of mixed-methods. The methods for data collection and the way instruments were designed is later outlined. The next section presents the comprehensive analytical method used for the different data instruments: a combination of content analysis, interaction analysis, and basic descriptive statistics. The remaining sections cover the issues of quality and ethics.

5.1. Epistemological concerns

A social constructivism theoretical approach and a qualitative research strategy form the main foundations of this study, and in turn imply certain ontological, epistemological, and axiological assumptions.

Ontologically, social constructivism is opposed to objectivism and stems from constructivism. Constructivism "asserts that social phenomena and their meaning are continually accomplished by social actors" (Bryman, 2012, pp.33). Social realities do not have essence: "their meaning is constructed in and through interaction" (ibid.). Adding the adjective "social" to constructivism has two implications. Firstly, it denotes that constructivism is not pushed to its extreme, that would argue that no external reality exists (Bryman, 2012). This research recognizes how social structures and interactions embedded in specific contexts shape individuals' interpretations (Creswell & Poth, 2007). Secondly, it recognizes that subjective meanings are not simply imprinted on individuals but are formed through interactions "with others (hence social constructivism) and through historical and cultural norms that operate in individuals' lives" (ibid., pp.21). Therefore, this study goes beyond the analysis of individuals' experiences and interpretations of social realities.

Epistemologically, social constructivism is concerned with understanding the meaning of human actions within social interactions, in contrast with positivism (Usher, 1996). These meanings need to be interpreted in relation to the social values, norms, beliefs, practices, and assumptions in which individuals are immersed (ibid.). These elements influence the way social interactions occur. Social constructivism relies on qualitative methods to understand subjective and culturally-situated meanings, but can also utilize quantitative methods, to grasp how meaning influence actions and interactions, as in the use of basic descriptive statistics in this study. In addition, social constructivism pictures the production of knowledge as an interpretative process (ibid.), therefore, it is always subjective because researchers are situated within specific social contexts. They are influenced by their background, beliefs, and practices (ibid.).

In terms of axiology, social realities, such as educational technologies or social presence, are neither intrinsically positive, negative, or value-free. They are not value-free because they always reflect social values and interests (ibid.). They are neither positive nor negative in a deterministic way because they always are a negotiation between human agency and the constraints imposed by broader processes.

5.2. Research strategy and design

These philosophical assumptions have implications for the research strategy. This study mainly implements a qualitative research strategy, complemented with basic descriptive statistics.

According to Creswell & Poth (2007), adopting a qualitative strategy implies certain assumptions. In epistemological terms, as a researcher, I try to minimize the distance with participants (ibid.). I recognize the "value-laden nature of the study and actively report (its) values and biases" (ibid., pp.18). In other words, I need to reflect on my position as a researcher Finally, the research process tends to be inductive and "shaped by the researcher's experience in collecting and analyzing the data", though deductive aspects are also incorporated in this study (ibid., pp.19). Therefore, this research incorporates both inductive and deductive approach (see *Data analysis*).

Besides the qualitative strategy, this study incorporates elements of mixed-methods, by using basic descriptive statistics. Several elements explain why this research is not qualified as a mixed-method study but as a qualitative study with elements of mixed-methods. Most of the data was collected through qualitative instruments, such as semi-structured interviews, and unstructured observations, except for the survey questionnaires. The latter are not analyzed in the findings but offer background information on participants to help the readers judging the transferability of the study, through recognition of patterns (Larsson, 2009). In the data analysis, quantitative methods were only used in a secondary way, to compare social presence, across students and instructors, in particular when examining the use of Zoom chatbox, during the webinars. They do not contradict the social constructivist framework but allow to shade light social and power relations embedded in the way participation is distributed. Finally, participations in the different learning activities were measured to provide contextual elements and thus increase transparency and quality. In this study, quantitative strategies are incorporating by carrying in out "limited amount of quantification of (the) data", also called quasi-quantification (Bryman, 2010, pp.621). It gives the reader a sense of the "extent to which certain beliefs are held or a certain form of behavior occurs" (ibid., pp.625). Consequently, this study exemplifies how the distinction between qualitative and quantitative strategies are not clear-cut (Bryman, 2012).

More specifically, this study adopts a qualitative comparative method to compare social presence through educational technologies in different learning activities. Qualitative comparative methods acknowledge the complexity of each comparative element (Palmberger & Gingrich, 2014). The aim of comparing is to understand rather than measure difference (Lewis, 2003, as cited in Palmberger & Gingrich, 2014, pp.3). In addition, qualitative comparison gives justice to the context of each comparative element (Palmberger & Gingrich, 2014). It balances universalism and relativism (ibid.) linking to the premises on which this study is based: analyzing the way individuals create meanings through their actions and interactions, while recognizing the constraints imposed on this meaning-making process.

This study is not a comparative case study as defined by Bartlett and Vavrus (2016), in which several cases are compared, but is closer to the nested comparative case study in which comparisons are made within a given case between nested elements (Thomas, 2011). The comparisons are used to understand differences and similarities in the way social presence is performed and negotiated, by drawing on contextual elements, such as instructions, technologies, population, social norms. It does not aim to explain differences and similarities in light of a variable but to give an understanding of them considering a complex set of contextual elements. Different dimensions are compared in this study: learning activities are compared to delve into subjective presence, educational technologies are compared to analyze physical presence and the different aspects of collective presence are compared in time.

Comparisons are also used at more micro-levels of the analysis. For instance, instructors' and students' physical presences in and across these technologies are compared. The use of different educational technologies is compared across learning activities and the perceptions of the group's shared identity are compared among students and instructors. Basic descriptive statistics support micro-levels comparisons for example of students' and instructors' participation in the chatbox available in Zoom, during webinars.

Moreover, this research follows a case study design, involving "the study of an issue explored through one or more cases within a bounded system" (Creswell & Poth, 2007, pp.73). The case study is a distance online course, bounded in the context of Finnish higher education. A case study is a useful tool to reveal the different ways social presence is performed and negotiated through educational technology across learning activities as it provides an in-depth analysis, by using multiple data sources (Thomas, 2011; Creswell & Poth, 2007). Here, survey questionnaires, interviews, observations, learning diaries, and the course material were used. They provide different outlooks to the analysis of the learning activities occurring during the course. Besides, it is common to use case studies to inform project design and implementation, as in this study (Gray, 2004, pp.123). This case study is a disciplined configurative case, "where established theories are used to explain a case" (Thomas, 2011, pp.51). To conclude, this study is a case study with nested qualitative comparisons.

5.3. Case and participants' selection

This section presents how the case was chosen, accessed and limits to the case defined. It then moves to strategies to recruit participants and gives an overview of participants' background.

5.3.1. Choosing and delimiting the case

In September 2020, I started studying at the University of Oulu. There, I heard about the project of designing and implementing this online distance course. *Figure 2* outlines the preparatory stage of the research. I started to be in contact with the course's instructors in September 2019. The instructors approved my research project and agreed to help me carry it out. Later, UniPID was contacted to obtain its agreement. Individual agreements were not asked to the other academics who participated in the course, as the instructors' agreement was considered sufficient. I offered to make a research report drawing some practical implications from the findings. A pre-research stage took place from September 2020 to January 2020, while the course was being designed. I attended meetings during which the course design was discussed with the instructors. Becoming familiar with the course's design helped me to design my research and plan data the collection. In January 2020, I began a research internship with the course instructors. This two-months internship aimed to plan the research and generate the data. I also agreed on details about the research plan with the instructors.
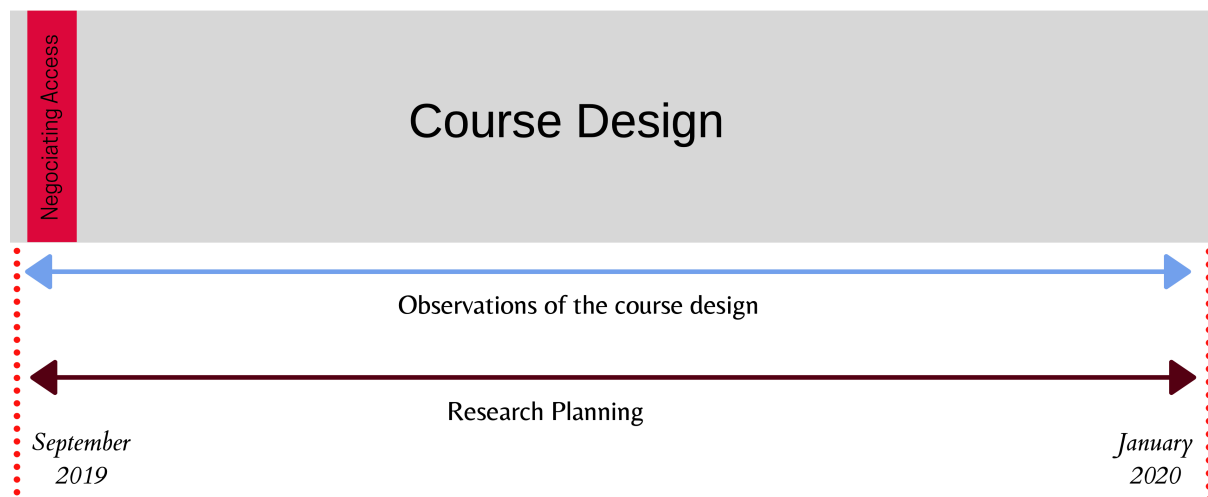
Figure 2: Preparatory stage of the research: negotiating access and observing the course design to inform research planning

Several reasons motivated the choice of this case. Firstly, it was selected because I had easy access to it. I heard about it when studying at the same university in which the instructors were working. It helped me to establish contact and enabled a thorough collaboration. Secondly, this course was also selected because it was run for the first time. This research was a good opportunity to reflect on its implementation. Thirdly, this course presented a theoretical interest. The course was typical of broader dynamics in online distance education and Finnish higher education. Firstly, it was emblematic of the ways online distance education is currently integrated into blended forms of education, in on-campus universities. Secondly, it embodied the third generation of distance education that incorporates a complex set of technological tools, such LMSs, video-conferencing tools, and social network sites. Finally, it was representative of current trends in internationalization in higher education. However, this course was also unique in the way it was implemented on a national level to foster collaboration between Finnish universities. Moreover, it was informed by the decolonial theory in its content and pedagogy, which is not common in online education This study did not analyze the course using a decolonial option. However, this specificity was considered in the conclusion when presenting practical implications. Those elements motivated the choice of this course as a case study.

To avoid being overwhelmed by the amount of data, the analysis of the case wass narrowed down in the following ways (Gray, 2004). Analytically, some of the data produced during the course was not considered because it did not relate to the research questions (see *Data collection*). Only those in which students interacted with others or reflected on their learning experience were considered. Spatially, the analysis focused on this course, offered by the University of Oulu. More precisely, I analyzed the activities that occurred in the course's learning online environments: the LMS and its associated platforms (Twitter and Zoom). Therefore, all the learning activities related to the course, such as those occurring offline, were not be considered because they were not accessible. Finally, only the data produced by students who agreed to participate in the study were analyzed individually. Timely, this study covered the whole course, from its design (September 2019 – January 2020) to its implementation (January 2020 – April 2020). However, observations of the course design were not analyzed in the findings. During the research process, they were used to increase familiarity with the course and to orient the research questions. In the thesis, they informed the case's presentation.

5.3.2. Recruiting participants

In February 2020, the online distance course began. At the beginning of the course, sixty-five students were enrolled. Students were recruited through the UniPID network. The course was advertised among the Finnish universities part of the network. All degree and exchange students studying at UniPID member universities could enroll.

The research project was presented to the students at the very beginning of the course. In the course's LMS platform, a link to an online survey was indicated. This survey was composed of a presentation of the research, a consent form, and a survey questionnaire (see *Appendixes A* and *C*). Consent forms were collected for three weeks. Six reminders were sent on the forum or by email by the researcher or by the instructors. The instructors assisted in recruiting participants and establishing the study's credibility (Salmons, 2012). In the end, twenty-one students gave their consent and three indicated that they did not want to take part in the study. Several reasons explain the low participation rate. Generally, online surveys are characterized by low completion rates (Bryman, 2012). Moreover, participants may have felt overwhelmed by the amount of information and tasks provided in the course platform. Besides, some students may have already left the course and were thus not interested in the research project. According to the instructors, among the forty-four non-participants, only sixteen completed the course and received a final grade. Finally, some students may have felt uncomfortable about their learning activities being analyzed by a researcher.

The low participation rate constitutes as a limitation of this study as participants may not be representative of all students who enrolled on the course. However, it is mitigated by the fact that this study does not focus on understanding the case itself but uses it to apply a theory. Moreover, information about research participants enables us to reflect on the nature of the population, thus getting rid of potential biases.

5.3.3. The participants

The results from the survey questionnaire are used to present participants' background. From an educational perspective, most participants were studying at a master's level (12), followed by bachelor's level (7) and Ph.Ds. level (1). One student indicated "others". The interview indicated that this participant was studying as part of a professional development project. Participants were currently studying at nine different Finnish universities. Some were studying at the same university.

Major of the degree programme
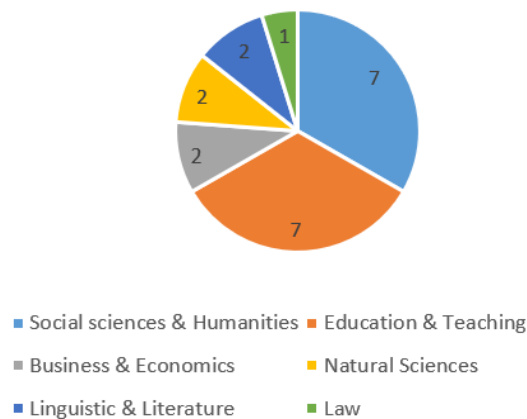
*Figure 3: Results from the question "in what degree program are you currently enrolled in?"
(Major)*

Figure 3 shows that majors were multidisciplinary as students were majoring in six different areas. Students majoring in social sciences and humanities, education and teaching were the most represented, comprising of seven students and two students were studying natural sciences. Therefore, different disciplines were represented, despite other disciplines apart from natural sciences being dominant.

Students' Status
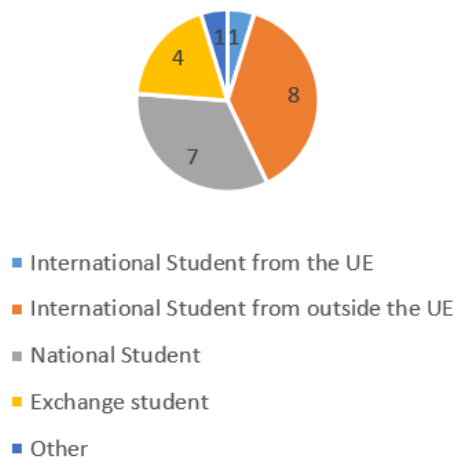
*Figure 4: Results from the question "What is your status at the university you are currently
enrolled in?"*

Figure 4 indicates that student's status varied: seven were national students, nine were international students permanently enrolled in a Finnish university, four were exchange students from three countries in Central and Southern Europe. One indicated "others", as this course was taken as part of professional training. Consequently, there were mainly foreign students, thirteen in total, who were studying there as international and exchange students. However, there was a significant number of national students, despite the course being in English.

In terms of online experiences, twenty students indicated that they use electronic devices for educational purposes every day, one indicated once a week, fourteen participants had already been enrolled in an online course, an online program, or a MOOC, four did not, and three indicated they did not know. In general, the participants demonstrated familiarity with the use of electronic devices for educational purposes. Many students were not novices to online distance education either. They all studied at Finnish universities, in which different technologies were commonly used. This demonstrates a certain level of homogeneity among the group.

As for demographic information, fourteen participants identified as female, five as male, one as non-binary and one participant did not want to answer this question. Female students thus were the majority. The participants were born between 1977 and 1999: twelves students were born in the 1990s, eight in the 1980s and in the 1970s.

A small majority of twelve students were from the Global North. Six students were born in Finland, five students were born in countries in the European Union, one in North America, and one student was from North-East Asia. The Global South countries were well represented, with nine in total: four students were born in South and South-East Asia, three students were born in South America, one student was born in East Africa, and one was born in the ex-USSR. Only three students indicated English as their native language. Therefore, most of the students spoke English as a second language.

5.4. Data instruments

This study uses survey questionnaires, interviews, observations, learning diaries, and course materials. I now inform how they were designed and used.

5.4.1. Survey questionnaires

The survey questionnaires were designed using the Webropol software (http://webropol.oulu.fi/). They were conceived in a semi-structured manner (Cohen, Manion & Morrison, 2011). They were composed of mainly closed questions and one open question. The number of open questions was low to limit the time spent to complete the survey questionnaire to fifteen minutes. For some questions, the respondents could indicate their responses. For others, they had to choose among pre-set answers, sometimes with the possibility to comment on their choices. Finally, some questions used scales. The consent forms and the survey questionnaires were first reviewed by the supervisor and several master's students. Survey questionnaires were then piloted with two students from the GED course who did not take part in the research and they were finally approved by the instructors.

Originally, the survey questionnaire covered a wide range of information (current studies, education background, online experiences, course expectations, and demographic information) as shown by *Appendix C*. This data was beyond the final study focus and was thus not integrated in the final report. Only basic descriptive information about participants' current studies, online experiences, and demographics were used to present participants (see *The participants*). The other questions were discarded because they did not fit the research question.

Survey questionnaires thus gave details on participants' affiliated university, study level, major, status, online experiences, gender, age, country of origin, and native language. These elements were used to provide information about participants' background and help the readers linking this study to other cases. Moreover, it punctually provided elements to interpret the research findings, by indicating how the characteristics of participants' background impinged on the results.

5.4.2. Observations

The main source of data were observations of discussions that occurred during the course. Observations provided rich data and helped to contextualize behaviors (Gray, 2004; Bryman, 2012). By observing different learning activities, the link between behaviors and contexts could be unraveled (Bryman, 2012). Observations also captured the influence of the physical and material environment (Mulhall, 2003, as cited in Morgan et al., 2017, pp.1061). As explained in the next sections, it was found difficult to discuss social presence during interviews: students tend to answer in general terms rather than based on specific experiences in the course. On the contrary, observations uncovered "structures, processes, and behaviors the interviewed participants may (have been) unware of" (Furlong, 2012, as cited in Morgan et al., 2017, pp.1060). They thus well complemented self-report instruments (Morgan et al., 2017). For this study, I observed online video-based discussions on Zoom and online text-based discussions in Moodle forums and Twitter.

Video-based online discussions

In total, I observed nine video-based online discussions that occurred during webinars and group meetings (see *Data collection*). Observations were mostly non-participatory, but participants were aware of my presence. During the discussions, I did not put the video and the audio and did not participate in the discussions. However, I participated when students were directly addressing me.

Observation notes were taken, and the sessions were observed from the beginning to the end. However, the beginning corresponded to the moment I joined the sessions. In some cases, some participants were already present when I joined. The interactions before I joined were not reported, except if they were parts of the recordings.

Observations did not follow a standardized guideline but I established an observation protocol to cover elements, such as, the "physical setting, particular events and activities, and (my) own reactions (Bogdan & Biklen, 1992, as cited in Creswell & Poth, 2007, pp.134). for each observation, I reported basic information (list of participants, date, and time). Moreover, I reported participants' speech. Each time an individual was participating in the discussion, it was indicated. I indicated the content of what was said, as well. However, when what was said focused on the course content, it was noted synthetically. Other information was included in the observation notes such as the visual elements visible in the video, the way participants used the video and the audio, as well as any outstanding occurrences with the audio and the video: for instance, when a participant accidentally kept the video or the audio. Finally, in the observation notes, analytical notes were also included, along with the factual observation report.

To help me formulating them, I compiled these potential exploratory focuses, before the observations: is there any interaction that illustrates social norms; how/do students introduce themselves and their personal experiences; can differences or similarities be found with observations of online text-based discussions and other online video-based discussions; do students and instructors comment on the group-as-a-whole; what do participants show of themselves through the camera; is there any sign of interpersonal relations between participants.

The observations notes were completed with data collected separately: screenshots taken during the observations and a copy of the interactions that occurred in the chatbox of Zoom during the sessions observed.

Text-based online discussions

Secondly, I observed text-based online discussions, occurring in Moodle forums or on Twitter. These discussions were part of the course activities. Instructions were designed by the instructors. It is not easy to distinguish observations of text-based online interactions and content analysis of documents. This is due to the asynchronous and text-based nature of these interactions. Hancock and Algozzine (2006) argue that the materials extracted from the internet are documents. On the contrary, theorists of digital anthropology assume that "textual/visual exchanges are equivalent of social interaction" (Aouragh, 2018, pp.5). In this study, they are defined as observations of social interactions.

I analyzed two kinds of online text-based online discussions. On the one hand, I analyzed the introductory activity, in which students were asked to introduce themselves, for its own sake to explore how students performed and negotiated their subjective presence. On the other hand, I examined the posts individually or collectively published by students, where they had to answer a question on the course content designed by in the instructors. Those posts informed physical presence and were triangulated with interviews to analyze participants' perceptions and uses of online text-based discussions tools. They were also used to compare instructors' and students' participation in online text-based discussions. Online text-based discussions mostly used text, but also photographs and videos. Length and date of publication were also indicated for each post in the platform.

I did not participate in these online text-based discussions, except by introducing myself and my research, in the introductory activity. Therefore, my study cannot be defined as an online ethnography (Bryman, 2012). In theory, research participants were aware that I was observing them, as it was mentioned on the consent form. However, they probably forgot about my presence.

5.4.3. Interviews

Interviews enabled richer and more personalized data than survey questionnaires (Mason, 2002, as cited in Hancock & Algozzine, 2006, pp.39). They also offered students' perceptions and thus complemented observations.

The interviews were held online because of the geographical dispersion of interviewees. They were semi-structured, which is common in case studies (Hancock & Algozzine, 2006). They followed an interview guide (see *Appendix B*). This interview guide was composed of fifteen questions organized into five sections: students' general impression about the course, their experience of social presence during, their perception of using Moodle, and Twitter platforms and some general information about them. The interview guide was reviewed by the supervisors and several master's degree students. It was also piloted with a student participating in the online course but who did not take part in the research.

During the interviewing process, it appeared that it was hard to generate information about social presence. Interviews revealed weaknesses in the initial research questions. Indeed, after the interview was piloted, the course design changed, which made the interview guide inappropriate when the interviews were conducted. Therefore, it was decided to use interviews in a secondary way. They were only analyzed to provide students' experiences and reflections on specific course activities and technologies used in the course (Bryman, 2012).

Several reasons explained the inadequacy of interviews, as they were initially planned. Firstly, students were interviewed at mid-course. Since the beginning of the course, they did

not experience a lot of interactions with other students. Consequently, they discussed in general terms, rather than reflecting on specific experiences. This was probably accentuated by some participants studying education and thus being used to discuss it in more theoretical terms. Secondly, the topic itself – educational technology – was likely to generate opinions. In public debates, technology doomsters usually oppose techno-romantics. Similarly, interviewees tended to share their opinions with me, rather than reflecting on their own experiences. It was also probably due to poorly framed questions and a clumsy research focus. While interviewing, I decided to adapt the interview guide and ask prompt questions, inviting interviewees to reflect on learning activities and educational technologies. Finally, social presence was not easy to address in interviews because it encompassed behaviors and processes that participants may take for granted, judge as irrelevant or may not be aware of (Morgan et al., 2017, pp.1061).

5.4.4. Reflective learning diaries

Final individual reflective learning diaries from the fourteen participants who submitted it were analyzed. As opposed to other learning diaries submitted during the course, this reflective learning diary was included because it was relevant to the research question, even if it was designed by the instructors and not for the research purposes. Instructors asked students to reflect from a personal level on their experience of the Covid-19 pandemic and of three course activities: the Moodle conference, the webinars, and the group work. It could thus be used to grasp students' experiences of activities that occurred at the end of the course. It complemented interviews, which occurred at the mid-term of the course.

5.4.5. Course material

The course material was collected and provided information about the course, in general, and specific learning activities. They were used in the presentation of the case and in the findings, to contextualize learning activities, in terms of pedagogical design. Also, my observations of the course design and implementation, materialized in meeting notes and emails exchanged with the instructors was used to complement with organizational information the presentation of the case.

To summarize, observations were used to compare how technologies were used to perform social presence, across learning activities. They were complemented with interviews and learning diaries that informed students' experiences of these learning events. Finally, survey questionnaires were used to provide background information on participants; and course material to contextualize the course and its activities.

5.5. Data collection

The study initially collected data from questionnaires, observations of text-based online discussions, course materials, and interviews. Other sources emerged during the course implementation, such as final reflective learning diaries, observations of video-based online discussions. Data collection plans were modified during the research process due to shifts in the course design and in the research questions, that made new data relevant to this study. I will now outline how and when each data source was collected, and the rationales that guided the choices made. All the data was collected in English.

5.5.1. Survey questionnaires

Online self-completion survey questionnaires were chosen because they were easy to administer, cheap, and flexible (Bryman, 2012; Toepoel, 2017). Participants could complete them when they felt like. At the beginning of the course, survey questionnaires were gathered at the same time as the consent forms. Questionnaires were made optional to increase the completion rate. All twenty-one research participants completed the survey questionnaire. They were online survey questionnaires, accessible through a link published on the course's Moodle platform. Respondents could complete them on their own devices. Survey questionnaires were gathered for three weeks. Six reminders were sent on the forum or by email by the researcher or by the instructors. Survey questionnaires were extracted from the survey software as Excel documents and stored in a secure box.

5.5.2. Observations

Online text-based discussions

I observed the online text-based discussions that occurred in forums in the course's LMS and on the course Twitter page throughout the course. Posts were published by individual students or groups, for each module, as part of the learning activities. The posts were regularly extracted from the platforms and stored in a secure box. Other forms of online interactions, such as the email sent by the instructors to the student's cohort and forums used as space for students to ask questions, were not analyzed in detail because they focused on organization issues. Video introductions were transcribed. The transcriptions were analyzed

Online video-based discussions

At mid-course, the instructors decided to include more opportunities for interaction. New activities, such as webinars and group work were included. The instructors let me observe the webinars and students' first online group work meetings.

I observed four webinars, in which students, instructors, and panelists were interacting. They occurred between February 2020 and April 2020. I did not analyze one of the webinar organized during Module 3, because the video recording was lost by instructors. I used only the individual data from participants, instructors, and panelists. Other students from this course and from other courses attended the first webinar, however, their individual data was not used. The webinars' observations' duration ranged from 1h48 to 2h12. A compilation of webinars observations notes corresponded to a document of 13 256 words.

I observed the first meeting of four working groups, comprising of students who accepted to participate in my research. In Module 4, participants were gathered in groups of three to five to work together for the rest of the course. Their first interaction occurred between March 23rd and March 30th 2020. The activity was mandatory and organized under the initiative of the course instructors, who allowed me to observe it. However, students were asked for permission by email before observing the meeting. One non-research participant accidentally joined one of the groups. That student was asked for permission and completed a consent form to allow me to use the data from this meeting. The first group work meeting was chosen because, being the first-time group members met, it was relevant to the research questions. The group works continued in the next modules, however their meetings were not observed. It may have been perceived as intrusive by participants and would have produced an amount of data difficult to process.

The group work observations' duration ranged from forty-three minutes to one hour and thirty-one minutes. A compilation of group work observation notes corresponds to a document of 11 073 words. Another group work meeting was observed, but the observation notes were lost because the device in which the notes were stored became damaged on the day of the observation.

Webinars and online group meetings form the observations of video-based online discussions. Notes were taken during the observation. The observations were also recorded with audio and video, when possible, or by me or by the instructors. The recordings were later watched, and the observations were completed. Annotations during and after the observations were distinguished. The observation notes were anonymized and stored in a secure box with the recordings.

5.5.3. Interviews

At the end of the survey, students were asked if they accepted being interviewed. If so, they indicated their emails. Twelve participants accepted being contacted for interviews. Among them, three had dropped out of the course at an early stage and the nine others were contacted. Out of these, two were no longer available probably because of work and the personal burden created by the corona pandemic and one did not answer at all. The choice of interviewees depended on their participation during the course and their willingness to be interviewed. Six online interviews were conducted between March 23rd, and March 30th 2020. Before the interviews, an email was sent to the interviewees with guidance on joining the online interview. It aimed to make sure that interviewees did not face technical issues and chose an adequate setting for the interview (Hancock & Algozzine, 2006). Interviewees were recorded (audio recording for all, video recording when possible). They lasted between thirty-five min and one hour and five minutess. Interviewees were asked for oral permission to record. The recordings were listened to before the making of the transcription. The interviews were transcribed very soon after they were conducted. The transcriptions were checked by re-listening to the full recording. Interviews were transcribed in an Excel document as they were heard in the recording. Small modifications were made before quoting them in this report to delete repetitions and informal words ("like", "let's say", "you know") and improve readability. The interview transcriptions were anonymized and stored in a secure box, with the recordings.

5.5.4. Learning diaries

During the research process, the final reflective learning diary was used, submitted in Module 5. Initially, reflective learning diaries were not included because they focused mostly in the course content. This final reflective learning diary was not defined yet in the course design phase. During the course implementation, instructors decided to orientate the final reflective diary towards students' experiences of the course, which made it relevant to the research questions. Fourteen participants submitted the final reflective learning diary. Individual diaries took the form of documents submitted by students in the course's Moodle platform. They were downloaded from the course platform and stored in a secure box.

5.5.5. Course material

Finally, this study used the data published by instructors on the course's Moodle platform. It included the course and learning activities' descriptions and instructions. The data was extracted from the platform throughout the research process. It was copied in a Word document and was stored in a secure box. Instructions from learning activities that were not

analyzed in the study, such as individual tasks and the course resources (articles, instructional videos, etc.) were not collected.

After gathering these new sources of data, no more data was collected because the course was coming to an end. The rest of the data that could have been accessible was mostly orientated towards the course's content and organizational issues. Thus, I did not include other learning artifacts, such as reflective learning diaries or individual learning tasks, that focused on the content. In addition, the amount of data and the multiple sources collected already raised many challenges in data management, as common in qualitative research (Savenye & Robinson, 2005, pp.83). Therefore, it was decided that data saturation was reached and that the feedback provided by students on the course in Module will not be included. Moreover, the feedback given by students at the end of the course was not analyzed as they did not focus on social presence and were not made accessible to the researcher.

Figure 5 and *6* summarize data collection in relation to the course implementation's outline
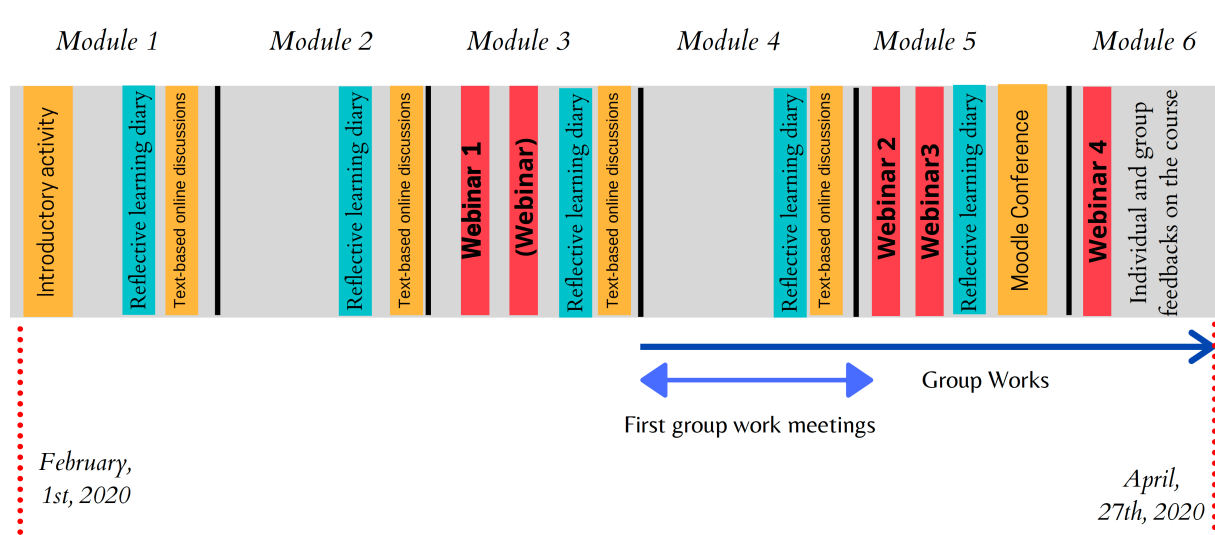
Figure 5: The outline of the course implementation
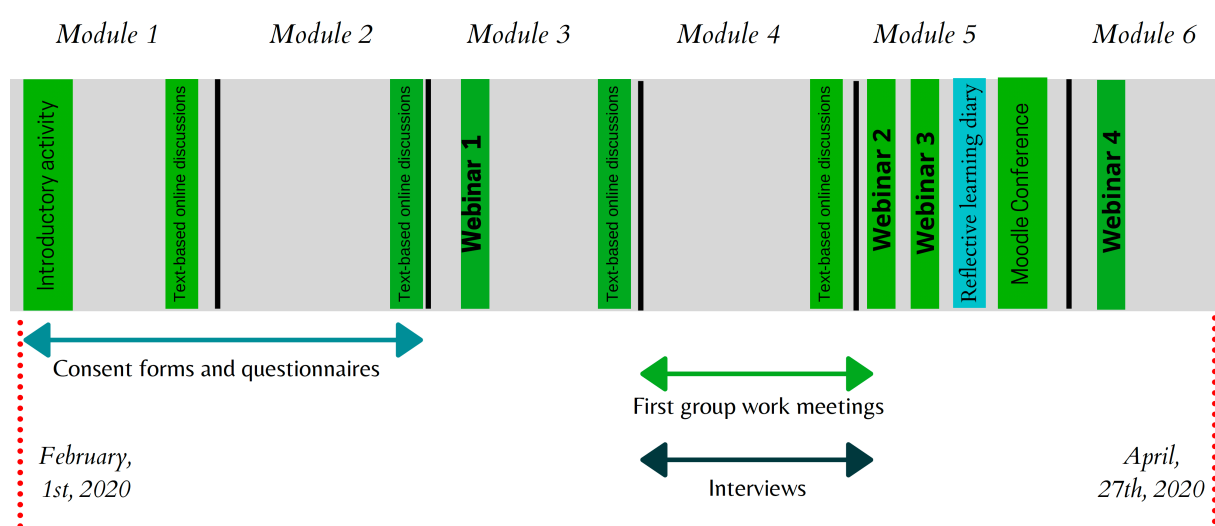
Figure 6: The outline of data collection

5.5.6. Participation in the course and in the research

Participation in the course and in the research fluctuated because participants dropped out or some learning activities observed were not mandatory. For clarity, participation in the research will be informed in this section. *Table 2* summarizes the number of participants per data sources and learning activities.

Table 2: Number of participants per different data sources

Students enrolled in the course	65
Participants in the research	21
Participants in the survey questionnaire	21
Participants interviewed	6
Participants in the introductory activity	20
Participants in the group work observations	12[1]
Participants in the final reflective learning diary	14

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[11] One of the group members was not participating in the research and was added to this group accidentally. This student was asked for consent to observe the group meeting.

Participants in webinar 2	4
Participants in webinar 3	5
Participants in webinar 4	9
Participants who completed the course	13

5.6. Analytical framework

This study mostly used content and interaction analysis, along with basic descriptive statistics. In this section, I will first describe the analytical process in general and then exposed it for each data source.

The study implemented a comprehensive data analysis, using different methods due to the variety of data sources. Firstly, content analysis was used to (1) investigate students' experiences and perceptions in interviews and learning diaries (2) explore the way students introduced themselves in text and pictures and shared personal background information in observations (3) examine the way the group was represented in students' and instructors' discourses, across data sources. Based on the way the concepts were operationalized (see *Concepts*), themes were identified in the data sources. The data relevant to those theme was then compiled and analyzed comparatively. For instance, I compiled and analyzed comparatively all the utterances in which students' and instructors were producing representations of the group-as-a-whole. This type of analysis is concerned with the content of what is said, rather than the way it is said. Therefore, it was complemented by interaction analysis for the online video-based observations. This study refers to interaction analysis, rather than conversational analysis, as in Bryman (2012), because the interactions analyzed involved several participants and did not concern only speeches, but other forms of interactions and data (chatbox, camera, sound). However, the principles are similar: interactions are analyzed to "uncover the underlying structures of talk in interaction and as such (the) achievement of order through interaction" (Bryman, 2012, pp.522). I was sensitive to the way interactions were structured and forged contextually, and the way the norms of interactions were modified (or not) in online settings. I thus examined turn-taking among participants and repair mechanisms, for instance (Bryman, 2012). Finally, basic descriptive statistics were used to process the data from the survey questionnaires and in some parts of the analysis, through limited quantification, in particular in the analysis of chatbox uses in the webinars.

The data analysis process was iterative, as advised by Gray (2004). Several rounds of analysis were organized. They were also required by the ongoing nature of data collection. The analysis was both inductive and deductive. It was inductive during the first round of analysis, as it was an exploratory stage. It was deductive in the second round of data analysis once the theoretical framework was established, based on the first round of analysis and further readings. The final round of data analysis occurred during the writing of the findings. In this stage, the analysis was much more focused. My attention was focused on the learning activities that emerged as essential or particularly revealing for the analysis (Angrosino, 2007). During the rounds of analysis, I kept track of the analytical choices in a journal.

The data was regularly represented and visualized in comparison tables, throughout the analysis (Creswell & Poth, 2007). It helped to draw comparisons and to show connections

between heterogeneous data sources. Finally, data on one learning activity was crystallized using multiple data sources - observations, survey questionnaires, and reflective learning diaries - and individual perspectives in the interviews and the learning diaries (Gray, 2004; Savenye & Robinson, 2005).

5.6.1. Survey questionnaires

Survey questionnaires were analyzed using basic descriptive statistics. Only the questions on participants' backgrounds were analyzed, including participants' affiliated university, study level, major, status, online experiences, gender, age, country of origin, and native language. Individual results were aggregated. Some of the results were represented in diagrams. Besides, individual survey questionnaires were punctually used in triangulation with other data sources.

5.6.2. Observations

Observations were analyzed using content and interaction analysis

Online text-based observations

The introductory activity and the other posts were analyzed in different ways because they were not used the same ways in the analysis.

The introductory activity was analyzed to inform the way subjective presence was socially constructed. Observations of online text-based discussions were triangulated with instructions given in the course material and students' perceptions of the activity in interviews. Posts were first analyzed and coded individually. They were then compiled in a comparative table, composed of the following elements.

- Basic information: medium used, length.
- Content: which elements of the activity's instructions are mentioned?
- Subjective presence: What educational background information is shared? Examples of educational background information were home university, major, host university. Do participants mention their nationality, if not, is other related information given? These categories emerged from the data.
- Picture: Do / How they comment on the picture?

Based on the comparison, the most illuminating examples were presented in more detail ways in the report.

Photo were analyzed based on content analysis in a comparative table composed of the following elements: body and eye orientation, distance (close/far), selfie (yes/no) smiling (yes/no), size (portrait, full body, half body). They were then analyzed individually. I described the background, the main subject, the other persons in the picture (if applicable), and whether the participant was visible. In the results, only the most significant pictures are analyzed individually.

Posts in forum discussions (Moodle) and on social network sites (Twitter) were used to examine the way students used online text-based discussions, based on content analysis and basic descriptive statistics. These analyses were also triangulated with the interviews. Indeed, I compared students' perceptions of forum discussions expressed in interviews with students' actual uses informed by the posts. The content of each post was not analyzed, except if it illuminated subjective presence. The analysis focused on measuring students' participation in

the discussions and the length of their post, and categorizing the writting styles (either academic or personalized). Students' posts on Moodle and Twitter were first coded individually and then compiled in a comparative table. The table was composed of the following elements.

- Writing styles: do they include smileys, references, quotations, specific page layout, note style sentences?
- Subjective presence: do participants use personal expressions?
- Length

Finally, only the instructions from the Moodle conference (Module 5) and from group works' online bi-weekly posts (Module 4) were analyzed.

Online video-based observations

Webinars and group work meetings were analyzed differently, using content and interactions analysis, and basic descriptive statistics.

Webinars were first analyzed individually. Using interaction analysis, the chronology of the interactions was drawn. Three moments were distinguished in the webinars: the session's introduction, the main discussion, and the session's closing. Then, I analyzed the dynamics of the interaction: how participation was distributed between students and instructors and across technologies and the instructors' roles. I compared between students and instructors, chat, audio, and video use. I analyzed in detail accidents that occurred during the webinar. I was sensitive to silences and disruptions (Creswell & Poth, 2007). I also analyze the way speech was regulated, through spoken instructions, for instance. Messages from the chats were analyzed using basic descriptive statistics. Messages' purposes were coded. For each purpose, I counted how many messages were published by students and instructors. Purposes emerged from the data. All the analyses were then compiled into a comparative table. I did not analyze the content of what was said, if it focused on the discussion content and on general course organization matters.

Group work was first analyzed individually. The chronology of the interaction was drawn, in line with interaction analysis. I distinguished off-task and on-task moments. Off-task moments were particularly relevant to analyze subjective presence. Observations were also coded using content analysis in an Excel document, but many themes were content-focused or task-focused. They were not relevant to the research questions. Therefore, it was decided to focus only on the themes which were relevant to the research question. They were compiled in a comparative table and focused on these dimensions:

- Do they introduce themselves in the beginning?
- Do they refer to personal experiences in the discussion?
- Do they refer to their country of origin in the discussion?
- Do they share personal background information?
- Do they ask each other personal questions?
- How is my presence as an observer perceived?

Online video-based observations were also analyzed using content analysis to inform the way the group was represented in students' and instructors' discourses.

5.6.3. Interviews

Interviews were analyzed using content analysis. They were only used to triangulate the observations. The analysis focused on students' experiences of certain learning activities and

technologies used in the course. The parts of the interview that were relevant to social presence were analyzed as well, such as the way interviewees perceived the group, the interpersonal relations they had prior to the course with other students, and issues related to identity. The rest of the interviews was not analyzed, because questions were irrelevant.

The interviews were not analyzed per sentence, but per unit of interactions, for instance, a tirade from the interviewee was considered as a unit. First, the structure of the interview was drawn to swiftly localize information and get a general sense of the interview. Secondly, the elements useful for cross-referencing were listed and then localized in the interviews. The list comprised of the following elements: before the introductory activity, introductory activities, students' complaints about Twitter, forum discussion, Twitter vs Moodle, webinars, group work, perceptions of the group, sense of community and existing interrelations in the group. These themes emerged from the knowledge of the course structure, the first round of analysis, and from the literature. For each category, the corresponding extracts from the interviews were compiled and analyzed.

5.6.4. Learning diaries

Learning diaries were used to triangulate the observations of certain learning activity. They provided more contextual details and students' experiences. Learning diaries were first analyzed individually, using content analysis. All reflective learning diaries were then compiled into a table. This table was used to localize the information useful for triangulation. The table had several components related to specific learning activities and technologies, such as group works, Moodle, webinar, learning diaries, Moodle conference. In the end, only the extracts that were relevant to social presence were analyzed in the findings. Extracts in which students provided feedbacks on learning activities were not considered, for instance.

5.6.5. Course materials

From the course materials, I analyzed the course description and specific learning activities' instructions using content analysis. It was used to provide the instructional design of the course and specific learning activities. The analysis of specific learning activities' instructions focused on the pedagogical objectives – the extent to which the emphasis was on subjective levels – and on the way technologies were used in the activity.

5.7. Quality

There are considerable debates about how quality should be assessed in qualitative research (Savenye & Robinson, 2005). Tracy (2010) advocates for the need for universal criteria applicable to all paradigms in qualitative research, for the sake of better communicating with powerholders and promoting dialogue between different qualitative paradigms. This study is assessed considering her eight criteria: a worthy topic, rich rigor, sincerity, credibility, resonance, transferability, significant contribution, and meaningful coherence. The last criterion, ethics, is dealt with in a separate section (see *Ethics)*.

Worthy topics are defined by Tracy as either relevant, timely, significant, or evocative. Educational technology and social presence can be considered as worthy topics (ibid.). In the last decades, they have been concerning for educational policies and stakeholders. The Covid-19 lockdown made this research particularly timely and evocative. In addition, this study is theoretically significant as it addresses a lack of social constructivist account of educational technologies and social presence. It is worthy because it has the potential to challenges widely

spread taken-for-granted assumptions about the neutrality and deterministic power of technologies.

This study strives to achieve rich rigor in multiple ways. Richness pervades in the variety and complexity of data sources used. The data instruments were planned in close relations with the course design. Therefore, instruments were more likely to grasp the courses' complexity and nuances (ibid.). Rigor procedures were used for data collection and analysis. Interviews and survey questionnaires were piloted. I listened to interviews' recording once, before transcribing them. I listened to them again, after transcription, to ensure their accuracy, resulting in fifty-three pages of interview transcripts. The observations' records were listened to and used to complete the observation notes. During the analysis, I kept track of my methodological and analytical choices, by completing a data analysis journal. The previous sections gave a transparent account of the way data were selected for analysis and the analysis conveyed.

This research manifests sincerity, that comprises honesty, transparency, and self-reflexivity about the researcher's bias, values, and goals (ibid.). I give a transparent account of how I gained access to the field (see *Case and participants selection)*. In the reflective section, I further elaborate on the nature of my relationship with the instructors and participants and how it may have introduced biases (see *Reflexivity*). Sincerity also encompasses transparency. The data collection procedures are reported with precision. It implies recognizing the challenges and twists in the research process, that had led some data to be discarded.

To increase credibility, I use two procedures. Firstly, I describe in a rich way the learning activities I am analyzing. I give concrete details of the technological and pedagogical context in which the activity occurred. I interpret the data considering social meanings and processes. I do not focus solely on what is apparent and assumed, but I also incorporate in the analysis what is less visible, facilitated by my familiarity with the study context and my immersion during a significant time in the field. Secondly, I use crystallization, a concept better suited for interpretative research that considers reality as multiple and socially constructed (ibid.). The findings were collected using different methods to "open up a more complex, in-depth, but still thoroughly partial, understanding of the issue" (ibid., pp.844).

Resonance is achieved by encouraging transferability. Rich and multilevel contextual information is provided about the online distance course, Finnish higher education, and research participants' background (Bekele, 2018). It gives tools for readers to judge if the findings can be transferred to other cases. This study does not aim to generalize through context similarities (Larsson, 2009). The latter has been criticized for not recognizing that describing the context is always a process of interpretation and for assuming that the "context determines the phenomenon or pattern" (ibid., pp.33). This conceptualization thus underestimates the complexity of human action. For instance, one person may act differently in different contexts. On the contrary, this study implements generalization through the recognition of patterns. The study aims to produce "interpretations – theoretical constructions, concepts or descriptions, i.e. patterns or configurations, which can be recognized in the empirical world" (ibid.). It is done by inscribing the case within a larger frame (Tracy, 2010) Moreover, findings are interpreted considering broader social processes. Such a generalization allows a looser link between processes and contexts (Larsson, 2009).

The most significant contribution that this research aims to achieve is theoretical. This research attempts to problematize the current theoretical assumptions about educational technology and social presence (Tracy, 2010). This ambition is carried on by using the qualitative comparative method. It is not widespread in research on educational technology and social presence. In that sense, this study may also have a methodological contribution. In

addition, this research has the objective of drawing practical implications to increase its significance (see *Practical implications*). Finally, this study aims to encourage readers to reflect on their assumptions on technologies and social presence and question their uses.

This study is planned to be meaningfully coherent. It must be recognized that the research process has been disturbed and to a certain extent messy. This is due to practical issues and shifts in research questions. However, it does not disqualify its quality (ibid.). Indeed, in the final product, it is assured that all elements are coherent. It implies putting aside data that are not relevant to the final research questions, as exposed in *Data collection* and *Data analysis*. Moreover, as social constructivism constitutes the theoretical backbone of this study, it informs all aspects of the thesis, from literature review to contextualization, quality considerations, and interpretation of findings.

To conclude, it is important to recognize that quality, even as conceptualized by Tracy (2010), can also be considered from a social constructivist perspective as "negotiated standards and criteria that are specific to particular communities as well as to particular sites of assessment" (Oancea, 2011, pp.2).

5.8. Ethics

This study complies with procedural ethics, which refers to the rules dictated by institutions and governing bodies (Tracy, 2010). Two national ethical frameworks were identified as relevant: the Swedish *Good Research Practices* (Vetenskapsrådet, 2017) and the Finnish *Ethical principles of research with human participants and ethical review in the human sciences in Finland* (TENK, 2019). They were chosen because the research was carried out as part of a Swedish university program, but research participants were all enrolled in Finnish institutions. Both are based on similar principles according to which harm should not be done, deception should be avoided, informed consent should be negotiated, privacy and confidentiality ensured.

To being with, the researcher foresaw no harm from participating in the research. The research topic was not considered as sensitive. It was specified to participants that their participation would not affect the course completion and their grades in anyways. Autonomy was respected by informing that participation was voluntary. Participants were also indicated that they could withdraw at any time.

Secondly, all participants signed informed online consent forms (see *Appendix A)*. On the consent forms, participants were informed about the central purposes of the study, the data collection procedures, and the expected research benefits. I also published a short description and a video about the research in the course platform. By presenting the research through different media, I made sure students were acquainted with the research purposes. It is crucial in online research: without offline contact, it can be difficult to know if participants fully understood the research project (Toepoel, 2017). I also wrote a description of myself. The aim was to personalize the research project and to introduce reciprocity in the exchange of information. The geographical dispersion of the population studied allowed for consents to be gathered online rather than by legally bound signatures. However, respondents were asked to confirm twice their consent. In line with the General Data Protection Regulation (GDPR) recommendations, I used a ticking box to provide consent (GDPR, 2016). Interviews and group works' meetings were recorded, with verbal permission from participants. Recording of the webinars were made accessible by instructors in the course platform, as part of the course material.

Thirdly, privacy and confidentiality were ensured. In the consent form, participants were informed about the way data will be stored and destroyed after the thesis' submission, to comply with the GDPR (2016). During data collection, all the data were anonymized and stored in an online secure box, protected by a password. Only the thesis supervisor and I had access to it.

On the consent forms, participants gave their name to enable me to identify their learning artifacts and keep track of who accepted to participate. However, they were informed that their confidentiality would be protected, by anonymizing the data before analyzing it (Creswell & Poth, 2007). It was done during data collection for all data sources. Participants were assigned numbers. The same number was used for each data source to allow crystallization. The anonymity lists, in which correspondence between participants' names and anonymity codes, was stored separately from the data. Observations were analyzed based on transcriptions rather than the video recording to ensure anonymity. However, photographs from the introductory activity were not anonymized before being analyzed. In the thesis report, the information likely to identify participants, such as their country of origin, was anonymized. Moreover, I did not used participants' anonymity numbers for all the data source, to prevent from identifying participants by cross-referencing the data. Ethical criteria are not always clear-cut, unproblematic, and universally applicable (Hammerley & Traianou, 2012). Moreover, ethics is inter-relational. An interesting example is how I negotiated my presence in observations of online group meetings. It was initially difficult to determine the degree to which I should participate in these meetings, along with other questions, such as should I put the video on, while I am observing. During the observations, it could be said that research participants taught me what kind of norms I should follow, by occasionally "checking" on my presence and asking questions, showing a form of interdependence (Tracy, 2010).

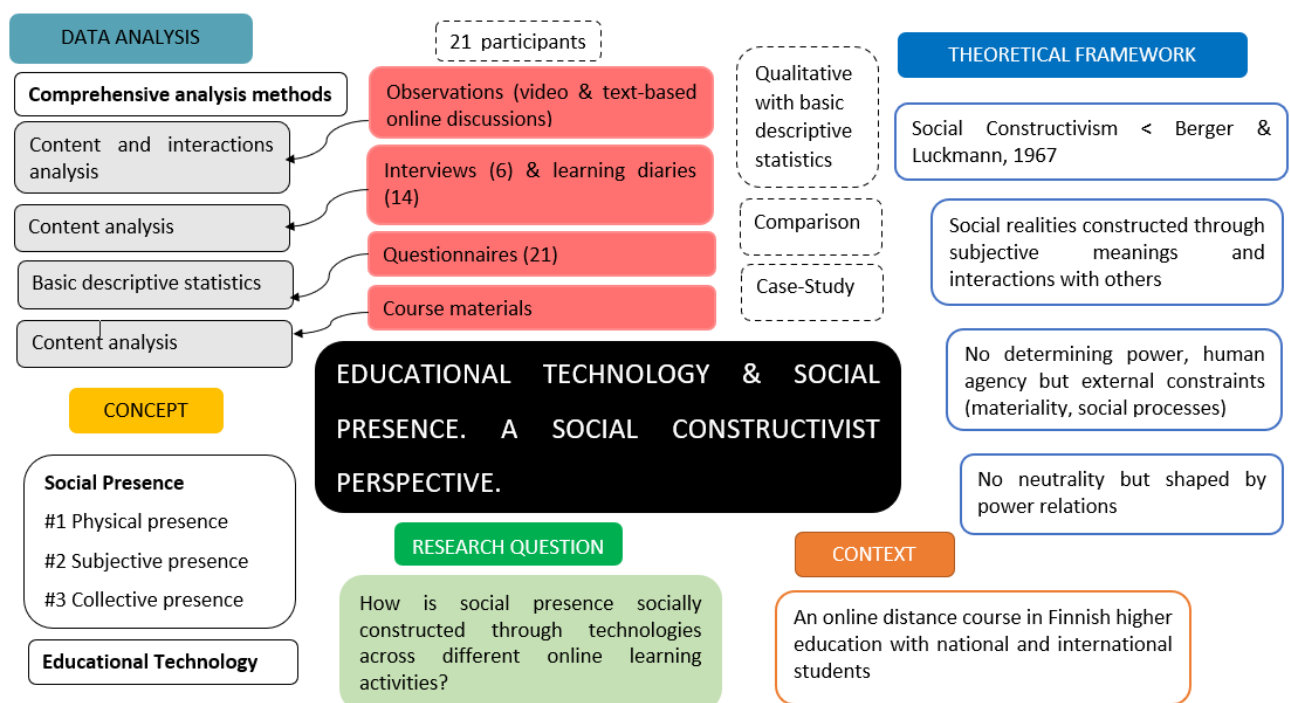*Figure 7* provides an overview of the research and its methodology.

Figure 7: Overview of the research and its methodology

Chapter 6 Findings

This chapter is structured around three dimensions of social presence, that are subjective, physical, and collective presences.

6.1. Subjective presence

I will analyze and compare subjective presence in different learning activities that occurred during the course. They are the introductory activity, both in text, video transcript, and photographs, and the first group works' meeting observations (see *Course activities* for further contextualization).

6.1.1. Texts in the introductory activities

Analysis

In the introductory activity, participants were asked to introduce themselves. Three questions were given as guidelines, about students' educational background (name, home university, and study background) and the course (students' motivations, expectations, and understanding of the course topic – decoloniality). The activity directly aimed at enhancing students' subjective presence, by "get(ting) to know each other" and "creat(ing) a more interactive learning space over here" (extract from course materials). Yet, it privileged educational aspects of students' self. Students could answer the activity's questions either by publishing a video or a text with a photograph.

Introductions were highly determined by the activity's instructions, leading to an emphasis on educational background information. Identification was mostly grounded on institutional belonging. Contrastingly, personal background information was limited, as it was not mentioned in the instructions. However, one participant stands out. The participant is the only one providing gender-related information: « I use they/them pronouns » (extract from the introductory activity). This participant also mentioned being familiar with gender studies. This background element probably contributed to a higher sensitivity to gender. The participant also refers to personal experiences, qualified as "traumatic": "My entry into education studies (or rather my continuing relationship with education) is because of my own traumatic schooling experience" (extract from introductory activities). Many participants motivated their interest in education based on educational and professional experiences in the introduction. On the contrary, this participant relates it to a personal and seemingly rather sensitive experience.

Beyond the activity's instructions, introductions were also influenced by students' subjective meanings and backgrounds, as given by the example of exchange students. The four exchange students differently present their educational backgrounds, compared to other participants. Two did not mention their home university. They rather mentioned the city they were living in, in their home country, often with additional geographical information to help their reader to localize it. Indeed, they did not expect other students to know about these places. On the contrary, when other participants mentioned Finnish universities, they expected the others to know about them. The same two exchange students did not mention their host university but their country of their exchange. Indeed, exchange students are more likely to move to a country for its reputation rather than for a specific university. They may have perceived information about their host universities as irrelevant. Nevertheless, the other two exchange students did not stand out as much. They mentioned their home and host universities.

It reveals how the emphasis on educational and institutional backgrounds in the instructions influenced introductions to a larger extent than students' subjective meanings and backgrounds.

Perceptions of others also influenced the way students introduce themselves. Students were probably influenced by the way other students introduced themselves before them. Some probably read others' posts before publishing their posts. Besides, the fact that the first post that was published was also the longest influenced the next posts' length. It shows the importance of group dynamics:

> *Interviewee n°3*: I think, we did it in the introductory part, we discussed ourselves, we put pictures of ourselves. And to be honest, this is because somebody did it at the beginning and I am pretty sure then everybody started to copy, because this is a social thing.

Homogeneity in students' introductions reveals an effort not to stand out from the group. Sometimes, introductions were less influenced by any actual perception of other students but expectations about them and the instructors. For instance, participants tend to mention information that they thought would be perceived as relevant. For instance, two participants mentioned their current occupation. Both occupations were in the field of education. Interestingly, observations revealed that other students were working while studying, to sustain themselves. However, they did not mention it in the introduction because they may have judged it irrelevant.

Homogeneity did not always prevail in the introductions. Some participants used it to highlight their singularity. One case is particularly illuminating. One participant did not identify himself as a student, as most students, but as an academic. In the survey questionnaire, he indicated "others" to the question on students' status. Rather than his educational background, he thoroughly discussed his academic background in the introductory activity. He referred to several past institutional affiliations and shifts in his academic titles. Mentions of these titles reveal that academic hierarchies constituted his main frame of reference. However, being a student was a course requirement. Therefore, he probably had a student status but did not identify with it. His introduction is almost identical to the information found on his professional website, as he indicated during the interviews. It shows that, rather than coming up with new personal narratives, participants often reproduce well-round established self-narratives.

Finally, the self-narratives conveyed in these introductions were not socially neutral or mere description. Students were asked to explain their motivation for joining the course. Many students mentioned educational, professional, or volunteering experiences relevant to the course topic. These introductions thus recall other forms of self-narrative, such as letters of intent, or C.Vs. Even if students did not have to « sell themselves », as they were already enrolled in the course, they may have felt the need to demonstrate how their presence in the course was relevant, as in this introduction:

> Reading this, you might find it a bit strange why I wanted to participate in this UniPID course about Global Education and Development. To be honest, I got to learn more about the Global Sustainable Goals last year, when I joined one volunteering organization (AIESEC). The fourth SDG, that being Quality Education, just seemed to me being one of the most important goals, because many other issues can be solved through good quality education and it being reachable to everyone all around the world.

(Extract from introductory activities)

The participant foresaw potential reactions of surprise from her readers, when reading her introduction. She was aware that her background did not intuitively fit the course as she was not studying education and did not have direct experiences in the educational field. She thus thoroughly justified her interest in the course and elaborated on the importance of education considering the sustainable development goals she was familiar with. One interviewee mentioned how he used students' introduction to evaluate the course relevance:

Interviewee n°3: I always like to find myself in a context. So, I read most of the introductions of the students. To be honest mainly because I want to know if I am doing the right course, if it is a course that I will really enjoy it.

Based on students' introduction, he could judge whether the course and the other students would fit his expectations. However, all the students did not read others' introductory posts, as informed by other interviewees. Therefore, introductions did not systematically allowed students to know each other, by sharing personal background information.

Summary of findings

The analysis demonstrated of these formal introductions gave evidence that subjective presence is not a neutral process in which participants project their true selves. These introductions are social constructions, impacted by different contextual elements, such as the instructions, subjective and culturally situated meanings, existing self-narratives, students' background, and perceptions of others.

6.1.2. Photographs in the introductory activities

In many introductions, texts were complemented with photographs. It was encouraged in the instructions. This denotes a will to enhance physical and subjective presence. Students were free to choose a "picture of themselves" - physical presence - or "of something that represents themselves" - subjective presence – (extract from course materials). In this section, physical and subjective presences are jointly analyzed because they overlapped in the activity's instructions.

Many participants chose to share a photograph of themselves. They published portrays or selfies. They were the focus of the photographs. Four participants did not focus as much on their physical presence. They were not the photograph's focus. One participant did not appear in the picture. The other three were represented with other people. They were shown from the side or from the back the back. The photographs used a distant framing. These elements decreased visual cues. These photographs are interesting to compare to analyze how different self-narrative can determine the way subjective presence is performed through photographs.

Photograph 1

One participant, in its forties, is represented walking between benches of pupils in a classroom. He holds sheets in his hands. The photograph was taken in a school in an East African country, during a study trip, as indicated in a comment written by the participant. At first, he seems to oversee the class, as in the typical teaching posture. However, the pupils do not look at him or the camera. They look at the other direction, where the board is probably located. As the photograph was taken during a study trip, the participant was probably not teaching but working as a development professional, during fieldwork. It is disclosed by the backpack and casual clothes he is wearing. It is confirmed by the participant's comment about the photograph. Therefore, he does not present himself as a teacher, as initially thought, but as

a development professional in educational contexts. His authority does not stem from being a teacher but from being a development professional.

Photograph 2

Another research participant, in its twenties, is standing in front of a building. The building looks like a school. People are standing around her. They are pupils and teachers posing for a group picture. The pupils are typically placed in rows, from the smallest to the biggest. They are probably aged between three and ten. Some are making signs to the camera. They wear uniforms. The participant is standing on their left, holding some of the pupils by the shoulders. She is wearing casual clothes. Two adults are standing on her left. They are wearing suits. They are teachers. They are standing slightly apart from the students. In the text description, the research participant informed that the photograph was taken in a school in a country in East Africa, where she worked. In the photograph, the position of the student as an outsider is revealed by her standing closed to the pupils, compared to the teachers. She is not in a posture of authority as she informally stands among pupils. On the contrary, the teachers are standing apart from the pupils. They are in their official position as teachers. Her casual clothes also contrast with teachers' suits and pupils' uniforms. Finally, there is an age difference between her, the pupils, and the teachers. Therefore, she stands with pupils and thus reduce the potential power relations between pupils and her, as a somewhat representation of teachers. However, an underlying power relation is still perceptible in her position as an outsider. She is also the only Western person in the photograph. Her position embodies the one of volunteers working in schools in development contexts. This position allows her more informality.

Photograph 3

Another participant chose to put a photograph of her experience working with indigenous peoples' movements. She indicated that the photograph she chose was taken during one of the workshops organized by her team. According to her, workshops were "inspired by participatory action research and critical methodologies including a decolonial approach" (extract from the introductory activities).

In the photograph, a woman is seating on a bench, inside a building made of wood. This woman could be the participant. However, she is showed from her back which makes it difficult to identify her. In the room, around fifty people are sitting in benches or standing. Some wear Western clothes. Others wear similar outfits composed of a white bine, a woolen bag with patterns, and a white overall. They could be traditional costumes. Some are looking at the front. Others are hiding their face. Others are looking at the back, where a person seems to be talking to the crowd of people. They may also be looking at the back to hide their faces, as other individuals do. The photograph was taken among indigenous movements. Appearing in photographs could be dangerous for indigenous. Compared to the previous photograph, the people in the photograph are not posing. The woman stands out from the others because she is the only white person. She is also seating alone on the front bench, on one edge of the room. Moreover, she does not wear the traditional outfit. However, she is wearing a similar woolen bag and a white t-shirt. She does not seem to be facilitating the session. She rather seems to be attending or observing it, in a much similar way than the other individuals in the room. The fact that her presence is not emphasized in the photograph and that she does not facilitate the session reveal the participatory approaches taken in these workshops.

Photograph 4

One participant chose to present a less coherent narrative in the photograph. The participant decided not to appear in the photograph. It is a photograph of four photographs,

arranged in composition and placed on a surface. The quality is low, and it is slightly blurred. It was taken in a dark room, and the flash makes some parts less visible. Moreover, the four photographs seem to be rather old. Besides being difficult visible, the photograph tells different narratives. It represents different people and situations. Each photograph has its narrative. On the top is a photograph of three young girls looking at a book that could be an English textbook. One is wearing a white scarf; another is wearing a headband. They are all smiling. It looks like they were posing.

In the middle-bottom is a black and white photograph. Two young women are standing in front of the camera, holding each other. They are wearing dresses and headbands. They smile and look at the camera. They are seating in the grass, in a sort of park. In the background, there is a row of trees.

On the left is a photograph of two men holding each other closely. They are around fifty years old. They are wearing suits. One is smiling, the other is making a funny face. It is not easy to say if one of the men is dragging the other as a joke or aggressively. There is another man in the background, looking very seriously at them. The photograph is very theatrical.

The photograph on the right represents a young girl. She is standing and is taking a picture with a cellphone. She is smiling. She is wearing a *djellaba*. She seems to be outside or on the balcony of a house. In the background, there are clothes hanged to dry. A woman is looking at her and making a sign with her hand. In the background, we can also see the walls of a house made of stones.

These photographs are not easily interpreted. They do not clearly relate to each other, to the course topic – except in the one with girls with a book. It is also difficult to know how they may represent the participant who published them. Interestingly, in other situations, this participant did not share a lot of personal background information or visual cues. For instance, during the first group meeting, the participant did not turn the camera on, as the other group members. In the survey questionnaire, the participant indicated "I prefer not to say" to the question about gender. This participant preferred to maintain a certain level of anonymity.

Summary of findings

The analysis of photographs showed, firstly, that using this medium does not necessarily increase physical presence. The latter is negotiated by students, based on the degree of visual cues they decide to share. Secondly, the way subjective presence is performed differ among three photographs that represented participants in contexts of education development, relevant to the course topic. In these photographs, the position hold by the participant manifests various power configurations with the other people represented: from the figure of authority, walking among school benches (*Photograph 1*), to the figure of the observer, attending a participatory workshop (*Photograph 3*). In extreme case, as in the fourth photograph, subjective presence does not present any unity or coherence. I will now move to the analysis of the first group work meetings.

6.1.3. The first group work meeting

From mid-course, students were gathered in group to work together. A first meeting was organized and observed. It was an opportunity for students to get to know each other's and to collaborate through online video-based discussions. Subjective presence was performed and negotiated differently across groups. *Table 3* informs meetings' composition.

Table 3: Number of group members per observation

	Group 1	Group 2	Group 3	Group 4
Members attending the meeting	2^2	3	3	4

Group 1

In Group 1, participants shared personal information during a discussion that occurred before the formal meeting started. This discussion was started by the instructor who was present at the beginning. In the first minutes of the meeting, three persons are present: Group member n°1[3], one instructor, and me. The instructor joined to authorize me to record. Because Group member n°2 was late, the instructor decided to stay until that person had joined. She asked us about how we were doing, since the Covid-19 pandemic had started. Group member n°1 then mentioned her anxiety concerning the current situation. Once the formal meeting started, group members did not introduce themselves or asked each other personal questions. Their interaction was mostly task-focused. This shows how informal moments, such as the minutes before all participants join, are more favorable to subjective presence.

Group 2

On the contrary, in Group 2, the end of the meeting gave space for more subjective presence. The first forty minutes were mostly task-focused. In the discussion, group members did not refer to examples drawn from personal experiences but from the course material. However, after completing the task, the group members started an off-task discussion for the last ten minutes. It was initiated by one group member. She introduced a personal concern related to the course content:

> It is a question that remains for her: how much a low-income country can deal with all of this. She says she is a bit a negative person. She says if they are more positive they can share and then she laughs. [Laugh]

> (Extract from observation notes, first group work meeting, Group 2)

She mentioned a personality trait and expressed being worried. The other group members did not answer her on a personal level but in relation to the course content. The tendency to avoid personal issues was mentioned by that same group member, in the final reflective learning diary:

> Also, it was nice to just have people to talk about things that are not so personal (yeah, most of my conversations right now involve the dreadful question "how are you?" and it is not a question I feel particularly inclined to think about at the moment) and that is very straight to the point.

> (Extract from final reflective learning diaries)

In her final reflective learning diary, she reflected on a more personal level, as shown by the abstract. She mentioned facing personal issues. The final reflective learning diary is a more appropriate place for her to do so. It was not accessible to other students. Its text-based nature may encourage reflective practices. Moreover, it may allow more self-disclosure as the

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[2] One group member could not attend this meeting.
[3] This numbering is specific to Group 1.

audience, here the instructors that will read the diary, is not directly visible. Self-reflection was encouraged in the instructions for the final reflective learning diary.

Coming back to this group's first meeting, in the end, the same group member started an informal discussion, by hoping the other group members were all safe. The Covid-19 situation triggered demonstrations of care among students, even if they did not know each other. The discussion then continued with students asking each other's questions about their personal background, such as their nationality, or students' status. These questions are commonly asked in international contexts in higher education. Group members also asked each other where they were currently located, as they were interacting at distance:

> Group member n°1[4] asks Group member n°2 her current location. Group member n°2 says in [Name of a Finnish city]. Group member n°1 asks Group member n°2 is Finnish. Group member n°2 laughs and says yes Group member n°1 answers: "so you are home". Group member n°2 says being 600 km from home. (…) Group member n°2 being in Finland so at home.

> (Extract from observation notes, first group work meeting, Group 2)

Being asked about the current geographical place became common during the Covid-19 pandemic. It can be interpreted as demonstrations of care but also forms of collective surveillance. Interestingly, in this extract, Group member n°2 laughed when asked about nationality. Group member n°2 may have perceived the answer as self-evident. Indeed, some Finnish students may not be used to be asked this question in their national context. In the interactions, Group member n°1 comments that Group member n°2 is at home. Because Group member n°2 is in Finland, Group member n°1 deduces that Group member n°2 is at home. However, Group member n°2 explains not being at home. Group member n°2 does not come from the place where currently located. Group member n°2 explains to be from another region of Finland. Group member n°2 thus brings in an alternative territorial identity than the national one. This shows a gap between these two participants in the way they perceive the issue of nationality and internationality. This reveals how their subjective meaning shapes the way they make sense of reality. Later, Group member n°1 regretted not being able to go back home during the pandemic:

> Group member n°1 wishes being at home with her dog. Group member n°3 understands. Group member n°1 thinks it is better to be isolated with a dog. Group member n°2 agrees.

> (Extract from observation notes, first group work meeting, Group 2)

The Covid-19 revealed a dichotomy between those who were at home and those who were not. National and European students, who can more easily come back home, are opposed to international students. However, in the group, this gap is reduced by the mention of the dog, at the end of the interactions. This helps to create a common ground despite differences in individual situations.

Group 3

Group 3 was very task-focused. Students did not ask each other questions about personal background information. However, they referred to personal experiences throughout their discussion, in relation to the task. Their discussion dealt with a report on external migrations. However, contrastingly with Group 4, they did not invoke as often to their country of origin. In

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[4] This numbering is specific to Group 2 to preserve anonymity.

this group, their experience as students who migrated to another country to study was emphasized. One exchange student mentioned her experience when she arrived in Sweden:

> Group member n°1[5] talks about having a tutor when arriving in Finland. Though Group member n°1 had a tutor, Group member n°1 was already lost.

(Extract from observation notes, first group work meeting, Group 3)

Group member n°2 alluded to having experienced different countries, moving from to the country of origin to Finland, and South America. Later, Group member n°2 mentioned struggling when applying to study in a European country, as a non-European student. Group member n°2 compares it to the struggles faced by refugees:

> Group member n°2 adds that it is even harder for refugees. When Group member n°2 applied, Group member n°2 had to do a lot of preparation, and it costs a lot. Group member n°2 wonders if they give money to refugees to prepare the application or to study.

(Extract from observation notes, first group work meeting, Group 3)

Less than their national background, the group members referred to their shared international experiences as people who migrated to a new country. In the discussion, they compared their experiences to other similar experiences, such as the ones of refugees who also had to leave their country. Contrasting their common experience to others, here refugees may have helpt to create unity in this group.

Group 4

In Group 4, the discussion was very grounded in personal experiences. The country of origin was often taken as a reference. This singularity is emphasized by one of the group members:

> Group member n°1[6] thinks that they talked about everything. They have personal experiences as well. Group member n°1 likes that they have so many countries represented.

(Extract from observation notes, first group work meeting, Group 4)

In the very beginning, one group member started to relate the discussion on a report on internal migrations to personal experiences:

> Group member n°2 thinks that the report is very well put together. It talks about many different countries, including [Name of the Group member n°2's country of origin]. (…) It also echoes Group member n°1's personal experiences. (…) Group member n°2 migrated from urban to rural areas at a very young age.

(Extract from observation notes, first group work meeting, Group 4)

From there, each group member reflected on the relevance of internal migrations in their national contexts, and in their personal experience, as in this extract.

> Group member n°1 agrees. Group member n°1 also comes from a small village. All her life was about taking buses, trains, etc.

(Extract from observation notes, first group work meeting, Group 4)

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[5] This numbering is specific to Group 3 to preserve anonymity.
[6] This numbering is specific to Group 3 to preserve anonymity.

The discussion topic, internal migrations, creates an opportunity to evoke local rather national experiences. Group members identified themselves based on whether they came from the city or the countryside.

During the discussion, the group members asked each other questions about their respective national contexts. Interestingly, the group members expected each other to have a deep knowledge of their national context. For example, Group member n°1 mentioned the *Sami* people, during the discussion. Group member n°1 then added that another group member, who is Finnish: "of course, you probably know more about this" (extract from observation notes, first group work meeting, Group 4). The Finnish group member then explained being from the South of Finland. There, when growing up, they did not talk about Sami people. They were not considered local issues in school curricula. Group member n°1 reacted surprisingly e ("seriously?"). Group member n°1 had certain expectations because the other member was Finnish. To summarize, this group mostly grounded their subjective presence in their country of origin. However, alternative identifications emerge from discussing internal migrations.

Summary of findings

This overview shows that these meetings were a place for the performance and negotiation of subjective presence. However, the prevalence of subjective presence varied from one group to another and from moments of interactions. The analyses gave evidence of moments of informality, during the meetings, mostly in the beginning before everybody had joined the meeting and in the end. Some groups incorporated their personal experiences in the discussions while others left it to informal moments of interactions.

Students' background and group dynamics may have influenced the extent to which subjective presences were performed. In general, being the first meeting may have contributed to limited subjective presence, as revealed by one participant:

> In my opinion, I really enjoyed this experience, more than the previous one maybe because of the less embarrassment caused by "the first time".
>
> (Extract from final reflective learning diaries)

External contextual elements impacted as well. In particular, the effects of the Covid-19 pandemic were visible. Students were more likely to express forms of solidarity and care, even if they barely knew each other. It suggests that there are no systematic ways in subjective presence is performed and negotiated.

Finally, groups highlighted different aspects of their identity. Often, they emphasized national and international aspects of their identities. Sometimes, more layers of complexity were incorporated, by evoking regional or rural identities. The topics of discussions played a role in shaping which identity aspects was brought forwards.

6.1.4. Comparison

It is interesting to contrast the introductory learning activity with the first group work meetings that were observed.

In both cases, it is the first time that students were in contact as a cohort or a working group. These learning activities were distinct in terms of group size and educational technologies used. The group work meetings only gathered two to five students. Moreover, they used a video-conferencing tool. Therefore, students were more likely to project their identity and share personal background information. Observations revealed that it varied a lot from a group to another.

In addition, participants had less control over the way they were represented in the meetings, compared to the photographs published in the introductory task. Using a video-conferencing tool could give insights into other elements of participants' life. It raised privacy issues. Some groups preferred not to use the video. Besides, offline interactions were sometimes interrupting the discussion. One participant joined from her working place. She had to deal with her online and offline presence simultaneously.

Finally, the impact of the Covid-19 pandemics reinforced the relevance of geographical localization. In the introductory learning tasks, the emphasis was on institutional identity. Later, interactions started to focus on students' current location.

6.2. Physical presence

This section analyzes physical presence, in online text-based discussions (Moodle forums and Twitter posts) and online video-based discussions (Zoom webinars). They are first analyzed individually using a social constructivist lens, and then compared.

6.2.1. Online text-based discussions

The GED course regularly organized discussions, through forums on Moodle or social media[7]. In each Module, it was used to foster discussion on the course content between students. This section compares students' and instructors' participations in these discussions. Physical presence is understood here as the extent and the way one demonstrates and interprets active presence through participation (see *Concepts*).

Students' participation in online text-based discussions

Students' participation in online discussions fluctuated throughout the course, as shown by *Table 4.*

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[7] In this section, discussions on Twitter and on Moodle are not distinguished. This distinction will be later analyzed for its own sake (see *Collective presence*).

Table 4: Number of participants in individual and group online text-based discussions for each module

Module 1[8]	Module 2	Module 3 (1)[9]	Module 3 (2)	Module 4[10]	Module 5[11]
14	12	9	2	15	14

From Module 1 to Module 3, participation regularly decreased not only because of dropouts but also because of students disengaging with the activity. In Module 1, fourteen students posted in the discussion. It dropped to twelve (Module 2) and nine (Module 3). Later in Module 3, it decreased even more swiftly as only two students participated in the discussions. From Module 4, the participation raised again, as all students who were still active in the course participated. The initial disengagement was confirmed by several interviewees, who noted the lack of efficiency of online text-based discussions:

> *Interviewee n°1*: There were many courses also, like the normal ones, where we would have this Moodle discussions sessions. I really don't feel like it works. Real discussions doesn't happen for me.

> *Interviewee n°5:* I don't feel like it allows for some kind of conversation. (…) At least, I feel like I don't go through all of the answers and engage in real discussion in the forums.

> *Interviewee n°3:* I think the forums are nice, but I don't think they are much discussions there, yet. There have been more like people posting ideas, but not real discussions.

According to interviewees', these discussions failed at being like "real discussions". They lack interactivity. Posting is a requirement, to complete the course. Therefore, students usually published only one post. Posts were usually long, especially on Moodle, where no limit of characters was imposed. Therefore, forums failed at reproducing discussions and became a space for students' individual essays. Two factors were regularly mentioned by interviewees. Firstly, the technology was text-based, fostering more essay-like posts. Secondly, the technology was asynchronous. It introduced a time lag between posts that hindered discussions. Hence, interviewees emphasized technical factors. They saw a determining relation between the technology used and the kind of social presence enabled. Nevertheless, two elements mitigated this deterministic account.

Firstly, physical presence, understood as forms of participation, was less determined by the technology, than by instructions. In later modules, instructions changed the way online text-based discussions were used. For instance, from Module 3, online text-based discussion spaces started to be used to share notes taken from the webinars. It was especially useful for those who could not attend. The technology was a resourceful tool to share and keep track of information, in a complementary way with video-based online discussions, during webinars. In Module 4, posting became part of group tasks. Several persons could work on one post. Only one person

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[8] For the bi-weekly discussions, both the posts on Moodle and Twitter platforms were counted.

[9] In Module 3, there were two bi-weekly discussions.

[10] For the bi-weekly discussions occurring in Module 4, students had to post as a group. One person posted for the rest of the group. However, I counted all the group members.

[11] In Module 5, the e-conference occurred on the Moodle platform. Students had to participate to the forum discussions as a group. All group members were counted when one posted for the group. However, during Module 5, one student decided to leave her group. She thus participated to the discussions individually.

needed to publish for the rest of the group. It resulted in fewer posts being published in the platforms in total, making them easier to be read by other students. More than a space of discussion, online text-based discussions became a space for groups to share and keep track of what they discussed in video-based synchronous discussions with their group members. Online text-based discussion forums were used for groups to share their work during the "Moodle conference", in Module 4. As a result, participation in these discussions increased in the last modules. These are bright examples of how the same technology can produce different effects. It thus does not determine uses.

In interviews, the experience of physical presence in online text-based discussions was compared with that of "real discussion", occurring in face-to-face classrooms. However, no consensus existed among interviewees about what defined a "real discussion". For some, it was understood in the model of non-academic discussions:

> *Interviewee n°1:* I say like in Twitter if discussion happens, it happens more realistically, than in Moodle. In Moodle, it is always more academic, you know? And then, people try to refer ideas to authors, to give a reference, to be like more academic writing; but in Twitter, you can be reflecting.

In this extract, "real discussions" were defined in the model of discussions in social media. Moodle was criticized. Compared to Twitter, it was too academic. Interestingly, in her post, this interviewee did not use the academic style but more personal expressions. On the contrary, another interviewee criticized online text-based discussions for being superficial and not academic enough:

> *Interviewee n°4*: They have a Moodle message board, where we comment on each other, but that felt very forced and superficial. It didn't feel like the thing that could really foster a kind of, you know, when you are discussing a topic with somebody and you bounced back and forth and you work together to elevate both of you in some kind of your understanding.

The interviewee seemed to picture "real-discussions" in the model of academic discussions. It echoes how some participants tended to write posts as academic essays. They added quotations, references, and lists of references. On the contrary, other participants used a more informal style and personal expressions. Finally, some participants considered the forums as a reflective space: "I just want to write my reflection on the thing in Moodle. It's better for me" (*Interviewee n°5*). It verifies that what is a "real discussion" is shaped by subjective meanings. Consequently, the use of the forum discussion is also shaped by subjective meaning. There is no group consensus on what a legitimate use is.

Instructors' participation in online text-based discussions

Instructors' participation in online text-based discussions was generally low. Besides publishing the prompt questions at the beginning of each module, only two posts were published by one instructor. The instructor used it to share links to resources, add comments, ask students if they had questions, to follow up on a webinar. The lack of engagement was mitigated by their feedback on individual learning diaries. It can be explained by the effort to manage workload and increase efficiency.

It is illuminated by an example of instructors' engagement with students' posts during the course. One instructor individually answered the 46 posts[12] published by students for the introductory activity. The answers were written in two days. In the first day, they were posted

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[12] Only those from participants are analyzed.

regularly from 10.44 am to 4.02 pm. It reveals the time required to answer every post individually. Replies oscillated between 27 and 84 words. When comparing the replies, one can see how efficiency and personalization were balanced. The same structure was used throughout the replies: greetings mentioning the student's name; a sentence thanking the students for posts, mostly in a standardized form, sometimes adapted to individual cases; a few individualized sentences commenting on the student's posts; a standardized concluding sentence and greetings. The instructor combined pre-set elements with more personal comments. In the latter, the instructor shared resources in relation student's interest, asked prompt questions, commented on the picture, provided clarification, commented on students' introductions, or evoked links between the students' context and the course topic. Through her replies, the course coordinator seemed to attempt to fulfil some of the roles expected from an online instructor, such as stimulating critical thinking, motivating students, referring to resources. To a certain extent, she is establishing her legitimacy as an instructor. It is instrumental in the beginning of the course, but time-consuming. It may explain why instructors did not engage with students' online text-based discussions, later in the course.

Comparison

In overall, instructors participated less than students in online text-based discussions, despite students negatively perceiving them, based on interviews; and thus, disengaging with the activity, at a certain stage of the course. Beyond technical aspects, what is at stake is time-related issues. Online text-based discussions produce a lot of data. It is challenging to individually go through all the threads, and eventually answer them, as an instructor or as a student. Interviewees mention they did not read other's posts because of lack of time:

> *Interviewee n°5:* Because I would say also when it's a forum, there is a feeling that you already have enough materials to read and to work on, and the video lectures. So, going through the comments of, if it is a big course, twenty thirty people, just to check what they wrote about, it's kind of hard. It may feel even like you don't really have the time for that, you have other things to do.

In class, time is usually allocated to discuss. However, time spent in processing the information from forums is usually not always incorporated in the general workload of online distance courses. One interviewee reflected on the need for equal distribution of the workload between students and instructors in many online courses:

> *Interviewee n°5:* I really liked the feedback that the teacher gave when I got the feedbacks from the reflective diaries. I would say, if I am not mistaking, all the courses that I have taken online, teachers don't really take the time to give a proper feedback. (…) But, when I got the feedback from this course in the reflective diary, I saw that she took the time to comment in a Word document, to give me her comments I felt I am getting actually real feedback and useful ideas. And I can see also that the teacher is taking the time to read what I wrote. So, it's much more motivating than usual.

Interestingly, two students were less critical of online text-based discussions. Both were older and had a lot of experience with online distance courses. Online text-based discussions seemed to be more easily integrated into their workload. One student was seeing it as a form of assignment. He did not necessarily expect it to reproduce in-class discussions. Another interviewee explains how he considered reading others' posts as one among other learning tasks.

Interviewee n°3: The thing is when I am writing my reflections, I do it in short times during several days. But when I want to post it, I go to Moodle. So, in Moodle, I go thirty minutes. I try to read as much as I can during these thirty minutes. And then, I usually tend to read most of the posts.

They were also the only two research participants who always published in the forum, throughout the course. It indicates that students with more experiences in online distance courses may have a clearer idea of what online discussions are meant for and how to use it, than students with fewer experiences.

Summary of findings

The comparison of instructors' and students' presence in text-based online discussions verified interesting aspects from a social constructivist perspective. Compared to instructors' presence, students' presence, understood as participation, was higher, although it fluctuated. Reasons for these fluctuations were given by interviewees: online discussions failed at reproducing real discussions. However, there were differences in their perceptions of what real discussions were and thus how text-based online discussions should be used. Their personal use of online discussions also differed. This shows how technology is shaped by subjective meanings, especially in contexts where no group norms or consensus exist about how technology should be used.

Behind technical aspects, one element explained the unbalanced participation between students and instructors, and students' disengagement with online text-based discussions. What is at stake in online text-based discussions is workload repartitions between students and instructors. Online text-based discussions can produce a huge amount of information. Staying engaged in the discussion and producing inputs can be time-consuming. Forums enable learner-centered pedagogies by placing students, rather than instructors as drivers of the discussion. However, this can favor a shift in responsibilities and workload from instructors to students. It reinforces tendencies in online education to put more emphasis on students, not only in a pedagogical logic but also to reduce the academic workload, thus increasing efficiency. This shows the importance of perceived balanced engagement between students and instructors, in online courses.

6.2.2. Online video-based discussions

Video-based online discussions are said to enable more physical presence being they produce more sensory inputs. This section will show that they have no deterministic effect on physical presence. Students and instructors' physical presences are compared across the four webinars that were observed. Different elements can indicate levels of physical presence during the webinars, such as who is talking through the microphone (audio input), who has the camera on (visual input) or who is participating to parallel online text-based discussions by using the chatbox available in Zoom (text input). The webinars differed in terms of numbers of participants, as shown in *Table 5*.

Table 5: Number of participants to the webinars

	Instructors	Panelists	Participants	Other students
Webinar 1 (Module 3)	2	6	NA[13]	NA[14]
Webinar 2 (Module 4)	3	0	4	8
Webinar 3 (Module 4)	2	0	5	7
Webinar 4 (Module 5)	3	0	9	19

Signaling physical presence through the microphone

During the webinars, the use of the microphone was regulated by instructions, given by the instructors, to panelists and students. If they wanted to participate by speaking out loud, they could unmute themselves.

Compared to instructors and panelists, students used less the microphone to participate in the discussions, throughout the webinars. Most of the discussion occurring at loud was driven by instructors and panelists. In the first webinar, for instance, only two students asked their questions and commented on the discussion through the microphone. Similarly, in the fourth webinar, only one student asked and commented on the discussion at loud. During Webinar 2 and 3, students more often used the microphone to participate. These webinars had a smaller number of students and instructors started to actively try to engage students in the discussions.

Discussions tended to be centered toward the instructors. It is due to instructors' roles as contributors and moderators. Instructors regularly commented on the discussion content. This is in line with the instructor's traditional role as a source of knowledge, in teacher-centered pedagogy. Similarly, the instructor systematically provided feedback on students' comments. There were very few direct interactions in which students answer each other's comments using the microphone. It occurred one time in the third webinar and three times in the second webinar. Instructors also played the role of moderator.

Instructors organized speech distribution, by inviting panelists or other instructors to comment. This is like the role taken in classroom or academic face-to-face discussions. However, in that context, the necessity to regulate the discussions was even higher. Indeed, Zoom technically disables several people to talk at the same time. To participate in the discussion, individuals needed ways of signaling themselves through the technological device, by making a sign for instance. They also needed to signal when they finished to talk, with

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[13] This information was lost due to a computer breakdown.
[14] This information was lost due to a computer breakdown.

expressions such as "I will just leave you with that" (extract from observation notes, Webinar 1), or "that's it" (extract from observation notes, Webinar 1).

Paradoxically, from Webinar 2, instructors' efforts to engage students in the discussions, in line with learner-centered pedagogies, reinforced instructors' dominant position in the discussion occurring through the microphone. At the beginning of Webinar 2, the instructors tried to engage students by asking questions and linking the discussion to their interest:

> Instructor n°2 asks what should be done with the rest. Instructor n°2 mentions the students who have been reading the report. Instructor n°2 asks what they have found. Instructor n°2 asks a question: what are the limits of Edtech solutions?

> (Extract from observation notes, Webinar 2)

This brings instructors to speak even more. Instructors' effort to increase participation increased in the next webinars. In Webinar 3, for instance, students were invited to participate in the discussion, from the beginning. Fifteen minutes after the webinar started, one instructor already engaged students:

> Instructor n°2 would like to add more things later on but she would like to start the discussion by hearing more from them.

> (Extract from observation notes, Webinar 4)

Instructors no longer commented on students' participation in developed terms. After one student's comment, one instructor shortly made the transition by asking if anyone wanted to continue, during the third webinar. They shortened the time spent in attempting to engage them, by directly asking them to contribute. Instructors targeted specific groups of students, such as these who did not participate yet. It demonstrates that despite students' physical presence being low, they remained accountable to instructors. Efforts to engage students did not inverse the balance between instructors' and students' participation. However, these efforts increased students' use of the chatbox.

Signaling physical presence through the chatbox

To participate, students were also informed that they could use the chatbox. It was a way to communicate without directly interfering with the communication occurring with the video and / or audio. It is interesting to analyze the way it was used as a secondary medium of communication. *Table 6* compares who used the chat throughout the four webinars.

Table 6: Share of the chat use between instructors, panelists, and students

	Instructors	Panelists	Students	Total
Webinar 1	2	4	2	8
Webinar 2	3	NA	8	11
Webinar 3	0	NA	21	21
Webinar 4	2	NA	16	18
Total	7	4	47	58

The use of the chat increases throughout the webinars, from seven messages to fifty-seven messages. This increase is mostly due to an increase in messages from students. They produced forty-six messages out of the fifty-seven in total. Students' messages in the chat increased throughout the webinar, from two, in the first webinar up to twenty-one and sixteen posts. Students started to use the chat in the fourth webinar. Instructors' chat use fluctuated throughout the webinar, without regular patterns. Generally, the use of the chat was low among instructors and panelists. Students more frequently commented on each other through the chatbox, such as in this thread:

> From Participant n°8[15] to Everyone: About what you mentioned of cheating, tests and examinations, it is also interesting to think in how these currently work and the idea of collective learning explained in the book, intellectual property and how "collaboration is denounced as cheating" according to the author, making learning a highly competitive process.

> From Participant n°11 to Everyone: Interesting point [Participant n°8]. Perhaps education should be more about interaction and teamwork-based problem-solving instead of emphasizing individualism and competition

> **(**Extract from the chatbox, Webinar 3)

Purposes for using the chatbox differed between instructors/panelists and students. The chatbox was mostly used by students to share comments or questions on the discussion content. Greetings from students at the end of the webinars were sent through the chatbox. For instructors and panelists, the chatbox was mostly used for technical and organizational issues, such as providing instructions. It was less often used to share comments and questions on the discussion and for greetings. However, interestingly, during the last webinar, one instructor commented on the discussion through the chat. Another instructor uses the chat to thanks students for the session, as the instructor did not have the chance to say it through the

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[15] Participants were given a number to protect anonymity. However, these numbers are not used to identify them in all data sources in the thesis to preserve anonymity. Designating them with a single number would have increased the chance of identifying them by triangulating the data.

microphone: "Thank you for the very relevant and challenging questions. All the best. Hope you had a few insights from the discussion and the course. Kiitos".

Once students started to often use the chatbox, from Webinar 3, the instructors' role changed. They started to facilitate the discussion by reading the messages on the chatbox, commenting on them and stimulating students with prompts. Paradoxically, instructors are still at the center of the main discussions, occurring through the media. They became conveyors of information produced in the chatbox.

Signaling physical presence through the camera

Finally, it is interesting to compare the use of the video, during the main discussions, in the webinars. Students' presence during the beginning of the webinar will be analyzed separately in the next section (see *Collective presence*) because it corresponds to informal interactions.

During the first webinar, panelists and instructors only used the camera. Panelists turned off the camera when they did not talk. During the second webinar, instructors always had the camera on. Students were advised to turn on the camera when they wanted to talk. During the third webinar, instructors announced that all, instructors included, will turn off the camera when they did not talk:

> Instructor n°1 asks if Instructor n°2 thinks we should turn off the video and audio. Instructor n°2 confirms that they will turn off the video now for connection issues, especially if someone is joining from Mexico. Instructor n°2 says she will do it later as well but now she talks so she will turn on the video.
>
> (Extract from observation notes, Webinar 3)

During the webinar, several times, instructors switched off the camera, when they finished to talk, as in this example:

> Instructor n°1 says students could talk about what they talked about in their groups. Instructor n°1 says it can help them to clarify things in relation to the post they have to send tomorrow. [Silence] Instructor n°1 disappears from the video.
>
> (Extract from observation notes, Webinar 3)

Sometimes, however, they seemed to forget about it and kept the camera. During the last webinar, the instructors announced that they will keep the camera all the time:

> Instructor n°2 says that it is easier for the connection to switch off the video at some point. Instructor n°2 says you do not have to be online all the time. They [Instructor n°1 and Instructor n°2] will try to be online most the time. Instructor n°2 says that they have practiced. Instructor n°2 laughs.
>
> (Extract from observation notes, Webinar 4)

Changes in the way the camera was used by instructors reveal their effort to balance students' and instructors' presence. However, shifting on and off the video was too complex to become a sustainable solution, showing how Zoom imposed certain constraints.

Summary of findings

The comparison of instructors' and students' presence across webinars revealed interesting aspects from a social constructivist perspective. Firstly, Zoom tended to distribute physical presence in an unequal way. This is due to a technical feature: only one speaker can appear and speak at a time. However, this technical feature is the reflect of socio-historical

processes. Zoom was first created for corporate meetings. It was later adapted for educational purposes. Consequently, Zoom tended to reproduce academic and educational hierarchies by placing the instructors at the front of the discussion. However, individuals have the possibility to disrupt these patterns, by opening alternative uses of the technology. It is illustrated by instructors' effort to increase students' presence. Finally, online video-based discussions are structured by norms and mechanisms that organize and distribute speech. They are not only imposed by technical materiality but also by academic norms and hierarchies. For instance, students' presence was lower when the number of instructors and panelists was higher. Because of their academic position, they occupied the space of discussion. Therefore, online video-based discussions only differ to some extent from face-to-face academic or classroom discussions.

6.2.3. Comparison

When comparing video-based discussions and online text-based discussions, it appears that students' presence is higher in online text-based discussions. On the contrary, instructors' presence is higher in online video-based discussions. Moreover, when students participated in the webinar, they often used the chatbox, which is also an online text-based discussion tool. Consequently, students shared less sensory inputs through technologies than instructors. Forums and social media give more space for anyone to share its opinion and interact at any time, without limits. On the contrary, Zoom emerged in the corporate world and allows one person to speak at a time. Space for various speakers in Zoom is also limited due to the time constraints. When space and time is limited, traditional hierarchies tend to regulate the distribution of the space for discussion. In the educational context, it brings to the fourth the instructors over students. In an academic context, it would favor panelists over the audience. This comparison shows that technologies are not neutral but convey social representations, norms, and hierarchies. However, these can be challenged by developing alternatives pedagogical uses, that move away from the initial meanings these technologies were given.

6.3. Collective presence

In the previous section, I analyzed activities organized at different moments of the course. This section will give a broader overview, by examining presence throughout all the course and by raising the issue of collective presence. It is defined as the extent to which the group-as-a-whole is a cohesive and consensual whole (see *Concepts*). It is determined by different elements that will be examined: (1) sharing sensory inputs, (2) creating interpersonal bound, relations, and interactions; (3) sharing interpersonal background information; (4) and building a shared group identity.

6.3.1. Sharing personal background information and sensory inputs

This sub-section aims to compare the way sharing personal background information and sensory inputs throughout the course.

At the very beginning of the course, students did not know each other. The students' group was invisible and anonymous in the course Moodle platform. One interviewee reflected on his feeling when completing the introductory activity, in which students were asked to introduce themselves:

> *Interviewee n°4*: I was really nervous to do it actually. I didn't know what kind of information they wanted! And so, I reached out my friend. (…) And just having that connection to be able to talk about with another person, before doing it and actually presenting yourself to this black hole! (Interview)

As for the first day of a face-to-face class, students were anonymous to each other. On top of that, because of the technology, they were invisible, until they published their first posts. This was conveyed in the expression "black hole" used by the interviewee. Another interviewee explained why she felt uncomfortable publishing a video for the introductory activity:

Interviewee n°5: I didn't want to do a video, because I felt like I don't know who is going to be watching and I feel a bit weird.

When addressing to this "black hole", participants could not adapt their behavior to their audience. The fear of acting inappropriately is mentioned by one interviewee, when talking about the reason why he did express his concerns about using Twitter for the course's purpose before other students raised the issue in one of the course's forums.

Interviewee n°4: I think there were some questions about etiquette. I didn't know if there was really a place where I could just... I didn't want, first day of class, be the guy that just send out a message to everybody that says: "Hey, I have a problem with X, Y, Z". (…) I don't know anybody in the platform. I don't know my classmates yet. I'm just trying to do what is expected of me. (…) And also, I didn't want to come across as rude in anyway.

He did not know what the appropriate place in the course platform was, where he could have shared his concern. Beyond this technical aspect, expressing his concern is made harder by not knowing the rest of the students. The interviewee was worried about acting inappropriately and being negatively perceived by others, because he did not know the group's norms. Moreover, he does not want to stand out from the other students. Interestingly, the fact that the group is invisible seems to increase some students' unwillingness to stand out by signaling their presence. After the introductory activity, students got a better perception of the group, as all the active students posted in the platform. However, all the students did not read others' posts. Therefore, the extent to which personal background information was shared was limited. It is corroborated by the interviews. Interviewees did not have a clear perception of the group of students. When asked if she perceived the group as homogeneous or heterogeneous, one interviewee explains she cannot really make a judgement:

Interviewee n°4: Oh... I don't really... When we got the email that I am accepted in the course, they said that there are eighty or ninety students. But I don't really know if there are that many anymore. (…) Students may drop out or they don't engage in the activities. So, I really lost track of who is still in that course.

In the first half of the course, most interactions between students occurred through online text-based discussions. Sharing sensory inputs is not possible in these technologies, except by posting a message. Consequently, one student may be present in the platform but invisible, because no mark of presence is left. This gap between presence and visibility to others is due to the demonstrative nature of presence. Therefore, students' presence varies based on their participation in discussions. Moreover, presence may be demonstrated, but may not be perceived. Because of the complexity of Moodle, some interactions occurred in the platform but were not perceived by all the students. In comparison, during the Moodle conference, students were suddenly connected at the same time and were required to publish. This time, presence corresponded to participation. One can possibly say that collective presence increased during this learning activity.

During the second half of the course, discussions occurred through video-conferences. In the previous section, I compared students' and instructors' presence through the camera in webinars, during the main discussion. I will now closely examine students' presence, by considering the webinars as-a-whole.

In the first webinar, no student turned on the camera and the audio intentionally. However, there was a cue of students' presence. Their names appeared in the screen in black boxes, but no sensory cue was provided. There was also a list of participants to the webinars. However, it was not directly accessible, creating moments of ambiguity. For instance, when I joined the fourth webinar, I thought only the instructors were present. They were the only one producing sensory inputs, but other students were already there.

In the next webinars, instructors started to ask students to turn on the camera and the audio, to introduce themselves in the beginning of the session. The collective presence thus increased. The personal background information shared was mostly name and university. One student positively commented on the opportunity given to being introduced during the webinars:

> It was nice to have a little introduction round before starting the conference since from time to time I have been wondering who am I actually studying with on this course.

<div align="right">(Extract from final reflective learning diaries)</div>

However, during the main discussion, students did not always turn on the camera to participate. As previously demonstrated, many used the chatbox. Students seemed reluctant in voicing out their comments and switching on the camera. For instance, during the second webinar, an instructor asked them to introduce themselves while a technical problem was solved. It took almost ten minutes for students to do so, after the instructor repeated the instructions several times. This may be due to unwillingness to stand out from the group. Indeed, students shaped their behavior based on the other student's behavior. Accidents are particularly illuminating of these group's dynamics. Several times, one student kept the video while all the other students turned it off. Systematically, the student turned it off when the fact was noticed. Group's dynamics were also visible in forms of accountability to the group. When most students had the camera on, students without the camera tended to justify it. During the second webinar, one student indicates in the chat that she does not have the camera on her device. Interestingly, during the group work meetings observed, group dynamics also defined how the camera was used. The camera was turned in on either all members or by none.

Summary of findings

The comparison of collective presence, as producing sensory inputs and sharing personal background information, showed that collective presence increased. However, throughout the course, sensory inputs did increase regularly but fluctuated between moments of presence and absence. Technical features did influence the cohort's visibility. However, the general increase in collective presence was shaped by instructors' and students' practices. For instance, individuals adjusted their behaviors to others. Unwillingness to stand out seemed to be important when students' presence is low. Finally, despite the introductory activity, students did not perceive a lot from others' personal background.

6.3.2. Building interpersonal relations

Interviewees generally mentioned a lack of interactions during the first half of the course, before the group works started. When asked with whom they engage with, until now, they answered:

Interviewee n°5: I don't feel a real engagement with the other participants.

Interviewee n°6: I think this course doesn't have a lot of engagement with the other students per se.

They could only create interpersonal relations through text-based online discussions, which were not perceived as very efficient, as previously exposed (see *Physical presence*). Apart from that, interviewees mentioned two kinds of interpersonal relations they had with other students. These were not planned in the course design.

The first one happened when some students expressed their concerns about using Twitter for online discussions in the course. Concerns were first shared by one student in a forum discussion; dynamic discussions between students followed from it. The discussion actively engaged some students who shared arguments and counter-arguments, in several posts. As a consequence, the instructors created an alternative space for discussion in Moodle. One interviewee evoked the sense of solidarity he felt toward the other students:

> *Interviewee n°4*: I would say that, in the beginning, when I was feeling very anxious about this idea of having to create a Twitter account, I did feel some sense of social solidarity because I realized that other students were also expressing that same concern at the same time. And that actually made me feel more connected to my fellow students.

This episode increased collective presence, by encouraging students to connect.

Three interviewees mentioned another kind of interpersonal relations. These were between students who knew each other before the course. It was more likely to occur in this course as some students were from the same university. Some were in the same programme, others were exchange students in the same university. They discussed the course together. Some joined the webinars. These offline interpersonal relations were perceived as very usual, especially while interpersonal relations with the other students from the group were low:

> *Interviewee n°2:* This also was quite a good opportunity because sometimes maybe a task wasn't as clear, or the guidelines for the task, (or) which citing style we had to use, or stuffs like that, wasn't as clear.... So, I could discuss it with my friends. That was good.

However, all the students did not benefit from these offline interpersonal relations. One interviewee explained that he did not know who was studying in his university in the course. This interviewee was completing his degree outside of Finland. He was older, working and only completing online distance courses. He was thus more experienced but also more isolated. He was typical of traditional students in online distance education.

From the second half of the course, students started to work in groups. New interpersonal relations emerged that did not rely on offline interpersonal relations. In the final reflective learning diaries, overall, students expressed their satisfaction about the group work. several students positively reflect on these overall experiences, as shown by the abstracts from five students. It helped participants to build interpersonal relations, though they did not know each other personally, as mentioned by this participant:

> I felt part of the group even though I don't really know the members (personally). This work task made me really think about the willing to know these girls in front of a cappuccino, maybe under the sunlight. (…) I felt close to people that few days ago were just co-workers, so the report is totally nice to me!"

> (Extract from final learning diaries)

She may refer to the fact they did not share many personal background information. From the second half of the course, students started to work in groups. However, in one group work, a group member decided to leave the group during Module 5. The group members' reflective learning diaries inform that she felt the group members were not participating enough:

The group I was assigned to was, from my perspective, not interactive at all. I tried to take a leading role due to the lack of participation of other members, but this did not work. (…) Communication among the group members was completely lacking (at least until I stopped being part of it)

(Extract from final reflective learning diaries)

Physical presence was low in the group, as revealed by the lack of communication and participation. Possibly, group members did not actively signal their presence, bringing one member to extract herself from the group. It gives evidence that signaling one's presence is part of the implicit norms, on which a group cohesion can be built. Another member reflected on her participation generally and during this group work:

I usually take a more passive role in group work, which means that I participate in conversations and all the work that is supposed to be done, but I'm not the loudest and most creative one. I like to focus on the actual work. Maybe this time I should have been more active and tried to better support the group member, who would had liked to work differently. I can't help, but to feel a little bit guilty, even though I don't know, what I could have done differently. But this is a valuable learning experience for me, because I honestly thought I was being active enough.

(Extract from final reflective learning diaries)

This student was indeed more reserved during the group work meeting that was observed. She was more silent than the other group members. On the contrary, she consistently posted in the online text-based discussions. She thus did participate in discussions when it was part of the learning tasks. In this extract, she explained that she was used to take this passive role. She is an example of silent learner, which questions the need for physical presence, as participation.

Summary of findings

Therefore, interpersonal relations did not occur with the students' group but mostly within group works and students who already knew each other. Collective presence did not emerge from creating interpersonal relations with the group as-a-whole. Interpersonal relations developed in reminding of rhizomatic patterns. It developed beyond the way they were planned in the course design. Offline interpersonal relations that already existed between some of the students played a crucial role, until group works started. Then, how did a collective presence emerge?

6.3.3. Creating a shared group identity

I will now analyze how the group is represented in students' and instructors' discourses, throughout the course, using different data sources (observations, interviews, learning diaries). I will then compare representation of the group with representation of the audience in Twitter.

In these representations, three elements were emphasized: the group's internationality, and its diversity in terms of universities and disciplinary backgrounds.

These representations were reproduced by the instructors. During the third webinar, one instructor commented that she was happy to travel around the world with them. One instructor mentions the various backgrounds and universities represented among "participants from all Finland, from different universities and fields" (extract from observation notes, Webinar 1). Similarly, at the end of the final webinar, the instructor said that she "hope(d) they learnt something, for their own field, as all students were not coming from education background".

These representations were produced based on questionnaires completed by students when enrolling in the course. For the instructors, the cohort's diversity was an argument to promote the course as international, pluri-disciplinary, and fostering academic collaboration. These are elements valued in higher education institutions. These representations were also produced by participants, throughout the course. In the introductory activity, participants emphasized the international diversity of the group:

> I am excited about this course as I guess the participants from across the globe will come out of their own experiences of "postcolonialism.

Interviewees also mentioned diversity in terms of academic backgrounds, nationalities, and universities:

> *Interviewee n°2:* We are all from different fields of study as well, and obviously different nationalities.

> *Interviewee n°3:* There were students from many, many different countries, at least because of their name or family names.

> *Interviewee n°5:* The fact that I can study from home and then I can also have a chance to meet other people who are not exactly from the same country, from various countries. Maybe, of course, they are related within different universities in Finland, because students are from various universities.

Diversity was also highlighted when participants commented on their working groups, in the final reflective learning diaries:

> I really enjoyed, as always, to hear about different experiences from many countries.
>
> (Extract from final learning diaries)

> Secondly, dealing with contextual problems and getting to hear from others what their views from their own situations and contexts were, even though sad, was very enlightening.
>
> (Extract from final learning diaries)

> Second, we are all different and come from diverging backgrounds, thereby the exposure to other perspectives necessarily broadens the horizon regarding this complex topic.
>
> (Extract from final learning diaries)

This diversity is partly grounded on the international characteristics of the students' cohort. They were from different countries because many were international or exchange students. Internationality constitutes an element of their shared identity. Discussing migrations during the first group work meeting, one student commented that she "thinks it relates to all of them. It is something they have in common" (extract from observation notes, first group work meeting, Group 4).

However, in other occasions, participants reflect and mention the group's heterogeneity based on being students, in the academic world, mostly from social sciences, as in the following examples:

> We discussed about including minority a lot in our field. For us, it is obvious to discuss about it. But in policy implementation, it is not very considered. It is maybe there that this topic should be discussed. There is a divide between the academic field and the policy implementation.
>
> (Extract from observation notes, first group work meeting, Group 4)

Interviewee n°2: Well, I guess it is just homogenous in the term that we are all students.

Interviewee n°3: I think I have noted that most of the students have this background in Social Sciences and I am more from Natural Sciences.

A shared group identity seemed to emerge from the diversity in students' fields, nationalities, and universities. However, this diversity was limited by the fact that many students were from the social sciences field. They also all experienced the Finnish higher education system, and many were international and exchange students, two group which had strong individual identities, in higher education. The emphasis on diversity enables to promote the course, among students, and an external audience. However, students' shared experiences influence the construction of a shared group identity. More importantly, the group mostly exists in representations.

As a final analysis, I will compare the way the group is represented to the way interviewees tried to represent the audience in Twitter, and public platform. Exposure was mentioned by all interviewees as a difference between Twitter and Moodle. Students' posts can potentially be read by anyone. Interviewees struggled to describe a specific audience in Twitter:

Interviewee n°2: And I guess that's also the reason why the instructors wanted us to make it public and to make the opportunity to people outside the course to read, to participate. But I couldn't imagine who would find the thread and who would read it, or who would actually also answer the questions, from outside the course. I didn't really get the sense of that.

This explained her reluctance to use Twitter, in which she would feel watched by unlimited audience:

Interviewee n°2: Hum... Because, I think I would… I would feel more like maybe watched also? And like, I think that… Or like... An unlimited... Or I would... I don't know. I think I would not dare to say something or something like...

Not only is the audience invisible in Twitter but unlimited as well. The interviewee faced difficulties formulating her thought. It is due to the material constraints that do not allow to identify who would witness one's presence in social network sites. Indeed, the logic of the algorithms are not disclosed to the public by social network sites' companies. From a social constructivist perspective, in social media, individuals' self-performance is made even more complex, as they cannot get a sense of whom is witnessing their presence. A group shared identity is thus made even more difficult.

6.3.4. Summary of findings

There are strong similarities between students and instructors' representations of the group. The same elements were evoked throughout the course. It shows that a consensus exists among students and instructors on the ways the group is represented. This representation is instrumental in shared group identity. This section showed that a shared group identity is the driving force of collective presence in this course, more than sensory inputs, creating interpersonal relations or sharing personal background information.

Chapter 7 Discussion

In this study, social constructivism and qualitative comparative methods were applied to counter deterministic and positivistic accounts of social realities. I will now discuss the way this approach contributes to a renewed understanding of social presence, in its multiple dimensions and in relation to educational technology.

7.1. Implications of findings

7.1.2. Subjective presence

Subjective presence was analyzed in two learning activities, that is the introductory activity and the first group work meeting. It was also examined across different technologies, that is text descriptions, photographs, and video-conferencing technologies. Subjective presence was defined as the extent to which one provided access to its subjectivity and interpreted others' subjectivities in interactions with others and based on subjective and culturally-situated meanings (see *Concepts*). It was analyzed by looking at (1) the way individuals presented their self, and (2) the extent to which personal background information was shared in discussions. Considering the research question, the findings showed that instructions and broader academic norms impacted subjective presence and shaped participants' representations of themselves. They also gave evidence to how the share of personal background information was shaped by students' subjective meanings, but also, group dynamics.

Table 7 presents the findings with regard to the research objectives, defined in the *Introduction,* that are (1) discussing social presence, educational technologies, and their interrelations from a social constructivist perspective, and (2) using qualitative comparison to analyze the way contexts influence how social presence in relation to educational technologies is socially constructed.

Table 7: Findings on subjective presence in light of the research objectives

	Objective n°1	Objective n°2
Introductory activity (text)	The introductory activity gave an example of how the self as a social construction was presented in the course situation. Participants did not project their "true selves", but shared information based on what they thought would be perceived as relevant. Introducing oneself was not a neutral process. Most participants defined themselves in relation to the group, sometimes to stand out. When introducing themselves, they also attempted to encourage positive perceptions from others.	Comparing participants' self-introductions, they often put emphasis on the educational background influenced by the instructions, the academic context, and the interactions with others, as students read each other's posts. However, differences were found. For instance, one student was keener on sharing personal background information, because of that student's specific background.
Introductory activity (photograph)	Physical presence was not determined by the technology used – here photographs - but negotiated by participants. Some chose not to appear in the photograph or not to be represented as the subject matter. The way subjective presence was embodied in photographs was shaped by subjective meanings, that is the way, for instance participants chose to be represented as teachers.	Across students' photographs, the degree of physical presence varied. The comparison of the four pictures in which participants were represented with other people showed how they displayed different power configurations between the subjects represented. It had implications on the representations of the self that were conveyed.
First group work meeting	Technology did not determine subjective presence in group work meetings. However, specific configurations (group size) and moments of the interactions were favorable to subjective presence, as shown by the distinction between formal and informal interactions. It showed how the "social" shaped the technology.	Subjective presence varied from a group to another, based on the group dynamics during the meetings. For instance, all groups did not emphasize the same aspects of their identities. Many working groups emphasized international aspects of their pathway. However, this emphasis was complexified by dynamics that emerged during the lockdown and from the topics discussed in the meetings.

These findings were in line with research on the social construction of identity and the theory of impression management. Self-representations varied from a context to another, through the influence of social interactions and norms embedded in specific contexts. However, this study showed how, in the context of low social presence, such as the introductory activities,

students and instructors tended to routinely reproduce well round-up presentations of themselves, often in compliance with academic norms.

In addition, interviewees reflected on blurred perceptions of others in the class, especially, when the audience was not directly visible, such as before publishing their posts for the introductory activity. These situations introduced spaces for ambiguity as they created uncertainties among some participants regarding what social norms were in play. It echoed research on the impact of unseen audiences, especially in public social network sites (Stark & Fins, 2012; Hogan, 2010).

In the photographs posted for the introductory activity, students negotiated their degree of salience, by appearing more or less visible in the photographs, and inscribed subjective meanings in their self-representations. Anonymity also opened up possibilities for deconstructed representations of the self, that did not create a single narrative. One participant decided to present several photographs in which he did not appear. It was not clear whether these pictures aimed to represent aspects of that student's subjectivity, as they individually displayed different narratives. This finding was in line with research showing how anonymity in online learning environments could encourage re-embodiments (Belk, 2016) or set conditions for students to filter out some information by reducing the share of visual cues (Öztok, 2013). However, the analysis of photographs also showed that they were broadly used as conveyers of visual cues. It revealed the influence of widely spread practices of image sharing on social networking sites (Zappavigna, 2016). Nowadays, space for a blurred and ambiguous identity to be displayed on the internet is increasingly reduced (Floridi, 2012, as cited in Belk, 2013, pp.487). Individuals are more and more encouraged to share visual cues and information to identify them. Throughout the introductory activity, it was exemplified in the way most photographs represented participants as the focus of the photographs, in clearly identifiable ways, often in the form of portrays or selfies.

The analysis of group work meetings aligned with research looking at identification in group work discussions (Öztok, 2016). It showed how identities played differently based on the group's dynamics and configurations. Unique or multiple aspects of identity were highlighted during the meetings. Group members demonstrated expectations in relation to other's identities. They also accepted and acted accordingly with the identity that other group members demonstrated. However, contrastingly with Öztok (2016), in this study, subjective presence was not interpreted in relation to knowledge construction, informed by social learning constructivism. The analysis rather considered the way identifications were embedded in social relations between participants, in line with social constructivism.

7.1.2. Physical presence

Physical presence was analyzed in two kinds of learning activities: the online text-based discussions and the online video-based discussions. They used different educational technologies: Moodle forums, Twitter social network site and Zoom video-conferencing tool. Students' and instructors' physical presence was compared in these learning activities. Physical presence was defined as the way and the extent to which sensory inputs were shared and interpreted in interactions with others, based on subjective and culturally situated meanings. It was analyzed by examining (1) the extent and the way one shares and interprets sensory inputs (2) the extent and the way one demonstrates and interprets active presence through participation (see *Concepts*). In light of the research question, the findings indicated that technologies did not determine physical presence, as participants' physical presence was not necessarily higher in online video-based discussions, compared to online text-based discussions. Despite being negatively perceived by interviewees, text-based online discussions provided more space for

students to participate in the learning activity than webinars using online video-based technologies. *Table 8* presents the findings considering the research objectives.

Table 8: Findings on physical presence in light of the research objectives

	Objective n°1	Objective n°2
Online text-based discussions	Students negatively assessed online text-based discussions based on the argument that it failed at reproducing real discussions. However, there was no consensus on what a real interaction comprised, and in which ways online text-based discussions should be used. This finding showed that individuals gave different meanings to technologies.	Online text-based discussions provided more space for students' presence. On the contrary, instructors did not engage a lot with the tool. Increasing students' presence run the risk of overburdening students' workload. Instructions for online text-based discussion tools changed throughout the course, with implications on students' presence. It shows that no single-use was inscribed in a technology.
Online video-based discussions	Using video-conferencing tools did not necessarily imply that students' physical participation increased because physical presence in webinars was not equally distributed. It showed that technologies were not neutral. They reflected, were organized by, and reproduced social norms.	Using video conference via the platform Zoom tended to reinforce academic and educational hierarchies and emphasize the instructors' presence over students, if not moderated by pedagogical practices. Efforts from instructors to engage students in the discussion paradoxically increased instructors' physical presence, manifested in the audio channel, while students' participation moved to the chatbox.

Firstly, the findings unpacked the multiple ways in which technologies were utilized. Despite their material and structural constraints, they could convey different subjective meanings that could reshape academic and educational hierarchies. Video-conferencing tools are often praised to creates more "illusion of direct experience", thus more physical presence, compared to forums or social media (Biocca et al., 2001, as cited in Kehrwald, 2010, pp.40). However, the findings showed that in online text-based discussions, students' physical presence, in the sense of sensory cues was low, but their participation was higher. In online video-based discussions, students' physical presence during discussions, both as sensory cues and participation, was lower than instructors' physical presence.

In the case of forum discussions, those findings can be related to two social-cultural processes. Internet forums emerged in reference to the forums in Ancient Roma. It was a place for people to discuss public issues (Encyclopaedia Britannica Editors, 2020; History.com Editors, 2018). Drawing from this tradition, the internet and online discussion forums historically bore the promise of democratization (Papacharissi, 2002). The internet was seen as a way to democratize the access and the production of information and to build virtual

communities beyond geographical boundaries. Deliberative democracy could be achieved through discussion forums, conceived as virtual agora (Street & Wright, 2007). Discussion forums could foster deliberation and emancipate groups from the need for one single authority (Papacharissi, 2002). Nowadays, it is echoed in the way online learning and online discussions are sometimes perceived as a tool for students' empowerment and participation (Costa et al., 2018).

However, forums were often incorporated in education through LMSs. LMS platforms aim to quickly implement e-learning across one institution (Weller, 2018). The most popular educational technologies are gathered in the same platform, not in their best version, but good enough to work. This standardization is driven by imperatives of efficiency and profitability but also reduces local expertise and innovation (ibid.). For tools to be enhanced, they require technical configuration and pedagogical adaptations from institutions or instructors, in other words, time and commitment. Besides, in the course, social presence in forum discussions was not necessarily achieved if the tool was used in a standardized way and without pedagogical thought to inform it, although alternative uses emerged that did have the potential to increase physical presence. In the GED course, it was made possible because of the context in which the course was implemented, characterized by good technological infrastructures and support and time allocated to the course design and implementation. The findings thus allowed us to move away from utopia or dystopia related to educational technologies, by looking at the processes that were concretely evolved in their design and implementation (Street & Wright, 2007).

The analysis of Zoom showed the need to distance oneself from the imperative of reproducing "real" interactions through technologies. Even if these technologies are deemed to create an illusion of real interactions, the way sensory inputs are shared is socially constructed. More importantly, the findings revealed how technical materiality constrained uses. Zoom gives stage on the screen to the prevalent voice and sound. It can reinforce the instructor's authority. Compared to Moodle, Zoom is not an open-source platform but a private company. Consequently, less space is given to adapt it and avoid such an effect. Besides, Zoom tended to reproduce academic and educational hierarchies in the way physical presence was negotiated and favored instructors' and panelists' presence. Students took over the chat functionalities as an alternative way to participate in the discussions, despite instructors' efforts to engage them.

The disbalanced presence of instructors and students in webinars and students' negative appraisal of online text-based discussions corroborated with students' tendencies to endorse conventional learning habitus (Costa et al., 2018). Even if technologies could open ways for emancipatory learning practices, they were not necessarily adopted by students, who preferred to maintain the instructor's prevalence, for instance by using mostly the chatbox during webinars or disengage with the online discussion forums. Consequently, technologies were not the main determinant of students' interaction, compared to academic traditions. The latter provided a stable framework in which students were familiar to navigate. It showed how alternative uses of educational technologies would require from instructors and students to learn how they can be employed and to create a consensus on how they should be used in specific contexts.

7.1.3. Collective presence

Collective presence was defined as the extent to which the group-as-a-whole formed a cohesive and consensual whole. It was analyzed throughout the course by interrogating in which forms it appeared throughout the course. Collective presence was broken into three aspects: (1) sharing sensory inputs, (2) creating interpersonal relations, (3) sharing interpersonal

background information, and (4) building shared group identities and representations. Contrastingly with previous sections, those aspects were studied at a group level. In light of the research question, the findings showed that collective presence was not created from sharing sensory inputs, developing interpersonal relations, or sharing personal background information at a group level. It emerged from creating a consensus on the group's representation. Collective presence thus existed, before anything else, as a representation. *Table 9* presents the findings in light of the research objectives:

Table 9: Findings on collective presence in light of the research objectives

	Objective n°1	Objective n°2
Visibility	Collective presence, as visibility was socially constructed, through interactions with others. Individuals adjusted their uses of educational technologies to the others. It was explained by individuals' reluctance to stand out from the group. Technical features did influence the cohort's visibility. However, the general increase in collective presence was mostly shaped by instructors' and students' practices.	Full invisibility at the beginning of the course did not contrast with full visibility at the end of the course. Collective presence - understood as visibility- was not linear but fluctuated between visibility and invisibility. However, it headed towards more visibility, in both text-based online interactive technologies and video-based online interactive technologies.
Interpersonal relations	Collective presence did not emerge from sharing personal background information or creating interpersonal relations.	Interpersonal relations developed in reminding of rhizomatic patterns. It developed beyond the way they were planned. Offline interpersonal relations that already existed between some of the students played a crucial role.
Representations	The way the group was represented revealed that the diversity of background among participants becomes the common frame of reference, in which the group grounded its shared identity and perceived itself.	Collective presence remained stable throughout the course. There were strong similarities in the way the group was represented in students' and instructors' discourses. It demonstrated that a consensus existed on the representation of the group.

This study ultimately adopted a more synthetic look by considering the course's temporality as a whole and by examining collective presence. It revealed that collective presence fluctuated between moments of presence and non-presence. It contrasted with the way social presence is often understood as a linear process in research on social presence. Linearity pushes to focus on evaluating social presence at the end of the course, rather than understanding it throughout the course and being sensitive to moments of presence or no-presence. Consequently, social presence cannot be summarized to a binary opposition: whether "another person is perceived as present or absent » (Biocca et al., 2003, pp.460). It is better represented as a continuum, in which one can be more or less present (ibid.). This study was in line with Kehwarld (2010) who analyzed students' experiences of social presence and showed that social presence is demonstrative - one needs to produce observable demonstrations of one's presence – dynamic – perceptions of others fluctuate – and cumulative – it builds on past experiences of social presence, such as offline interpersonal relations. The latter element is echoed in the findings which showed the importance of being sensitive to offline dynamics, especially in this course where students came from the same university or could have taken together other courses offered by the UniPID network before.

In addition, the findings revealed the importance of conformity to the group, for instance in the webinars. Implicit, and explicit norms were formulated throughout the course, regarding the way physical presence should be signaled. Students tended to conform to the group behaviors, putting the video, if everyone did as well. Attention to moments of "accident", in which these norms were momently disrupted were particularly interesting. Mechanisms of conformity and norms are further illuminated by Lea and Rogers' (2004) findings: social influence, as the extent to which behaviors are shaped by others, is higher when social presence is low.

The findings also shed light on the fact that, at a collective level, what was instrumental was less interpersonal relations, or sharing sensory inputs and personal background information than building a shared group identity. It was in line with Lea and Roger's results (2004) according to which group cohesion was not only based on interpersonal bonds but on a shared social identity. Representations of the group emphasized its diversity. In particular, the group endorsed a shared international identity, that was regularly emphasized and strongly rooted in the idea that individuals were representing a certain country or context. These representations played favorably for different narratives. From a decolonial point of view, as endorsed in the course, internationality enabled different voices to be heard. For more a pragmatic narrative, internationalization could play in favor of the university's attractiveness. Both narratives were manifest in the course. Internationality in the course was yet limited by structural elements such as the specificities of internationalization, which enabled certain international students to access Finnish higher education, and this course, and to thus be represented in this cohort. Similarly, diversity in students' discipline was mitigated by the over-representation of disciplines outside natural sciences. Therefore, diversity among participants was relative, but perceived diversity was instrumental to build a shared group identity. These findings are particularly relevant to ICE.

The findings also compared Twitter and Moodle, in terms of their audience. In Moodle, the audience was closed and students could, in theory, find information about who had access to the data. Despite this functionality existing, it was not used and known by students, showing a limit in their agency. On the contrary, on Twitter, the audience was determined by curators, that are algorithms that select specific online artifacts to be displayed to an audience. (Hogan, 2010). Students showed even more difficulties in picturing the nature of this audience. Collective presence was less likely to emerge in Twitter as it was not a space for a shared group identity to be built.

7.2. Limitations

Limitations appeared in the research process. To begin with, social presence was a concept hard to manipulate, because of its lack of conceptualization. This study did not aim for conceptual clarifications. It rather chose to explore its multiple dimensions through a social constructivist lens. The question remains open whether a unique definition of the concept is needed or if its multiple dimensions constitute a conceptual strength. One could even question if social presence should be considered a useful analytic category or whether it should be considered obsolete (Öztok & Kehrwald, 2017). Indeed, throughout the research process, it was challenging to combine the concept of social presence, which stemmed from psychology, with social constructivism, which emerged from a sociological tradition.

Secondly, the findings' structure put social presence in the front lines of the analysis, as it was challenging to cover the diversity of educational technologies used in the GED course. The study did not analyze technologies per se, but only in relation to social presence.

Thirdly, the analysis did not cover the amount of data this study generated. The latter was beyond the scope of this thesis. Consequently, many issues, which emerged from the data, remained unaddressed (see *Directions for future research*). Moreover, shifts in the planning of research questions and in data generation downplayed the usefulness of some of the data instruments. If interviews were conducted at the end of the course, they could have provided better insights on the research question.

Fourthly, in this study, the qualitative comparative method manifested some limits. In the literature, it did not entail a clear methodology. This suited well to qualitative methods but may have created a loose implementation of comparison. In addition, no research in ICE were found applying qualitative comparative methods with a social constructivism framework. Therefore, the extent to which these two traditions can be integrated still needs to be further evaluated.

Fifthly, I argued that collective presence was built through a consensus in representations, rather than interpersonal relations and shares of personal background information between the group as-a-whole. If data were accessible, it would have been interesting to analyze how a shared group identity emerged from the working groups, by doing observations throughout their collaboration.

Finally, using social constructivism facilitated close descriptions of what online learning was, rather than directly jumping to an evaluation of its success, as usually done in research (Luppicin & Lin, 2012). However, social constructivism was less convincing to draw practical implications and assess what could be changed and eventually improved in the course. This study thus formulates implications in light of the decolonial theory, an approach that emerged from the course content and pedagogy (see *Practical implications*). The decolonial theory is useful because it does not only aim for mere description, but also for changes in social realities, making it more relevant to draw practical implications.

7.3. Directions for future research

Several questions and research designs remain open for future research. Some issues that rose from the data could not be covered in the report. In particular, the use of Twitter social network site was ultimately not delved into. However, it would have raised many enlightening issues regarding the implications of using social media for self-representations (Hogan, 2010; Belk, 2013; Belk, 2016) and related issues of context-collapses and privacy (Baisley-Nodine, Ritzhaupt & Antonenko, 2018; Dennen & Burner, 2017). It would be interesting to further compare the way students perceive their audience, in close and open learning environments, such as Moodle and Twitter. A further analysis of Twitter, that was not initially designed for educational purposes, could be interesting in terms of whom has the agency and power of designing the technologies currently utilized in education (Adam, 2019).

In addition, the full data collected from interviews were not analyzed as expected, because of a shift in research questions and the difficulty to address social presence through interviews with students: students tend to reflect on social presence and technologies in rather general terms and to sometimes reproduce the deterministic and instrumental accounts found in the research. This may be due to their familiarity with education and learning issues, from being enrolled in this course. Beyond the methodological challenges this situation presented, it would be interesting to explore the way arguments and views on technologies commonly found in research and public debates, influence students' perceptions of their online learning experiences.

In addition, it would be interesting to further understand the impact of students' background on the way they construct their subjective presence. One can wonder how survey questionnaires could be used in a study in which social constructivism is used. Additionally, differences and similarities between students could have also been more systematically analyzed, if more interviews were conducted and if more participants were recruited.

The importance of offline processes was partly stressed in the findings. These offline processes could be further explored to examine the relation between offline and online processes, and eventually question their opposition (Aouragh, 2018). This could indicate modes of "out-of-presence", in which offline processes disrupt online interactions between participants, for instance when using Zoom as it provides a window on participants' offline environment, bearing risks for privacy.

Also, it seems worth to mention that the data also provided examples of "silent learners" (Creelman, 2018). Some students completed the course but through passive participation and lurking. These cases could be delved into, especially for Finnish students, often associated with less active participation. Interviews rather than observations would then be an appropriate instrument. Examining silent learners could allow to question active demonstration of presence as the norm in online distance learning.

Finally, social constructivism seemed to be a relevant approach to explore the way a shared international identity was collectively constructed among the international group of students. Internationality could be further explored as a complex social reality, constructed through discourses and socio-historical processes, promoting the internationalization of higher education; and renegotiated in specific international educational contexts. This issue is particularly relevant to ICE.

Chapter 8 Conclusion

8.1. Practical Implications

The course drew on critical approaches found in the decolonial theory in both its content and form. The course content aimed to "critically reflect on educational power structures globally and locally, giving attention to education under the purview of the colonial matrix" (Menon et al., 2020). From the instructors' perspectives, there was also an effort to use it in the course design and pedagogy (ibid.). This study attempts to produce situated implications, in the sense of implications that consider the course's objectives. I will now reflect on the findings considering the theory that informed the design and implementation of the GED course.

In the introductory activities and in the webinars, institutional belonging was emphasized. Students' and instructors' self-representations were often shaped by academic norms. This can contradict decolonial endeavors because it does not allow diverse, and eventually socially disruptive identities to flourish. Going beyond the routine performance of the academic self is essential for students to reflect on how their identity - in its complexity and multidimensionality – plays with decolonial issues. As claimed by Zavala (2016), decolonial educational practices should aim to reclaim people's identity, practices, and places.

Several strategies were utilized in the course to increase students' physical and subjective presence, such as visual cues, or students' introductions and photographs. However, attempts to augment visual cues raises issues from a decolonial perspective. Firstly, it emphasizes visual cues as the main determinant for physical presence. It is worth asking the ultimate necessity of visual cues, as they can convey prejudices. Physical presence also implies that students actively signal their presence in the online learning environment. The internet can then become a tool for surveillance and control. Signaling one's presence gives instructors access to students' behaviors and can be used to track participation (Costa et al., 2018). According to Costa et al. (2018), it unveils the metaphor of the internet as a panopticon. The invisible audience then also refers to the instructor's gaze. It is not directly palpable but potentially omnipotent. Surveillance is one of the ethical issues raised by learning analytics.

In addition, the course used an online public platform to discuss decoloniality, to deconstruct eurocentrism and recognize epistemic violence. The limits of Twitter should be further critically interrogated as a relevant space to de-construct decoloniality, at individual levels. If so, how can these systemic forms of discomfort and at times implicit forms of self-censorship be tackled?

The findings also indicated the importance to critically engage with the way technological features, such as Zoom tend to reproduce hegemonic hierarchies in the way physical presence is negotiated. Technologies do often reproduce colonial and hegemonic patterns in their access, design, content, mode of production, language, and pedagogy of technology (Adam, 2019). Using these technologies in line with a critical and emancipatory approach remains a challenge, especially when imperatives of efficiency and standardization are strong in higher education (Clegg et al., 2003). This confirms the need to put pedagogies before technologies (Ascough, 2002).

Furthermore, the study emphasized how collective presence was based on a consensus on the group's representation. However, building collective presence can lead to dismissing differences in the group over homogeneity and conformity (Hodgson & Reynolds, 2005). Students can feel isolated because they perceive their identity as less valued or accepted by other members of the group. Consequently, equity in online learning should go beyond access

and be sensitive to whose voices are heard and identities valued. Instructors' role is instrumental to prevent processes of othering and social absence, in which students filter out representations because they judged that they are not appropriate or valued (Phirangee & Malec, 2017; Öztok, 2013). Further research could invest into developing strategies to develop collective presence in a way that recognizes differences, fluidity, and eventually dissensions (Hodgson & Reynold, 2005). From a decolonial perspective, we do not only need safe online learning environments and communities but also busy and disruptive spaces to welcome de-construction and reflective processes (Kolb, 2000, as cited in Hodgson & Reynold, 2005, pp.22).

Finally, in online distance education, there may be an emphasis on planning in advance the course. It is exemplified by the way strategies and toolkits for planning online distance courses flourished during the Covid-19 pandemic. The findings highlighted the necessity of what I would call a pedagogy of the moment, in which instructors, and probably students as well, are sensitive to social presence while learning occurs, to adapt the pedagogies to the constantly moving social situations.

8.2. Reflexivity

I will now reflect on the nature of my participation in the course design and implementation, and how it has affected and fed the research process and the findings because reflexivity is an important step in qualitative study (Tracy, 2010; Creswell & Poth, 2007).

To begin with, self-reflexivity encompasses "asking whether (one is) well-suited to examine (its) chosen sites or topics at this time" (Tracy, 2010, pp.842). Studying educational technologies was initially spurred by the professional opportunities it offered me, after my graduation. The Edtech industry is currently flourishing. In many institutions, the use of educational technologies is encouraged. This interest was then deepened by an internship in a company helping universities to administer their LMSs. My position towards educational technologies is thus ambivalent. While criticizing prevalent technological optimism, I also recognize their power in shaping current education issues. Despite my demonstrated interest in educational technologies, I initially felt a lack of legitimacy as I did not have a background in technology-related field. It is commonly assumed that researchers studying technologies would also demonstrate expertise in their uses. However, I think this unfamiliarity was also an advantage. Drawing on my academic background in sociology, anthropology, history, and international and comparative education, I was able to go beyond the technical aspects to steer at the social aspects.

Secondly, I was not initially interested in the Finnish context because I perceived a lack of legitimacy, as I was not familiar with the Finnish education system. Besides, I was reluctant in engaging with a topic saturated with concerns about "best practices" and "exceptionalism". However, the opportunity offered to study the GED course convinced me to study the Finnish context. Throughout the research process, my legitimacy was strengthened by seven months in the University of Oulu. I complemented it with scientific and contextual readings. This experience turned me into an insider. Being an insider has the advantage of getting privileged access to the field and developing a sense of familiarity. However, being an insider may create bias. This was mitigated by the fact that I did not directly belong to the University of Oulu. I was there as an exchange student, and later as an intern. I was often presented by others, including the course instructors, as "Irène, from Stockholm University".

Thirdly, the choice to focus on social presence emerged during the first month of the course. I felt very anxious about presenting my research to potential participants. I realized that it was also due to not knowing whom I was addressing. I had the impression of projecting

myself in a black hole, likewise what was mentioned by one interviewee. This research is thus originally grounded in a subjective feeling. I then attempted to analyze and question it by taking the researchers' glasses.

In research, self-reflexivity also applies to expose the way access was negotiated: I was informed about the course, through a university acquaintance. I got access to the course, after presenting a research proposal to the course instructors. Access to the field was thus negotiated on academic criteria. Indeed, the course instructors were also academics in my field. However, they probably accepted my project less for its theoretical values than for its possible practical benefits. In instructors' perspective, my research could produce feedback and give momentum to the course project.

During the course design, I episodically gave advice to the course's instructors, on technical and pedagogical aspects. This was spurred by concerns of reciprocity. I knew I was benefiting of excellent support to carry out my research, I thus wanted to make myself useful, beyond my research's findings. In January 2020, once I decided to focus on social presence, the design phase was already achieved. However, this focus probably made instructors more aware of this issue during the course implementation. It was not problematic because it enabled experimental pedagogical uses of technologies to emerge and be analyzed.

The data collection was done as part of an internship with the course's organizers, for which I received a grant from *Erasmus* and not from the University of Oulu. This internship was mostly motivated by economic and administrative benefits of being officially recognized in the University of Oulu. As an intern, I was given access to the university's infrastructures, including its survey software and its video-making team.

Overall, instructors were either taking the role of course organizers or academics towards my research. Our collaboration entailed arguing on organizational issues, such as data collection procedures and ethical issues. However, as more experienced academics, they also gave advise on the research itself, mostly on methodological issues. Generally, they did not influence the research focus, which considerably changed from the way it was initially validated by them. In that sense, my close collaboration with them did not introduce biases. However, I may have unconsciously levelled down negative accounts on the course (Creswell & Poth, 2007) to avoid creating deception towards the course instructors. As representative of their institution, their interest was in promoting the course, to contribute to the University's attractiveness. This bias was firstly mitigated by data being collected on a university, which are organizations sensitive to research agenda thus providing relative freedom to produce knowledge. Secondly, I decided to take the GED course as a pretext to explore a theory, thus approaching it with some distance.

Finally, by the end of the research process, an academic collaboration started with the course organizers, to jointly reflect and create knowledge on the course's design and implementation. This may flow into future collaborations, that will go beyond this research project.

After exposing my collaboration with the course instructors, I now reflect on my relationship with participants. To begin with, I shared several similarities with some of them, as I was also studying education and I was an international student in a Nordic country. This means that we shared some similar cultural-situated meanings, that informed my interpretations. This sometimes complicated the analysis. I felt that my familiarity with the discussions they had sometimes hindered my capacity to view from a renewed researcher's glasses what I perceived as banalities. However, shared experiences and being a master's student probably encouraged participants to join the study. Several interviewees mentioned that they experienced similar challenges when carrying their research project and were thus willing

to help. During data collection, I regularly reflected on how my presence could influence their experiences. My presence was particularly palpable during observations. As noted by Creswell and Poth: "observing in a setting is a special skill that requires addressing issues such as (…) impression management, and the potential marginality of the researcher in a strange setting (Hammersley & Atkinson, 1995)" (pp.134). Indeed, my presence impacted their behaviors in enlightening directions for the analysis of social presence. Being the observer usually triggered curiosity. It sometimes created awkwardness. For example, during a group work meeting, one participant suddenly addressed me asking what I thought about the discussion. It is a bright example of how individuals are accountable to the group. I was the only one without the camera, thus displaying low physical presence. This participant made me accountable by checking if I was still following the discussions. However, participants often forgot about my presence or got used to it with time (Angrosino, 2007), especially because I was not turning off the video during the observations.

Finally, by studying and doing my research in the Finnish context, I caught a certain vision of how technologies impacted people's life, that may have introduced biases as the Finnish context is an example of what a possible future could look like but is not the only alternative. The course design and implementation benefited from being organized in Finland: instructors had access to particularly good infrastructures and technical support, available at the university; but were also given the freedom and time to infuse pedagogical thoughts in the way technologies were used and learning activities organized. This should be kept in mind when considering the findings in light of other cases.

8.3. Final thoughts

As a final thought, I would like to compare several pictures that capture online experiences.

The first picture (see *Figure 8)* was found during my work as an intern in an Edtech company. During my internship, I remarked that technologies were conceived and assessed from a very technical perspective, in terms of flexibility, stability, functionality, security, or powerfulness, with little interest in how they were used or experienced (Charbonneau, 2019). Besides, the company tapped into utopic representations of the use of technologies, as exemplified by *Figure 8*. This picture was part of the marketing materials used by the company to promote its activities. Although it did not represent students, but probably executive in a company setting, it was used in to illustrate the company's activity in the e-learning sector. Individuals are represented in a decontextualized and idealistic way. In this picture, individuals are depicted as they are supposed to be or expected to be in the future, rather than for what they are. Four people are discussing around a table and surrounded by high-quality technology devices, such as Mac computers, and seemingly tactile board on the wall. Their collaboration seems to be fruitful as they are smiling.

The picture, originally found in a website providing free stock pictures aims for neutrality and universalism as free stock pictures are usually produced to be used in many different contexts. However, the representations it conveys are not neutral: they describe the transformations that are expected in the future and provide a justification for the company's current activities, that is helping educational institutions to adapt to those predicted changes. In that sense, this picture has a performative power as it indirectly aims to convince the company's clients that they should prepare themselves to face those transformations and it directs the companies' strategic plans. The representations conveyed in *Figure 8* support discourses, arguing that technologies will transform working (and learning) conditions and echo statements made on how a global and digital world would look like in the future, often formulated with

little "refinement, examination, or reality-checking" (Peters, 2003, pp.64). It shows how photographs can be both "ways of seeing" and "ways of worldmaking" (Hatch & Yanow, 2008, pp.23). My experience in this Edtech company, as exemplified by the picture, persuaded me of the relevance of contextualizing students' experiences of educational technologies and the need to question those stereotypical portrays.

Figure 8: Example of pictures used in the marketing materials. Extracted from Pexel.com, a website providing free stock pictures.

Later, during the writing process, I went back to France and discussed with a relative working as a teacher during the lockdown. Suddenly, I felt that I was extracted from the idealistic representations of online distance education captured in *Figure 8*. Through those discussions, online distance education appeared to me in very human and concrete traits, embedded in material and social conditions. Some of my relative's students did not have computer and complete their courses on a smartphone, while others did not have a private space to study. My relative had to adapt to those unexpected circumstances and draw on the pedagogy of the moment rather than on planning to inform her practices.

As a conclusion, I chose to display several drawings that were done by my relative during an online meeting on a video-conferencing tool, with her permission. She explained me that they were drawn while feeling bored during the meeting. She added that she first drew what she was seeing on her screen (*Figure 9*); and that later, she started to draw other configurations using the same characters from the screen (*Figure 9* and *10*). Those drawings present another narrative of our relations to technologies that contrasts with *Figure 8*.

The first drawing (see *Figure 9*) represents a computer in which participants to the meeting are displayed in well-delimited and organized square boxes, as participants usually appear in video-conferencing tools, such as Zoom. In the second drawing (see *Figure 10*), five boxes are represented that mimic the well-delimited boxes in which participants appeared on the screen in the previous drawing. However, the content of the boxes has changed. While in the previous drawing we could see a computer's screen in which appeared participants, we now see the same participants, now represented as small characters, standing in front of their screen,

represented as spiral or multiple squares embedded in each other. The screens are represented as omnipotent and almost scary. One character is even squeezed by its screen. Another one is facing its screen, with a head ready to explode. On the contrary, in the background, animals and natural elements seem to be flourishing. In the last drawing (see *Figure 11*), the previous boxes have been turned into windows of the same house and boxes on which a giraffe stands. The characters are still in the box, but the screens have disappeared. The characters are doing multiple things, some are even going out of their boxes. The atmosphere seems happier.

Those drawings illustrate three aspects relevant to this study. Firstly, they illustrate the ambiguous relation with technologies in current societies. While providing many opportunities for social interactions, they can become omnipotent, with demonstrated risks, especially during the lockdown. Secondly, these drawings also represent the ambivalence of technologies, that are both shaping and shaped by individuals, as revealed in this study by the social constructivist framework. They provide the only access to others and can overwhelm us, but they are also inhabited by individuals and social meanings. For instance, in the drawings, boxes in which participants appeared in the initial screen turned into windows of a house. Finally, considering social presence, these drawings reveal that online interactions are grounded in specific offline contexts. When drawing, my relative's presence was not in the online interactions but, in the offline activity. It raises the question of how in educational contexts, offline spaces can be integrated in online learning interactions.
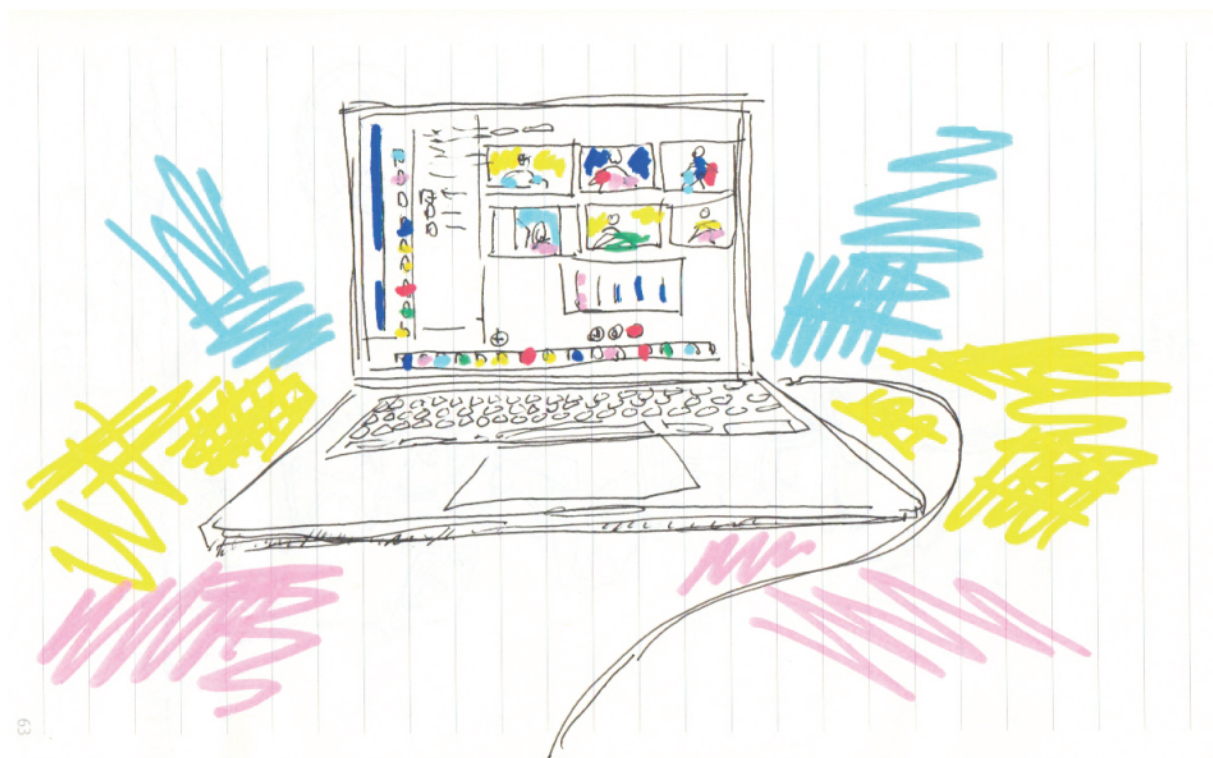
Figure 9: Drawing

Figure 10: Drawing

Figure 11: Drawing

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List of appendixes

Appendix A – Consent form

Master's Thesis Research: Social Presence in Online Courses

Presentation of the Research

Dear Participant,

I am a graduate student in International and Comparative Education at Stockholm University. For my master thesis, I am examining what factors shape students' social presence and experiences in this online course. As you are enrolled in this course, I would like to invite you to participate in my research. Data will be gathered through:

- A survey questionnaire that takes about 15 min to complete. It is available until the 16th of February 2020
- Data produced on the course platforms (Twitter, Moodle) for the course purposes by the students participating in the research

If you accept to be interviewed, the researcher may contact you for a scheduled online interview (30 minutes). Below you will find the consent form with more detailed information. You can only proceed to the survey questionnaire once you gave your consent. Thank you for sharing your experiences with me and contributing to research!

Kind regards,

Irène Charbonneau

Consent Form

We hope you are willing to take part in this study investigating what factors shape students' social presence and experiences in online learning environments.

This research analyses students' sense of being and belonging (Picciano, 2002, p.22) and their ability to interact with others in online courses. The aim is to contribute to research on e-learning, by examining how a safe space for interaction and learning can be created. We also wish to give directions for future improvements of this course's design. Because it is the first time it is run, your participation is even more precious.

To carry out the study, we need to gather students' background information through survey questionnaires, later used for comparison purposes. We will also use the data produced in the course platforms (Moodle, Twitter), for the course purposes by students participating in this research, to analyze their social presence and experiences. Finally, depending on the research requirements, it will eventually be extended through individual online interviews with participants who agreed to be contacted.

The study forms part of the compulsory program curriculum and is supervised by Ulf Fredriksson, supervisor of the Department of Education at Stockholm University, who will ensure that the student adheres to all the necessary rules. The resulting thesis is assessed and graded by an examiner at the end of the course.

By giving your consent, you allow the researcher to use the data collected for the study. Participation is always voluntary. Even in the case that you give your consent, it is still possible for you to withdraw at any time without giving any motivation. Your participation will not affect the course's completion in any way. During the research process, your data is protected and will not be disclosed to unauthorized persons. We will store recordings and other details in a safeguarded manner. Any data collected in the first phase will be anonymized, coded and transcribed as text. This will be done immediately upon transmission to disable any potential for detecting that you have participated. When the study is completed, and the thesis has passed the assessment, we will destroy the original data that has been collected. The results of the study will be published in the thesis in a manner that will not reveal the participant's identity. The study adheres to the guidelines on research ethics and common laws.

Please contact us in case you need further information.

Ulf Fredriksson (supervisor)

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Irène Charbonneau (graduate student)

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+33672639677

I give my consent to participate in this study

- o Yes

o   No

I confirm that I gave my consent to participate in this study

    o   Yes
    o   No

I accept to be contacted for a follow-up interview. Your email will be processed in a separate way from your answers to the survey questionnaire, in order to assure anonymity.

    o   Yes
    o   No

If you accept to be contacted, please indicate your email: [Text field]

Appendix B – Interview guide

Introduction

I am Irène Charbonneau, a student in International and Comparative Education at Stockholm University. For my Master's thesis, I am researching social presence, looking at different learning settings, such as Moodle or Twitter and taking this online course as a case study. I don't know if the concept of social presence is familiar to you. In the literature, it is described as "the degree to which a learner feels personally connected with other students and the instructor in an online learning community" (Sung & Mayer, 2012). More specifically, I want to describe how students engage with others in the online course and how they perceive the use of Twitter or Moodle as an educational tool.

Thank you for taking part in my research. The interviews will be used in two ways: firstly, to corroborate (or challenge) my findings so far, secondly to gather personal experiences about the course. It will last 30 to 45 min. It will be recorded with your permission.

1.   Do you have any question about the research topic?

Here are some general information worth mentioning again. By giving your consent, you allow the researcher to use the data collected for the study. You can withdraw at any time without giving any motivation. During the research process, your data is protected and will not be disclosed to unauthorised persons. We will store recordings and other details in a safeguarded manner. The interview will be anonymised, coded and transcribed as text. This will be done immediately upon transmission to disable any potential for detecting that you have participated. When the study is completed, and the thesis has passed the assessment, we will destroy the original data that has been collected. The results of the study will be published in the thesis in a manner that will not reveal the participant's identity.

2.   Do you have any question at this point?

I sent you a link in the chat to a consent form specific to the interviews. You can take 2 minutes to give your consent to participate in the interviews and indicate if you accept to be recorded.

We are going to start the interview. If you are facing any technical issue during the interview, please let me know. The interview is composed of 4 sections:

- Your general impressions about the course

- Your experience of social presence during the course

- Your perceptions of using Moodle or Twitter

- General information about you

Your general impressions about the course

1. How have you experienced the online course so far?

2. What kind of activities did you do in the course so far?

3. Can you describe the course's online learning environment?

Your experience of social presence during the course

4. Did you have opportunities to engage with new people during the course? If so, <u>with whom</u> did you engage, <u>how</u> did you engage and <u>how intense</u> was engagement with others in the course?

5. Did you face challenges in engaging with others? If so, what kind of challenges? What were the reasons for these challenges? How did you cope with them?

6. How comfortable are you talking about the course's topics (decoloniality and global education development) in general? How was it to engage with this topic in online settings? How did you cope with it?

Your perceptions of using Moodle or Twitter

7. Did you use Twitter or Moodle to answer the instructor's questions, every week, during the course? Why?

8. Are you satisfied with how the platforms were used and implemented by the course's instructors?

9. What are the differences and similarities between these two platforms, according to you?

General information about you

10. Did you use Twitter before? If so, how and for what purposes?

11. How comfortable are you writing in English?

Conclusion

We have reached the end of the interview.

1. Do you have anything to add?

2. Do you have any questions concerning the research project?

3. Do you want to receive the transcript of the interview?

If you later find yourself with questions, you can contact me at any time. Thank you for taking the time to answer my questions. The results will be presented in a way that will disable any identification. Updates about the research process will be published on the forum dedicated to the research project on the Moodle platform.

Good luck with the course!

Appendix C – Survey questionnaire

This survey questionnaire contains questions about your background and your expectations for the course. This data will be used to compare students' social experiences and identify factors influencing their social presence in the course.

Completing the survey questionnaire takes about fifteen minutes. The survey is available until the 16th of February 2020.

You can click "next" to begin.

Section 1: Current studies

This section is composed of four to six questions. The aim is to provide information on what you are currently studying.

Question: In what degree program are you currently enrolled in? If you are an exchange student at a Finnish university, please indicate the level and the major of the program you are enrolled in at your home university. Indicate "other"' in the section about your university.

a) Level
   o Bachelor's degree
   o Master's degree
   o Doctoral degree (PhD)
   o Other
b) University

- o University of Eastern Finland
- o Tampere University
- o Aalto University
- o Åbo Akademi University
- o University of Jyväskylä
- o University of Helsinki
- o University of Turku
- o University of Lapland
- o University of Oulu
- o Other

c) Degree program

- o Architecture
- o Arts (Performing Arts, Visual Arts, Design, etc.
- o Business/Economics (Accounting, Finance, Economics, Marketing, Management, etc.)
- o Computer Science/IT
- o Education/Teaching
- o Engineering (Electrical/Electronic, Mechanical, Civil, Chemical, Industrial Engineering, etc.)
- o Health Science (Medicine, Nursing, Pharmacy, etc.)
- o Law
- o Linguistics/Literature
- o Mathematics/Statistics
- o Natural Science (Physics, Chemistry, Biology, Earth Science, etc.)
- o Social Sciences/Humanities
- o Other

Question: Is the degree program you are currently enrolled in, in English? If you are an exchange student, please indicate the language of the program at your home university.

- o Yes
- o No

Question: How many credits are you completing this semester (Spring 2020)? Please indicate only the number of credits. [Text field]

Question: What is your current status at your university? If you are an exchange student please indicate your status at the Finnish university you are doing your exchange.

- o International student from the European Union
- o International student from outside the European Union, with a scholarship
- o International student from outside the European Union, without a scholarship
- o National student

    o   Exchange student from the European Union (Erasmus +, Nordlys, etc.)
    o   Exchange student from outside the European Union (bilateral agreements)
    o   I prefer not to answer
    o   I don't know
    o   Other [Text field]

Question: If you are an exchange student, please indicate the Finnish university in which you are doing an exchange.

    o   University of Eastern Finland
    o   Tampere University
    o   Aalto University
    o   Åbo Akademi University
    o   University of Jyväskylä
    o   University of Helsinki
    o   University of Turku
    o   University of Lapland
    o   University of Oulu
    o   Other

Question: If you are an exchange student, please indicate the country in which your home university is situated. [Dropdown menu]

Section 2: Education background

This section is composed of four questions. The aim is to provide information on your past studies.

Question: What is the highest level of Higher-Education that you completed so far?

o   Bachelor's degree
o   Master's degree
o   Doctoral degree (PhD)
o   Other [Text field]

Question: In which country did you completed your highest degree? [Dropdown menu]

Question: What was the major of your highest degree?

o   Architecture
o   Arts (Performing Arts, Visual Arts, Design, etc.
o   Business/Economics (Accounting, Finance, Economics, Marketing, Management, etc.)
o   Computer Science/IT
o   Education/Teaching
o   Engineering (Electrical/Electronic, Mechanical, Civil, Chemical, Industrial Engineering, etc.)
o   Health Science (Medicine, Nursing, Pharmacy, etc.)

- o Law
- o Linguistics/Literature
- o Mathematics/Statistics
- o Natural Science (Physics, Chemistry, Biology, Earth Science, etc.)
- o Social Sciences/Humanities
- o Other

Question: You completed half of the study, how do you feel now?

Section 3: Online Experiences

This session is composed of four questions. The aim is to provide information on how often you use information and communication technologies and for what purposes.

Question: How often do you use electronic devices (smartphone, computer, tablet) for educational purposes? Such as enrolling in an online course, reading academic articles, using educational applications, etc.

- o Every day
- o Once a week
- o Once a month
- o A few times a year
- o Once every few years
- o Never
- o I prefer not to answer
- o I don't know

Question: Have you been enrolled in an online course/program/MOOCs (Massive Open Online Course) previously?

- o Yes
- o No
- o I prefer not to answer
- o I don't know

Question: How often do you publish, for professional or educational purposes, on social media platforms (Twitter, Instagram, Facebook, etc.). Such as posting pictures, texts or links, commenting or sharing other people's posts.

- o Every day
- o Once a week
- o Once a month
- o A few times a year
- o Once every few years
- o Never
- o I prefer not to answer

- o I don't know

Question: How comfortable do you feel interacting with others in online discussion platforms (forum, social medias) for educational purposes?

- o Not at all comfortable
- o Quite uncomfortable
- o Neither comfortable or uncomfortable
- o Comfortable
- o Very comfortable
- o I prefer not to answer
- o I don't know

Section 4: Course's Expectations

This session is composed of four questions. The aim is to understand why you decided to join this course and what you expect from it.

Question: What was your motivation for enrolling in this course? (maximum 500 characters) [Text Field]

Question: How familiar are you with the course topics (global education development and decoloniality)?

- o Not at all familiar
- o Quite unfamiliar
- o Neither familiar or unfamiliar
- o Familiar
- o Very familiar
- o I don't know
- o I prefer not to answer

Question: What are the three purposes you would like your interactions with the other students of the course to fulfil? Please indicate the three options that appear to you the most important.

Sharing personal and professional experiences
Sharing ideas and understanding
Constructing knowledge
Sharing resources for learning
Answering your questions and providing clarification about the course's content
Networking
Maintaining your motivation
Increasing your collaborative skills
Providing emotional support
Giving you feedback on your work

Question: What are the three roles an instructor in an online course should fulfil, in your opinion? Please indicate the three options that appear to you the most important.

Organizing and managing the course's tasks and contents
Providing clear instructions and guidelines for the course activities and assignments
Facilitating online discussions
Promoting a safe environment and community feeling
Motivating students to engage in the course
Answering students' questions and providing clarification about the course's content
Stimulating critical thinking and reflection by using questions and probes
Assessing student work and providing timely feedback to students
Referring students to online support services for tutoring, advising, library resources, or other help when necessary
Helping with technical problems or referring students to technical support resources

Section 5: Demographic Information

This session is composed of eight questions. The aim is to gather general background information about the students, for comparison purposes.

Question: Which gender do you identify yourself?

- o Female
- o Male
- o Non-binary
- o Other [Text field]
- o I prefer not to answer

Question: Which year were you born? [Number field]

Question: In which country were you born? [Dropdown menu]

Question: Is English your native language?

- o Yes
- o No
- o I don't know
- o I prefer not to answer

Question: Did your father graduate from University?

- o Yes
- o No
- o I don't know
- o I prefer not to answer

Question: What is your father's current occupation? You can choose to indicate his exact occupation, in the text field. If he is now retired, unemployed or student, please indicate as well the last occupation he had, in the text field

- o Manager [Text field]
- o Professional [Text field]
- o Associate professional [Text field]
- o Clerical support worker [Text field]
- o Service/sales workers [Text field]
- o Skilled agricultural/forestry/fishery worker [Text field]
- o Craft/related-rades worker [Text field]
- o Plant/machine operator/assembler [Text field]
- o Elementary occupation [Text field]
- o Armed forces occupation [Text field]
- o Retired [Text field]
- o Student [Text field]
- o Home-maker [Text field]
- o Unemployed [Text field]
- o Other [Text field]
- o I don't know [Text field]
- o I prefer not to answer [Text field]

Question: Did your mother graduate from University?

- o Yes
- o No
- o I don't know
- o I prefer not to answer

Question: What is your mother's current occupation? You can choose to indicate her exact occupation, in the text field. If she is now retired, unemployed or student, please indicate as well the last occupation she had, in the text field

- o Manager [Text field]
- o Professional [Text field]
- o Associate professional [Text field]
- o Clerical support worker [Text field]
- o Service/sales workers [Text field]
- o Skilled agricultural/forestry/fishery worker [Text field]
- o Craft/related-rades worker [Text field]
- o Plant/machine operator/assembler [Text field]
- o Elementary occupation [Text field]
- o Armed forces occupation [Text field]
- o Retired [Text field]
- o Student [Text field]

- o   Home-maker [Text field]
- o   Unemployed [Text field]
- o   Other [Text field]
- o   I don't know [Text field]
- o   I prefer not to answer [Text field]

Thank you for filling out our survey. If you have any questions or comments about the questionnaire or you want to get updates about the results, please send an email to irene.charbonneau.paris@gmail.com

If you are willing to be interviewed, please indicate your email. Your email will be processed in a separate way from your answers to the questionnaire, in order to assure anonymity.

The information provided in this questionnaire will be treated with confidentiality. Results will be reported without any identification possible.