Master Thesis in Informatics

A Phenomenographic Study:

The Effectiveness of Adobe Connect as a Tool for learning based on a Social Perspective of Learning

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Abstract

The increasing number of e-learning platforms and synchronous technologies that are coming on the market coupled with the technical limitations of each technology makes choosing an effective platform for learning a very difficult and tedious process. The purpose of this study is to examine the effectiveness of Adobe Connect as a tool for learning based on a social perspective of learning. To do this, I adopted an interpretive worldview which involves a qualitative approach to the study. Phenomenography was selected as the strategy of inquiry in order to elicit the participants’ experiences of Adobe Connect as a tool for learning based on a social perspective of learning. The variation in experience was also highlighted in the outcome space. A community of practice theoretical framework drawn from Wenger (1998) was used to guide and interpret the study. The 6 participants were Masters’ students that were taking part in a Distance Master’s of Information systems at Linnaeus University Sweden. All were attending live classes through Adobe Connect. The results indicated that there were mixed experiences related to the use of Adobe Connect. These experiences varied within and between each category and, rather interestingly, one of the richest experiences discovered through investigation was that Adobe Connect as a tool for learning was more of a traditional experience that was controlled but nevertheless accepted. It was also viewed as a good tool but with limitations and that training was required to gain the most benefits from using the technology.
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I’d like to dedicate this thesis to all my family ...

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Appendix
1. Introduction (Context)

This chapter contextualizes e-learning by focusing on the challenges and opportunities it presents. The research problem, question and delimitation are introduced. In addition, the deficiencies in previous studies are outlined and justifications for carrying out the present study are discussed.

With the ubiquitous use and availability of the internet around the world, e-learning presents various opportunities for learners to construct knowledge online. E-learning, as opposed to the traditional formats of learning, involves the use of synchronous and asynchronous forms of technologies to provide for learning online (Cappiccie & Desrosiers, 2011). Asynchronous forms of technologies include discussion board postings, videos and taped lectures whilst an example of a synchronous form of technology would include web conferencing software which allows for real time interaction between learners and students (Cappiccie & Desrosiers, 2011). E-learning is a cost effective and convenient way for continuing one’s education (Hudson, Knight & Collins, 2012). Synchronous learning involves instructors using web-conferencing software to present content to learners and allows for instant communication between instructors and learners online (Hudson, Knight, & Collins, 2012). Instructors can present live through video conferencing or audio conferencing technology and learners can interact through instant chat or by using their own web-cameras and/ or microphones. As well as the many opportunities that e-learning provides for learners and instructors, and collaborative benefits that synchronous learning offers, there are also many challenges to learning online. These include technical and communication issues that some users have encountered (Graf & List, 2005). Adobe Connect is one example of a synchronous technology where students have had problems with using webcams and microphones even though they had been provided with initial training (Cappiccie & Desrosiers, 2011).

1.1 Research problem

Despite the collaborative opportunities and challenges to using synchronous technologies, there are not a lot of studies which have investigated the effectiveness of synchronous technologies as tools for learning. There have been a number of studies which have evaluated asynchronous technologies such as Blackboard but my focus is on synchronous tools. Many of the studies carried out relating to e-learning have only focused on technical aspects such as use or ease of use (Jamal & Shanaah, 2011). The main problem that I seek to discover in this study is related to how effective Adobe Connect is as a tool for learning based on a social perspective of learning. The
social nature of learning is important for constructing new knowledge and developing ourselves, not only as individuals, but also as part of a community. It is important to assess how well Adobe Connect can provide for experiences of participation.

A disclosure in how learners subjectively experience Adobe Connect can lead to the identification of various issues not identified in previous studies. By identifying these subjective experiences, it can be easier to assess who and what is responsible for any problems associated with the use of Adobe Connect. The true effectiveness of Adobe Connect as a tool for learning can only be seen from those who utilize it as a learning tool, thus, the target of this study involves students at the highest level. With the ever increasing number of e-learning platforms coming on the market, it can be hard for universities and other educational institutions to judge how effective each platform is and especially how effective they are for facilitating learning. It is necessary, and even vital, to carry out this study, because in order to better facilitate the social construction of knowledge, better quality learning platforms have to be developed.

1.2 Aim and Research Question

The aim of this study is to examine how effective Adobe Connect is as a tool for learning based on a social perspective of learning. The answer to the following question will help to achieve the researcher’s aim:

How do learners perceive/experience Adobe Connect as a tool for learning based on a social perspective of learning?

1.3 Delimitation

This study will only research Adobe Connect, which is a synchronous learning tool. Synchronous learning will be at the heart of this study. As a piece of phenomenographic research, this study will investigate how a group of people experience a given phenomenon and Master’s students are the only subjects included. This study will not involve instructors. The research on how learners experience the phenomenon will only be related to a distance Masters in Information Systems program which is provided by Linnaeus University in Sweden. It should also be noted that there are different versions of Adobe Connect available on the market and the version which concerns this study is Adobe Connect Pro which is used in a lot of Swedish universities. The social theoretical framework may also have some influence on the results of this study as some of the interview questions will be related to a social learning perspective.
1.4 Previous studies and their deficiencies

Hudson, Knight and Collins (2012) assessed the effectiveness of the polling feature in Adobe Connect as well as student perceptions of different features of Adobe Connect. The aim was to examine the levels of participation in the Adobe environment. The study lacked an in-depth analysis as only polls and questionnaires were used in the research. Although it was also shown in the study how synchronous communication can increase student levels of participation and collaboration, there was no theoretical framework to guide the study. Cappiccie and Desrosiers (2011) presented the findings of a study related to students studying in a hybrid Master’s level course. It sought to discover by means of a survey, the level of satisfaction that students had in relation to Adobe Connect use. There was no level of analysis in this study related to social learning but nevertheless, the survey did provide a general guide to the issues surrounding student participation in the Adobe environment.

The findings from a recent study carried out by Falloon (2012) indicated how students viewed the Adobe Connect platform as enhancing their perception of membership in a learning community. Students viewed the classrooms as valuable to relationship development. Elements of interaction were also at the center of the study which involved semi-structured interviews. A methodological contribution such as one based on phenomenography that focuses on variation might identify the different ways that learners experience such a phenomenon. As social interaction is fundamental to humans (Wenger, 1998), by not fully incorporating this perspective into a study related to learning, then an essential part of the learning process is not considered.

1.5 Significance of Study

This study will shine light on how learners experience synchronous technologies as tools for learning by investigating the variation in their experiences. The use of a phenomenographic study will add a methodological contribution to the literature. The communities of practice conceptual framework will also contribute to the study as it will help readers to better understand the findings. The biggest significance of this study will be how the findings will make instructors more aware of how learners experience Adobe Connect as a learning tool and it will also provide them with a perspective to look at these experiences. Instructors and designers can better design their platforms for learners as a result of being made more aware of the outcomes of this study. This study exclusively involves students from the Distance Master’s Programme in Information Systems based in Linnaeus University in Sweden. This study should also be of use to a wide variety of online and distance educational providers.
2. Literature Review:

This chapter presents a review of the existing literature related to e-learning technologies and experiences. Furthermore, the chapter introduces and differentiates between communities of inquiry and communities of practice.

As a starting point to introduce the literature, I deem it crucial to understand issues related to the neutrality of technology, as this will provide the reader with some idea of how to fairly allocate blame and responsibility in relation to the experience of technology use. It is very easy to blame a person or blame a feature of a technology without thinking twice but if one has a better understanding of the relationship between technology and humans, then humans can go beyond the routine view of technology as a means to an end.

Introna (2007) made it quite clear that the means cannot be separated from the end. She explains that there is an intra-action between the two. There is a human aspect to the development of technology and this human aspect often plays out in the design and shaping of a particular technology. Introna demonstrates this intra-action by providing the example of how a mobile phone only becomes a mobile phone when the user picks it up to make a call. The user and the mobile phone only become who and what they are through this intra-action. It is this co-constitutive relationship that provides for an experience of meaning. In order to maintain the reversibility of foldings, the issues concerning the intra-action between the means and the ends have to be disclosed. Introna also emphasizes how search engines such as Google discriminate against some and favor others based on how the user manipulates the system. These technologies are designed by humans and their bias is often molded into the technology where it can be hard to identify. The importance of these points are that when assessing how people experience technology, they may also be experiencing a design that can be traced back to some organization or even some specific person. This could mean that the experience of technological tools may also be an interaction with a software or IS developer. These are important factors when it comes to the design for learning online.

Wenger (1998) states in his book that “Those who can understand the informal yet structured, experiential yet social, character of learning—and can translate their insight into designs in the service of learning—will be the architects of our tomorrow”. This could not be more relevant than to the design for learning online. If faculty and designers had a better qualitative understanding of the issues experienced by users when they use platforms such as Adobe Connect, then the informal, social and experiential needs of users would have a better chance of being met to improve the
quality of learning. Dagge et al (2007) state that traditional Learning Management Systems are failing to keep up with advances in internet technologies and social interactions online. This means that designers, or in this case faculty staff, should take into account user needs when deciding to choose specific tools for learning online so that the quality of learning can be improved. However, to be fair, as there are more and more e-learning technologies coming on the market, it may be difficult and time consuming evaluating the effectiveness of each new learning tool.

Graf and List (2005) carried out a study evaluating the effectiveness of different e-learning platforms. Moodle was deemed to be the most effective platform as it gained the highest scores using a qualitative weight and sum approach. It performed well in the usability and course management categories. That study analyzed the effectiveness of e-learning platforms based on 8 main categories: communication, learning, management of user data, usability, adaptation, technical aspects, administration and course management. This study could have but did not measure the related social aspects such as interaction. Therefore it did not provide any deeper insight with regard to how users qualitatively experience the platforms.

Dabbagh (2005) outlined the experience of 3 international students when studying in an online environment. The major issue encountered by students was in relation to the English language usage. The students often felt lonely as they thought nobody was replying to their posts because of their proficiency level in English. They also experienced information overload issues which made it even harder for non-native speakers of English to reply to posts. Students from different cultures tended not to socialize in the platforms as it was not their culture to do so. What can be clearly seen in this study is that there are a wide variety of experiences related to the use of e-learning platforms and this variety of experience can pose problems, as well as opportunities, for faculty staff when they are choosing a specific platform for online courses. More research, and specifically more qualitative research, would enable faculty and designers to better capture the learner’s experience so as to further improve the quality of learning online.

Lewis (2005) illustrated the main features of Adobe Connect in a good practice guide which included details about polls, breakout rooms, screen sharing, file sharing, whiteboard, video, recording ability and chat. Educators can gain feedback in real time by utilizing the poll function. They can also be used to create a quiz or multiple choice questions. The breakout rooms can provide the space for group work where students can work through exercises and so on. It is a useful collaborative feature that can build self-esteem in students. Screen sharing is used for displaying documents or information which can aid the collaboration process. The whiteboard feature allows
users to draw, write or display photos collaboratively in real time. There are two types of whiteboard. The standalone whiteboard enables educators and students to design in a collaborative basis against a white background whilst the overlay whiteboard allows presenters to show existing documents in order to highlight certain areas of it. The video feature can be used to demonstrate activities, ideas and skills, but it also brings literature, plays and music into the room. The use of the video can help to engage students in problem solving and discussion (Lewis, 2005). Students can also view recordings of the class as Adobe provides for that facility. This can benefit students who have access issues or even to review important points. The chat pod can be used for participation in class if users have any questions or comments that they would like to add. There is also a private chat facility where users can ask the presenter about some issue and receive a more prompt reply compared to the general chat. The other usual features are the webcam and microphone which can all add to the learning experience.

Figure 1: Adobe Connect platform

Taken from (Lewis, 2005)
The focus in this research will be on how users experience Adobe Connect, a web-conferencing tool that can be used to promote learning online. In a study carried out by Cappiccie and Desrosiers (2011), a survey was used to evaluate Adobe Connect as part of a specific section of a course. Student responses were assessed using a Likert scale of 1-5. The higher the score, the more satisfied students were with using Adobe Connect. The survey questions involved aspects such as how difficult it was to set up, the technical problems involved, connection with classmates and preference to using asynchronous tools. The highest score in the findings suggested that students preferred Adobe Connect over Blackboard which is an asynchronous tool. Students generally agreed that they had no problems setting up Adobe Connect. In general, students neither agreed nor disagreed with the idea that Adobe allowed for an increased connection between classmates. This study also lacked a deep understanding of how users experienced Adobe Connect and it did not provide any learning perspective so as to help frame an insight into the issues experienced by learners.

However, the survey did allow for some flexibility as open-ended questions were provided in the second part of the study. Some of the issues identified were related to learners’ favorite/least favorite aspects of Adobe Connect and suggestions for improvement. Some of the favorite parts mentioned were that 1) Adobe was a new technology; 2) they had less anxiety and 3) there was no need to drive to class. The least favorite aspects involved technical difficulties and connectivity issues. Even though this study did point out some of the user experiences related to Adobe connect, the link between learning and Adobe connect use was not explicitly made.

Another study carried out by Hudson, Knight and Collins (2012) discovered the effects of online instructional design on student’s participation as well as the level of satisfaction associated with certain features of Adobe. It was agreed, based on a Likert scale of 1-5, that students preferred using polls as a means to participate during group discussions. It was also agreed that polls helped to increase students’ overall classroom participation. The implication of these findings suggests that certain features of Adobe Connect can increase students’ participation in online synchronous learning environments.

The study also included open-ended questions that sought to discover the positive and negative experiences of students related to Adobe Connect use. One of the positive experiences indicated that students enjoyed the game-like characteristic of using polls and they could clearly identify what they knew as well as what areas required further study. One of the negative experiences encountered by students in the study involved switching the microphone between the host and student which was considered
awkward. Students also preferred the chat function as it often got confusing when students were trying to chat at the same time. The technical issues were not made clear in the article as there were no interviews carried out. The study did, however, indicate that Adobe Connect can increase learners’ participation online. The study was limited, however, and could have provided a more thorough analysis of the issues experienced by users and the impact of these issues on the quality of learning.

Sudoc, Bizoi and Filip (2009) evaluated different web conferencing software and Adobe Connect was deemed the best in terms of functionality and value. It was also recognized in this evaluation that a lot of the problems associated with using Adobe Connect are the fault of the user, such as rotating the webcam incorrectly and leaving microphones turned on when conversations had finished. Adobe did notify users when their microphone was turned on but many users failed to recognize this. Information overload issues were also identified in this study. Introna (2007) expressed in his paper that technology is not neutral, and if one applied this reasoning to the Adobe case above, it might not only be the fault of the user but also of the designers and developers. Nevertheless, the Adobe study did make it explicit that there are also many benefits to using Adobe Connect such as collaboration and flexibility. A follow up study to get a more profound evaluation of Adobe Connect issues might alter the evaluation results altogether as the subjective experiences were not made clear. It was also not made clear if Adobe was actually effective to support learning.

A community of inquiry theoretical framework was used in Jamal and Shanaah (2011) to guide their study and to also assist in the interpretation of the findings. An educational community of inquiry can be defined as the following:

“An educational community of inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding.”

The study evaluated the role of Blackboard as an asynchronous tool (Learning Management system) for learning and teaching processes from the learner and teachers’ perspective. My own study concerns Adobe Connect and will involve a community of practice conceptual framework to guide the interview questions and discuss the findings. Wenger (1998) defines a community of practice as the following:

“Communities of Practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.”
It is also necessary to differentiate a community of inquiry with a community of practice in order to avoid confusion and to produce transparency. Communities of inquiry (COI) focus on setting up an inquiry into problematic situations. Communities of practice come together to share a passion or a problem whilst communities of inquiry only focus on particular problems. Another distinction that can be made is that the COI model includes a cognitive presence perspective whereas the community of practice model focuses more on social, collaborative and conflicting relationships. Wenger (1998) does not deny that cognitive learning takes place but his works have focused on communities of practice as a theory of social learning. He even went as far as to say, when we are thinking independently, there are social forces in motion that cannot be denied:

“*Our engagement with the world is social, even when it does not clearly involve interactions with others. Being in a hotel room by yourself preparing a set of slides for a presentation the next morning may not seem like a particularly social event, yet its meaning is fundamentally social. Not only is the audience there with you as you attempt to make your points understandable to them, but your colleagues are there too, looking over your shoulders, as it were, representing for you your sense of accountability to the professional standards of your community.*” (Wenger, 1998).

As I have reviewed the relevant literature related to this study and presented some of the key findings from other studies, the main issues seem to be the lack of a deep qualitative understanding to how learners experience Adobe Connect as a tool for learning. The variation in how learners experience such a phenomenon has not been captured along with an analysis based on a social theory of learning. As I have briefly explained the social theoretical perspective on learning that will be used in this study, a more detailed illustration will be provided in the following section.
3. Theoretical Frameworks/ Theories

This chapter presents a background and introduction to the socio-cultural theory of learning as well as outlining and illustrating the community of practice conceptual framework that will be used as a theoretical lens through which to guide the study. The 4 components of social learning theory will also be applied in the discussion of the findings. The chapter concludes with a brief overview of alternative learning perspectives.

3.1 Background

Vygotsky was one of the founding fathers of the socio-cultural learning theory which influenced Wenger. Indeed, Wenger later developed this theory further. Vygotsky is famous for his zone of proximal development theory which illustrates how learners do better in interactions. The More Knowledgeable Other (MKO) can help a learner to progress in his or her learning trajectory, but it takes the interaction of the two individuals. An example would be when a child tries to solve a puzzle—a more experienced person might provide a helping hand and thus the child can solve the puzzle and do better the next time (Vygotsky, 1978).

Vygotsky also developed the apprenticeship idea that states that learners can improve when they are participating in situations. The apprentice can become a journeyman and finally a master himself by imitating and observing the master (Vygotsky, 1978). Lave and Wenger (1991) tried to rescue the idea of apprenticeship as an effective form of learning. Legitimate peripheral participation involves learners taking part from the periphery and working their way in to become full members.

Wenger (1998) then further developed on the theory of social learning by focusing on communities of practice. Community, practice, meaning and identity are the four core components of a social theoretical perspective of learning that Wenger identified in his book.

3.2 Introduction to the communities of practice perspective

A theory of social learning will be used to analyze the level of social learning that takes place based on the findings from the phenomenographic study/outcome space. Wenger (1998) concentrated on the idea of how learning takes place within the context of communities of practice. Communities of practice are where the negotiation of meaning takes place. The negotiation of meaning involves two key processes, namely participation and reification. When these processes converge, like a
river and a mountain, new knowledge is created. This construction of knowledge could also be referred to as learning.

This theory of social learning focuses more on how knowledge is constructed socially rather than individually. The interaction is important when it comes to the construction of knowledge. By collaborating together, learners can create new knowledge. Participation is how learners interact, engage and collaborate with each other. This could be by sharing new ideas, sharing resources, completing a task or chatting together. Reification refers to how learners regard each other as well as the world around them. Learners often reify when they tell stories as they reveal images, memories and moments. By reifying, it makes the construction of knowledge a lot easier. Learners often talk about a certain issue in a few short words, for example, “That platform does my head in”. This reification captures the moment, the problem and the emotion in an instance. The interplay between participation and reification leads to the construction of knowledge.

3.3 Criticisms of the community of practice perspective

Barton and Tusting (2005), in their book Beyond Communities of Practice, explained that communities according to Wenger were often described as being very static and harmonious. Wenger did state very briefly that conflict does occur but failed to develop on it. The semiotic and non-semiotic relations which are involved in the negotiation of meaning were not developed upon. Language, which is one way to reify, can often lead to stereotypes, discrimination and inequalities in the workplace. Wenger only mentioned that language is only one of the aspects in the negotiation of meaning but again failed to provide any further details. Hierarchy and power issues in the workplace were better addressed by Barton and Tusting (2005).

Jarvensivu and Koski (2010) honed on the reality that many workers oppose learning opportunities. In a study conducted of factory workers in which employers wanted to upskill employees, employees were not keen on upskilling as it would mean they would have to change contexts and some employees nearly resigned. As a lot of organizations focus on the efficiency model, there is no room for exploration so employees often cannot realize their full potential (Jarvensivu & Koski, 2005). Wenger often focused on the great eudemonia of the workplace but other authors were quick to point out the harsh realities of the workplace.
3.4 Conceptual framework

The conceptual framework used in this study consists of different components of learning that are all mutually constitutive of each other. As Wenger explains these concepts, he assumes that the concepts of Community and Practice should be assumed as being together in order to clarify that the practice he is trying to depict is different from, for example, playing the piano or playing basketball. Moreover, by associating practice with community, they are defined in a unique way which can be described as a community of practice (Wenger, 1998).

![Diagram showing components of a social theory of learning: an initial inventory. Source: Etienne Wenger.](image)

Figure 2: Social learning components Taken from (Wenger, 1998)

3.4.1 Learning as experience (Meaning)

The negotiation of meaning involves the interplay between participation and reification. When these two processes converge, then learning has been said to take place. When members of a community of practice engage in collaboration, conflicts and disagreements, competition and co-operation, then that is when participation is said to have taken place. An example would be when students who are members of such a community interact with each other through a discussion, a task, a forum, use
of a whiteboard etc. The process of reification can involve writing down a law, producing a tool, the production of stories, naming and the use of a new word (Wenger, 1998). Reification gives form to our existence. For example when a president uses a 5 word slogan, he captures the audience of a nation. Reification is like a shortcut and it is when participation and reification converge that new meanings have been negotiated. Thus, something has been collectively experienced and learned. A good example that would illustrate this convergence would be when one student introduces a new word to another student- the introduction of the new word could be regarded as the reification but the discussion between them could be regarded as the participation.

3.4.1.1 Negotiation of meaning through engagement, imagination and alignment

The negotiation of meaning can involve shared ownership of meaning, when members are invited to voice their concerns or ideas about an issue (Wenger, 1998). The economies of meaning can be produced and adopted by various members which can lead to a more inclusive approach to dealing with certain issues. Ownership of meaning may not always be shared, especially when power comes to the fore. This lack of space for the negotiation of meaning can marginalize, and even alienate, some members from their practice. When e-learning platforms suffer from information overload, learners have no chance to participate and are thus marginalized from interacting with instructors or fellow learners. It can be hard to identify who or what is responsible for these problems but Introna (2007) mentions that there is an intra-action at play between designers who design these technologies and members who use them.

When members imagine that they are playing the role of others in different situations, this too can lead to an experience of meaning (Wenger, 1998). Stories reify strong emotions which can lead us into the mind of different characters and events. When engagement leaves members puzzled in how to tackle a problem or devise solutions, the imagination can make up for shortcomings of engagement through improvisation. Imagination can also lead to positive and negative reifications of people, events and other issues. When learners view the comments of others in an online chat room, it can be difficult for them to interpret accurately their precise meaning. This can often lead to cultural misunderstandings. The inability to visibly see the members leaves a lot to the learner’s imagination. The technology design in itself can also be a contributing factor to these cultural misunderstandings as there might not be a space to upload a photo.
The alignment of different perspectives can either be carried out in a democratic or non-democratic fashion. When there is space for the negotiation of meaning, members have a better sense of fulfillment. But when members are paralyzed from this process, the risk for marginalization increases. Technologies often force members to align with its processes which can at times lead to negative outcomes. Van Der Velden (2009) was explicit in stating that Wikipedia does not include all forms of knowledge even though it states on its website that it does. When students use online e-learning platforms, they have to align with the technology requirements. They have to either type or use their webcam, as well as uploading in a particular format.

3.4.2 Learning as becoming (Identity)

Learners define who they are based on where they have been and where they are going (Wenger, 1998). As learners journey across their trajectories, they shape their identities as they negotiate meaning in their communities. Learners shape the identities of their fellow members and vice versa when the convergence of reification and participation provides them with new meanings. When we learn in a community of practice, we become different people and we change who we are, whether it be for better or worse. An example would be when learners or brokers participate in the boundary of a community, they are faced with new ideas, new suggestions and new members of other communities. However, they can also experience loneliness or isolation as they are not yet full participants. They change mentally as they experience these opportunities and emotions. Thus, it gives them new identities. When learners in an online learning platform do not participate fully, they are at the boundary or peripheries of their community. They might pass between different communities on the Internet and might feel guilty as they do not participate fully in the online learning platform. They might also feel comfortable as they experience the peripheries and boundaries by surfing through various communities. All these kinds of participation can affect a learner’s identity as it changes who they are in the eyes of others but also in their own eyes.

3.4.2.1 Identity through engagement, imagination and alignment

Through the process of engagement in communities, learners not only recognize the strength and weakness in others, but also in themselves. Learners often realize the boundary of their actions in the instance of a moment (Wenger, 1998). When a member sends a message in an online forum that is deemed inappropriate, it can create a sense of chaos that can make people feel angry, irritated or annoyed. These feelings often contribute to a person’s identity.
Members often fantasize about what kind of person they would like to become or be like and this often only comes alive in the mind rather than in actual engagement (Wenger, 1998). Nevertheless, it contributes to a sense of identity as members can put themselves in the positions of others. The availability of reifications in an online classroom can help members to imagine different situations or roles in given situations. The experience of different roles and situations can help learners to develop a more pluralistic approach to learning. Online learning platforms that make available the facility to upload videos and pictures that can be displayed to learners can help them imagine different engagements in various communities.

Through alignment members can take the role of full participants, peripheral participants or marginal participants. When alignment takes the form of bullying or coercing, some members can become victims and remain marginal participants (Wenger, 1998). When this happens, marginalized members fight for their identities as they feel they have become victimized. When certain technologies are designed to satisfy teachers rather than learners, this increases the risk for the marginalization of learners. When learners do not have the chance to use the microphone or voice their concerns in online learning platforms, they are left to the mercy of the instructor in order to participate. Experiences like these also construct different kinds of identities.

3.4.3 Learning as doing and belonging (Community and Practice)

It is the doing in a community of practice that leads to learning. When members mutually engage with each other, pursue joint enterprise and share repertoire, then those are the conditions for learning in a community of practice (Wenger, 1998). The mutual engagement between members involves the negotiation of meaning which leads to new learning. The pursuit of joint enterprise entails learners pursuing some common concern, problem or passion, and where they are held mutually accountable to their actions (Wenger, McDermot & Snyder, 2002). Shared repertoire involves the resources that these communities build up in the pursuit of their enterprise. These could be the journal papers, books or other literature or even the routine words, expressions, stories, ideas and gossip that have been produced by the communities during the course of their existence. (Wenger, 1998). The repertoire involves the products of participation and reification which are the two essential processes that lead to learning. It also takes the belonging in the community to be able to legitimately participate in learning activities. Community members have to welcome and give new members a chance to participate either at the peripheries, boundaries or at the center of communities. A sense of belonging can give members better confidence to strive and gain full participation. Through the generational encounters between older members and newcomers, new members can gain a strong sense of
belonging if the older members are open to sharing experiences. Older members also have the incentive to open up to newcomers as they will get a taste of what is in store for the future of these communities. Older members may not be happy with existing community regimes so these encounters offer a means to change current regimes in the future.

3.4.3.1 Community/Practice through engagement, imagination and alignment

Through doing or engaging in a community, members form their learning trajectories. Newcomers on the peripheries of communities who have access to participation can continually negotiate new meaning which may eventually lead to full participation (Wenger, 1998). This engagement is limited in time and space as members can only be in one place physically at one time and so provides for stronger participation which can contribute to a higher quality of learning. But this sense of boundedness can also develop into a kind of space where the process of learning can become demotivating, insular and uninspiring as members are tied to one place. There is also the opportunity cost in the sense of missing out on the construction of knowledge elsewhere. The level of engagement in communities can define where and how one belongs.

Through imagination, members can locate themselves in different contexts. When the limitations to engagement become transparent, imagination can contribute to a different sense of belonging (Wenger, 1998). Members can picture what others are doing across boundaries or in other communities. The use of the imagination is beneficial to learning as it widens the space for reflection and makes up for the boundedness of engagement. But imagination also has its own limitations as it is often not well aligned with the realities of the community. Stereotyping is often a product of imagination that can lead to inaccurate or hurtful comments. Imagination can marginalize members if it is not delicately balanced with engagement (Wenger, 1998).

Through alignment, members in communities can align their practice with higher contexts such as the institution. This can give members a sense of power and confidence as they can see how the coordination of multiple-viewpoints can lead to a strong voice of participation and reification. But this sense of power can be dangerous, and members risk abusing and marginalizing other members, crushing their identities and leading to the destruction of productivity and innovation as powerful alignment reduces the level of negotiation (Wenger, 1998). When a teacher acts as “the sage on the stage” in the classroom, s/he requires only for students to pay attention to what is being explained. This can aid the teacher to achieve implementation of the lesson plan
but can also marginalize students in the sense that they cannot engage with the teacher.

3.5 Cognitive Constructivism/ Social Constructivism/ Radical Constructivism

Even though the main theory that is used in this thesis relates to a theory of social learning, I think it is no harm to show my understanding of other theoretical perspectives on learning. The general principles of constructivist learning relate to how learners build on previous existing knowledge and act upon the environment to construct new knowledge. The teacher in this perspective acts as a facilitator providing the learner with a sense of direction along with the needed resources.

There is a continuum which has been proposed by Doolittle (1999) which indicates the heterogeneity of this perspective. At one end of the continuum is a weaker form of constructivism that can be regarded as cognitive constructivism. This form of constructivism is based on the epistemological notion that knowledge is based on an objective experience of the world (Von Glaserfield, 1984, 1990). At the other end of the continuum is located radical constructivism which is based on the epistemological assumption that learners do have a subjective experience and while there may be an external reality that exists, it is unknowable to the individual (Von Glaserfield, 1984, 1990). This is because learners experience external objects with their senses which are not reliable enough to discover a true reality that may exist. Social constructivism lies in the middle of the continuum assuming all of the 4 epistemological principles. The main principle that stands out in this form is the assumption that knowledge is created based on the interaction between individuals. It is a collective experience that has to incorporate an interaction between individuals.

It is also worthwhile differentiating constructivism with constructionism as both theories recognize that learners do have a personal experience that is constructed. However, they differ in the sense that constructivism focuses on how internal structure is required to organize the cognitive system with constructionism dwelling on the environment, relationships and context (Ackermann, 2001). There is a more sense of connectedness associated with constructionism rather than a separation at a distance. Nevertheless, the two perspectives can be integrated as they both involve engagement, whether it be at a distance or at the centre of a specific context, and it is this reflection and centricness that converge the two perspectives as doing and reflecting are essential components of engagement (Ackermann, 2001).
4 Method

This chapter presents the worldview of how the researcher approaches the study, as well as the strategy of inquiry used to carry out the research and present the findings. The data collection and data analysis process are also explained along with data reliability and validity methods before concluding with a discussion of ethical considerations related to this research.

4.1 Philosophical worldview

An interpretive worldview is intended so as to discover how learners subjectively experience Adobe Connect as a tool for learning. Interpretive research seeks to understand how one regards the world around them. The connection between understanding and action is indirect as choices of action are not always clear as the world is a complex place (Fisher, 2010). Interpretive research addresses this complexity as it seeks to discover how people make sense of this complex world. People experience the world in different ways and thus attach their own meanings to various phenomena. Fisher demonstrates how different meanings are attached to a given phenomenon when contemplating a chair.

“It is not just a physical object, it has a meaning, linked to a whole range of related meanings: chairs are not to be sat on in the presence of certain superiors without permission, or, in certain circumstances, before grace being said. Some chairs are thrones, others reserved for members of religious hierarchies, others, without existing physically, define their nominal possessors as professors. You cannot think of a chair without tacitly associating yourself with the political, religious and academic ranking of your social order. Only by understanding the chair you sit on as one specimen of all these others, can you understand a culture.”

It requires interaction between people in order to construct meaning. It can be seen how social constructivism ties in with the interpretive paradigm as through the negotiation of meaning between the researcher and the subject, new meanings are revealed (Creswell, 2009). This study will involve an interaction between the researcher and participants. The interaction will elicit the different meanings in how participants experience Adobe Connect as a tool for learning.
Fisher mentions how each human experiences a given phenomenon in a complex amount of ways. With this complexity in mind, the present study involves eliciting the complex ways that participants experience the phenomenon. The strategy of inquiry used in this study falls under the interpretive worldview, as the goal of phenomenography is to elucidate the variation of experience of the phenomenon (Marton, 1996). This variation requires an interpretive worldview to make sense of the complex experiences attributed to the phenomenon.

4.2 Strategy of inquiry: Phenomenography

I have selected a qualitative approach that comes under the interpretive paradigm in order to understand and make sense of the learner’s experience of Adobe Connect. Phenomenography is a strategy of inquiry that seeks to elucidate the qualitatively different ways people experience a given phenomenon. Marton (1996) explains the phenomenographic perspective in the following way:

“The distinctive features related to the phenomenographic perspective of learning rely on how each person experiences a certain phenomenon differently. No two people will experience something as the same.”

Phenomenography focuses on the variation of the experience rather than the essence of the phenomenon which is associated with phenomenology (Marton, 1994). Phenomenography is often associated with phenomenology but there are differences between the two. Phenomenography derives its foundations from education research while phenomenology is a philosophical method. The phenomenographic perspective is also non-dualist, i.e. it does not separate the object from the human. Rather, they are linked to each other. A car without a driver is not meaningful but a car with a driver projects a whole host of different meanings.

The findings related to a phenomenographic study are presented in an outcome space which reveals the different categories of description. These categories of description contain the different conceptions of how participants experience the phenomenon. The outcome space not only reveals the conceptions but also the meanings associated with them and the relationships between each meaning (Marton, 1996).

The phenomenon in this case is Adobe Connect. I aimed to interview learners who were taking part in a 100% online Distance Masters program taught by Linnaeus University in Sweden. This provided me with the variation in learning experiences related to Adobe Connect. After carrying out the phenomenographic study, the
findings were presented in an outcome space which made it easier to understand the relationship between each experience and the meanings associated with each conception. The experiences of Adobe Connect were presented in a logically related fashion based on complexity that captured not only the richest and deepest experiences but also the more frivolous and shallow experiences.

4.3 Role of the Researcher

Being a distance student myself, I have experienced various issues related to the use of Adobe Connect and this was advantageous when carrying out the phenomenographic study as it provided me with a better insight into the problem at hand and made it easier to develop questions for participants in the study. I was adamant that this research needed to be carried out as Adobe Connect has advantages and limitations that have impacted on the quality of learning that I have experienced and I thought it necessary that faculty understand the different ways that learners experience such a phenomenon. Once faculty understand the qualitatively different ways learners experience such a phenomenon then improvements can be made to the learning process for online communities.

4.4 Data Collection

4.4.1 Participants

All participants were Master’s students who are enrolled in a distance Master’s of Information Systems online. There were 6 participants who were studying online in various parts of the world. These participants often come together online to attend lectures using Adobe Connect. The participants also come from various backgrounds and cultures. The variety of different backgrounds also adds to the richness of the interview findings, but more importantly, the variation in their experience.

A participant information sheet was put together to include details about the study. The details included information about ethical issues such as data privacy and recording. It also outlined what the study would entail. This participant sheet was sent through email to various participants. Participants responded with a signed pdf indicating their willingness to take part in the study. A date was then negotiated for the interview to suit the participant’s schedule.

The study was carried out online using Skype, a synchronous conversational tool. Participants can join Skype or use their existing ids to log in. Video and audio can be
used to carry out interviews. Skype also has a recording tool which can record the interview so it can be downloaded later. The participants were notified in advance about the recording. A headset and webcam were a priority for this interview as well as a stable internet connection.

Semi-structured interviews were carried out in the first week of April 2013 using Skype. Questions or general themes of the interview were sent in advance to participants. The average time for each interview was 30 to 40 minutes.

4.4.2 Data Collection methods

Based on a phenomenographic research methodology, a number of students were interviewed to establish the different ways in which they experience Adobe Connect as a tool for learning. The interview questions were geared towards the area of social learning so as to provide for a more cohesive and coherent analysis. Semi-structured interviews were used and learners were provided with the questions beforehand. Semi-structured interviewing is the main method used in the phenomenographical strategy of inquiry (Marton, 1981). The phenomenographic semi-structured interview, as described by Bruce, (1994) is a kind of specialized form of interview that is related to the qualitative research interview. The interview should focus on the different ways in which a participant experiences the phenomenon. The interviewer should focus on the relation between the participant and phenomenon rather than on the participant or phenomenon itself (Bruce, 1997). Marton (1986) also states that the interview can go either way so it is necessary to provide open questions in order to prepare for new roads that may be taken in the interview which can later provide for rich reflection. The semi-structured interviews involved questions that were open ended so as to evoke the different ways participants experience Adobe Connect as a tool for learning.

4.5 Data analysis process

The aim of the data analysis process is to identify broad themes which represent how students view Adobe Connect. The first step was to transcribe the recordings.

The analysis involved reading and rereading the transcripts in order to identify key similarities and differences related to how students experience Adobe Connect as a learning tool. The process also involved breaking down the data into various sections for interpretation. This process helps to decontextualize and recontextualize the data which then contributes to a more abstract analysis, thus providing the researcher with a better insight of the data (Love & Fry, 2006). Patterns began to emerge across the data and main themes were established.
The next part of the data analysis process involved developing categories of description. Each category of description should denote a distinctly different aspect of the experience of the phenomenon. There should also be a logical and complex relationship between the different categories. The final criterion states that the outcome space should consist of the minimum number of different categories required to describe each variation of the experience (Marton & Booth, 1997). This means that there should be a table that presents the different ways students experience the phenomenon. Under each category of description, students’ conceptions of the phenomenon are interpreted and explained by the researcher.

The final step in the process necessitated a discussion to view the various student descriptions of their experience through the lens of the socio-cultural conceptual framework. This discussion indicates just how effective Adobe Connect is as a tool for learning based on a social perspective of learning.

4.6 Data Reliability and Validity

The credibility and accuracy of the data have to be checked (Creswell, 2009). Validity means that the researcher checks for the accuracy of the findings by applying certain procedures (Creswell, 2009). Reliability checks the consistency of the study. By matching my transcriptions with the audio, I made sure that the data was more reliable. The detailed literature review, along with the description of the methodology, play a big part in strengthening the validity of the data. However, I also used a number of additional strategies to verify the reliability and validity of the findings. The following 4 strategies adopted from Creswell (2009) were used in this study.

1. A follow up was carried out among a number of participants in order to match the accuracy of the findings with their own opinions. This ensures that the researcher has not added any unjust bias to the findings. It also clarifies if the researcher’s findings represent the participants original thoughts related to the original interview.

2. Peer debriefing (also known as analytic triangulation) was used to strengthen the credibility of the research. This involved calling upon a third party not involved in the study to comment on various parts of the research process (Given, 2008). This third party should also have some knowledge on the subject. Peer debriefing is useful because changes can be made once feedback is received from the third party. It adds an alternative perspective to the research in order to strengthen its
validity and reliability.

3. The variation in experiences presented in the findings also adds to the validity of the findings as it invites the reader to a more rich experience (Creswell, 2009).

4. Reflectivity clarifies any bias that the researcher brings to the study. In addition, the reflectivity technique lets the reader know what background the researcher brings to the study (Creswell, 2009). I also presented my biases in the reflection of the findings and questioned assumptions that I had going in to this study. I also stated that I was a user of the Adobe Connect platform too.

4.7 Ethical issues

All participants in this study were treated fairly and equally during all parts of the research process. When students were invited to take part in the study, they were not pressured into doing so. As indicated by Fisher (2010), there should be no obligation on anyone to assist in the research. Participant confidentiality was also respected in all areas related to this study including in the carrying out, analysis and publishing stages. The use of pseudonyms in the study prevented participants from being identified. Before the interview, participants were asked for permission to record it (Fisher, 2010). All data related to participant information and relating in any fashion to the participant was handled with care. Data was stored in a safe and secure place where it would have been difficult for any person in the general population to access. The data will only be kept for as long as it is required (the length of time has not yet been established but will be in the near future). I also received permission to use the theoretical model in this thesis.
4 Findings

This chapter presents the findings from the phenomenographic study. With respect to the use of quotations, pseudonyms were assigned in order to safeguard the learner’s identity.

The final categories of description were developed after similarities and differences in the learners’ experiences, perceptions and thoughts were identified. The categories contain the 4 qualitatively different ways learners experience Adobe Connect as a tool for learning based on a social perspective of learning. The outcome space is presented first and details of each conception are then portrayed for each category ranging from the narrowest to the richest experience that are logically related using quotes from the participants. The reader will be able to see how each person’s experience varies within and between each category. The essence of the variation in experience is captured in the quotes which are also summarized by the researcher.

5.1 Outcome Space

The outcome space that is presented in this section illustrates the 4 qualitatively different ways that participants experienced Adobe Connect as a tool for learning. The use of the letter C stands for category, and each category contains each conception of the phenomenon. The narrowest and most basic experience is presented in category 1 whilst the richest experience is presented in category 4. There is a logical relationship between all the categories as they go from basics and challenges all the way to the ambiance experienced by participants. The various conceptions are then further explained in the following sections and one can also see how each participant’s experience varies between and within each category.
Figure 3: Phenomenographic outcome space

Adobe Connect as a tool that functions well if people are informed and know how to use it.

Adobe Connect as a tool with limitations that requires learners to jump hoops.

Adobe Connect as a standard tool associated with distractions, messiness and inconsistencies.

Adobe Connect as a traditional classroom experience that does not allow for interaction and collaboration but rather a controlled experience.
**5.2 Conception 1:** Adobe Connect as a tool that functions well if people are informed and know how to use it

In this conception, participants view Adobe Connect as a tool that can work well if learners and trainers have experience using it or if they have been trained how to use it. In addition, some learners felt they should have been informed beforehand about technical issues such as compatibility as this would have prevented any technical issues from affecting the quality of the class. Furthermore, it was also mentioned that the lack of utilization of different features comes down to training and that some prerequisites such as having a headset are important for learning.

**George** “I think it depends what you know about the technology and how you use it...if I know how can I use it, it’s will be more easy for me to use it...the trainer must train the teach is how to use it as they could not all of them they can use all this technology... I think it’s a new one and in the class is because most of them they said oh it’s first time for me to use it”.

**Douglas** “It’s good overall... you have to know, you have to know what you are doing all right...the mic functions well without when the other party is mute that and you talk...some people cannot talk by the same time”.

Jefferson explains that there should be training sessions.

**Jefferson** “Everyone who is in the class, this is how you do this and this is how you do that...a tool is only effective as the person operating it”.

Barack explains how the facilitator should have informed students beforehand.

**Barack** “I felt kind of lost...And the very first time when we used it and it said oh, it’s not compatible with Chrome, they should have given us like a bit more information before that, if it gives you instructions, it’s not a problem to use it”.

**Abraham** “I think it’s a good tool if the people using it on both sides know the functionality of it...I think there’s a bit of a lack of use of all the different functions, but I think if they used it properly and people had better training on them, I think would be absolutely brilliant, but it’s a new technology and I don’t think people have gotten to that stage yet...It’s very important that people understand the technology.. I found it very hard to learn when I can’t actually hear the person properly.. we were all told at the start, you have to have a headset and I think it’s very important for
everyone to understand that”.

**Robert** “I guess first time that I used it, some years ago, there was an issue because didn’t know what to do. But after knowing what to do with it, I guess it’s really easy. If you have been using it over time, you get used to the system... If you never used it before, if you have some issues... then you might have a different story to tell..it depends on”.

**5.3 Conception 2 Adobe Connect as a standard tool that is associated with distractions, messiness and inconsistencies**

In this conception, students felt distracted and confused when using the technology, they mentioned that it was messy looking at everything such as viewing the private chat while the lecturer was speaking. On top of that, some learners also felt that the tool lacked customization and that there were some inconsistencies when using different devices. There seemed to be a different experience when using the technology on different devices.

George tried to speak his mind about how the chat function is too standard and that it should be customized so that the teacher can see who is asking a question and to filter out what is important.

**George** “it’s held how to make that’s like to get a new idea to make the chats more effective and to be more like this base of the chat will be more big.. Yeah like when I make my class and want to mark someone, to mark some word, to make it in red and to make it in blue.. well as I told you before if I want to ask a question it will turn to red color...Just only a black so that you don’t know what is the art and what’s the difference.”

Douglas explains the distractions when using Adobe Connect.

**Douglas** “When too many people are talking or chatting and things on its very difficult to manage. When there is a choice, there is an internal talking and people are chatting its quite difficult, you cannot manage it at the same time...it can be distracting you know yes, and many students, some students are medium to insult one another.”

Barack stipulates that Adobe is laggy and that there are too many things going on at the same time so it is very hard to learn. His experience is similar to that of Douglas’s.
Barack “It’s a bit distracting. Because it’s laggy as well when you’re stretching onto
the group chat and enter a private chat. So I personally do not enjoy using it...Like
for me it’s quite messy when you’re looking at a lecturer on a webcam, and then at
the chat box full of names, and then there’s people concurrently typing. And then there’s a
screen for the presentation and the slides. So everything is moving at the same
time...it’s just distracting the whole learning process. You’re trying to listen, you’re
trying to read, you’re trying to watch at the same time..... Like people are inputting
information all the time, where if you’re in a proper class, people wouldn’t be like
talking non-stop while the lecturer’s talking at the same time. So it’s very distracting.
Sometimes it’s just like, oh, yeah I agree and all that. You don’t really have to input
that in the chatbox”.

Abraham explains some of the inconsistencies with the technology.

Abraham “Yeah, for instance, if your hand goes up, at the moment now, someone puts
their hand up in the class, it’s a little tiny little...It’s hard to notice, yeah.  It’s hard to
notice...The design needs to be a tiny bit better...Actually, I got a better view of the
lecturer when I use my phone to watch the sessions because I can have a full screen
that’s just on the camera...When I’m using it on the laptop, I don’t know, there’s a lot
more functionality I’ve found”.

Robert also explains some of the inconsistencies similar to Abraham

Robert “Yeah the consistency is not there across the board, that, I noticed because I
have tried to use it on phone, on I pad, on other tablets too, so...And the technology,
the technological side is that bringing it into mobile applications too, maybe because,
if you are using Adobe Connect on your desktop computer or your laptop, it’s a
different experience from using it on your phone.”

5.4 Conception 3   Adobe Connect as a tool with limitations that require
learners to jump hoops.

In this conception, students depict how Adobe Connect is a limited tool that requires
learners to overcome challenges, obstacles when trying to use it effectively. It was a
challenge and a hassle for some to be able to use the features to reach their learning
goals. Students also emphasized on the lack of visuals as they couldn’t see other
students and they just had to visualize the other participants utilizing the platform as
there were no pictures to identify them.
George explains that if students could see each other, he would feel better.

**George** “It shrinking me like for me give me more idea how to see the student of a case more on time and how like to make it more easy to see the student you are feeling more better and how can anybody see it. It give me like some idea and how we -- can we use technology to make it like the virtual class like how can we say it like imagine that like guess what class with distant student but all of them they can see each othislike to make like video from Panorama side.”

Douglas’s experience was similar to George as they both focused on the visual limitations and disadvantages.

**Douglas** “Many students are participating but they are not there like many people just come in and do something else and that’s the disadvantage with it. Some people are just there so it’s kind of a, a way of deceptive like people are there just with their names…. you cannot see them. You are not sure. So even if you chat with them and say hello or something, they might not even be there. I’ve done that a couple of times. I said hello to someone and he’s not even there. But Eileen is there. He’s present on the, but he’s not present.

Jefferson’s experience is also similar to other participants as he critically stated that the technology itself is limiting and people are viewed by coming through this realm and that the lack of visuals further adds to this limitation. He also presented his challenge that it was difficult to get his point across.

**Jefferson** “You ask a question, and immediately if you’re the third person to ask maybe perhaps the same question, then you’re looked upon in the real world realm as a person who either isn’t paying attention or is not intelligent enough to understand, or you become a nuisance… You’re coming through this particular medium, and it’s the only -- it’s the only way that people in the world view you as. They visualize you coming through -- your name, you’re a name and attached to your name are your comments, and that’s it, you know, that’s it… it’s limiting that we don’t all have video streams and we all can’t see each other; we can’t see each other’s facial expressions and all that sort of stuff…. The technology wasn’t letting me get my point across..getting the attention of the operator was a problem.”
Barack similarly to other participants experienced the visual issues but he also focused on how one has to jump hoops because of the technological limitations.

**Barack** “it’s just a hassle. You have to like raise your hand and then you’ve got to mute the mic, because then there’ll be echoes and everything...It’s a bit of a hassle you have to click on something to look at something and then wait. It’s just lots of waiting time, I suppose...you can’t use your webcam as well. So you’ve got to use just a headset, so you’re limited by the tools...So it makes you feel that yeah, you’ve got to jump many hoops before you could do something...
The lecturer can’t see you and you can’t see the rest of your classmates... So you could be turning it on and dozing off, or you could be doing other stuff and not really listening...you don’t get to see their expressions. All you see are words.

Abraham also focuses on certain limitations that he has experienced when using the technology.

**Abraham** “It’s all text space for us.  We very rarely get a chance to, you know, they give us the microphone to ask a question...you have to have a headset...I kind of feel like you’re limited in the questions you can ask because they have to be short, because of the size of the text box...It’s just been Adobe that we’ve been using”.

Robert describes his experience about how the technology has its own routines and that there is no other options only the choices available due to its limitations. He gives examples of how these limitations can create challenges.

**Robert** “it’s just all Adobe Connect that we have been using so...The way that the technology has been designed, there is no other way to go about it.  The other way to go about it is to send email...Yes it has been fixed, it has been structured to work in a particular way and if you really want to, if you really want to achieve any other outcome too, you have to follow that way too.  The routines have been standardized...if you chat and write it, you cannot chat a story, right? And you might not be able to have access to use a microphone and you really want to say something. And because you don’t have that chance to say what you want to say, someone at the other send might not -- you might not feel good if you are passing across short information especially for somebody like me who like to talk.
5.5 Conception 4  Adobe Connect as a traditional classroom experience that is not for collaboration and interaction but rather a controlled experience.

In this conception, most learners felt that Adobe Connect was a tool built around a traditional design and that due to this design, they didn’t really experience it as a collaborative and interactive tool for learning. It was more like the traditional class where the teacher leads it out and it is more of a controlled experience. Some students did say that it can and does accommodate for learning but that it is more centered on a traditional style instructor to learner arrangement. The learners had mixed experiences related to this traditionalism as some felt that it was like a real class and that there was no difference to studying on campus whilst others felt that due to the lack of interactivity and collaboration, they didn’t get much of a sense of belonging so they went on to Skype instead to build personal relationships. A number of learners also had problems trying to build relationships as in they couldn’t trust the private chat because they felt that someone could be viewing their conversation although a minority did say that the private chat was useful for sharing information.

In the two paragraphs below, George firstly describes his feelings as being like in a real classroom and in the second paragraph, he talks about the interactivity and confidentiality issues associated with his experience of Adobe Connect.

George “I think it’s the same. It’s not different. I didn’t even -- when I use like – either connect or I’ve been the student in the class, it’s feeling for me the same thing. I would be in the same class would I do as team…It’s the same feeling… I will go from one like -- from 2 to 3 o’clock maybe I go through be in the class time and also in the online, I -- if I want to be connected with the teacher and the student, I must be in that time…you have the board, you have seen the teacher, you have -- the voice and you have the chatting room and sometimes it’s really like and they are trying to make you feel as home as to be in the real class…we will not use it for just talking or how are you and how was your day? We will share knowledge and we share information for that they will make it or they know that we will be sharing knowledge and sharing the information. We will not use it like Facebook.”

“That you know I feel I belong to the class if I have discussions and to be a partner for discussion and the discussion or idea are of my opinion and their opinion and to see what should have in me…hey will announce like we got a private chat. You -- did you see that where we -- where you will write your comment before a little bit doubt there would be like -- it’s will be like in orange or in yellow this I am like alarming that’s there is a private chat and if we click he can -- he can see it...think
they -- who designed this, I don’t connect you try to make you more interact and to use it and they try to make it more easy…it’s not that like a big tool for interaction and action because most of that what teacher said he just -- he just make his presentation and it’s a play and for discussion it’s little time to make a discussion and the learn for me it’s depend how much we discussed with -- the other idea and what you talk, you will be learn -- not just to be listening, listening, listening, listening.

Barack’s experience is similar to Tom’s as he also agrees that it is not really a collaborative tool but he does think that control has to be in place otherwise there would be chaos. He also says how the private chat is not the place for any sense of belonging so he prefers Skype for that.

**Barack** “it’s not interactive…I mean it’s not a collaborative tool. If you look at it, Adobe Connect is not something that I can like, collaborate with people… But if it’s just purely for like the lecturer to have a bit of control of what’s going on in the class, it might be chaos…Imagine like 30 people wanting to speak at the same time… Thirty people just writing whatever they want, so I don’t think that would work very well as well…when we’re doing like the drawing, the rich pictures and all that… I mean like Adobe Connect was clearly not the tool for it… There were so many technical issues that we just left. Yeah, it itself is not a strong collaborative tool… I think we need to recognize that”.

“But I’m using Skype whilst I’m watching the chat. So I’d rather use Skype to chat than the private chat in Adobe because it’s laggy and yeah. It’s not. it’s not exactly the best tool to use, yeah”.

Douglas feels like a student as he sees no difference between the online and offline experience, he also states that control is required to prevent chaos and that Adobe lacks interactivity. He also feels that the private chat is not safe too.

**Douglas** “With Adobe, you can actually be a little bit relaxed… That’s why you have the webcam going on or something sometimes when you’re presenting. But that gives a little bit of confidence, I mean relaxability. That way you can actually express yourself well…when I was taking this, while I’ve been taking this program and all the courses, I don’t see the difference because we will receive the lectures the same as the students…We’ll receive the same lectures at the same time,
the same assignments, though different exams sometimes. So I don’t really think there is a disconnection or something...I feel like I’m involved in the -- yeah. I understand what is going on, and what he is trying to teach. A full student, not a part time student, really...

Many people still do not talk. Not everybody -- although except that in classes, not everyone talks in class. So it doesn’t really bring any kind of interaction...

So I think without that, for the teacher being able to control to some certain extent makes it more manageable, otherwise people just talk anyhow and interrupt one another while talking. So it’s just to be able to control it for the use of the Adobe makes it manageable

I feel it’s open because there are some things you cannot say on the, on the chat it’s not like a private line it’s for lectures. So I think the teachers can access whatever kind of conversation although there was a private section from where you can actually discuss something privately with someone where the people cannot see but I still think there is a way that it’s checking.

Jefferson describes his mixed experience as he does feel that the learner can become part of the class through the technology but the whole experience is dependent on the facilitator.

Jefferson “You know, you can easily become a part of the class remotely, so it does give you that sort of sense of belonging...On the technology side you have that sense of belonging. You know, you log in, you participate...you listen, you hear, you can see the teacher...

I felt disconnected , I didn’t get a sense of the instructors..depending on the operator, your experience can be positive or negative...if the operator isn’t looking at the screen then 9 times out of them you won’t get a reply.”.

Abraham sees Adobe as being built around the traditional meeting and he feels like he is part of the classroom. Similar to other participants, he states that it is not a tool for collaboration.
Abraham “I think it’s designed because the person who facilitates the meeting, anyone that’s attending the meeting understands that the facilitator -- it’s like any meeting, you know, you have to talk to the chair. You can’t just start -- everyone starts shouting and then nothing happens. It’s built on a very formulated interaction that from years of experience, this is how meetings are run and it’s formulated that way...this software is designed around the traditional meeting. That’s what it’s meant to be, so the functionality in there is to follow traditional protocol, I think, for meetings, for business meetings...it’s not designed for classroom learning as far as I can see...I’m just trying to say that Adobe seems to be more designed to accommodate meetings. I mean obviously we’re there for learning, but it accommodates learning as well”.

“I can visualize them sitting where they normally sit...The features and functions -- the way I look at it is Adobe Connect is basically a tool that basically puts the classroom in my sitting room...I’m actually in the classroom and participating in a normal class, yeah”.

“It’s great for communication, both text and verbal but if you need to do something else, you know, collaborate on a project. Synchronous communication is brilliant but the ability to collaborate, it doesn’t have a space for that, if you know what I mean”.

Robert similar to most participants thinks that Adobe Connect is built around traditional design and he has no major problems with that. He states that the participatory style would not work anyway. He also mentions how the instructor and the technology control the experience.

Robert “You can private message someone if you don’t want to be on the public messaging which is good, which is good...Sometimes maybe you have a friend in a class, the way you interact with your friend, you might not be willing to interact like that on a public chat because when it comes to having, even if it’s a lecture, I believe it still should be taken seriously, right? So you have to be professional in what you say how you talk there. But if you are chatting with someone you have some kind of personal or you have a relationship in terms your friend, it is different the way you talk to your friends...The way of chatting is good, it shows who is typing, that I like. So on your side waiting for someone’s response you will know the guy you, the guy
you’re sending message to, is responding...the fact that you can actually see who is --
you can actually use a webcam, makes more sense to me. You can see the setting. You
can see the classroom settings, you can see some other students also in the physical
classroom, that forms an imagination of this is actually -- this is it’.

“So the control has been from the learning, the traditional learning because it is
based on traditional learning right... However the traditional method is gives the
instructor more authority more right to select to what to say and know what to say or
right to control the...and as long as we know that when you give students more
control. Over the learning process believe me it’s not just going to work...Actually I
guess the fact that we haven’t tried anything before which is out of context, so there is
no way to really worry about it as long as it still works. So why should we change
something working?”.

“In the sense that sometimes you really want to express yourself, you really want to
say something but because the instructor and the technology restrict how the
relationship is, right The instructor and technology restrict the relationship”.
6 Discussion

This Chapter presents the discussion and interpretation of the findings. For the interpretation of the findings, Wenger’s (1998) theory of social learning is used which involves 4 components, meaning, identity, community and practice. For the purposes of this study, community and practice will be regarded as being together as this helps to contextualize the practice that Wenger tries to depict.

6.1 Meaning through engagement, imagination and alignment

When learners are invited to participate in the negotiation of meaning, this can lead to a feeling of inclusiveness (Wenger, 1998). In the context of Adobe Connect, it seems as though the ownership of meaning is not shared equally. This can be seen in conception 4 where learners viewed Adobe Connect as a traditional classroom experience where the teacher acts as the traditional “sage on the stage”. The ownership of meaning, in terms of engagement, mostly involved the teacher presenting and did not involve the learner’s participation to interact. It also seems that the technology is not designed around an interactive and collaborative environment where learners can engage with each other and create new meanings. Most students agreed that it was not a collaborative and interactive tool but some did say that the possibilities are there if the teacher and student are trained to use it effectively. In conception 1, it can be seen that the tool can work well and that the functions are there to invite collaboration. However, for this to occur, learners should be informed beforehand about issues such as compatibility, training and connectivity. Information overload issues did affect the negotiation of meaning as learners indicated how they could not keep up with the chat and that they had to write quickly or in a few short words. In conception 2, a number of students also made explicit that if there were some way to highlight or customize the text when asking a question then this would filter the overload and grab the teacher’s attention. The learners’ engagement was often obstructed as numerous learners judged the experience of Adobe Connect as messy, distracting and confusing. While Wenger was discussing a more static environment, this study demonstrated how engagement can become problematic. As conception 2 explains, the inconsistencies and distractions present in Adobe Connect that can divert learners as they proceed through their trajectories of engagement. The issue of raising one’s hand, for example, was described as being problematic
according to some as it requires permission and also because the symbol for raising one’s hand is so small, it may be hard for the teacher to notice.

As discussed above that engagement can be lacking, I will now discuss the learner’s experience of how imagination can make up for this and can position learners in various contexts, roles and situations (Wenger, 1998). Reifications can be a good place to begin the processes of imagination in terms of participating in different contexts. In conception 4, students indicated that they could see the teacher, board and classroom, and furthermore, some imagined that they were in a real classroom participating. A number of students felt that they could share information in the private chat which made them feel closer to a real classroom experience. The biggest obstacle to participating effectively in terms of imagination was that students could not see their fellow students in the platform and this, it was found, affected the learning process. It was difficult to imagine who the students were, what they were doing and what they were trying to say as they were only represented as names and nothing more. The overall limitations in conception 3 involved the lack of visuals which made it harder to construct meaning through the imagination. A number of students in conception 1 speculated that there may exist facilities to overcome these visualization issues but that they were not certain. Moreover, they believed that learners and trainers would have to be trained in how to use them if they did exist.

As the experience of Adobe Connect was more of a traditional experience, the alignment of different perspectives was carried out in a controlled fashion; this seemed to bother some but not others. Regarding conception 4, students felt that the private chat was being controlled and that they did not feel safe chatting as they thought it was being watched and monitored. Therefore, they were more comfortable with using other formats such as Skype. It was also noted that the trainer, combined with the technology, controlled the experience as the trainer has the power to allow or deny engagement from participants. The lack of interactivity also contributed to this sense of control. Wenger also described the concept of diseconomies of meaning where learners may feel excluded or left out. The diseconomies of meaning could be seen from the perspective of some students in this study as demonstrated in conception 3 where students felt they were often left unsatisfied and that the technology was not helping them to get their point across. There was not, however, such an extreme sense of marginalization as most felt that there had to be control in order to prevent chaos. Overall, the alignment of different perspectives was carried out in a controlled fashion as the power of the technology lies in the instructor’s hands and that if s/he is trained well how to use it then the possibility for the shared ownership of meaning between instructors and students may increase.
6.2 Identity through engagement, imagination and alignment

As learners journey through their trajectories, they work out their relations with others, and gain a sense of who they are and who they are not (Wenger, 1998). This journey involves the engagement of learners and the construction of various identities. In conception 2, many of the learners appeared to be distracted, frustrated and confused when trying to engage in the class through the Adobe medium. This was because viewing the chat, the teacher and the PowerPoint all at the same time was difficult and therefore was an obstacle to learning. It can often be these experiences that shape a learner’s identity as they try to become engaged. The participants in this study also emphasized that it was hard to communicate with other participants as they could not assimilate and accommodate the meanings of what some people were typing in the chat box because of the lack of visuals and due to a sense of being overwhelmed with information. It is hard to notice the boundary of an action when one cannot identify the various participants who are involved in engaging activities. This is because it is hard to gauge the context and social cues. This can lead to the creation of stereotypes in the minds of some users as learners only communicate through one medium which is limited and therefore their identities can only be shaped by this.

The ability to project reifications on the part of the learner was also limited as can be seen in conception 3 where participants felt they were limited in the questions they could ask because of the size of the textbox. It was found that it was difficult to interweave the different forms of participation and projections of reifications and as Wenger mentions, it is this interweaving that forms our identity. There is also evidence that Adobe Connect does not provide for the generational encounters where learners gain insight into the tricks of the trade that Wenger (1998) discusses. These generational encounters provide learners with a sense of where they stand as they interact with experienced users. The lack of visuals, the limitations in collaboration and the illustrations in conception 4 all contribute to the sense of separation rather than the experience of an encounter. Nevertheless, learners did mention that they can use different mediums if they would like to follow up on some matters. Many mentioned that they would use Skype or email if they required any insights. The entrance into other communities such as Skype seems to add to the idea that there are forms of multi-membership where Adobe Connect is only one medium through which learners participate. The participants’ identities as learners never cease to stop as they flow between different communities delineating all the pieces of the puzzle that they require to become who they are.

Imagination is a valuable resource for identification. It can carry us beyond our existing paradigms of engagement and put us in the positions of others. We can
become a different person through the processes of the imagination. The context of the situation plays a key role in whether imagination will contribute positively or negatively to our identities. In terms of the Adobe Connect experience, students were often limited to their imagination as they could not view the other participants’ webcams. One learner mentioned how he wanted to see his fellow participants but that he also wanted them to see him. With the information overload on the text chat and the confidentiality issues on the private chat there was not much space left for engagement with other learners. This only left learners to imagine what their fellow participants were like.

Wenger mentions that it can be dangerous to leave activities solely down to the imagination as stereotypes and conflict can arise. This can be seen where one student in conception 2 stated that students tend to insult each other on the chat box. On a positive note, many did feel that they could imagine themselves as being like a learner as they saw no difference between the online and offline experience. They agreed that you have to be on time for class, that it is closed once the lecture ends and that you can see the classroom where the teacher presents the class. Imagination did bring students into the classroom but they could not identify who their fellow participants were. This brings us back to the basics in conception 1; if the trainers are well experienced with how the technology works then there may be a better chance of utilizing features that can better facilitate identity construction that involves an optimum balance between engagement and use of the imagination. This facilitation may help prevent possible conflicts and problems which can lead to a more harmonious environment where learners can journey through their trajectories, self-actualize and become learned masters of their profession.

Identification through alignment can occur in a demanding or inspiring fashion (Wenger, 1998). The way learners align themselves towards their practice shapes their identities in numerous ways. The intra-action between humans and technology can be an experience of alignment as the ways and designs of the different technologies have to be followed in order to gain peripheral entry to a community. Issues concerning the design of technology were well highlighted by Van Der Velden (2009) as she described how the design of Wikipedia seeks to favor some users and not others. In this study, I noticed different ways in which learners felt aligned towards the technology and the instructor. The way Adobe Connect is designed had an effect in the sense of requiring permission to engage and interact with the instructor. Students also said that they had to follow the norms of the technology and that it became almost a routine. The feeling of like being part of an audience was mentioned in the findings where silent participation illuminated from the echoes of certain students.
However, most students accepted the way things were and some even felt that participation does not work, especially in the case of synchronous technologies such as Adobe Connect. Some students did say that it would be nice if students had a little more power, but nevertheless, the experience would have to be controlled to some extent in order to prevent chaos.

The controlled experience was another reason for using alternative forms of technology such as e-mail and Skype. The ownership of meaning lies in the hands of the instructor when control takes the lead in the negotiation of meaning. This ownership of meaning can lead to feelings of exclusion as they have no way to gain entry into the circles of participation except through the use of one’s imagination. There were indications as to where possible sources of potential marginalization lie and it was mentioned that if people on both sides know how to reap the benefits of the technology, then there may be possibilities for the development of a strong community where legitimate peripheral participation can give learners a sense of empowerment to grow the seeds of innovation without risking any negative repercussions that would crush a person’s identity.

6.3 Community and Practice through engagement, imagination and alignment

The mutual engagement in practice, which is a mode of belonging, can help learners to concentrate on the present and make wise decisions concerning the existing time and space that they participate in. This focus on the present can lead members in a community to a sense of belonging that makes them feel at ease. Most participants in this study felt some sense of belonging as they said it was just like a traditional classroom where they could experience the board and the teacher. The ability to log in was one of the simple and most obvious ways that learners gained the minimum sense of belonging. One student even commented that Adobe Connect brings the classroom into his living room. Students also mentioned that they could see what was going on, they could see who was typing and this all added to the feeling of “homeliness”.

Some also acknowledged that the private chat could be used to build up relationships. Others felt that the question of privacy lead them to use different technologies such as Skype and one student even said that Skype gives him a greater sense of belonging. Some students also visualized themselves sitting in a classroom as they had attended the on campus classes before. It was also stipulated how it was more relaxing to present work as you did not have to present it in a physical classroom but rather at home at your own convenience. The very fact that Adobe Connect facilitates international education also contributed to some sense of belonging. The restrictions for participation remain a consistent pattern throughout the study. Conception 2 and 3
demonstrate the obstacles to overcome in order to become better engaged combined with limitations of the medium in itself. The lack of Ba/space for negotiation was also highlighted in this study as it was expressed that Adobe Connect was not a discussion or collaborative tool. All of these experiences contribute to how one belongs in their community in the sense of engagement in practice. The limitations to engagement can often lead learners to different communities and it was mentioned how some participants could use alternatives to maximize their sense of belonging. I will now move on to explain how imagination can make up for the inherent limitations of engagement in the light of the presented findings.

As a number of students felt that the lack of visuals hindered their engagement with others, they often had to imagine what the other people were like as there were only names associated with fellow participants. Some participants said that their fellow students could be there in the sense of signing in but may not be at the computer at all as not even the lecturer can see them. This was described as being deceptive as there was no proof to know if the real person was there or not. These experiences combined with the limitations of the technology, such as the inability to customize fonts and squeezing words in to the very small text chat space, made it difficult to negotiate meaning in an effective manner. Even though learners had some sense of belonging, the challenges described in conception 2 and 3 did not do anything to improve on that sense of belonging.

The number of distractions also mentioned made it difficult not only for the learner’s imagination but also for them to engage as there were too many things going on at the same time. The limitations of the tool may have in turn have limited the students’ imagination as there was little visual focus involved, apart from that on the teacher and the presentation. Wenger (1998) mentions that it is through the imagination that we can see into the past, explore alternatives and envision possible futures. At the same time, imagination can also be detached from the realities and there lies a risk that people can lose touch with the communities that they engage in. As Adobe Connect limits engagement, the risk of learners losing touch with what is going on increases as they become isolated to the wonders of the imagination. It was mentioned by a number of students that the design should be improved in order to better facilitate engagement. This improvement may lead to a better sense of belonging where learners would not only reflect through their imagination but also better engage through participation.

As alignment in communities and practice can be convincing, inspiring and uniting, it may also be enforced among people where they may have to comply with
requirements and orders (Wenger, 1998). It takes various forms of participation and reification in order to coordinate various activities. The coordination may involve the diverse perspectives of various participants which can lead to a shared sense of belonging in the division of the ownership of meaning. In this study, the experience was perceived to be a controlled experience where it was accepted that the alignment of participants was needed in order to create a stable online environment. As conception 1 indicated, there may be problems if people are not trained and informed, this may suggest a relation to students’ acceptance of alignment. Learners may have realized that a participatory environment where each student can contribute equally may be difficult to engage in as the lack of training and the experience of technical issues make such engagement awkward especially in the online context. In this case the experience of alignment affects learners’ communities in complex ways as many of their experiences indicated a sense of belonging. However, many indicated that Skype gives them a better sense of belonging.

The implications for practice are that Adobe Connect, combined with the power of the instructor, does indeed align participants to engage in specific ways such as through the use of chat and microphone. This alignment may facilitate the traditional learner but there are clear indications that it does not facilitate the social learner. The sense of alignment that can be seen in this study seems to be more of an alignment that requires compliance as the ownership of meaning is not shared equally and a stable environment is preferred over the explorative environment. This is because there is too much risk associated with the use of new functionalities due to the inexperience of users.
7. Conclusions and Future Research

This chapter summarizes the key conclusions that can be drawn from this study. Furthermore, this section will attempt to answer the research question that was proposed at the beginning of the study. The chapter ends with a reflection on the study and with a discussion about further research that can be carried out related to this topic.

7.1 Conclusions

The purpose of this study was to assess the effectiveness of Adobe Connect as a tool for learning based on a social perspective of learning. This level of effectiveness was discovered through asking the following question: How do learners experience Adobe Connect as a tool for learning? I discovered that learners experienced Adobe Connect in a number of ways. These variations in experience were similar in many cases but different in others. Most of the learners felt some sense of belonging when using Adobe Connect but it was also felt that it lacked the collaboration and interactivity aspects of social learning. Thus, from a social perspective of learning, I can better judge that Adobe Connect is not the ideal tool for building relationships, aiding mutual engagement or co-constructing knowledge. The possibilities may be there to facilitate a social environment but it will take education and training on the part of the learner and the teacher in a coordinated fashion to transform these possibilities into realities where learners can go beyond the instructor-learner interaction and enter into a more holistic paradigmatic trajectory of learning.

Despite the lack of collaboration and interactivity, it was felt among learners that it may be difficult to coordinate social learning as there are so many participants and that if everyone was given a chance to participate, then it would become a meaningless exercise. The limitations of Adobe Connect as a synchronous tool coupled with the time and spacial constraints of each class makes it a more acceptable controlled experience. It was also noted that Adobe Connect provided a satisfying traditional experience. However, to answer my question related to social learning, Adobe Connect was not experienced as a tool for learning from a social perspective.

I think that if the architectures were better designed toward a more interactive, customized and collaborative space where learners would be given a better level of control than they currently have, but one that would not impede on learning, then the tool may provide for a delicately balanced social experience that promotes the use of the imagination and the power of engagement. This may result in an inspiring
alignment that promotes the fair distribution of the ownership of meaning. This
distribution might lead to the economies of meaning that would engage learners from
diverse backgrounds and lead them to the zenith of a virtual space where learners
build their own environments.

7.1 Final Reflections

I think that there are questions remaining that have to be answered in order to remove
the bias that accompanies my study. The teachers’ experience has to also be
investigated as they would provide a different valuable perspective. It is true that a
qualitative study can bring the issues of technology use and technology design into the
spotlight and that was a personal goal of mine in this study. The reversibility of
foldings can be maintained as long as people continue to investigate issues concerning
learning through technology use. By disclosing the learner’s experience of these tools,
the true essence of their experience can act as a method to encourage the designers of
technology and of curricula to improve on the learning architectures of tomorrow.

7.2 Future Research

Further insight into the technical issues experienced by learners can only benefit
future designs. However, learning has to also be taken into consideration as this is a
complex area in itself where people’s backgrounds shape what and how they learn.
Learning associated with online spaces should continue to be the focus of the future as
e-learning is a trend that seems to be continuing, if not growing. A comparison
between platforms such as Adobe Connect and Second Life may yield some
interesting findings. The most important point that I have to stipulate is that when it
comes to the design for learning, technologies should be investigated and analyzed
from one or more learning perspectives so that they can be better designed for
learners.
8 References


9. Appendix A: Participant information sheet

A phenomenographic study:
The effectiveness of Adobe Connect as a tool for learning based on a social perspective of learning

Principal researcher
There is one researcher who is carrying out this study and his name is Patrick McCarthy. He is a student who participates in a distance Master of Information systems at Linnaeus University.

Invitation
You are being invited to take part in a research study. The decision whether to take part or not is entirely voluntary. There will be no pressure put on you whatsoever to participate in this study. Before you make your decision, it is necessary that you understand what this study entails and what it means if you do decide to take part. Please do not hesitate to ask if there is anything unclear by contacting me at the above. Thank you for your time.

What is the purpose of this study?
The purpose of this study is to discover how effective Adobe Connect is as a tool for learning based on a social perspective of learning.

Why I have been chosen?
You have been chosen because you are a student who takes part in a Master of Information Systems at Linnaeus University and that you have been using Adobe Connect to take part in the Masters.

What does participation entail?
If you do decide to take part in this study, a semi-structured interview will be carried out. This semi-structured interview will involve a set of questions that will be sent to you before the interview. The interview estimated time is between 30 and 40 minutes. It will be carried out online using Skype.
You will be asked by the researcher for permission to record the interview on Skype before the interview takes place. If you do not agree to being recorded, the researcher will instead take notes and not record the interview. If you do accept to the recording, you may at anytime during the interview request the researcher to turn off the recording at any time.

The questions will be based on how you experience Adobe Connect as a tool for learning based on a social perspective of learning. The semi-structured interviews will be developed in order to elicit the different ways you experience Adobe Connect as a tool for learning. As it is a semi-structured interview, the questions will be open-ended and during the interview, the researcher may ask you to develop on certain questions in order to provide a more qualitative understanding of how you experience Adobe Connect as a tool for learning. Questions may be of a repetitive nature in order to elicit a deeper understanding.

**Will my taking part in this study be kept confidential?**
Yes. This interview will not be made available to any person only the researcher. The researcher will use pseudonyms when recording, taking notes and publishing the material in order to protect your identity from being discovered. All data will be stored in a safe and secure place where it would be difficult for any general member of the population to access it. The information that you have provided will be used in the study but your identity will not be revealed in any way.

**What will happen to the results of the research study?**
The research will be published in the archives at Linnaeus University and will be available for inspection when it has been completed.

**Will there be a follow up?**
There will be a follow up in order to match the accuracy of what has been revealed in the draft works for the study with the opinions of the participants. This will be an informal follow up that will seek to tweak any issues that do not correlate with the participant’s original thoughts as well as strengthening the validity of the study. This follow up may also seek to clarify any missed questions or misunderstandings. The follow up will involve a 10 -15 minute call after having put the research together.
When will this study take place?

The study will take place at any time between March 27th and April 3rd. The exact time and date can be negotiated but it is preferred that the study take place between the above dates. The estimated date for the follow up has not been established but participants will be informed 10 days before the follow up. The researcher will contact you not too long after you have responded that you are willing to participate in order to establish an exact date and time.

Consent information
Please type yes or no to the following questions

1. I confirm that I have read and understood the information sheet attached above and that I have been provided with a chance to clarify any misunderstandings.
   Your response:

2. I understand that my participation is entirely voluntary and that I may withdraw at any time without reason.
   Your Response:

3. I agree to take part in the above study
   Your Response:

4. I agree to the follow up.
   Your Response:

5. I agree to the interview being recorded.
   Your Response:
5 Signature:____________________________

Note: If you do decide to participate, please send back this document with your reply indicated before March 26th 2013. Thank you very much for your time once again.

Note: To add text and put your digital signature there is a sign, add text icon in the pdf, if you are not able to use it, then let me know and I will provide another way to sign.

Note: After typing yes or no and signing, re-save the pdf and send it back to the researcher

*Note: This participant information sheet is a modified version of that found in (Fisher, 2010).*
Appendix B: Phenomenographic interview questions

Section 1

1. How do you feel about Adobe Connect as a tool for participation and expressing oneself?

2. What do you think of Adobe Connect as a tool to spark the learner’s imagination?

3. What do you think about when you are participating in Adobe Connect activities as in chat, viewing other people’s messages, watching the lecture, using the mic and so on?

4. From your experience of Adobe Connect, do you think the platform provides for opportunities and space to participate and express yourself? Could you elaborate please?

5. Do you think it controls your interaction in any way? Could you explain in more detail please?

Section 2

4. Do you think that Adobe Connect shapes your identity in terms of participation and reification? If yes, how does it shape your identity and if not please explain further?

5. How do you feel about that?

6. From using Adobe Connect, did you notice any ways that the platform can trigger your imagination and place you in different contexts, places, situations and roles? It would be great if you could give me more insight to your answer.

7. From your experience, are there any features of Adobe Connect that feed the imagination in the sense of aiding processes of visualization that place the learner in different contexts, roles or situations? Could you get into more detail please?
8. Do you think Adobe marginalizes the student in any way? If so, in what ways does it marginalize the student? If not, please explain more.

9. Judging from your response, how do you think this marginalization or lack of affect the learner’s identity?

10. What has been your experience?

11. Do you think Adobe Connect attracts the learner to interact? Please develop on your answer.

12. Depending on whether it attracts the learner to interact or not, do you think this attraction or lack of affects the learner’s identity? Please elaborate.

Section 3

13. How do you feel when you interact in Adobe Connect?

14. Does Adobe Connect give you a sense of belonging when you interact? If yes, how does it give you that sense of belonging, if not please explain more.

15. Do you think it excludes people in any way from engagement? If yes, how does it exclude people? If no, please state why?

16. Do you think it is an effective tool for facilitating engagement between learners? Can you make explicit more details related to your answer?

17. Do you feel that Adobe Connect can support joint enterprise between learners? What has been your experience?

18. Do you think the platform supports your imagination in terms of giving you a sense of belonging? If yes, how so? If not, why not?
19. In your opinion, does Adobe stimulate your imagination to interact in activities? If yes, how does it do that? If not, please provide further details.

20. Do you agree or disagree with the statement that Adobe Connect alienates some members from participating and expressing oneself? Would you kindly explain your reasoning?

21. Does the platform help co-ordinate participation from students? If yes, how does it do that? If not, please provide more insight.

22. Do you think the platforms supports some but not others? Explain your answer please.

23. What do you think of Adobe Connect as a tool for facilitating the achievement of learning goals.