

Mind Your Language

- *Cultural Differences*

in

Computer Supported Collaborative Learning



By

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- *Cultural Differences in Computer Supported Collaborative Learning*

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Foreword

This thesis is a part of my studies for a Masters degree in IT, Learning & Organizational Change, at Aalborg University, Denmark. I have chosen to name this thesis “Mind Your Language – Cultural Differences in Computer Supported Collaborative Learning”. The first part of this title “Mind Your Language” is in fact borrowed from a popular British television series by the same name from the late 70’s. The series focused on culturally diverse adult learners in a language school in London, England. The series portrayed students with varying degrees of English proficiency and played on the humour, that students misunderstood English words and misinterpreted situations in the classroom.

For this thesis, I have chosen to examine computer supported collaborative learning and cultural differences. My choice of topic instantly made me think about the above mentioned television series. Although, the series presented a stereotypical view of various nationalities and might have been considered offensiveness by some, it managed to show how cultural differences exist in everyday situations among culturally diverse people and it therefore becomes important to “*mind your language*”.

During my work with this thesis, the information provided by the professors at the Canadian university became the very basis for the empirical study. Although, they have requested to stay anonymous, I would like to acknowledge their support as they went above and beyond in order to aid my case study. Also, I would like to thank my thesis advisor Anne Ejlsing for her most valuable suggestions, comments and generous support.

Last but not least, I would like to express my immense appreciation for Ammi, Ehsan and Junaid for their love, care, and support which made it possible to complete this thesis. And to my Xavier, thank you for your smiles.



Sara A. Khan

March, 25th 2009

Resumé

Set i lyset af et kollaborativ læringsgrundlag er læring en social proces, hvor man igennem samarbejde med hinanden opbygger viden. Ved hjælp af informations- og kommunikationsteknologi (IKT) har man mulighed for at udvikle kollaborative læringsmiljøer, som er computermedieret. Derved opstår bl.a. 'computer supported collaborative learning', også kaldet CSCL. CSCL er et multidisciplinært forskningsområde som bl.a. inddrager IKT, pædagogik, kommunikation mm.. CSCL giver mulighed for, at kollaborativ læring kan finde sted på tværs af tidsmæssige og fysiske grænser. Af nogle aktører indenfor uddannelsesmiljøet, bliver CSCL endda anset for at være løsningen til at opnå ønskede ændringer i undervisnings- og læringsmetoder i uddannelsesmiljøet. Idet læring finder sted gennem aktiv deltagelse og engagement mellem de studerende afhænger succes af CSCL af at kommunikation og kollaboration mellem de studerende rent faktisk forekommer i læringsmiljøet.

Denne specialeafhandling undersøger, om kulturelle forskelle har en indvirkning på kommunikationen og kollaborationen blandt studerende med forskellige kulturelle baggrunde, som samarbejder i et CSCL forløb.

Jeg valgte at undersøge ovenstående problem fra både et teoretisk og et empirisk perspektiv. Det teoretiske perspektiv tog udgangspunkt dels i en læringsteoretisk dimension i CSCL, dels en interkulturel-teoretisk dimension og dels en kultur-teoretisk dimension. Den empiriske undersøgelse tog udgangspunkt i en specifik case, som omhandler studerende fra to kurser i et online MBA studie på et canadisk universitet. Den empiriske undersøgelse benyttede kvantitative undersøgelsesmetoder i form af et spørgeskema, som undersøgte de studerendes holdninger og forventninger til deres online kommunikation og kollaboration i kurset. Hensigten med spørgeskemaet var, at undersøge hvorvidt de studerendes svar var baseret på deres kulturelle forventninger til kommunikation og kollaboration, og derved indikerede om kulturelle forskelle har en indvirkning på kommunikationen og kollaborationen i CSCL.

Baseret på de teoretiske konklusioner fra de første kapitler i afhandlingen, argumenterede jeg, at i et CSCL miljø har kulturelle forskelle en indvirkning på online kommunikation og kollaboration blandt studerende med forskellige kulturelle baggrunde.

Resultatet af den empiriske undersøgelse viste ingen klar sammenhæng mellem de studerendes holdninger til kurset og deres etniske eller kulturelle baggrund. Overordnet set havde de studerende en positiv holdning til de forskellige spørgsmål omkring online kommunikation og kollaboration, hvilket antydede et velfungerende online kursus. Ud fra den kvantitative undersøgelse og den efterfølgende analyse, var det således svært at konkludere om kulturelle forskelle blandt de studerende har en indvirkning på kommunikationen og kollaborationen i et CSCL miljø.

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1. Introduction

We gain knowledge through our social interaction with others, whether in a traditional classroom or through computer mediated learning technologies. The basis of collaborative learning is grounded in the belief that learning is a social phenomenon (Dillenbourg 1999). By the means of interaction, students work together to construct knowledge and solve problems, through expression of ideas and by way of improving on those ideas. With the introduction of computer supported collaborative learning, there are opportunities for collaborative learning to take place across barriers of time and space as it allows for learning through electronic means.

For many educators and researchers, computer supported collaborative learning appears to be one of the most promising ways to achieve changes in teaching and learning practices (Lipponen et al. 2004). However, the move to a computer mediated learning environment does raise some concerns about learning, successful interaction, participation by learners and so forth. Collaborative learning is built on the premise that individual learning is promoted through group processing (Dillenbourg 1999). Therefore social interaction becomes the key element regardless of the technology used to support that interaction.

Today's reality is that human diversity reflects the social profile of our planet, hence diversity is visible culturally, ethnically and linguistically. Diversity has become the norm in a globalized world and we share territories of space, time, and communication with culturally diverse people (Baraldi 2006).

From an educational perspective, cultural diversity is also reflected in the student population in traditional classrooms and computer mediated learning environments. As diversity is increasing, instructors and students are enjoying the benefits of a multicultural learning environment where students may share and learn various perspectives on life. However, this also means that interactants in classrooms are experiencing an increase in intercultural communication and collaboration in their everyday lives. For computer supported collaborative learning, where students are often distant in time and space and lack the opportunity to resolve issues face-to-face, intercultural communication and collaboration might pose a problem for all interactants in the CSCL environment.

1.1 Problem Description & Problem Statement

In my professional career, as program manager for an e-learning provider of various online graduate programs, I experienced first hand how some online learner groups proved more successful than others. During several online courses, instructors as well as students voiced their concerns about how certain group members seemed uncooperative or how some students were left with all the work while others barely participated. Although, at that time it was hard to pin-point the exact reason for a dysfunctional group, successful interaction among learners did seem to be one of the decisive factors for online collaboration.

The programs that I worked with were based on various instructional methods where some had elements of collaborative learning. These programs were all affiliated with North American universities, hence the student population reflected the ethnic and cultural complexity of a diverse North American society (Frankfort-Nachmias & Leon-Guerrero 2002). My choice of subject for this thesis is therefore triggered by my professional and personal interest in computer supported collaborative learning and online communication and collaboration among culturally diverse learners.

From a socio-constructivist perspective on learning, social interaction and discourse lead to students' cognitive development and higher cognitive functioning (Scardamalia 2002). Therefore, learning becomes a social phenomenon where students construct knowledge while interacting with their peers in a learning community (Wenger 1998). However, one's social interaction and behaviour is strongly grounded in culture as every individual carries within himself or herself patterns or schemas of thinking, acting, feeling and so on (Hofstede & Hofstede 2005). As successful social interaction and communication is particularly important in fostering collaborative learning, differences in culture could pose an issue among diverse learners and impact the successful outcome of a CSCL environment. Therefore, it must be important to have a growing knowledge of cultural issues in computer-supported collaborative learning to inform us of how to foster online collaboration and communication among culturally diverse learners.

In the Fall of 2008, the students of two courses in an online Masters of Business Administration program at a Canadian university became the basis of the empirical research for this thesis. Like the Canadian society, the student population in both courses was highly diverse. The courses, built around collaborative learning principles, required a large degree of student participation, as students had to collaborate with each other in small groups throughout the course. I found it interesting to examine if their various cultural backgrounds and differences were having an impact on the communication and collaboration in the CSCL environment and therefore affecting the outcome of the courses.

Existing research on possible cultural issues in computer mediated learning primarily focuses on cross-cultural comparisons among learners from various countries who are collaborating with one another (e.g. Kim & Bonk 2002, Sorensen & Takle 2004, Wang & Reeves 2007). They focus on differences in learning styles, communication, online social behavior and so forth. Undoubtedly, these findings provide an important base to understand how learners in various nations interact in computer-mediated learning environments. However, my area of interest is primarily concerned with culturally diverse learners within a multicultural nation who are engaged in online CSCL environments. Hence, the study in this thesis is not of a cross comparative nature but focus is on any visible attitudes and opinions about communication and collaboration in CSCL grounded in students' cultural backgrounds.

In the light of the above, I have reached following **problem statement** for this thesis:

In computer supported collaborative learning environments, do cultural differences have an impact on the communication and collaboration between students who are culturally diverse?

Moreover, in order to aid my research and a theoretical explanation to my problem statement, I will work with the following questions:

- How do learning, collaboration and communication take place in CSCL?
- How can intercultural communication be defined and what does it mean to be intercultural?

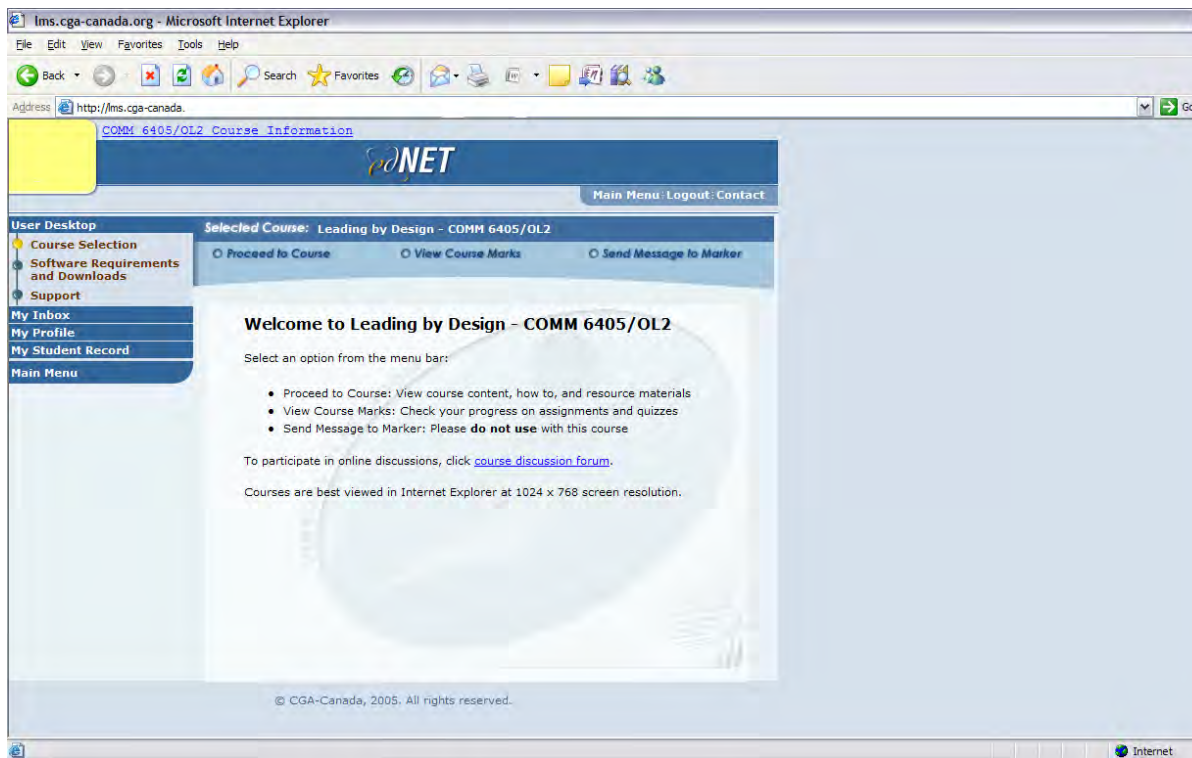
- How can the concept 'culture' be defined and what impact does culture have on learning?

My aim is to first examine the problem statement theoretically by exploring the various theories of collaborative learning, intercultural communication and culture chosen for this thesis. Afterwards, based on a case study, I would like to examine the problem statement empirically by applying quantitative research methods by gathering data through an attitude survey.

1.2 Case Background

Two graduate level courses were chosen for the empirical study. The courses took place from September to December 2008, each course lasting for one semester. Both courses are mandatory in an online Masters of Business Administration (MBA) program at a Canadian university. The MBA program is specifically designed for working professionals who are holders of a certified general accountant (CGA) designation which is a Canadian accounting and financial management designation at a post-graduate level. The MBA program has a general business curriculum that builds on CGA members' existing knowledge base, therefore giving students with CGA designation an advanced standing in the program.

Students from both courses have a somewhat similar academic and professional background as they all have the same designation. However, being a Canadian program, the student population is highly diverse in terms of ethnic and cultural backgrounds. Since the program is conducted entirely online, students are not required to be physically present at the university at any point during the program, hence the students are located across North America and therefore likely to be distant in time and space.



The program is delivered through a web-based learning management system. Since the learning system is web-based, students do not have to install a program on their personal computers and can access their courses anytime from any computer. There is no fix entry point into the program, therefore most courses are not conditioned by prerequisite courses. Students take only one course at a time. Thus, for some students the online course will be their first course, for others it might be their third and for some students this course might be their last course in the program.


The course format is primarily based on asynchronous threaded discussions, which are used for both formal and informal discussions, file sharing and instructor comments and feedback. All communication is written communication, either through the discussion board or through emails, as the students do not use tools like web-conferencing. The learning platform provides opportunity to enter discussion forums for all groups in the course, thus students can at any given time see what the other groups are working on. However, once something is posted, the platform does not allow students to change or delete their posted items.

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


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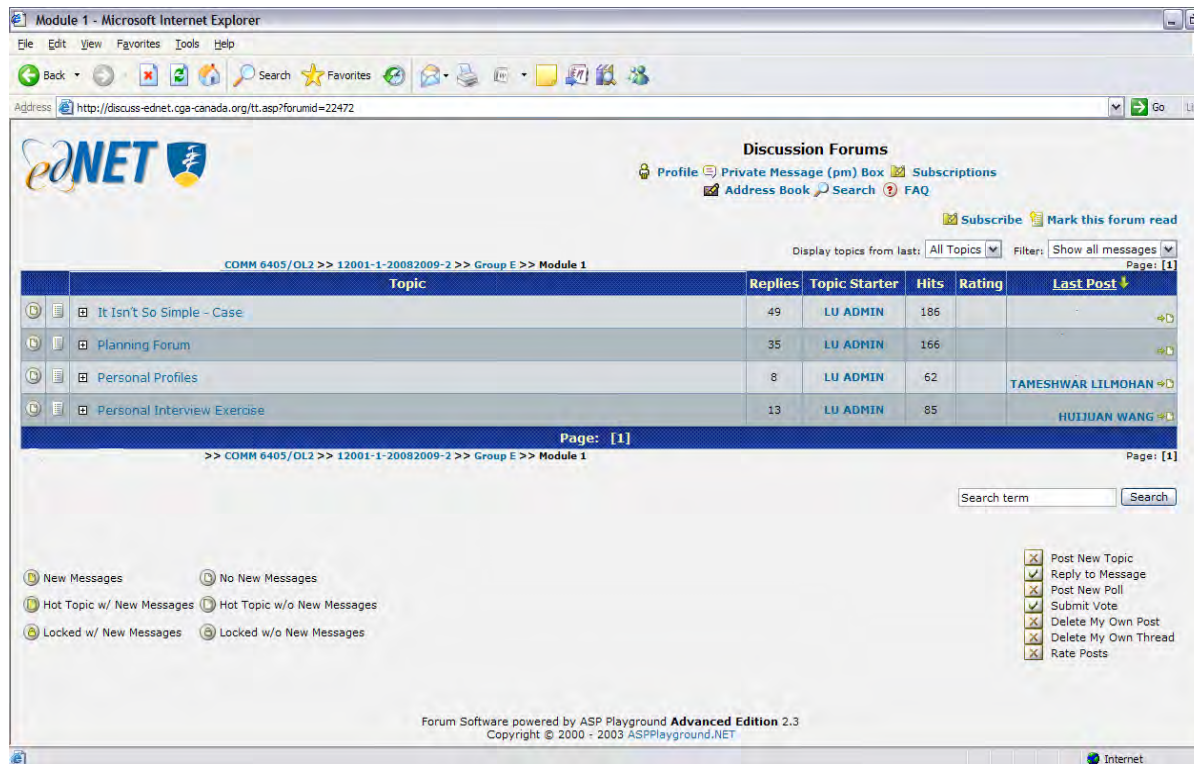
	Forum Description	Topics	Posts	Last Post
	Welcome to OL2!	1	38	RE: Welcome to our OL2 Class .. ANDREEA AXANI
	Group Summaries	9	84	Module 8 and rest of submissi .. Guy Chartrand
	Instructor Weekly Feedback	20	79	RE: Assignment 8 - Additional .. DOMINIC NORONHA
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	Group A	22	547	RE: Lilly New Zealand: Buildi .. HARDEEP DHALIWAL
	Sub-forums: Module 1, Module 2, Team Effectiveness Project, Module 3, Module 4, Module 5, Module 6, Module 7			
	Group B	22	527	RE: Lilly New Zealand: Buildi .. LOUISE USICK
	Sub-forums: Module 1, Module 2, Team Effectiveness Project, Module 3, Module 4, Module 5, Module 6, Module 7			
	Group C	22	632	RE: Lilly New Zealand: Buildi .. MARGARITA BERNABE
	Sub-forums: Module 1, Module 2, Team Effectiveness Project, Module 3, Module 4, Module 5, Module 6, Module 7			
	Group D	22	556	RE: Lilly New Zealand: Draft .. DOMINIC NORONHA
	Sub-forums: Module 1, Module 2, Team Effectiveness Project, Module 3, Module 4, Module 5, Module 6, Module 7			
	Group E	22	654	RE: Second draft report .. EHSAN KHAN
	Sub-forums: Module 1, Module 2, Team Effectiveness Project, Module 3, Module 4, Module 5, Module 6, Module 7			
	Group E – Mid-Term Case Project PRIVATE AREA	9	174	RE: Case .. STEVEN CHAO
	Group E – Managing Knowledge at Booz-Allen & Hamilton - Critique PRIVATE AREA	2	3	RE: Planning Forum .. STEVEN CHAO

Internet

The courses are built on case-based learning methods, divided into modules. In addition, each course usually has a midterm and a final exam. Most assignments are in the form of weekly group case-analysis as well as a few individual projects during the course. Each group is comprised by five to six students who work in collaboration each week on one case. At the beginning of each course, groups are randomly selected based on their regional location and remain in those same groups throughout the course. When the course starts, each group enters into a Team-Contract, which serves as a guide to students regarding online ethics, roles and responsibilities, academic integrity etc. (example Appendix E). In addition, during the first week of the course, the students are required to introduce themselves in a separate forum called the ‘Student Profiles’ and conduct a personal interview exercise in pairs. These activities are meant to help students learn more about each other, both personally and academically/professionally so they can form a bond between each other.

Every week students take turns to be the designated IR (Initiator and Recorder) for the weekly group case-analysis assignment. The IR can be considered as a moderator for the group, who first initiates that particular week’s case discussion and afterwards records all group members’ various contributions as the work progresses. At the end of the week, the

IR summarizes the case discussions and analysis before it is submitted for review to the course professor.



Students are graded according to an elaborate grading scheme, where group-cases, group and individual participation and the exams are graded for each student on an ongoing basis as well as at the end of the course. In addition, each student is required to evaluate their fellow group members based on an evaluation plan called “Team Effectiveness Climate Inventory” or TECI for short. This helps students evaluate how the member of the group has performed throughout the course in terms of participation, collaboration, achieving group objectives, group spirit and so forth. The scores for each student is tallied and taken into consideration by the professor in regards to participation marks. Besides this, the professors provide ongoing feedback regarding the group case-analysis, however, they do not actively participate in the weekly case discussions among students, hence the discussions are self-directed by the students.

1.2.1 Summary: Case Background

The courses selected for this empirical study are mandatory courses in an online MBA program especially designed for holders of a professional accounting designation at a Canadian University. The courses are conducted completely online hence the students do not meet face-to-face and are often distant in time and space.

The courses are based on case-based learning methods in the form of weekly group case-analysis assignment which are solved in collaboration within a small group. Students are divided into small groups at the beginning of each course and remain in those groups throughout the course. The courses are primarily based on asynchronous threaded discussions, which are used for both formal and informal discussions, file sharing, instructor feedback and so forth. All communication among students is written communication, either through the discussion board or through emails. The discussions are student-led as the professors prefer not to take actively part in student discussions.

There are a number of pedagogical tools implemented in the online course, for example students sign a team-contract at the beginning of the course, each weekly assignment has a designated 'Initiator & Recorder', who acts as the moderator for the group discussions and case analysis and students evaluate each others performance at the end of the course which is taken into consideration when professors assign final participation grades.

2. Methods

In the following chapter I will first give a brief description of some of my theoretical consideration during the work with this thesis, and second, I will describe the approach and design of the empirical study. This will be followed by definitions for some of the concepts used in this thesis.

2.1 Theoretical Considerations

With computer supported collaborative learning being such a vast research field, I have tried to limit my research of CSCL to a few key aspects that would be both interesting and relevant in the light of this thesis. My aim is to look at learning in the light of the two learning theories that I have chosen and an overall review of collaboration and communication in CSCL.

There are several theories and approaches to collaborative learning and CSCL, however I have chosen to explore Etienne Wenger's notion of 'communities of practice' and Scardamalia & Bereiter's 'knowledge building' theory. Although, Wenger's theory is not directly related to computer-mediated learning, it provides a basis for understanding the inter-group dynamics of learners in this particular case study. In addition, Wenger's theory also provides a broad point of reference about learning communities, whether in an educational or an organizational context (Pemberton & Mavin 2007).

There are a number of reasons for reviewing Scardamalia & Bereiter's knowledge building theory in connection with learning in CSCL. First, their research and implementation of a 'knowledge building environment' is based on Canadian learners and society which relates to the empirical case in this thesis. Second, they have conducted their research on various levels within the educational system. For example, the prototype for their knowledge building software was tested on university students, but later on also implemented in the elementary school system with younger learners (Scardamalia & Bereiter 2006). Hence, their work is not specifically related to one particular group of learners and can therefore be applied broadly. Third, the research on knowledge building through technology, now by

the means of Knowledge Forum (cf. Knowledge Building & Technology), is current as it continues today as well.

The primary source for describing collaboration in CSCL is a text by Pierre Dillenbourg which gives a detailed description of various features related to the notion of collaboration in collaborative learning. Dillenbourg (1999) defines collaboration in terms of collaborative situations, collaborative interaction, collaborative mechanisms and the effects of collaboration. However, I have chosen only to discuss collaborative situations and interaction due to two reasons; first, the collaborative mechanisms or processes are also discussed by Scardamalia & Bereiter who for instance mention collaborative discourse as a key element of knowledge building. Second, the effects of collaboration I believe is a matter of application and may vary from case to case, hence it becomes difficult to discuss the effects of collaboration from a general perspective without specific data to relate it to. Dillenbourg himself points out that “one should not talk about the effects of collaborative learning in general, but more specifically about the effects of particular categories of interactions.” (ibid, p.12).

In order to examine the communication aspect of CSCL, I have chosen a paper by Stahl, Herrmann and Carell (2004) called “Concepts of Communication in CSCL”. It gives a broad overview of theories of communication and show how they relate to CSCL. As CSCL is a multidisciplinary field, I find it important to examine the communication process in CSCL from various angles, hence the choice of Stahl et al.

In order to better understand intercultural communication and culture, I have chosen the work of different scholars to define and discuss these two concepts. My intention is to demonstrate how complex both concepts are and still continue to be, even though they are widely discussed and investigated within multiple scholarly fields.

However, two specific frameworks for culture studies are reviewed in this thesis, the first being Hofstede’s cultural dimensions and the second being Gullestrup’s three cultural dimensions. It is important to highlight that I have chosen these, since I feel that though similar in many ways, they also represents two different views of the concept of culture. Both models are based on cultural dimension, however where Hofstede’s focus is primarily

on national cultures, Gullestrup's cultural dimensions also emphasize the importance of various cultural subdivisions within a culture. Therefore by the means of Gullestrup's three cultural dimensions, culture is supposed to be viewed in its entirety. There are also other ways of looking at culture by the means of multiple dimensions which are not included in this thesis. For example, Hall's high vs. low-context cultures with regards to the different demands for contextual information among cultures (Rogers et al. 2002) or Hampden-Turner and Trompenaars' six binary oppositional dimensions of culture (Würtz 2006).

2.2 Empirical Research

In regards to empirical research, I believe that Daniel Muijs points to a key issue:

"... this view, that there is a true reality out there that we can measure completely objectively, is problematic. We are all part of the world we are observing, and cannot completely detach ourselves from what we are researching. Historical research has shown that what is studied and what findings are produced are influenced by the beliefs of the people doing the research and the political/social climate at the time the research is done." (Muijs 2004, p.4).

2.3 Empirical Study - The Questionnaire

For the empirical study, I am using quantitative research methods in the form of an attitude survey by the means of a questionnaire. It is important to highlight that my initial intention was to use quantitative and qualitative research approaches in combination to ensure reliability and consistency. In addition, interviews would have helped gain a deeper understanding of aspects regarding student interaction which might become visible through the questionnaire result. However, it was unfortunate that just before I was about to send out the questionnaires, I was informed that I did not have permission to conduct qualitative interviews with the students due to liability issues; the department chair did not want the university to be legally liable for the collected information and data as I was an external researcher not affiliated with their university. At the given time, I had planned my empirical research based on both the qualitative and the quantitative research methods, however, the refusal from the university came at a time when it was not possible to make changes to the empirical research process.

Since I was not permitted to perform qualitative interviews, the quantitative research became the primary basis for this empirical study. Though, I would like to add that most of the general background information regarding the two online courses as well as access to screenshots was obtained through informal conversations with the two professors. However, I was not allowed to access the main discussion board for each group as this would give me access to student-student interaction which is considered confidential. The two professors have requested that they as well as the students and the university remain anonymous in the final report.

I soon realised that the lack of qualitative research would pose some challenges in terms of accurate interpretation and generalization of findings in this study. Culture studies are considered complex and require a deeper analysis of the different cultures a person relates to (Gullestrup 2006), hence qualitative interviews would have been of key importance in the findings of this study.

Nonetheless, survey research has a number of advantages which could benefit the empirical study. According to Muijs (2004), survey research methods are flexible and can therefore appear in different forms. Another advantage is that research by the means of questionnaire did not set up an artificial situation like in an experiment, therefore it should be easier to generalize findings to real-world settings outside the sample group (Muijs 2004).

The population for the survey is students on a post-secondary education level who are participating or have participated in a CSCL environment. In addition, the CSCL environment should be set in a highly diverse society and the student population should reflect this diversity. The choice of students on a post-secondary level is based on the fact that older students, as compared to younger students on the primary school level, may have a more set learning style grounded in their culture, which could be a determining factor for their interactive behavior in the course, hence making it easier to study the influence of intercultural communication and collaboration in CSCL environments (Joy & Kolb 2009).

The questionnaire was kept rather short in order to ensure a higher response rate, as Muijs (2004) points out, a lengthy questionnaire might deter respondents not to participate in the survey as it takes away a great deal of personal time or perhaps seems boring to them. Although, Nielsen (2007) suggests that surveys in general should not be sent out during holidays, one of the professors suggested that the questionnaire should be emailed during the holiday break, at the end of December, as students would be more likely to send a reply back since most people have time off and therefore have more time and energy to spare on extra activities such as this survey.

The questions were derived deductively arising from the problem statement and the theoretical framework. The survey was meant to identify whether students' attitudes and perceptions about their online intercultural communication and collaboration were culturally grounded, hence indicating the implication of cultural differences on computer supported collaborative learning. Most of the questions are close-ended questions with only a few open-ended factual questions regarding different variables like, gender and ethnicity as well as a request for comments about any challenges during the course (Appendix A, Question 21). The closed-ended questions used a 5-point rating scale which allowed the students to choose between five options indicating level of agreement. It was a conscious choice not to include more than five categories in the rating scale as this could make it difficult for students to make a precise distinction between the various categories.

I chose not to include a middle or neutral category such as "neither agree nor disagree" as this answer would be difficult to interpret in the analysis. Muijs (2004) points out that some respondents who do not understand the question or do not have an opinion choose the neutral category. It is then for the researcher to decide what a response in this category means; does it actually mean that the respondent neither agrees nor disagrees; that the respondent really 'don't know'; or perhaps that the respondent do not understand the question. However, to alleviate some of this problem a 'don't know' category was included at the end of the rating scale.

In regards to validity of the result, it was important to consider whether the questions in the survey did in fact measure what was intended with the empirical research. Hence, questions were formulated in way so they would give insight to student's attitudes towards

online communication and collaboration in the course. Some of the questions were repeated after being slightly modified in order to observe whether students had the same attitude and answer as before, again to increase the validity of the result.

2.4 Note

It is important to realize that there are constraints and limitations to any discussion, and some ideas in this thesis might appear idealized, naive, or perhaps even insensitive. Additionally, I have to acknowledge that I most probably write out of my own ethnocentric perspective and my own cultural base. Gullestrup (2006) argues that it is unavoidable to eliminate the ethnocentric bias of the researcher, hence, my interpretation of the various theories and empirical data will be culturally determined and be marked by my personal insight to Scandinavian, Canadian and South Asian cultures. Nevertheless, this interpretation reflects my current thinking.

2.5 Definitions

CMC (Computer Mediated Communication): “the communication produced when human beings interact with one another by transmitting messages via networked computers” (Herring 2001 in Paulus 2004, p.102)

CSCL (Computer Supported Collaborative Learning): Strijbos et al. (2004) offer a definition of CSCL stating that: “*it is group-based learning, regardless whether this takes place face-to-face, via computer networks, or a through a mixture of both modalities*” (p.xi). This definition, although somewhat simplified, gives a broad working definition, which could include several aspects of CSCL and therefore suitable for this thesis.

Case-based learning: An instructional method, where learners actively participate in analyzing, discussing, and solving real problems in a specific field of inquiry (Flynn & Klein 2001).

Collaboration: I will adapt Rochelle & Teasley's (1995) definition of 'collaboration' that Dillenbourg (1999) refers to: "...a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (p.12).

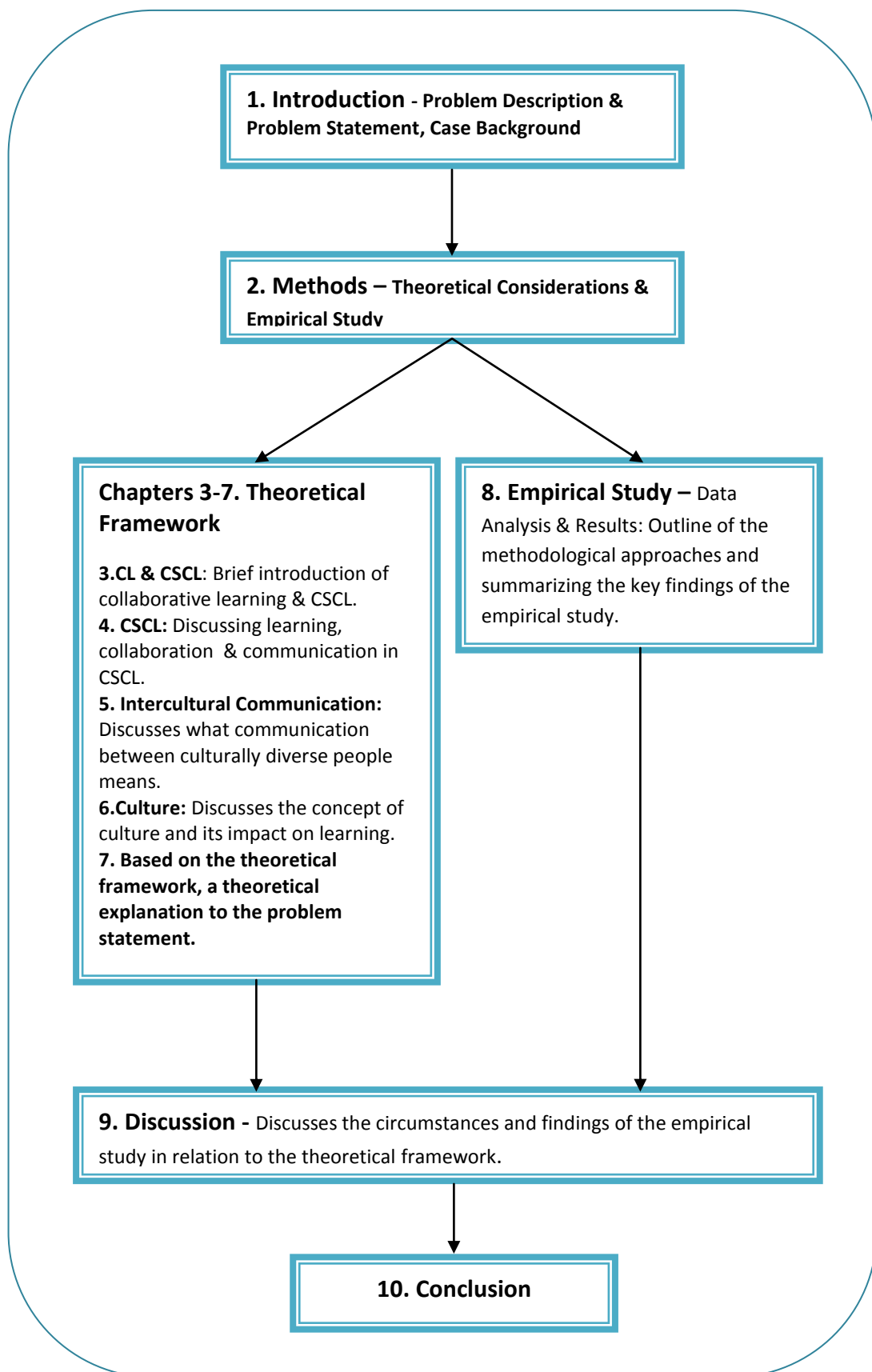
E-learning: E-learning is used here in the broader sense of learning activities, processes, and environments using any form of information and communication technology (ICT).

Learner/Student/Peer/Member: Various scholars use different terms in their description of interactants in a collaborative learning situation. In this thesis, the terms learner/student are used interchangeably in order to describe interactants in an educational context. The terms peer/member are also used interchangeably for interactants in learning situations, however not limited to an educational context.

Multicultural/Diverse: These two terms will be used to somewhat interchangeably in this thesis. However, it is important to point out that the term 'multicultural' differ a little from the term diverse. The term multicultural seems like a buzzword these days, it is hard to define because of its different usages and the sometimes controversial debate around it¹. However, Parekh (2000) gives following definition for a multicultural society: "*A multicultural society, then, is one that includes two or more cultural communities*" (p.6). It is important to note that there is a difference between the term 'multicultural' and 'multiculturalism'. According to Parekh, "*The term "multicultural" refers to the fact of cultural diversity, the term "multiculturalism" to a normative response to the fact.*" (ibid, p.6), hence in this thesis the aim is not to discuss the idea of multiculturalism, but merely stating the fact that a society or classroom consists of more than one cultural group.

¹For example following article is from the Danish newspaper "Information" dated May 20th, 2008 and refers to the public debate about whether Denmark is a multicultural country (in Danish): <http://www.information.dk/159506>

2.6 Graphic Depiction of Structure of the Thesis



3. Introduction to Collaborative Learning and CSCL

As the above indicates, the following is a brief introduction to collaborative learning and CSCL. I call it brief as it is not possible to cover all general aspects and topics in collaborative learning and CSCL in this small chapter within a thesis. Nonetheless, these two concepts are key to the theoretical framework, hence an overall introduction becomes necessary.

3.1 Collaborative Learning

The definition of ‘collaborative learning’ has been broadly expressed as “a situation in which two or more people learn or attempt to learn something together” (Dillenbourg 1999, p.1). This definition introduces three elements of collaborative learning which are *two or more*, *learn something* and *together*. Each element is interpreted in different ways. The element of *two or more* refers to the number of the group members which can be a peer (group of two people), small group (group of under 10 people), and group of more than ten people. The definition of *learn something* is interpreted as follow the course, problem solving, or course material. The final element is how this group of learners interact with each other in order to learn something. The word *together* is considered here as either face-to-face or computer-mediated interaction. The interaction can be either asynchronous or synchronous, relying on the time of the interaction. Also, the division of labour can either be a truly joint effort or divided labour (ibid, p.2). Hence in collaborative learning, social interaction among learners is essential for effective knowledge acquisition and increased understanding. Collaborative tasks such as discussing, summarizing, clarifying, and integrating course content become important in order for learners to acquire knowledge and gain a deeper understanding of the course material (Roberts 2004).

As defined by Dillenbourg et al. (1996), in collaborative learning there are three theories of learning which have been taken into account. These are the socio-constructivist approach, socio-cultural approach and shared cognition approach. Socio-constructivist theory, which is a theory that was strongly influenced by the theories of Piaget, is concerned with the cognitive development of the individual from social interaction. This thesis will be concerned with the socio-constructivist approach to collaborative learning.

Dillenbourg (1999) argues that there are two separate understandings of collaborative learning; collaborative learning can be understood as a pedagogical method or a psychological process. Dillenbourg further argues that from the pedagogical perspective collaborative learning is ‘prescriptive’ as one assumes that collaboration among two or more people leads to efficient learning. In contrast, collaborative learning from a psychological perspective is ‘descriptive’ as one concludes after observing two or more people who have learned together that collaboration was the ‘mechanism’ which caused the learning to occur. However, he argues that collaborative learning is neither a method nor a mechanism. According to Dillenbourg (1999), collaborative learning describes a situation in which certain form of interaction among people is expected to take place “which would trigger learning mechanisms...” (p.5).

Roberts (2004) refers to Panitz (2001) who lists a number of benefits to collaborative learning, which covers academic, social and psychological benefits. Some of the benefits are that collaborative learning; promotes critical thinking; involves students in the learning process; builds diversity understanding among students and can help increase self-esteem in the students (Roberts et al.2004, p.2-4). Also, collaborative learning is suppose to improve learning because it creates awareness of one’s own thinking processes as various perspectives are shared through discussion (Paulus 2004).

However, Roberts (2004) also acknowledge that there are a number of problems related to collaborative learning (p.6): a) the “free rider” effect, where one or more students do not do their fair share, b) the “sucker” effect, where one or more members is left to do all of the work, c) the “status sensitivity” effect, where groups form within the group and d) the “ganging up on the task” phenomenon, where subtasks are divided among members of the group without much collaboration taking place. Additionally, Hopper (2003) discusses some of the issues related with collaborative learning, as he states that collaborative learning does not take into account the differentness of learners and often enforces what he calls the “groupthink” phenomenon, where group cohesiveness is protected at the cost of individual critical thinking which results in flawed group decisions (p.27). He argues that collaborative learning is suitable for some learners in certain contexts and emphasizes that when it comes to collaborative learning methods the notion that ‘one size fits all’ is not applicable (ibid).

3.2 CSCL

Computer supported collaborative learning (CSCL) has by many been characterized as a complex multidisciplinary research field that involves several established disciplines, such as ICT, education, communication, pedagogy, cognition etc. (Roberts 2004, Lipponen et al. 2004, Stahl et al. 2006). For instance, Prinsen et al. (2007) claim that CSCL emerged from the research interests of the socio-constructivist perspective found in ‘collaborative learning’ and computer supported cooperative work (CSCW). In line with this, Lipponen et al. (2004) state that CSCL is a younger sibling of CSCW and the research field in CSCL is focused on how collaborative learning, supported by technology, can enhance peer interaction and work in groups, and how collaboration and technology facilitate sharing and distributing knowledge among learners. A more simplified explanation is provided by Stahl et al. (2006), who explain that CSCL is “concerned with studying how people can learn together with the help of computers” (p.409).

Among some of the prominent theories of learning in CSCL, Roberts (2004) mentions following four theories which closely resonates with Dillenbourg et al.’s (1996) account of learning approaches in collaborative learning: the socio-cultural theory, constructivist theory, distributed cognition theory and situated cognition theory. Beside these, Roberts (2004) points out that for instance Koschmann (1999) has proposed a new theoretical framework for understanding learning as a socially-grounded phenomenon and Stahl (2002) has proposed a theoretical framework for CSCL incorporating models of knowledge building, based on the work of Scardamalia and Bereiter’s knowledge building theory.

Pea (1994) and Lipponen et al. (2004) argue that in the study of CSCL it becomes important to consider what the abbreviation CSCL actually stands for. According to Lipponen et al. (2004), researchers within CSCL have in recent years discussed the meaning of the last two letters in the abbreviation, i.e. researchers agree that CS stands for *computer supported*, however CL can stand for a number of things. For example, Pea (1994) interprets the CL as “collective” learning instead of collaborative learning as collaboration often does not occur in collaborative learning and students experience CSCL

as collective learning instead. Likewise Lipponen et al. point out that some refer to the C in CL as coordinated or cooperative learning. In addition, Lipponen et al. also draw attention to the fact that there have been even different interpretations of the meaning of the whole abbreviation. They refer for instance to Koschmann (1999) who discusses CSCL as computer support for collaboration *and* learning, suggesting that research should link learning and working more closely to each other, as well as the research on CSCL and CSCW.

Technology is considered a central element of CSCL research and development. Lipponen et al. (2004) point out that there exists a great variety in the technologies used in CSCL research, however, it is very difficult to find evidence that a particular CSCL application is better than the other ones. The fact that almost any technological application could, in some way, be used in support of collaboration among learners complicates things even further (ibid). Stahl et al. (2006) argue that although, technology is important in CSCL, the role of the computer is secondary to the interpersonal collaboration process among students. Hence “the software is designed to support, not replace, these human, group processes” (Stahl et al. 2006, p.414).

Stahl et al. (2006) argue that CSCL is often confused with e-learning, however, there are number of issues with this. They point out that e-learning is often based on the assumption that existing classroom content can be digitized and made available to a large number of students without much effort by the teacher. Posting of content such as text, slides and videos merely replaces the textbook, but is hardly effective without the interactive and motivational context provided through interaction. In addition, online teaching in CSCL environments requires just as much, or perhaps even more, effort by teachers than in traditional classroom teaching, as teachers must guide and motivate students through on-going interaction.

Sorensen (1999) calls out for a change in didactic methods in distance learning processes unfolding in virtual learning environments. She argues that design and management in CSCL is based on the assumption that online inter-human dialogues takes place like face-to-face dialogues, however, this is not the case as the online dialogue is not “routed and embedded in a physical time and context”, hence this wrong assumption can influence the

success and failure of a CSCL process (ibid, p.3). In line with this, Strijbos et al. (2004) argues that providing students with communication technology does not automatically result in collaboration, let alone collaborative learning, thus it becomes important that a number of variables are considered in the design and development of CSCL environments.

3.3 Summary: Collaborative Learning & CSCL

Collaborative learning can simply be defined as a situation where two or more people learn together. There are several learning theories concerned with collaborative learning, however, the focus for this thesis will primarily be the socio-constructivist approach and Wenger's theories about communities of practice (cf. Chapter 4). There are both a number of benefits and problems with collaborative learning. Where on one side collaborative learning actively involves the student in the learning process, on the other side at times it fails to recognize the differentness of individual learners. Hence, it is wrong to assume that collaborative learning is for every kind of learner in any context.

CSCL is a multidisciplinary research field, which involves ICT, communication, learning and so forth. CSCL is concerned with the study of how people learn together with the help of computers. Various researchers point to the fact that this field has emerged from research in collaborative learning and computer supported cooperative work (CSCW). Like collaborative learning, there are a number of learning theories that have been dominant in CSCL research, which among others include the socio-constructivist theories of learning. Some researchers call for recognition of CSCL processes as being considerably different than face-to-face process, such as inter-human dialogue, hence a change in didactic methods in CSCL becomes necessary.

4. Computer Supported Collaborative Learning

This chapter theoretically examines how learning, collaboration and communication takes place in CSCL. The purpose of this chapter is to present some of the conditions for learning, communication and collaboration presented by the theories chosen for this thesis.

4.1 Theories of Learning in CSCL

As mentioned earlier, researchers of CSCL are engaged with several theories of learning that among others involves socio-constructivist theories of learning. The following gives a description of Wenger's Communities of Practice theory and Scardamalia & Bereiter's Knowledge Building theory about learning and how both theories can be seen in relation to the courses in the empirical study.

4.2 Wenger's Communities of Practice

The concept of 'communities of practice' (CoP) was presented by Etienne Wenger in his book "Communities of Practice. Learning, Meaning and Identity" (1998). The term appeared after Wenger and anthropologist Jean Lave studied apprenticeship as a learning model. The theory on CoP is based on the notion that learning takes place through active participation in social communities and is based on, what Wenger (1998) calls, a "social theory of learning" (p.4).

4.2.1 A Social Theory of Learning

According to Wenger (1998), his proposed theory of learning is not meant to replace existing learning theories, however, the social learning theory does operate on different assumptions and has a different focus. He lists following four premises for learning (Ibid, p.4):

1. "*We are social beings*" - a central aspect of learning
2. "*Knowledge is a matter of competence*" - can be seen in activities such as singing, researching, writing poetry, fixing machines and so on.
3. "*Knowing is a matter of participating...*" – actively engaged in the world
4. "*Meaning*" – the outcome of learning.

Further, learning should integrate different components that together describe social participation as the central and most efficient process of learning. Wenger (1998) emphasizes the importance of the concept of ‘participation’: *“Participation refers to a process of taking part and also to the relations with others that reflects this process. It suggests both action and connection.”* (p.55). Wenger (1998) presents following illustration for his social theory of learning:

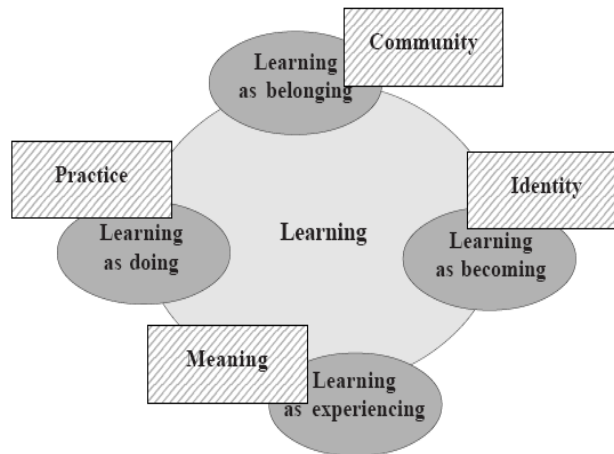


Figure 1. Components of a social theory of learning (Wenger 1998, p. 5)

The four main components *meaning*, *practice*, *community* and *identity* are interconnected to such an extent that any of these four components could be switched with learning in the figure and the entire figure would still make sense (Wenger 1998, p.5). Wenger argues that learning is a constant process that does not start or stop at any given point as it is inherent in our human nature and an integral part of our lives. Nonetheless, learning might become more intensified when we are put in a situation where our sense of familiarity is shook or we have to face new challenges. We can also explicitly be placed in a situation where the focus is learning; such as lectures, classes, exams etc, although those are not necessarily situations where we learn the most. Wenger emphasizes that it is important not to create learning, but to create circumstances that make learning empowering and productive (Wenger 1996) and take steps that foster learning in our relationships, communities and organizations (Wenger 1998).

Another key component for learning is described as identity. Learning transforms who we are and what we are capable of doing, hence altering our identity. Learning is not merely

accumulation of information and skills, “*but a process of becoming — to become a certain person or conversely, to avoid becoming a certain person*” (Wenger 1998, p.215).

4.2.2 Defining Communities of Practice

According to Wenger (1996), CoPs have always existed as human beings have formed communities that share cultural practices which show their collective learning. He offers several definitions for a CoP, however this is a more simplified definition for ‘communities of practice’ that captures the concept from a learning context –as compared to for instance an organizational context:

“In a nutshell, a community of practice is a group of people who share an interest in a domain of human endeavour and engage in a process of collective learning that creates bonds between them.” (Wenger 2001, p.2)

In Wenger’s perspective, CoPs are the ‘social fabric of learning’ and can be found everywhere, whether at home, at work or in our hobbies. Hence, a person belongs to several CoPs at any given time, some times by being deeply involved and other times by having a more peripheral involvement. However, every community is not a community of practice. A CoP defines itself along three basic dimensions (Wenger 2000, p.208-209):

- Sense of *joint enterprise* – reflects the communities shared understanding of their situation and their goals for the community.
- Relationship of *mutual engagement* – this binds members together in a social entity, where everyone is interested in maintaining the community and learning through joint activity.
- *Shared repertoire* of communal resources – the repertoire is developed over time through mutual engagement and consists of standard routines, artifacts, tools, stories, vocabulary and so on.

These three dimensions work together since all three are conducive to a CoP; a sense of joint enterprise is important to initiate a CoP; without a mutual engagement, the CoP would be torn apart; and the shared repertoire is important as it provides the opportunity to

reflect on previous practices and the history of the community (Wenger 1996). The crucial characteristics for a CoP are (Wenger et al. 2002, p.29-40):

1. ***The domain:*** A CoP is focused around a domain of shared interest, so membership of the CoP indicates that the individual has a certain level of knowledge of that domain which might differ from member to member, but still considered somewhat similar.
2. ***The community:*** Members of a CoP engage in joint activities, discussions, sharing of information etc.. Interaction and learning together are key elements of the CoP.
3. ***The practice:*** The practice is developed through the CoP's shared repertoire so the experiences, stories, artifacts etc. become their shared practice. The development of a shared practice often occurs self-consciously through informal meetings or discussions of a general nature but within a certain domain.

4.3 Scardamalia & Bereiter's "Knowledge Building"

The concept of "knowledge building" was introduced into the educational literature in the 1980's by Marlene Scardamalia and Carl Bereiter (Scardamalia 2004). They noted that computer-mediated communication (CMC) provides new opportunities to build learning communities that are rooted in the society. Knowledge building consequently refers to a process of creating new cognitive artefacts resulting from collaborative, critical discussion and analysis of ideas. This collaborative discussion is supposed to lead to a better understanding by means of interactive questioning, dialogue and continuous improvement of ideas, also called "idea improvement" (Scardamalia & Bereiter 2006, p.99). The teacher becomes a guide, rather than a director, and allows students to take over a significant part of the responsibility for their own learning, including planning, execution, and evaluation (Scardamalia 2002).

Scardamalia and Bereiter (1994) argue that schools and educators in North America have failed to understand "the social structures and dynamics required for progressive, communal knowledge building"(p.268). Instead, the focus has been on each student's abilities to demonstrate formal knowledge and skills which in turn has lead to knowledge

transmission instead of knowledge construction. They point out that even new constructivist ideas about learning has been limited in scope if not entirely missing the point in regards to knowledge construction (Scardamalia & Bereiter 2006).

Scardamalia and Bereiter (1994) suggest transforming the classroom into a knowledge building community where new knowledge is discovered or created in the same fashion as the work of researchers or scientists. Hence, education should undergo a revolution to become ‘idea-centered’ instead of ‘activity-centered’ and at the same time become collaborative learning instead of independent learning (Scardamalia 2002). This will introduce students to ‘knowledge building’ and initiate students into a ‘knowledge-creating culture’ (Scardamalia and Bereiter 2003, 2006). The knowledge-creating culture promotes that each person is willing to take on the responsibility of collective problem solving for a shared knowledge understanding (Scardamalia 2002).

4.3.1 Idea improvement

According to Scardamalia and Bereiter (2006), the notion of idea improvement is the key principle in knowledge building, and therefore something that should guide the work of both educators and students that are part of a knowledge building community. Scardamalia and Bereiter argue that generating new ideas come naturally to people however, an effort to improve on those ideas is not a part of the natural thought process. Idea improvement has traditionally been a part of professions where the task is to improve artefacts, machines, tools etc. Though, the same is also true for fields such as science or history where scholars are seeking ‘continual idea improvements’ instead of absolute answers (Scardamalia & Bereiter 2003).

Thus, in order to prepare the youth for the knowledge age and make them accustomed to ‘the knowledge-creating culture’, the belief that all ideas are improvable should be introduced to students through their early schooling (Scardamalia & Bereiter 2006). In addition, Scardamalia and Bereiter (2003, 2006) emphasize that idea improvement should also be one of the main objectives in the education of scholars, scientist and researchers in order to reach a continuous advancement of ideas and a successful future for the society as a whole.

4.3.2 Knowledge Building – in words

As mentioned above, “idea improvement” is the central aim for knowledge building. In order to achieve idea improvement, Scardamalia and Bereiter (1994) developed a knowledge building discourse that was divided into three categories (p.274):

- *Focus on problems and depth of understanding;*
- *Decentralized, open knowledge environments for collective understanding;*
- *Productive interaction within broadly conceived knowledge-building communities.*

In knowledge building communities, the focus is on problems and cases rather than topics or categories of knowledge. Scardamalia & Bereiter (2006) differentiate between ‘knowledge about’ and ‘knowledge of’. One can gain knowledge about various topics through books, projects, lectures and so on – as seen in traditional educational practices. However, in order to gain ‘knowledge of’, students need true understanding of a topic which is gained through problem solving. The key is that students should be challenged to explain different ideas, to produce new ideas and to further advance existing theories, thus in knowledge building, students should work with problems, in the form of problem-based learning, that results in deep structural knowledge *of* instead of just knowledge *about* (ibid).

A knowledge building pedagogy that go beyond the discourse has evolved since 1994. Scardamalia and Bereiter (2006) emphasize that the aim with the knowledge building pedagogy was not to create a set of rules or procedures, but rather to develop a set of working principles that could guide the efforts to create a knowledge building community. They acknowledge that working principles are often considered to be too abstract or merely restating some of the activities or ideas already used by others. However, the work of teachers as well as students, who adhered to the principles of knowledge building, shows that the principles can be successfully implemented in practice. In addition, students have taken these principles beyond the classroom as a guide to their own work (Ibid).

A list of 12 principles for a knowledge building pedagogy contains concepts such as “idea diversity”, “community knowledge, collective responsibility”, “democratizing knowledge” and “pervasive knowledge building” among others (Scardamalia 2002, pp.78-82). Also, each concept is further explored in the light of socio-cognitive and technological issues that could be a determining factor for knowledge building. For instance, the socio-cognitive dynamics related to the principle of “idea diversity” is described in the following way (Scardamalia 2002):

“Idea diversity is essential to the development of knowledge advancement...To understand an idea is to understand the ideas that surround it, including those that stand in contrast to it.” (p.79)

The technological dynamics for ‘idea diversity’ would be provided through features such as bulletin boards or discussion boards where ideas can be exchanged and further explored (ibid). The 12 principles for knowledge building are meant to show the close link between knowledge building and technology, which in combination provides a powerful environment for educators and learners.

4.3.3 Knowledge Building & Technology

Scardamalia (2002) acknowledges the fact that the core idea of knowledge building can come across rather abstract until you see it implemented together with technology. The 12 principles of knowledge building could in theory be implemented without the technology, however, in order to fully implement the concepts and the objectives of knowledge building, the technology plays a central role as it facilitates the transition from traditional classroom to a knowledge building community.

Although online distance education is widely used, it does not always implement knowledge building principles. Scardamalia (2002) argues that the traditional ‘courseware’, used for online distance education, merely provides a software that covers traditional teaching activities, such as transforming paper notes on to the screen or sharing slides from a lecture, thus actual understanding of problems and knowledge creation does not exist. In order to facilitate knowledge building, you require a knowledge building environment, or KBE for short (ibid).

The main focus for a KBE is to create a flow of information between the users of the environment, whether it is between learners, organizations or different professions. This means that there should be multiple ways of presenting and organizing ideas in a KBE. A high level of interaction between people and ideas in a KBE creates a better understanding of a given problem through collaborative work.

In order to design an effective KBE, it is important to understand the difference between traditional classroom activities and the work of experts who are trying to solve a problem in knowledge-creating organizations (ibid). In Scardamalia's (2002) perspective, online environments for knowledge creation should enable true knowledge building and reflect knowledge work as it goes on in knowledge-creating organizations. Scardamalia argues that, although a growing number of online learning environments are being characterized as KBEs in the CSCL literature, an environment that is only effective in an educational context cannot be characterized as a KBE (ibid).

Scardamalia and Bereiter (2006) refer to a knowledge building environment that they have developed at OISE at University of Toronto. The aim for this software application was to have a tool which could alter the flow of information among learners. This software called "CSILE—Computer Supported Intentional Learning Environments" was first used in a prototype version in 1983 in a University of Toronto course, and later fully implemented in 1986 in an elementary school (ibid, p.104). Scardamalia and Bereiter point out that their motive for the design of 'CSILE' was a belief that students themselves represented a resource that was largely wasted in traditional classrooms and that could be brought into play through network technology. The work with CSILE in a classrooms proved highly successful as the KBE was able to restructure the flow of information among learners so that questions, ideas, criticisms, suggestions and so on were contributed and stored to a public space equally accessible to all, instead of it all passing through the teacher or between individual students (ibid). Later on, CSILE was redesigned to aid collaborative work aimed at idea improvement and is currently known as Knowledge Forum (ibid, p.105).

4.4 Summary: Communities of Practice & Knowledge Building

Wenger's social theory of learning is based on the principle that learning takes place by actively participating in social communities. His social theory of learning consists of four main components: *meaning*, *practice*, *community* and *identity*. Learning is considered to be a constant process that does not start or stop at any given point. It is important not to create learning, but to create circumstances that make learning empowering and productive.

Learning is closely linked with identity as learning has an impact on who we are or what we can become. Communities of practice, CoPs, have always existed and we all belong to one or several CoPs. CoPs can be defined in terms of *domain*, *community* and *practice*.

Knowledge building refers to a process of creating new knowledge by collaborative, critical discussions of ideas. Idea improvement is the key principle in knowledge building, hence it should be promoted that all ideas are *improvable*. To create 'knowledge of' requires true understanding of a problem, therefore knowledge building communities should focus on problems rather than individual topics to enhance learning. Scardamalia & Bereiter have introduced 12 working principles which can guide the work of teachers and students who would like to implement knowledge building. Traditional classrooms should be transformed into knowledge building communities by the means of a KBE, where information is shared between the learners in multiple ways as demonstrated by their own KBE, Knowledge Forum.

4.5 Collaboration in CSCL

In order to fully understand knowledge building among learners in a CSCL environment, it is important to explore the concept of collaboration, collaborative learning or 'building collaborative knowing' (Stahl 2006). These terms refer to the process in which a group *collectively* constructs a new degree of understanding about the topic that they are exploring. The new knowledge is something that the group creates and that cannot be attributed to any one individual as it has emerged after exploring or discussing an idea in collaboration with one another. Thus according to Stahl (2006), building collaborative knowing becomes the core phenomenon for CSCL.

4.5.1 Collaborative situations

Dillenborg (1999) provides three features for situations that could be characterized as collaborative, based on following four criteria for collaboration (p.7):

- peers are more or less at the same level,
- peers can perform the same actions,
- peers have a common goal and,
- they work together.

In regards to the first two criterion, he maintains that a certain level of balance, or ‘symmetry’, in the interaction between peers is important, hence a *symmetry* in action, knowledge or status are all various forms of symmetry that can be found in collaborative situations (Ibid). Dillenbourg acknowledges that a complete symmetry in knowledge is not possible as no two individuals can have the exact same knowledge and this slight ‘asymmetry’ is beneficial to the group as it increases interaction and challenges learners to engage in discussions.

For the third criterion, it is important for the collaborative peers to have a common goal. Dillenbourg (1999) admits that this criterion is not recognized by all researchers of this field as shared goals can only be partially set up and they are negotiated and revised as the work progresses. However, establishing common goals is constructing the common ground, hence the point of reference for ones further work. Also, the common goals transform into shared goals as establishing goals is a process that happens among peers in collaboration and makes everyone mutually aware about their shared goals. However in Stahl’s (2006) perspective, the common ground or goal exists from the start and is not something that has to be established through any kind of agreement or coordination among peers.

The third characteristics for collaborative situations, is related to what Dillenbourg (1999) calls “division of labour” among members of a group (p.8). Although, collaboration by definition is peers working together to reach a shared goal (cf. Glossary), some division of work may still occur that can be characterized as a “horizontal division of labour” (ibid). This way it stands apart from the kind of division of tasks that one finds in cooperative work where each member performs a sub-task that adds to the end result. In a horizontal

division of labour, there are no set roles as peers take turns to moderate or regulate joint activities.

4.5.2 Collaborative interactions

Collaboration can also be characterized in terms of interaction among peers. Dillenbourg (1999) discusses several criteria that characterize interaction as collaboration. His emphasis is in particular on following three features: interactivity, negotiability and synchronicity (Ibid, p.8).

Interaction among peers is a key concept for collaboration, though it is not the frequency of interaction that matters, but rather what cognitive influence the interaction has had on the peers – so the question becomes whether it is truly interaction that happens among people working together or simply separate actions that leads to a result. Both Dillenbourg (1999) and Stahl (2006) points out, that defining the nature of interaction among peers remains a challenge for researchers as it is a complex phenomenon but very important for collaborative learning or knowledge building.

Another key feature for collaborative interaction can be seen in terms of negotiability. Dillenbourg et al. (1996) describe negotiation as “a process by which students attempt (more or less overtly or consciously) to attain agreement on aspects of the task domain . . . and on certain aspects of the interaction itself . . .” (p. 19). In collaborative interaction one party or member will not impose their views on the other part based on their role or authoritative status. Views and opinions would rather be discussed, justified and negotiated till the other party is convinced. Stahl (2006) agrees that the phenomenon of negotiation can, among others, be used to explain social interaction.

According to Dillenbourg, the third feature for collaborative interaction is related to synchronicity, as working together implies that peers must engage in synchronous communication, synchronized work efforts and synchronized interaction. However this can pose an issue in virtual collaboration. He gives the example of the chat feature versus the email feature. Where email is considered to be asynchronous communication, chat is considered to be a synchronous communication tool. However, empirical studies show that

due to technical delays in both media, the actual difference in receiving messages from each medium may be very minimal. Therefore, in Dillenbourg's perspective, the difference between synchronous and asynchronous communication lies in how and when the communicators expect the receiver of their message to react; in collaboration through synchronous communication the sender expects that the receiver will wait for his message and process the message as soon as it is delivered. This is not the case in asynchronous communication where it is given that the sent message will not be processed instantly and there will be a delay.

In light of the above, it becomes obvious to examine the communication process within CSCL environments.

4.6 Communication in CSCL

There are many theories of communication, that each focuses on a specific unit of analysis within communication. Stahl et al.(2004) refer to Littlejohn (1999) who lists nine broad categories of communication theories, such as *conversation analysis, message reception/production, critical theory, cybernetics* or *the socio-cultural approach* (p.1) – these theories address both individual and social views of communication as well as face-to-face and computer mediated communication. However, they do not directly address the particular concerns of communication in CSCL environments.

As established earlier, CSCL is founded on the idea that computers and technology provides new communication environments that facilitates collaborative knowledge building among learners. Nevertheless, it has proven to be a complex task to provide effective computer support for collaborative learning. In Stahl et al.'s (2004) perspective, this is partly due to the fact that

“Software cannot be designed to support a simple model of communication, but must take into account interactions among many people, mediated by various artifacts, and pursuing pedagogical goals at both individual and community levels.” (p.5).

Hence the CSCL researchers who are trying to design and develop CSCL environments should integrate several theories of communication into their work, as according to Stahl et al. (2004), CSCL for instance transforms the *mode, medium, unit and context* of communication (p.5).

The mode of CSCL communication: Communication in CSCL environments occur through several different modes, which for instance includes face-to-face classroom discussion, email, chat or threaded discussion forums – with the emphasis being on the asynchronous threaded discussions. The threaded asynchronous discussions are not conditioned by time or space, thus learners are often distant from one another in regards to location and time and everyone participates at their own pace. Threaded discussion are however not suitable for quick group decisions as there can be a considerable delay in response time. The chat feature, on the other hand, does provide a synchronous communication mode but with some drawbacks as it becomes difficult to manage a large number of participants as well as organize and structure the discussions. Stahl et al.(2004) point out, that every mode whether it is asynchronous or synchronous has its pros and cons which is important to consider if researchers would like to benefit from them all.

The medium of CSCL communication: According to Stahl et al.(2004), the computer based medium provides some obvious advantages for CSCL communication. The computer is an excellent source to store, organize and structure information so it becomes easily available to learners. Also, the computer allows learners to browse previous documents, share their findings with the group and associate prior work with current practice. However, the more features a collaborative environment have, the harder it becomes for learners to familiarize themselves with the environment – something which could lead to confusion and frustration, hence the aim should be that the features in the collaborative environment are kept as simple as possible.

The unit of CSCL Communication: Although, collaborative learning takes place in groups – and mostly small groups, it is also central to look at the unit of individuals who bring their prior knowledge, experiences and contributions to the group discourse. It is this individual unit of learning that contributes to the group's learning process and the final

learning outcome for the entire group. Hence, the individual unit becomes embedded with the group unit (ibid).

The context of CSCL communication: CSCL communication primarily consists of small utterances or text either in spoken or written language. For instance, threaded discussions are more like written language but delivered in an interactive way so the meaning should be seen in the context of the entire discussion, which includes all sequences and threads made by various learners.

It becomes evident that the less complicated and less specified the circumstances and tools are for communication in CSCL the more it facilitates the communication process among learners.

4.6.1 Technology for CSCL communication

Computer support for collaborative communication pose challenges as it involves sharing information among several perspectives. However, according to Stahl et al.(2004) there are a number of features that are particularly important for technology that is designed to support collaborative communication. Those features are (ibid, p.10):

- *Shared learning place*
- *Shared meaningful media*
- *Social awareness*
- *Knowledge management*
- *Group decision support*

In the above features, it is especially interesting that Stahl et al. mentions ‘shared meaningful media’. The purpose of the technology for CSCL is not to introduce the use of any kind of media, but *meaningful* media that is aimed to facilitate communication and learning in the CSCL environment, hence you do not promote technological features in CSCL for the sake of having technology in the learning environment, but technology should have a meaningful purpose in CSCL. It is however, as Lipponen et al. (2004) specified, difficult to decide which CSCL technology is better.

4.7 Summary: Collaboration and Communication in CSCL

The above account shows the complexity of both collaboration and communication in CSCL as learners are often separated both in time and space. However, some key perspectives have appeared which can act as a foundation for understanding the empirical study and analysis of the CSCL environment in this thesis.

First of all, collaboration is conditioned by a certain level of symmetry between peers working in collaboration, whether it is in the form of symmetry in knowledge, action or status. Secondly, collaboration can also be characterized in terms of interaction, which in turn can be explored from an interactivity, negotiability and synchronicity aspect. Beside this, the conditions for collaboration and collaborative learning are numerous and all somewhat interconnected (cf. Dillenbourg 1999). They together form some of the conditions necessary for successful collaborative learning – to provide a final prioritized list of conditions would therefore not be possible.

A theory of communication for CSCL should consider the following:

- group interaction and collaborative learning,
- clearly defined technological features that support collaborative communication,
- the relationship between individual, group and community learning and,
- consider the overall social and cultural context of the communication in CSCL.

Technology for CSCL communication should contain a number of features, such as shared meaningful media or knowledge management, so they can facilitate communication and learning in CSCL. However, it is important that the technology does not become too complicated as it could lead to frustration and confusion among learners.

4.8 Discussion

The two terms, knowledge building and communities of practice are often used in the same context thus hinting that they are considered to be somewhat interconnected. Wenger's social theory of learning and the concept of knowledge building are in fact closely related

in many ways. Both Wenger and Scardamalia/Bereiter argue that learning or according to Scardamalia & Bereiter, knowledge building, occurs as a result of a joint collaborative effort where ideas are explored and discussed and information is shared with one another in small or large groups.

Bereiter (2002) draws a theoretically clear distinction between the two concepts ‘knowledge building’ and ‘learning’. He argues that the concept of knowledge building refers to the collective work done by learners for the improvement and elaboration of theories, ideas, models and so forth. In contrast, learning is focused on changes in individual knowledge structures (ibid). For instance, learning involves acquiring new understandings or skills, which could include riding a bike or explaining rainfall. Scardamalia & Bereiter argued that it is important to gain knowledge *about* instead of knowledge *of*, which could also be seen in relation with the concepts knowledge building and learning. Hence, knowledge building as a result of a reflective activity leads to knowledge *about*, whereas learning, often a rather unreflective activity, results in knowledge *of*.

In regards to learning theory, Wenger’s theory of learning is fundamentally social and participation, interaction and mutual engagement are central concepts. Scardamalia & Bereiter’s theory is also rooted in a socio-constructivist view of learning that emphasizes collaboration and collective development of knowledge (Scardamalia 2002).

It is important to point out that Wenger’s theory of learning does differ from the socio-constructivist theory of learning which is based on Piaget’s theories. Piaget’s theories are primarily concerned with cognitive development of the individual from social interaction, however Wenger goes beyond that as he looks at learning from a broad perspective and discusses not only the cognitive development of learners but also the actions that leads to learning, such as being actively engaged and involved in a CoP or the fact that learning should be productive (Wenger 1996).

Moreover, Wenger argued that learning is an ongoing process that does not start or stop at any given point. This correlates to how knowledge and ideas are perceived in a knowledge building community. Scardamalia and Bereiter (2006) points out that, students in a regular

classroom tend to see knowledge as a quantifiable entity, so the more they learn and understand, the less remains to be learned and understood. However, students in a knowledge building community would look at knowledge differently as they would understand the dynamics of knowledge. They would understand how new advancements in knowledge lead to other possibilities to learn and improve on ideas – hence, learning becomes a dynamic and on-going process. Wenger et al. (2002) also argue along the same line by giving a lengthy description of the concept of knowledge and how it can be collective in nature, can be perceived as being dynamic and both tacit and explicit at the same time.

In the light of this thesis, the commonalities between the theories of CoP and Knowledge Building provide a key point of reference, as the online courses in the empirical study could in fact be considered to be both a CoP and a knowledge building community – or rather a *knowledge building community of practice*. The educational model for both courses promotes problem-based collaborative learning activities that consist of formal and informal online discussions, collaborative group cases/projects, on-going student-to-student evaluations and so on – coherent with both Wenger’s social learning theory and the concept of knowledge building.

The online courses can in particular be characterized as CoPs since they contain the characteristics of a CoP (cf. Wenger 1998, 2001):

- ***The domain:*** The program is designed especially for working professionals who are holders of a CGA² designation, thus the students have a shared academic background which indicates that they all have knowledge that is specific to that group and sets them apart from other MBA programs or other domains.
- ***The community:*** The course is designed in a way that students engage in collaborative learning activities such as discussions or group projects, hence active participation and interaction becomes key elements for the success of the course and the ‘community’.
- ***The practice:*** The students share a pre-existing knowledge of accounting practices as well as the online learning environment. Every course in the program is built on

² CGA: Certified General Accountant.

the same learning principles and similar learning activities. As the program moves along, students build a shared practice in terms of problem solving, moderation of online discussion as IRs and so forth

However, in regards to the notion of a *knowledge building environment (KBE)*, it is questionable if the courses can be classified as a true KBE. Although, the courses can be characterized as theoretically being built around knowledge building principles, the technology does not provide multiple ways of sharing information or exploring ideas/concepts. The main source of information sharing or exchange of ideas is through a thread-based discussion board, which does not offer the level of flexibility and interaction as a KBE calls for (Scardamalia 2002, Stahl 2006).

The two courses adhere to the key principles for collaborative learning, as described in the theories of CoP and knowledge building, thus I have chosen to look at the courses as online *knowledge building communities of practice*.

According to Scardamalia & Bereiter, classrooms should be transformed into knowledge building communities by implementing a KBE. However, they fail to fully discuss how the implementation of technology cannot bring about the change necessary for a knowledge building community as other external factors also need to be considered. I believe that Scardamalia & Bereiter's proposed transformation of the classroom, into a knowledge building community, would require a complete change in current practices whether it is within the classroom, in the educational system or society as a whole.

To start with the classroom, knowledge building communities require that there are no set roles between the teacher and the learners which would lead to a complete change in teaching as well as learning styles. Let us suppose that the current curriculum in teacher education is changed, hence training the new teachers to be moderators or facilitators in a future knowledge building community. However, it poses a problem for senior teachers, who have been in the educational system for a number of years, and therefore used to a traditional classroom with traditional roles between the teacher and the student. In addition, knowledge building theory does not consider individual learning styles of students who

often come from diverse cultural backgrounds and perhaps not accustomed to collaborative interactive knowledge building which requires active participation – alas, this might cause a resistance to CSCL from these students.

The educational system in most countries in the western hemisphere, if not to mention the entire world, is built on the notion that students should be able to demonstrate their knowledge so it can be ‘measured’ and graded based on a set grading scale. Recent trends in the educational system, such as the university reform in Denmark³, have put even more emphasis on establishing an educational system that tries to measure individual learning in educational institutions. This is an attempt to hold educators accountable for an increase in tangible knowledge creation that benefits the society. However, this is a far cry from Scardamalia & Bereiter’s theory of a knowledge building communities which should lead to a knowledge building culture. As knowledge building is an on-going process that transcends the classroom, measuring knowledge according to a grading scale or standardized testing will be a challenge for educators. Thus, a transformation of the educational system into knowledge building communities would require a break from current practices as well as extensive legislative changes in countries with a publicly funded education system.

Both Wenger and Scardamalia/Bereiter’s learning theories are based on the success of collaborative learning. However, I find that it is important to examine whether this ideal collaborative learning actually takes place in real life CSCL environments where learners have to participate in interactive collaborative activities. One thing is having a theory of learning on paper, another is real life situations where CSCL is practiced. In fact, there are scholars such as Pea (1994) who argued that instead of computer supported collaborative learning, this field should actually be called computer supported *collective* learning. Although, Scardamalia & Bereiter (2006) provide several examples of effective Knowledge Building communities, it is not clear whether the learning or knowledge building that took place would not have occurred if knowledge building pedagogy and the KBE had not been implemented. Also, it is important to discuss another key point, whether teachers and learners, who are introduced to knowledge building principle in their post-

³ For more information visit: <https://www.retsinformation.dk/Forms/R0710.aspx?id=29268> (in Danish)

secondary education, are willing to change their teaching and learning styles in order for collaborative learning to take place. Learners in particular might be reluctant to engage in collaborative learning as it requires immense efforts in terms of participation, interaction and ability to engage in on-going written communication process (Roberts 2004).

In regards to CoPs, Wenger et al. (2002) list several downsides to communities of practice. CoPs can, instead of promoting knowledge, hoard knowledge, limit innovations and become reflections of society prejudices, hence it becomes important not to idealize or romanticize CoPs. In addition, it is questionable if every CoP can be defined in terms of domain, community and practice. Pemberton & Mavin (2007) argue that when it comes to CoPs, one size does not fit all as some consider CoPs to be knowledge or learning communities, while others find that the term refers to teams and groups in a formal organizational structure. This shows that there are several ways to understand and implement Wenger's theories.

Thus, it becomes important to acknowledge that though I have chosen to characterize the two online courses as CoPs, there could be many arguments against it. Also, traditionally CoPs are considered to be formed by voluntary participation of a group of like-minded people who are keen to share information and ideas – which is not entirely the case with a mandatory course in a MBA program. Although the students have voluntarily chosen to enrol in the MBA program, they are required to take these online courses as part of their curriculum in the program, which means that this particular community of practice is not entirely formed by voluntary participation.

With the Knowledge Building theory, it is important to consider if this theory can provide a theoretical, methodological and practical framework for CSCL. Scardamalia & Bereiter (1994, 2003, 2006) undoubtedly give a detailed theoretical account of knowledge building based upon discussions on learning, knowledge construction, collaboration, participation and so forth. Hence, Scardamalia and Bereiter present a theoretical framework for a given CSCL environment by the means of their knowledge building theory. Additionally, their 12 principles of a knowledge building pedagogy can be seen as the methodological frame for implementing knowledge building in the educational system. Although the principles are meant as guiding working principles, Scardamalia and Bereiter argue that

implementation of the 12 principles have led to desirable results in terms of creating an actual knowledge building community instead of a mere classroom. Scardamalia & Bereiter's research and implementation of their knowledge building environment, Knowledge Forum can be considered the practical framework for implementing knowledge building theories in practice. Thus, Scardamalia & Bereiter's theory of knowledge building can be said to have three different layers that all together address the central question about how new knowledge and practice is created through collaborative activities by the means of computer-mediated-communication tools.

In regards to the problem statement, the preceding chapter relates to the very first part of the problem statement about computer supported collaborative learning. This chapter established how knowledge building occurs in collaborative learning according to theories of CoP and Knowledge Building and how successful collaboration and communication among learners play an important part in CSCL. In fact, knowledge building in CSCL can be considered as a direct result of a collaborative discourse between learners where ideas are exchanged, augmented and improved upon. Hence, collaboration becomes not just a choice but a condition for collaborative learning. One can therefore conclude that successful social interaction among learners is vital for the success of CSCL environments.

This thesis is in particular concerned with communication between culturally diverse learners in CSCL, thus it becomes important to examine what communication between people of different cultures actually means and what issues are involved.

5. Intercultural Communication

In the following chapter, the concept of *intercultural communication* will be discussed. I will try to reach a definition for this term and what it means to be ‘intercultural’. The purpose of this section is to reach a working definition for ‘intercultural communication’ which can help characterize and examine the communication among learners in a multicultural CSCL environment.

5.1 The Field of Intercultural Communication

Edward T. Hall is said to have fathered the concept of intercultural communication in his book “The Silent Language” from 1959, which is also called this field’s founding document (Rogers et al. 2002, Arasaratnam & Doerfel 2005). Hall, together with his colleagues, developed the first original discourse for intercultural communication (Rogers et al. 2002). The main elements of Hall’s discourse for intercultural communication were as follows (Rogers et al. 2002, pp.10-11):

- focus was on intercultural communication, and not as earlier where the focus was macro-level mono-cultural studies,
- systematic empirical study and classification of nonverbal communication,
- emphasis, especially on nonverbal communication, on the out-of-conscious level of information-exchange,
- approach was to accept cultural differences and be non-judgemental and
- participatory training methods as integral part of intercultural communication

As the above shows, the beginning of intercultural communication was for applied purposes rather than based on theoretical considerations. However, over the past decades the increase in intercultural interaction across racial, religious, linguistic and national boundaries expanded the research of intercultural communication and added significant academic and practical validity to this field.

According to Gudykunst (2005), there are three major approaches that have been used in theorizing about intercultural communication. First, culture has been integrated with theories of communication, leading to for instance speech code theories that examine how communication influences culture. Second, theories have been designed to explain how

communication varies across cultures. Third, theories have been formed to explain communication between people from different cultures. Most of the theories on intercultural communication concern the latter (Ibid).

Bennett (1998) identifies two schools of thought within intercultural communication; the theory-and-research school and the theory-into-practice school (p.viii). The theory-and-research school is based on traditional theories and methods within the tradition of sociology and communication. The theory-into-practice school is characterized as being more interdisciplinary, involving theories from psychology, sociolinguistics, anthropology etc.

Iben Jensen (2003) also identifies two major traditions within the research of intercultural communication; one being a tradition based on a “functionalistic approach” and the second being a tradition based on a “poststructuralistic approach” (p.3). She argues that scholars who belong to the functionalistic approach are trying to predict how culture influences communication. The basic notion is that culture is a barrier against effective communication and it is therefore necessary to develop tools that can help an individual understand and predict what might happen in an intercultural situation (ibid). On the other hand, scholars concerned with the ‘poststructuralistic approach’ theorize for instance about some of the philosophical, theoretical or ethical issues with intercultural communication (ibid, p.4). For example, Jensen refers to the work of Collier and Thomas (1988) who look at intercultural communication from the individual’s perspective. Thus, the focus changes from national cultures to each individual’s own perception of culture (Jensen 2003).

In regards to national cultures and intercultural communication, Jensen (2003) points out that research in intercultural communication has traditionally focused on differences in national cultures – defining cultures as nations. Würtz (2006) argues along the same line, as she recognizes the fact that major contributions to the field of intercultural communication, such as by Hall, were based on research conducted on differences in national cultures, hence representing a view that geographical borders between nations are boundaries for cultures as well. However, she concludes that although the research by for instance Hall was done decades ago, there has been no convincing study since then that shows that differences in national cultures have ceased to exist (ibid).

5.2 Definitions and Characteristics of Intercultural Communication

The study of intercultural communication involves researchers from a number of scholarly fields such as anthropology, psychology, communication, linguistics and so on. Therefore, it becomes difficult to find one single definition for intercultural communication that interculturalists would agree on. Also, it is seen that literature on intercultural communication uses a number of arbitrary terminology, such as *interethnic*, *interracial* or *cross-cultural*, to characterize communication between cultures.

Intercultural communication has by Hall, and subsequently by other interculturalists, been defined as *communication between people of different cultures* (Bennett 1998, Gudykunst 2002). Gudykunst (2002) points out that many scholars limit the definition of intercultural communication to only include face-to-face communication. Fred Jandt is one of the scholars that share this view, as he defines intercultural communication as generally being face-to-face communication among people of diverse cultures (Jandt 2001, p.39). In Bennett's (1998) perspective, intercultural communication is focused on, not just face-to-face, but person-to-person interaction among human beings, thus intercultural communication becomes an entirely human phenomenon.

From a communication point of view, Porter & Samovar (1985) suggest that intercultural communication occurs "whenever a message producer is a member of one culture and a message receiver is a member of another" (p.15). The focus is on four components in the communication process: the sender, the receiver and the message, with the added component of culture.

From a linguistic perspective, Knapp & Knapp-Potthoff offer following definition for situations where intercultural communication takes place:

"...whenever participants introduce different knowledge into the interaction which is specific to their respective socio-cultural group, which is relevant in the sense that it determines how a particular interaction should normally be verbally or non-

verbally accomplished, but which is taken for granted and thus can affect the process of communication.” (Knapp & Knapp-PottHoff 1987, p.8)

Above definition offers a very detailed description of intercultural communication where it specifies the importance of both verbal and non-verbal interaction. Knapp & Knapp-PottHoff define the difference between participants’ cultures in terms of a “socio-cultural group” which does not limit this definition to mere national cultures.

It is, however widely discussed that there is no difference between intercultural communication and other kinds of communication. Kim argues that:

“intercultural communication, basically, is not different from all other human communication phenomena, it involves communicators, encoding and decoding of verbal and nonverbal messages and the physical and social environment” (Kim 1988, p.12)

Nonetheless, Matsumoto et al. (2007) maintain that intercultural communication is in fact unique as there is a certain level of uncertainty and ambiguity concerning the ground rules by which the intercultural interaction will occur. They claim that culture has a pervasive influence on all aspects of a communication process, hence, it is hard to predict whether the rules by which two people from different cultures operate are similar and the non-verbal signals that they exchange have the same meaning. This uncertainty and ambiguity is further increased as intercultural communication is generally carried out in a verbal language that is often not the native language for at least one, or sometimes both of the individuals involved in the communication (ibid).

Jensen (2003) also perceives intercultural communication to be different from other kinds of communication. She argues that it has become important in a multiethnic society, especially in terms of legalities, to discuss which participant in an intercultural situation belongs to “the majority culture” (ibid, p.3).

5.3 The Notion of Misunderstanding in Intercultural Communication

Another key characteristic of intercultural communication, as often identified by many interculturalists, is the notion of misunderstanding or miscommunication (Hinnenkamp 2001). In Matsumoto et al's (2007) perspective, intercultural communication is characterized by conflicts and misunderstandings as these are unavoidable in intercultural interactions. Chances are that other people's behaviors do not match your own expectations. This can lead to frustration, anger or resentment in the involved individuals and cause conflict and misunderstandings as the intent of the message is not understood (ibid). Thus, misunderstanding becomes an inherent and unavoidable part of intercultural communication.

Jens Allwood (1985) points out that understanding each other is the key issue in all forms of communication. He points out that lack of understanding, either consciously or unconsciously, can be defined as a failure to interpret what the other person is saying or doing. Misunderstanding is slightly different as one makes an interpretation, however this interpretation is inadequate or perhaps completely wrong. Based on this, when two people from different cultures communicate, their lack of understanding will be higher thus leading to a higher degree of misunderstanding. Allwood lists a number of factors that can lead to misunderstanding and claims that misunderstandings are mostly based on a combination of some or all of the factors mentioned below (ibid, p.17):

1. strong expectations concerning communicative contents
2. insufficient awareness of your own lack of understanding of the other's cultural background
3. strong motivation, or perhaps an absolute need, to try to understand
4. mastery of the language used for the communication
5. the occurrence of something that gives strong evidence against the interpretation about to be made.

Nonetheless, Hinnenkamp (2001) argues that misunderstandings rarely lead to a complete breakdown in intercultural communication, though a lot of literature on intercultural communication suggests otherwise. Most misunderstandings are solved in one way or another through interaction between the involved parties. Hinnenkamp lists seven types of

misunderstandings roughly categorized into ‘latent’, ‘overt’ and ‘covert’ misunderstandings (ibid, pp.215-219), however points out that so far there is no comparative research that shows that “particular kinds of misunderstanding were more frequent or typical in particular kinds of encounters such as between speakers of particular differences as to origin, background, language or culture area” (ibid, p.221). Thus, explaining and analyzing intercultural communication solely based on the notion of misunderstanding would not be sufficient.

5.4 Summary: Intercultural Communication

The concept of intercultural communication can be examined from a number of different scholarly perspectives and carries with itself a number of different definitions, both in terms of what intercultural communication is and how it differs from other kinds of communication. The notion of misunderstanding is a key characteristic of intercultural communication, however intercultural communication encounters cannot be analyzed based on this alone.

For this project, I will adopt Hall’s definition for intercultural communication, namely as *communication between people of different cultures*. Hence, this definition is not limited to intercultural communication as mere face-to-face communication. This is an important aspect considering the role of intercultural communication in a world increasingly influenced by computer mediated communication as also seen in the case of CSCL.

5.5 Being Intercultural

According to Alred et al. (2003), it is important to distinguish between ‘intercultural experience’ and ‘being intercultural’ in order to understand what it means to be intercultural. Intercultural experience can simply be described as an encounter between particular groups that are culturally different from one another (ibid). However, ‘being intercultural’ implies that one had an experience which led him/her to question their own cultural values or conventions, thus the person can make a qualitative judgment about the experience. Alred et al. (2003) describe ‘being intercultural’ by writing that; “it is the capacity to reflect on the relationships among groups and the experience of those relationships” (p.3). They further argue that it is an unavoidable consequence of

intercultural experience that it challenges your common perception, thoughts and feelings. Thus, ‘being intercultural’ would lead to a higher degree of self-understanding and self-knowledge as you examine not only the person that you are interacting with but also yourself.

In Gupta’s (2003) perspective, the term ‘intercultural’ refers to “a cultural encounter that goes beyond the passive and the observational. Intercultural may be used to refer to encounters where individuals are immersed, either temporarily or permanently, in cultures other than their own.” (p.159). Hence, the term intercultural, according to Gupta, is a process wherein the individuals are actively engaged in defining both their own cultural systems as well as others. She argues that the term ‘intercultural’ does not just mean being in the presence of more than one cultural system. Therefore, for an experience or encounter to be intercultural, as for instance in a multicultural classroom, it is required that communication is based on cultural assumptions and that individuals are required to actively engage with cultural material so they can reflect on their own as well as other’s cultural systems.

Bredella (2003) writes that “being intercultural means acknowledging that we belong to a culture and exploring how we are shaped by our culture just as others are shaped by theirs”. People grow up in specific groups with the belief that their cultural system is rational, inevitable and natural and, sometimes, that it is superior to those of others, which can lead to cultural bias or even ethnocentrism. This cultural bias causes people to interpret and judge a situation in terms particular to their own culture. Gudykunst points out that:

“The only bases we have for communicating with strangers is their group memberships and our stereotypes about the group. Strangers’ communication may be based on any (or more) of their social identities. To communicate effectively, we need to understand which social identities are influencing strangers’ behaviour and how they define themselves with respect to these identities” (Gudykunst 1994 cited in Baraldi 2006, p.56)

Along the same line, Gupta (2003) points out, that ethnocentrism is the by-product of group membership where the views of the in-group serve as a reference point for assessing

the out-group. However, according to both Alred et al. (2003) and Bredella (2003), being intercultural would make people go beyond the stereotypes about other cultures or groups, as being intercultural means that one reconstructs the others' frame of reference and see things through their eyes. This can help overcome ethnocentric tendencies to impose your own cultural norms and values on people's behavior (ibid).

Where Alred et al. and Bredella refer to intercultural encounters or experiences, several scholars discuss a range of, somewhat similar, concepts such as, 'universal man', 'intercultural person' or 'multicultural man', from the individual's perspective (Kim 2001). Kim (2001) refers for instance to Walsh's (1973) concept of the 'universal man' which is based on three key aspects based on a 'cosmopolitan view'; 1) respect for all cultures, 2) understanding of what individuals in other cultures think, feel and believe and 3) appreciation of differences among cultures (Kim 2001, p.196).

However, in an increasingly multicultural world, Kim (2001, 2008) prefers to use the concept of 'intercultural personhood' which is a result of several factors such as acculturation, deculturation etc. Kim (2001) argues that the concept of 'intercultural personhood' is different than for instance the concept of 'universal man', which suggests an awareness and identification with all groups of the world, or the concept of 'multicultural man', which suggests that the individual have characteristics of more than one culture. Also, it goes beyond the mere practical characteristics of a 'multicultural person' which is often described as being able to speak more than one language or being able to swing between two different cultural systems. Instead, intercultural personhood indicates a way of life that strives to incorporate different cultural elements into something new and unique. It involves a clear self-definition as well as definition of others as individuals rather than members of a set cultural system. Hence, you relate to oneself and others with greater objectivity, realism and comprehensiveness (ibid).

Bredella (2003) argues along the same line, as he states that: "being intercultural means to enhance our self-awareness as cultural beings" (p.236). It makes one aware of the relativity and dynamics of your own beliefs and values and protects from fundamentalist attitudes towards other cultures. This also means that one is able to accept other people's beliefs and values even if one does not agree with them as there is no absolute beliefs or

values (ibid). Thus, “being intercultural comprises both involvement and the reflection on this involvement” (Bredella 2003, p.237).

5.6 Summary: Being Intercultural

The various scholars discussed a number of factors that all indicate the notion of ‘being intercultural’. One can examine this by looking at intercultural experiences/encounters or from a more individual perspective, which discusses the qualities of each individual’s ‘intercultural personhood’.

However, it becomes clear that ‘being intercultural’ may go beyond the simple meeting of people from different cultures. In order to become intercultural, it is necessary to accept other people’s beliefs and values and at the same time reflect on your own cultural beliefs and values as well. People are raised in specific groups with the belief that their cultural system is rational and natural. This can lead to cultural bias, which in turn makes people interpret and judge a situation in terms particular to their own culture. However, being truly intercultural would help a person avoid cultural bias. The intercultural personhood requires that you relate to yourself as well as others with a greater objectivity, realism and comprehensiveness.

5.7 Discussion

As mentioned before, for this thesis I have chosen to define intercultural communication as *communication between people of different cultures*. However, it is important to acknowledge that the term ‘different cultures’ is not only a question of national cultures, but should be considered to include, what Knapp & Knapp-Potthoff (1987) write, *socio-cultural groups* as well. Hence, intercultural communication could describe communication between different groups within the same society and culture. I believe that this is particularly important while studying CSCL environments in highly multicultural societies such as the Canadian society, which consist of numerous racially, linguistically,

socially and religiously diverse groups – to mention just a few distinctions between people in Canada⁴.

In the light of the above, I feel it becomes important to consider both the functionalistic and poststructuralistic approaches to intercultural communication, as described by Jensen (2003). The functionalistic approach is based on a notion that cultures, and in particular national cultures, are barriers against effective communication. Thus, this approach can be a point of reference for discussing intercultural communication between various nations. However, we should also consider each individual's own perception of culture and how it might influence intercultural communication as seen in the poststructuralistic approach to intercultural communication.

Alwood (1985) argued that not having a sufficient command of the language used for the communication, could lead to misunderstanding in intercultural communication. This puts focus on the role of language in intercultural communication. Since the online courses in the empirical study comprise of students from diverse cultural backgrounds, it is questionable if all students have the same level of mastery of English, which is the language used for communication. English will be the native language for some students where as others probably consider English as their second language. Based on this, I find it interesting if one could perhaps distinguish between intercultural versus interlingual communication.

Gupta (2003) addressed a key issue in the discussion about intercultural communication, as she argued that an encounter between two people or groups cannot simply be characterized as *intercultural* merely because people belong to different cultures, as not all aspects of their interactions reflect intercultural communication. This is an important aspect to keep in mind while studying or analyzing any form of intercultural communication, and definitely also applicable for the empirical study in this thesis. It therefore becomes vital to consider whether communication in the CSCL environment reflects the students' cultural characteristics and assumptions in order for it to be intercultural communication.

⁴ Information on ethnic diversity in Canada by Statistics Canada: <http://www40.statcan.gc.ca/101/cst01/demo26a-eng.htm>

Kim (2001, 2008) discussed ‘intercultural personhood’ where the focus was on the individual, however, I believe that it is important for today’s globalized world that one also discusses the notion of nations being intercultural – one could perhaps say ‘intercultural nationhood’. Various official bodies within a nation (such as political parties, the public sector, stakeholders in the educational sector etc.) need to realize that people living in the country belong to various cultures so there is a need on a national-level to be intercultural where, as Kim pointed out, you relate to oneself and others with greater objectivity and comprehensiveness.

The above chapter on intercultural communication helps answer the problem statement by first of all defining what communication between people of different cultures is and second, what important issues are involved with intercultural communication. According to the definition I chose for intercultural communication for this thesis (cf. 5.4 Summary) the communication between students in the empirical study can be defined as intercultural communication as people from different cultures are communicating with each other. At the same time it is also important to consider that misunderstandings in intercultural communication is a key issue, hence I intend to examine whether this is the case in the intercultural communication between students in the empirical study.

The preceding chapter also goes beyond this as it discusses what it actually means to be intercultural in today’s world and whether the mere encounter between people of different cultures can always be characterized as intercultural. In light of this thesis, these aspects are important to consider in the analyses of culturally diverse learners’ communication and whether this communication actually may or may not be characterized as intercultural communication.

The discussion of intercultural communication touched briefly on the notion of ‘culture’, however, it is important to further examine and discuss this concept as it has become obvious that this is also a key concept for this thesis.

6. Culture

The following chapter aims to theoretically explore the concept of ‘culture’. The purpose is to reach a better understanding of the concept, both in terms of definition and manifestation. In addition, the aim is to discuss what possible implications cultural differences have on learning as well as computer mediated learning.

6.1 Defining Culture

On a historical note, the term culture comes from the Latin word *cultura*, which derives from the verb ‘*colo*’ meaning cultivation (Hastrup 2004). However, during the course of history the meaning and definitions for culture have changed numerous times. Jahoda (1993) points out that scholars “construct their own concept of culture in a way that fits in with their theoretical approaches - there is no right or wrong, though there is sometimes the inappropriate and even bizarre” (p.283). British anthropologist, Edward Tylor, is widely credited for providing one of the first definitions of culture (Kroeber & Kluckhohn 1952, Jahoda 1993, Hastrup 2004, Gullestrup 2006). According to Tylor:

“Culture or civilization... is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society” (Tylor [1871] 1958 cited in Jahoda 1993, p.277)

Kroeber & Kluckhohn (1952) provide an exhaustive list of definitions for culture in their critical review of this concept. They categorize the different definitions of cultures into six groups (ibid):

1. Historical - Describes “social heritage or tradition” (p.89)
2. Normative - Prescribes the “rule or way” (p.95)
3. Psychological - Culture is seen “as a problem solving device” (p.105)
4. Structural - “Patterning or organization of culture” (p.118)
5. Genetic - “Culture as a product or artifact” (p.125)

In regards to learning, it is particularly important to define culture from a psychological point of view as culture becomes important for problem-solving. Also, psychological

definitions emphasize cultures' capacity to adapt, thus showing the importance of culture as a dynamic concept instead of a passive one (Kroeber & Kluckhohn 1952).

Hostede's definition of culture has been influential in management and business literature. Hofstede and Hofstede (2005) define culture in terms of a mental program or software also called "software of the mind" (p.3). They expand the definition of culture as being:

"...the collective programming of the mind that distinguishes the members of one group or category of people from others" (Hofstede & Hofstede 2005, p.4).

Each individual carries within himself a certain pattern of thinking, ways of acting and feeling which were acquired through life and perception. Factors such as; where a person is born and raised; the language or languages he or she learns; the people and environment that the person interacts in and the psychological incentives that one receives altogether form the mental software. Hence, the emphasis in Hofstede & Hofstede's definition is that culture is learnt in nurture and not inherited by human nature. Also, the "*collective programming of the mind*" highlights culture as a collective activity that should be seen as a dynamic process rather than a passive state (ibid).

In order to describe the manifestations of culture, Hofstede and Hofstede (2005) look at culture as an "onion", saying that it can be understood by examining it layer by layer (p.6). Culture can be manifested on many different layers, each with a varying level of deepness. There are a number of apparent manifestations of culture, such as through *symbols*, *heroes*, *rituals* and *practices* (ibid). However, in order to obtain a further understanding of culture, one must reach past these layers down to the *values*, or core of the group's beliefs. Thus, in Hofstede's view culture includes not only what is readily visible, but also what lies under the surface forming the foundation. One characteristic of culture as an onion is that the values form a platform for a general understanding of culture in groups, and as such they are extremely difficult to change or unlearn. Norms and values of a culture change only very slowly, while the outer layers of these models may shift and adapt more rapidly (ibid).

According to Allwood (1985), culture is "all the characteristics common to a particular group of people that are learned and not given by nature" (p.1). He argues along the same

line as Hofstede, that culture is a part of your nurture instead of nature. Allwood (1985) distinguishes between four primary cultural dimensions (p.1):

1. **Patterns of thought** – common ways of thinking, factual beliefs, values, norms, and emotional attitudes.
2. **Patterns of behavior** – common ways of behaving, behavior can be intentional or unintentional; individual or interactive.
3. **Patterns of artifacts** – common ways of manufacturing and using material artifacts such as dwellings, tools, machines or media.
4. **Imprints in nature** – the lasting imprints left by a group in their natural surroundings, where such imprints include agriculture, trash, roads etc.

Allwood argues that all human activity contains the first two cultural dimensions, patterns of thought and patterns of behavior. Some activities also contain the third dimension, patterns of artifacts, whereas ecologically important activities also display the fourth dimension, imprints in nature (ibid).

Gullestrup (2002) considers the study of culture a complex topic which makes cultural studies and analysis immensely difficult. He argues that culture cannot be studied only from the perspective of one specific scientific school or based on one paradigm. Gullestrup (2006) mentions several reasons for this:

- Cultures do not have clearly defined borders, hence they might spread and merge into each other.
- An individual can belong to and be influenced by several cultures at the same time
- Experience of culture is marked by subjectivity as the theorist's or researcher's cultural analysis will be marked by his or her own cultural perception and background.
- Culture is not static as it undergoes constant changes.

Gullestrup bases his study of culture on the following definition and points out that this definition of culture is a general definition, which might be applied to various social units and different situations:

“Culture is the philosophy of life, the values, norms and rules, and actual behavior - as well as the material and immaterial products from these – which are taken over by man from the past generations, and which man wants to bring forward to the next generation - eventually in a different form – and which in one way or another separate individuals belonging to the culture from individuals belonging to other cultures.” (Gullestrup 2002, p.2)

According to Gullestrup (2002), “the basic philosophy of life and values” are “the core culture of any culture” (p.2). He points out that the term ‘generations’ refers not only to generations of family but also generations in the more general sense of the word, meaning descendants, i.e. pupils in relation to teachers, new employees in relation to senior employees and so forth (Gullestrup 2006). Gullestrup (2002) points out that it is important to consider culture as a “continuously changing unit” (p.1). Thus, the dynamics and changeability of culture becomes a key factor for understanding the concept of culture. Culture is not static as it undergoes constant changes caused by both internal and external factors. Moreover, Gullestrup argues that culture consists of both “shared meanings”, as seen through the basic philosophy of life and values among a group, and in the way these shared meanings are manifested in people's social interactions and in the outcome of this interaction among people (ibid, p.3).

Gullestrup further argues that culture is often described from a ‘macro’ perspective and only seen in terms of “national culture” (ibid, p.6). However, a person might see himself as a representative from several different layers within the macro culture by for instance being part of international, regional or local cultures. In addition, an individual might consider himself a part of different cultures in different situations. And yet again, this individual can by other people be considered as a part of another culture, all depending on the specific situation and character of the intercultural encounter (Gullestrup 2002). Therefore, Gullestrup (2002) points out that it becomes important to consider the various cultural categories which are ‘trade culture’ (agriculture, fishery etc.), ‘macro culture’ (Asian, European, Canadian etc.) and ‘occupational culture’ (professionals, unskilled, accountants, lawyers etc.) (p.9).

An aspect, that seems common in the definitions by Allwood, Hofstede and Gullestrup, is defining culture in terms of cognitive patterns that drive our thoughts and actions and are culturally grounded. Parts of our cognitive patterns can be shared by people from the same group, society or nation as us. However, at the same time since an individual's cognitive pattern is also based on his or her personal experiences in life and the person's upbringing, each cognitive pattern becomes unique, i.e. no two people hold the exact same cognitive pattern or mental programs even if they grow up in the same family. Thus, you can consider culture to manifest itself on two levels, one being on a collective shared level and the second being on an individual level.

6.2 A Theoretical Framework for Culture Studies

In regards to theory in culture studies, Van den Bouwhuijsen et al. (1995) claim, based on the work of Kroeber & Kluckhohn (1963), that the absence of theory is the main source of problem in the field of culture studies. They argue that it is essential to have a theory which outlines what makes differences between human groups into cultural differences since the concept of culture is used in many different ways, making the concept 'fuzzy' (ibid, p.166). Van Den Bouwhuijsen et al. point to the fact that you can look at culture by for instance referring to Western, African or Asian cultures. At the same time you can also speak of a Flemish or Frisian cultures and yet again of mass and elite cultures (ibid). According to Van Den Bouwhuijsen et al., in order to talk about cultural differences, one must have a viable theory specifying "the facts of culture", thus showing what makes human groups into cultures – and the various categories of culture.

In the following I will overview two theoretical frameworks for culture studies; the first being Hofstede's cultural dimensions and the second being Gullestrup's analytical frame model.

6.2.1 Hofstede's Cultural Dimensions

Geert Hofstede conducted an elaborate study on cultural values primarily based on data from employees at IBM subsidiaries in 66 different countries. The research was carried out

around 1967 to 1973. He statistically analyzed the answers to the survey questions and as a result, isolated four universally present values that together describe national culture: individualism-collectivism, weak/strong uncertainty avoidance, small/large power distance, and masculinity-femininity. Later, Hofstede added a fifth dimension, long-term versus short-term orientation, (Hofstede & Hofstede 2005, p.30). According to Hofstede (1980), both ends of every dimension exist in all cultures, but one end tends to dominate in a culture. Hence, members of a culture learn the predominate ‘trend’ in their society. In addition, these dimensions are polarized, value-based constructs and can be seen throughout all levels of society, from basic units such as families, economic units such as companies and national units such as governments (Gudykunst 2005).

Power Distance - is defined as “...the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede & Hofstede 2005, p.46). Hence, power distance is based on the value system of the less powerful members of a culture.

Individualism vs. Collectivism – This dimension focuses on the relationship between individual and the group. Highly individualistic cultures believe that the individual is the most important unit, whereas highly collectivistic cultures believe that the group is the most important unit (Hofstede & Hofstede, p.76).

Masculinity vs. Femininity – This dimension focuses on gender roles. High-femininity cultures blur the lines between gender roles. In contrast, high-masculinity cultures show traditional differences in how gender, age and family are viewed.

Uncertainty Avoidance - can be defined as: “the extent to which the members of a culture feel threatened by ambiguous and unknown situations” (Hofstede & Hofstede 2005, p.167). This dimension relates to the extent to which countries establish written and unwritten rules as well as fixed patterns of operation in order to enhance security and avoid ambiguity and doubt.

Long-term vs. Short-term orientation – This refers to how much society values long-term - as opposed to short term - traditions and values. Values associated with long-term

orientation are thrift and perseverance; values associated with short-term orientation are respect for tradition, fulfilling social obligations, and protecting one's 'face' (Hofstede & Hofstede 2005).

It is important to note that, although Hofstede's cultural dimensions have had an immense influence on management studies, intercultural communication, organizational development, marketing etc., it has also met considerable criticism (Jensen 2003, McSweeney 2002). For instance, McSweeney (2002) argues that that surveys that Hofstede conducted are not a suitable way of measuring cultural differences as they do not represent the entire nation. Moreover, Tayeb (1994) points out that Hofstede failed to empirically investigate the relationships between the four dimensions and the structures of the organizations whose managers participated in the survey, therefore leading to a result which was "conceptual and speculative" (p.435). Essential questions regarding differences in organizational structure and management style between the IBM subsidiaries were not included in Hofstede's findings. Tayeb (1994) concludes that such questions were not included because "*culture was used as an explanation after the findings revealed interesting patterns*", and therefore, Hofstede's findings are not representative of national cultures, but rather map out the positions within different countries and the chosen occupations (p.435).

6.2.2 Gullestrup's Cultural Dimensions

Gullestrup's model is based on the notion that people belong to several cultures at any given time (Gullestrup 2002). The model operates with three cultural dimensions, the horizontal dimension; the vertical dimension and the cultural dimension in time (Gullestrup 2002, 2006).

6.2.2.1 The Horizontal Cultural Dimension

According to Gullestrup, common to all living beings is that their survival depends on the relationship between their basic biological needs, such as food, and the opportunities offered to them by their natural and social environment. If more than one human being is present at the same time in nature, they will act together, in joint action, in order to fulfill

their basic needs. Gullestrup (2002) characterizes this as “social cooperation and solidarity” or even as some form of “oppression and exploitation” (p.10).

Although, each group of people might have varying ways of working together in order to fulfill their basic needs, there are certain patterns in their tasks that make up the central part of their joint action, also defined as their ‘cultural segments’ by Gullestrup.

The horizontal dimension consists of eight cultural segments. They are defined as horizontal because the eight cultural segments are at the same level, and they are all of equal importance to cultural understanding. The eight cultural segments are (Gullestrup 2002, 2006):

1. *The processing segment* describes how nature and the physical surroundings are processed. This can also be called the technology of the culture.
2. *The distribution segment* shows how the outcome of the before-mentioned processing is distributed – also called the economy of the culture.
3. *The social segment* shows how individuals relate to each other – it is their cultural social behavior.
4. *The management and decision segment* describes the processes which regulate who control what and whom – showing the culture’s political institutions.
5. *The conveyance segment* describes how knowledge, attitudes and ideas are conveyed to and about each other – the culture’s communication.
6. *The integration segment* describes how the individuals and the unit are integrated, maintained, and developed – the culture’s reproduction and socialization
7. *The identity creating segment* shows how their common identity is created and preserved
8. *The security creating segment* describes the processes that show how life and death is perceived – also called their religious institutions.

6.2.2.2 The Vertical Cultural Dimension

In simple encounters between people from different cultures, it is not possible to fully understand the other individual’s core culture, as the immediately visible traits are merely

‘symbols’ or ‘symptoms’ of their culture, such as behavior, language or clothing (Gullestrup 2002). These visible traits will make up the first impression of any culture, however it is not until later that the underlying moral norms and values of the culture will appear.

Hence, a culture cannot be analyzed and understood solely based on the eight cultural segments in the horizontal dimension, as values and moral norms remain hidden. Therefore, it becomes necessary to discuss different layers in a culture, also called the vertical cultural dimension. The vertical cultural dimension exists of six layers which are divided into two categories, the ‘manifest culture layers’ and the ‘core culture layers’ (Gullestrup 2006). The six layers are (Gullestrup 2006, p.82):

- The manifest culture layers:
 1. Immediately observable symbols and symptoms of culture
 2. The difficult to perceive cultural layer
 3. The formalized layers of norms and rules
- The core culture layers:
 4. ‘The non-perceivable existence’ – tacit or silent elements of culture
 5. The basic value layer that consists of partially legitimized values (values of animal rights, gender relations, treatment of criminals etc.) and generally accepted highest values.
 6. The fundamental world conception.

According to Gullestrup, the horizontal and vertical cultural dimensions can in combination provide an analytical tool that would help understand a culture in any given time – although this analysis will still be considered a rather static view of culture.

6.2.2.3 The Cultural Dimension in Time

As mentioned before, culture cannot be considered a static entity as it is constantly changing due to a number of reasons such as internal factors, under the influence of other cultures or changes in nature – also characterized as the change-initiating factors

(Gullestrup 2002, 2006). Internal factors that could influence a culture to change could for instance be growth in population or perhaps increase in violence or discrimination. Other cultures can also influence a given culture to change, by for instance inspiring the culture with new ideas, technological development, trade etc., by indoctrination or simply by violence and force (Gullestrup 2006). Lastly, changes in nature can cause a culture to change. Those changes could for instance be destruction or improvement of living conditions or lack of natural resources (ibid).

Gullestrup points to the fact that most cultures are at any given time constantly being showered with change-initiating factors; while some of these will be rejected, others might penetrate the culture and lead to some degrees of change in different cultural segments and layers. However, not all change initiating factors, as the ones mentioned above, will actually have a lasting impact on a given culture. Gullestrup argues that a number of decisive factors are important to consider when it comes to cultural change. The determining factors are the degree of integration in terms of values and degree of homogeneity in the culture.

In a strongly integrated culture, most people agree on certain values, such as freedom for each individual, prioritization of economic gain and so on (Gullestrup 2002). Hence, it becomes easier for change-initiating factors, that are identical with the values in the integrated culture, to penetrate the culture. On the other hand, one can expect a strong level of rejection if the change-initiating factors are contrary to the strongly integrated values (Gullestrup 2006). The other key factor is the degree of homogeneity in the culture. The more diverse, or 'heterogeneous', a culture is in terms of knowledge, experience and practical skills, the more likely a culture will be influenced by change-initiating factors (ibid, p.137). Gullestrup gives the example of cultures that for instance exists solely on traditional agriculture or fishery, in these cultures change-initiating factors such as modern technology will face difficulties both in terms of comprehension and acceptance into the culture (ibid).

Thus, the purpose of cultural dimension of dynamics or time, is partially to show that the importance of the horizontal dimension will decline the deeper one gets in the vertical

dimension and partially to show that the upper manifest layers of a culture can be changed more easily and more rapidly than the deep layers of the core culture.

6.3 Summary: Defining Culture and Theoretical Frameworks for Culture Studies

Culture is a complex concept and can be defined in numerous ways. The different definitions can be categorized into several categories such as historical or psychological. Definitions of culture identified as psychological definitions have in particular importance to learning as they define culture as a problem-solving device and look at culture's ability to adapt.

Scholars such as Allwood, Hofstede and Gullestrup define culture in terms of a cognitive pattern or schema that drives an individual's behavior, form his or her norms and values etc. in a way that distinguishes one group from another. The cognitive schemas are formed based on an individual's geographic location, his or her upbringing and personal experiences in life, thus culture is learnt in nurture and not inherited by human nature. According to both Hofstede and Gullestrup, culture can manifest itself on different layers. The upper layers, also called the manifest layers, are changed more easily and rapidly, whereas it is harder to change the deeper layers of culture, characterized as the core culture.

Culture studies are complex in nature and often face difficulties as a culture does not have clearly defined borders and therefore easily merge with one another; culture is dynamic and ever-changing; culture studies are marked by the researcher own cultural perception and so forth.

Hofstede and Gullestrup present two different theoretical frameworks for culture studies. Although, both are based on cultural dimensions, the primary focus for Hofstede's five dimensions are based on differences in national cultures, whereas Gullestrup's cultural dimensions also describes cultures within national cultures.

For this thesis, I will adapt Gullestrups's definition of culture and try to understand cultures based on his three cultural dimensions, firstly because it is a general definition that can be applied to various situations; secondly, his definition for culture does not limit culture as mere national cultures and thirdly, the three cultural dimensions look at culture in its entirety.

I would like to add that although I have chosen to focus on Gullestrup's definition of culture and his cultural dimensions, I have still included Hofstede's work both in the preceding discussion and the following review of cultural differences in learning. This is due to the fact that although his work has met criticism, his work has had enormous impact on the field of intercultural research (Jensen 2003). Even though, his theories do have flaws, they are still applicable and can act as a foundation for cultural studies in terms of differences in nations (Würtl 2006).

6.4 The Implications of Cultural Differences on Learning

Hofstede (1986) argues that teacher-student interaction is a part of the archetypical phenomenon in cultures⁵ and deeply rooted in the culture, hence "cross-cultural learning situations are fundamentally problematic for both parties" (p.303). According to Hofstede, the problems can be related to the following four areas:

1. differences in the social positions of teachers and students in the two societies;
2. differences in the relevance of the curriculum (training content) for the two societies;
3. differences in profiles of cognitive abilities between the populations from which teacher and student are drawn;
4. differences in expected patterns of teacher-student and student-student interaction.

Hofstede (1986) examines how teacher-student and student-student interaction relates to his original four cultural dimensions, *individualism-collectivism*, *uncertainty avoidance*, *power distance*, and *masculinity-femininity*. The following highlights some of Hofstede's findings within each cultural dimension.

⁵ Examples of other archetypical phenomenon are *parent-child*, *man-woman*, *boss-subordinate* etc. (Hofstede 1986, p.302)

The collectivism vs. individualism dimension (Hofstede 1986, p.312):

Collectivist Societies: *Students expect to learn how to do; individuals will only speak up in small groups; formal harmony in learning situations should be maintained.*

Individualist Societies: *Students expect to learn how to learn; individuals will speak up in large groups; confrontation in learning situations can be salutary; conflicts can be brought into the open.*

The power distance dimension (Hofstede 1986, p.313):

Small Power Distance Societies: *Student-centered education, teacher expects students to initiate communication; students may speak up spontaneously in class; students allowed to contradict or criticize teacher.*

Large Power Distance Societies: *Teacher-centered education; students expect teacher to initiate communication; students speak up in class only when invited by the teacher; teacher is never contradicted nor publicly criticized.*

Uncertainty avoidance dimension (Hofstede 1986, p.314):

Weak Uncertainty Avoidance Societies: *Students feel comfortable in unstructured learning situations: vague objectives, broad assignments etc; students are rewarded for innovative approaches to problem solving; teachers interpret intellectual disagreement as a stimulating exercise.*

Strong Uncertainty Avoidance Societies: *Students feel comfortable in structured learning situations: precise objectives, detailed assignments; students are rewarded for accuracy in problem-solving; teachers interpret intellectual disagreement as personal disloyalty.*

The femininity vs. masculinity dimension (Hofstede 1986, p.315):

Feminine Societies : *System rewards students' social adaptation; students practice mutual solidarity; students try to behave modestly.*

Masculine Societies: *System rewards students' academic performance; students compete with each other in class; students try to make themselves visible.*

Hofstede's research shows that cultural differences do have an impact on multicultural learning situations where teachers and students of various cultural backgrounds interact with one another. Hofstede's research describes cultural dimensions that are applicable for differences in national cultures, making differences in nationality the key variable in multicultural learning situations. For example, Joy & Kolb (2009) suggest that other variables such as gender, age and level of education of the learners have an impact on learning styles as well. They also refer to Fridland (2002) who points out that academic specialization might have more influence on learning than culture, i.e. computer programmers or accountants share an academic background which is a stronger variable than their different national cultures, consequently it would be easier for these professionals to interact and learn with other professionals in the same field as them in spite of their different cultural backgrounds. Joy & Kolb (2009) base their research on the notion that countries are cultures and do not explicitly categorize academic specialization as a culture own its own, however, Fridland's (2002) work does resonate with Gullestrup's perception of cultural categories, where 'occupational culture' is considered as a cultural category on the same level as for instance 'macro cultures' and 'trade cultures' (Gullestrup 2002, p.9).

Schallert & Reed's (2004) research shows that classroom discussions in American universities can be particularly challenging for international students. First, it is seen that international students, often being second-language-learners of English, cannot keep up with fast moving oral discussions. Second, international students at American universities indicate that they often feel frustrated about adjusting to cultural practices at American universities. For example, Asian students are accustomed to a more teacher-centered approach to learning and have in their past studies been less encouraged to talk, ask questions and share ideas within the classroom (ibid). International students also express that they find it confusing and sometimes even shocking that American students share personal experiences or perhaps make comments about not doing their required readings for the course. Third, international students often face situations where they lack "cultural

capital”, i.e. how to interpret and understand the comments made by their fellow American students and teachers so they can contribute appropriately to the conversation (ibid, p.113).

The above shows that cultural differences have implications on multicultural learning situations, thus it becomes important to consider not only the nationality or ethnic background of teachers and learners, but also their level of education, academic specialization, gender etc. as these factors could also impact a learning situation.

6.5 The Implications of Cultural Differences on Computer Mediated Learning

Hofstede’s above mentioned research was based on traditional classrooms, however, research by several scholars suggest that cultural differences have implications for online learning environments as well (Kim & Bonk 2002, Wang & Reeves 2007, Vatrappu & Suthers 2007).

Vatrappu & Suthers (2007) argue that Hofstede’s (1986) description of cultural issues in the traditional classroom could also have an impact on computer mediated learning environments. They point out that for example *power distance* might not be explicitly visible in online learning environments, however this dimension helps understand the interactional behavior among students. Also, Vatrappu & Suthers argue that Hofstede’s collectivism-individualism dimension is particularly interesting in terms of the socio-constructivist theories of learning and the small group size emphasis in CSCL. In learning groups where students are culturally diverse, this dimension might affect the perception of other students in the online learning environment. The notion of in-group versus the out-group members could impact the collaboration among students, as technological affordance could be taken as social affordance by some (ibid).

Wang & Reeves (2007) refer to Bentley et al. (2005) who have outlined a number of cultural issues related to e-learning based on value differentials in which they incorporate factors such as issues regarding language, technology, learning styles and cultural sensitivity. For example, Bentley et al. point out that ‘reasoning pattern differentials’ can

have implications for e-learning as people from different cultures can have different thinking patterns in terms of problem-solving (Wang & Reeves 2007, p.7). Similarly, 'high- vs. low context differentials' can be problematic as high- and low context cultures have different demands for concrete versus abstract information which can pose a problem when people do not meet face-to-face (ibid).

Kim & Bonk (2002) also report that cross-cultural issues do exist in CSCL environments. Their research showed that students from the U.S., Finland and Korea displayed distinctive cultural differences in their online collaborative behavior. For instance, Kim & Bonk noted that there was a difference in the way students from the various countries sought and gave feedback. They also noted that American and Finish students seemed less likely to display social interaction behavior in the online learning environment as compared to the Korean students, hence making the American and Finish students more task-oriented. However, where American and Korean students worked independently on their cases, Finish students wrote their cases as pairs or small teams. Kim & Bonk explain students' distinctive behavior based on various cultural dimensions such as differences in high- and low-context cultures; i.e. U.S. and Finland can be considered as low-context cultures, while the Korean culture is characterized as a high-context culture (ibid). Kim & Bonk also point out that lack or presence of cultural sensitivity and possible misunderstandings among students are mostly grounded in culture and can therefore often be explained by the means of cultural dimensions.

Shallert & Reed (2004) argue that some of the problems that international students face in traditional classroom discussions, might be carried on to computer-mediated-discussions, or CMD for short. The perception that CMDs provide a more egalitarian learning environment, where language inadequacies, such as fluency, pronunciation or accent, are masked is often not true. Shallert & Reed's research shows that international students do not participate in the same manner in the written CMDs as American students.

International students often feel that they are not fluent enough in English or they have a certain cultural expectation about writing only "error-free prose" which prevents them from participating like their American peers (ibid, p.114). However, Shallert & Reed also states that despite these limitations, CMDs do provide an opportunity for international students to express their ideas and views so they can take part in the dialogue. They point

out that without the CMD, other students would not benefit from the diverse views and perspectives of international students who otherwise remain quite in traditional classroom discussions.

6.6 Summary: The Implications of Cultural Differences on Learning and Computer Mediated Learning

Cultural differences are very much present and pose a problem in traditional classrooms where interactants are from various cultures. Hofstede looked at teacher-student and student-student interaction based on his four cultural dimensions which showed that various national cultures impact the way students perceive the teacher, the other students as well as their own roles in the learning situation. However, cultural differences cannot solely be based on different national cultures since factors such as academic background, level of education, gender and age also matter in multicultural learning situations.

The work of Vatrappu & Suthers, Kim & Bonk and Shallert & Reed clearly showed that cultural differences are present and have implications for interaction and collaboration among learners from different cultural backgrounds, whether it is in CSCL environments, web-based instructions or computer-mediated-discussions. In addition, Kim & Bonk's study showed that differences in communication and misunderstandings among students in online collaborative learning can also be grounded in culture and understood based on cultural dimensions.

6.7 Discussion

The above chapter showed that the concept of culture involves a range of academic topics, processes and differences which makes it close to impossible to give a complete account of all aspects related to culture. In addition, the concept is both complex and divergent in its various applications therefore it becomes hard to define and apply to any one designated area. Nonetheless, I feel that it has become evident that culture has a significant role in every aspect of life, whether it is in our way of thinking; our way of defining ourselves, other people and our surroundings; or simply our way of interpreting various situations in everyday life.

Accordingly, Gullestrup (2002, 2006) stated that the complexity and the dynamics of 'culture' make research and analysis in this field particularly difficult. Although, the primary aim for the empirical study in this thesis was not cultural studies, it is important to acknowledge that analyzing cultural affects in any setting, be it educational as in CSCL or organizational as in a corporate environment, will be an immensely difficult task. Hence, I should approach the analysis of the empirical data with a certain level of hesitation when it comes to making large conclusions and generalizations to other CSCL environments in multicultural societies.

In regards to multicultural societies, it is seen that although nations consist of culturally diverse people, these people also have a unifying national identity as they share a national language, political, legal and economic system (Hofstede & Hofstede 2005). These and many other commonalities distinguish people of one nation from people of other nations, hence you could for instance discuss differences in Canadian culture versus the British or French cultures, although these countries as well can be characterized as multicultural societies. And as Würtz (2006) argued, culture-relevant differences still exist between nations.

The presence of a unifying national culture in multicultural nations could be interpreted based on Gullestrup's theories which indicate that the upper manifest layers of a culture are easily changeable (cf. 'Vertical Cultural Dimension'). Thus, it indicates that although the Canadian society consists of people from different cultural backgrounds, their upper manifest layers might have been changed according to Canadian society and culture as a result of their stay in Canada while they perhaps still hold on to their core cultural layers.

Schallert & Reed's (2004) research about international students on American universities showed that international students often felt a lack of 'cultural capital' which could help them understand various conversations at the university. I believe that the notion of cultural capital touches upon a key issue regarding people in diverse societies. Although, people from culturally diverse backgrounds seemingly appear well-integrated into another country than their country of origin, my personal experience has been that they often lack this so-called cultural capital. For example, I have lived and worked in the Canadian

society for a number of years, however, I still experience that I have problems understanding core Canadian humor seen in different Canadian TV shows, advertisements and so forth. Although, I am born and brought up in Denmark, which are in many ways similar to Canada, my lack of the Canadian cultural capital sometimes pose a problem in how to interpret everyday situations. I can imagine how the lack of cultural capital increases when people arrive to Canada from cultures considerably different than the Canadian culture.

In regards to the problem statement it is central to define ‘culture’ in order to understand what cultural differences actually means. Gullestrup’s definition established that culture is *“the philosophy of life, the values, norms and rules, and actual behaviour...”* which means that cultural differences could be seen in any of the before-mentioned factors hence, one could talk about cultural differences in values, norms or behaviour among learners who are culturally diverse.

7. Theoretical Explanation to the Problem Statement

At this point in the thesis it is important to examine whether the preceding chapters provide a theoretical explanation to the problem statement. The problem statement in this thesis is:

In computer supported collaborative learning environments, do cultural differences have an impact on the communication and collaboration between students who are culturally diverse?

As also stated in the problem description, my intention was to work with three additional questions in order to aid my research, which came to be the theoretical framework for this thesis. Thus, I first looked at learning, collaboration and communication in CSCL based on the theories I had chosen to review. Based on this it became evident that the success of computer supported collaborative learning is conditioned by a high degree of learner participation and social interaction. For instance, Scardamalia and Bereiter argued that in order to build knowledge students must engage in collaborative, critical discussions of ideas. In addition, Wenger discussed that learning takes place by actively participating in social communities. Hence, the three above mentioned scholars emphasized collaboration and active participation among students as key factors for learning or knowledge building.

I discussed collaboration in terms of collaborative situations and collaborative interaction. In regards to the problem statement, collaborative interaction is particularly important which Dillenbourg (1999) chose to explore from an interactivity, negotiability and synchronicity aspect. It became evident that interaction among peers is a key concept for collaboration as the very concept of ‘collaboration’ is defined as a situation where learners interact in collaborative ways, thus if collaboration has to occur among learners they must interact with one another.

In regards to communication in CSCL it was discussed that it is particularly important to consider that it contained elements of group interaction and collaborative learning and technological features that support collaborative communication. In regards to the problem statement, these two ‘conditions’ for communication in CSCL are particularly important as they indicate that communication and collaboration can be considered as being somewhat interconnected in CSCL. Thus, it can be concluded that if for some reason there is a lack of

social interaction among learners, it will influence the communication and collaboration process and impact the outcome of CSCL.

The second question that aided my research was examining intercultural communication. Although, a complex topic, it was obvious that a number of problems are associated with this. Firstly, in terms of defining intercultural communication, there were a number of definitions that could be applied to this thesis, however, I chose a broad definition that could be applied to any form of intercultural communication, whether it is face-to-face or online communication. Secondly, as some interculturalists discussed, intercultural communication is different than other kinds of communication, as it is based on a certain level of uncertainty and ambiguity regarding the ground rules by which the intercultural interaction occurs. Thirdly, misunderstandings are bound to happen in intercultural communication among people of different cultures, although misunderstandings alone cannot define intercultural communication. Hence, the communication between culturally diverse learners, which can also be characterized as intercultural communication, could cause problems in a CSCL environment as it involves a certain level of uncertainty and ambiguity and misunderstandings can occur.

The third part of the theoretical framework was concerning the concept of culture. Again, a complex topic, but it was evident that culture influences all aspects of life as well as learners' norms, behaviour, communication process and so forth. Also, previous research shows that culture influences learning situations whether in a traditional classroom or in computer mediated learning environments. It is therefore expected that learners' attitudes, expectations, communication and so forth will be culturally grounded and impact a multicultural CSCL environment.

Therefore, in the light of the theoretical framework, one can conclude that in computer supported collaborative learning, cultural differences will influence the communication and collaboration among culturally diverse learners.

8. Empirical Study - Data Analysis and Results

In the following chapter, I will outline some of the methodological approaches for the survey and summarize the key findings of the empirical study.

8.1 Procedure

The questionnaire was initially sent to the two course professors who emailed them to the students after the semester ended. The students had about three weeks to complete the questionnaire and email it back to their professors. The professors then forwarded the responses to me, thus ensuring complete anonymity for the students. It was an advantage that the questionnaires were emailed and received electronically as it saved time on data input.

8.2 Coding

The collected data was migrated to Excel for data analysis. The raw data is presented in Appendix B. It is important to be aware of the fact that the 5-point rating scale used in the majority of questions in the survey uses ordinal variables which makes it difficult to decide whether the mathematical distance between, for example 'agree' and 'strongly agree' is the same as between 'agree' and 'disagree', thus limiting the statistical analysis possibilities (Muijs 2004). However, each variable on the rating scale was given a numeric value in order to aid the statistical analysis, i.e. 'strongly agree'=1, 'agree'=2, 'disagree'=3, 'strongly disagree'=4 and 'Don't know'=5 (for details see Appendix B). Hence, a score less than 3 would be considered a positive opinion; a score greater than 3 would be considered a negative opinion or no opinion at all.

It was a deliberate choice that in calculations about for instance the mean the 'don't know' replies are skewed to one side of the rating scale, the side that expresses a negative opinion. It was grounded in the fact that, as mentioned in the Methods, the 'don't know' category was included to alleviate some of the problems associated with a neutral category, hence it was assumed that a response in the 'don't know' category would imply the respondent's lack of opinion or lack of understanding in regards to the question. In both instances it is a clear indication of a non-positive opinion. However, in the further analysis

it becomes important to acknowledge the number of students who did not express their opinion about certain questions.

Each student or respondent was given a number, i.e. student #1, 2 etc. In addition, the questionnaire was divided into five sections, e.g. questions 1-6 were categorized as ‘online collaboration’ and coded as A; questions 7-14 were regarding ‘online communication’ and coded as B; questions 15-20 were about ‘online activities’ and coded as C; the factual questions were migrated directly to Excel, and question 21 stood on its own (for details see Appendix B).

The factual open-ended questions about ‘age’, ‘gender’, ‘number of courses taken’ and ‘ethnicity’ were migrated into Excel as entered by the student, hence you see somewhat similar entries such as ‘Italian’ and ‘Italian-Canadian’. In Question 21, a numeric value of 1 was given for those students who had chosen to comment and a numeric value of 0 was given for the students who choose not to comment.

8.3 Sample

The questionnaire was sent out to a total of 48 students, 23 students in one course and 25 students in the other, however both courses were afterwards considered as one single case. This was done as the aim of the empirical study was not to examine the specific courses but the students’ attitudes towards the communication and collaboration no matter which course they belonged to. A total of 29 students responded ($N=29$), hence the response rate was 60.4%. Out of the 29, there were 16 male students and 13 female students. Their ages ranged from 26 to 47, the mean age being 34.7.

8.4 Data Analysis and Results

Many theorists discuss that the response rate is directly linked to the level of confidence in the result (Muijs 2004, Frankfort-Nachmias & Leon-Guerrero 2002). As mentioned above, the response rate was 60.4%. Although it produced a low N , the degree of variation in the responses was relatively small (cf. below). Muijs (2004) points out that if the respondents’ responses tend to be tightly clustered, then it becomes less important to have a large response rate as it would if the responses ranged widely. The low degree of variation in the

responses indicates that those that did not response might be very similar to the students that did respond on a number of relevant variables and thus would have answered the questionnaire similarly if they had taken part (ibid). As we already know, the students do have a number of variables that are somewhat similar, such as level of education or professional background.

The ethnic composition of students (*N*) is illustrated below showing a highly diverse student sample. Two respondents chose not to indicate their ethnicity on the questionnaire, thus they are marked as a nil. The largest ethnic group is 'Chinese' being 28% of students who respondent. The second largest group is 'Indian' and the third largest group is 'French'.

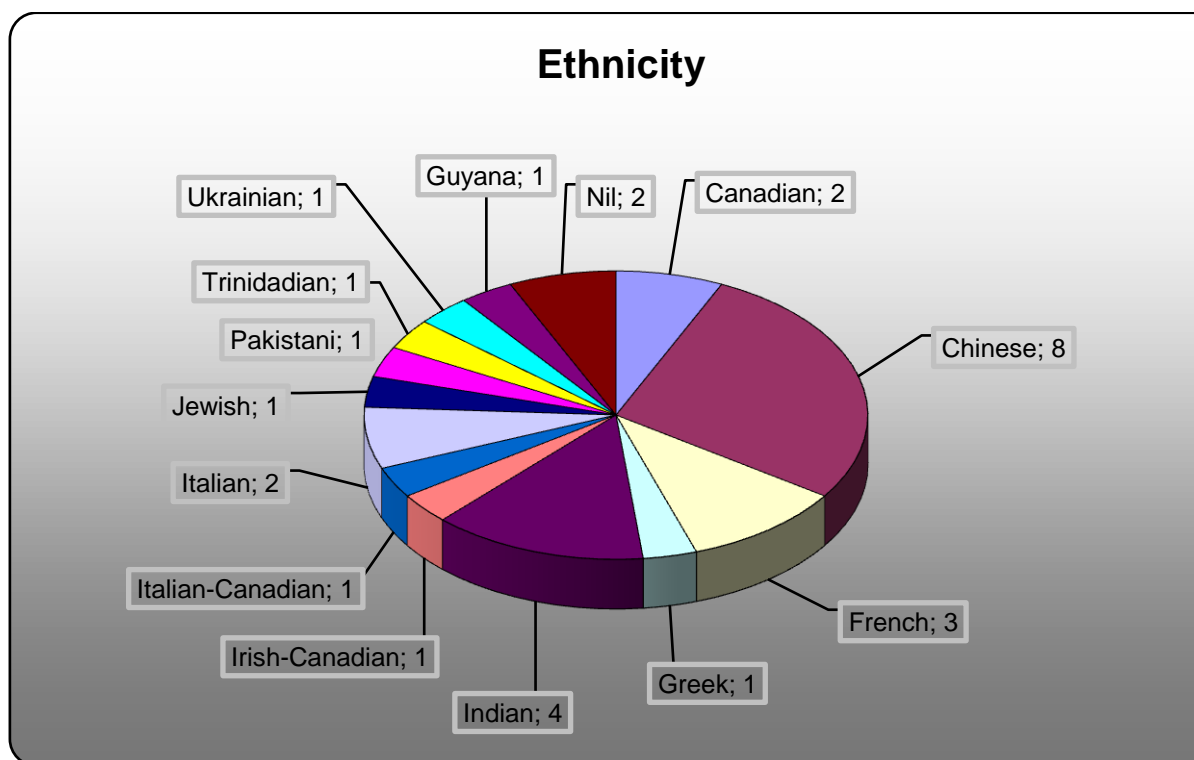


Figure 2: Ethnic composition

The two students who did not indicate their ethnicity are also included in the above diagram, as they constitute 7% of the total number of respondents. It is unknown why these students chose not to answer this one question on the survey, however Muijs (2002) points out that the lack of response to a questionnaire or some questions on the survey might be

due the fact that the questions are too personal or regarding a sensitive matter, hence the respondent feels uncomfortable answering them.

It is noteworthy that one student (student #18) entered 'Italian-Canadian' as her ethnicity whereas two other students entered just 'Italian' as their ethnic background (student #6 and 26). The fact that the female student entered Italian-Canadian as her ethnicity could be indicating two things 1) the person is a second generation Italian in Canada thus has a strong bond with her Canadian identity or 2) is half Italian half Canadian and therefore relates to both ethnicities and cultures. This student is one of the youngest among the respondents (she is 27 years old) which again could be related to her being a second generation of Italians in Canada.

Student number 29, entered 'Jewish' as her ethnic background which is interesting because off hand one would consider 'Jewish' as an indication of your religious affiliation rather than ethnicity. However, this is in line with Statistics Canada who also lists Jewish as a separate ethnic group in the Canadian society⁶.

The mean value for each question is 2.5 which could also be expressed as 50%, hence a score <3 . Any number less than 3, 3 being 60%, indicates a more positive opinion towards the given questions and a score >3 , thus more than 60%, indicates a more negative opinion (cf. 8.2 Coding). The table below shows the mean score for all students, and the distinction between the mean for male and female student answers.

Characteristics	All students (N=29)	Female=13	Male=16
Mean score	2.41	2.38	2.44

Table 1: Mean score for all questions

The overall mean score ($2.41 < 3$) indicates a positive opinion about all questions on the questionnaire. Also, the relatively low deviation from the mean score, for the mean for both female and male students, indicates homogeneity in student opinions no matter

⁶ Statistics Canada website: <http://www40.statcan.gc.ca/l01/cst01/demo26a-eng.htm>

gender. That is to say, most students have, though not identical, but still fairly similar opinions.

8.4.1 Group A Questions - Online Collaboration

The majority of the respondents showed a positive opinion about course collaboration, as the mean for all of group A questions were below 3. This indicates that the course collaboration was overall viewed as a positive element in the course. It is particularly interesting that question number 3⁷ and 6⁸ showed very similar responses from students. In question 3, 17 respondents 'agreed', 8 respondents 'disagreed', 3 students 'strongly disagreed' and 1 student answered 'don't know'. In question 6, 18 students 'agreed', 9 students 'disagreed' and 2 students 'strongly disagreed'. This indicates that students were actively engaged in course collaboration in their respective groups. However, students seemed divided about question number 2:

2. The lack of face-to-face contact made collaboration among students more challenging

Total with Opinion (+ive)	13
Total with Opinion (-ive)	16
% of +ive Opinion	45%
% of -ive Opinion	55%
Mean	2.43

The above result shows that 45% of students agreed with the question and 55% disagreed with the questions, leading to a mean of 2.43. It is notable that there is such a significant difference of opinion among students regarding this one question about lack of face-to-face contact, even though they have agreed on most other questions. This indicates that face-to-face contact in groups still has an importance for group work. One of the students who agreed with the question, had the following comment in Question 21:

⁷ 3. The collaboration between students has been beneficial to the entire group.

⁸ 6. You feel satisfied with the level of collaboration among students.

“It would be good case discussions if students could discuss cases by being face to face. We have to reach a decision in short time and some don’t respond very quickly to postings.” Student # 10, Male, Chinese ethnicity.

The above shows that this student felt strongly about this question as he has cared to comment on it later on in the questionnaire. His comment shows that he felt the lack of face-to-face contact to be an important factor in the group decision making process. However, this comment also highlights another key issue in online collaboration, namely if it was easy to reach a group decision (Question 5). Although, most students agreed with Question 5 (20/29), there were 8 students who disagreed and 2 students who even strongly disagreed. The two students, who strongly disagreed with Question 5, were two male students, one with Pakistani ethnicity and another with Ukrainian ethnicity.

Three students showed a more negative opinion about course collaboration, as their mean values for Group A questions were well above the mean for rest of the students.

Student #	Gender	Ethnicity	Mean Group A
7	M	Pakistani	3.17
14	M	Ukrainian	3.17
23	F	Nil	3.50

8.4.2 Group B Questions - Online Communication

In group B questions, 6/8 questions showed a <3 mean value, which shows that the students had a considerably positive attitude towards the questions in group B about course communication. It is an indication of an overall successful online communication process among students. However two questions, question 11 and 13 had a higher mean value than 3, that indicates a high level of disagreement in regards to these questions and that some students had a different experience about the online communication.

11. Misunderstandings among students often occurred during the course

Total with Opinion (+ive)	6
Total with Opinion (-ive)	16
% of +ive Opinion	27%

% of -ive Opinion	73%
Mean	3.53

The result for Question 11 establishes that among the 22 students that had an opinion about this question, 16 students believed that misunderstandings did not occur often among students and 6 students felt the opposite, expressing that misunderstanding often occurred during the course. However, among the 6 students who felt that misunderstandings often occurred, was a student that made following comment in Question 21:

“I felt that there was a lack of communication in our group, as everyone seemed confused about what to do and when things should be completed. No clear guidelines from the professor made things worse. I did try to organize things but I felt as if people did not understand me or perhaps I didn’t understand them.” Student # 14, Male, Ukrainian ethnicity.

The above comment indicates that this particular student felt that there was a lack of communication among his group since there seemed to be confusion among students. This student felt that he didn’t understand the group and vice versa – hence he indicates, perhaps not a misunderstanding, but that there were from his perspective definitely a lack of understanding among students.

In group B questions, Question 13 also resulted in a higher mean than 3.

13. Online communication during the course led to a closer relationship with the other students

Total with Opinion (+ive)	6
Total with Opinion (-ive)	18
% of +ive Opinion	25%
% of -ive Opinion	75%
Mean	3.47

The result for Question 13 shows that out of the 24 students who had an opinion about this question (5 students answered ‘don’t know’), only 6 students agreed with this question whereas the majority, 18 students, disagreed. It is however noteworthy that 5 out of the 6

students that agreed with Question 13, were women, hence indicating that the women perhaps were more relationship focused than the men in the online course.

In group B questions following 3 students had an overall mean which was greater than 3 hence indicating a more negative opinion about course communication:

Student #	Gender	Ethnicity	Mean Group A
1	M	Chinese	3.63
3	M	Indian	3.13
20	F	Nil	3.38

8.4.3 Group C Questions – Online Activities

In group C questions, Questions 17 and 18 regarding the “Team Contract” showed a higher mean than 3, thus indicating that majority of the respondents disagreed with these questions.

17. The “Team Contract” was a key element for successful teamwork throughout the course

Total with Opinion (+ive)	7
Total with Opinion (-ive)	18
% of +ive Opinion	28%
% of -ive Opinion	72%
Mean	3.50

The result shows that out of the 25 students that did have an opinion about this question, 18 disagreed as only 7 students agreed.

18. All students adhered to the “Team Contract”

Total with Opinion (+ive)	6
Total with Opinion (-ive)	16
% of +ive Opinion	27%

% of -ive Opinion	73%
Mean	3.83

The mean for this questions is even higher than the mean for Question 17, thus showing that a high number either disagree or perhaps even strongly disagree with this question. However, a large number of students also chose not to state their opinion about this question as 7 students answered ‘don’t know’. One of the students, who disagreed with Questions 17 and 18, made the following comment in Question 21:

“It was a challenge that some students didn’t contribute to the course analysis unless they were the IR.” Student # 18, Female, Italian-Canadian ethnicity.

This student’s comment clearly marks her dissatisfaction with other students’ level of participation in the group cases, however, her overall mean for Questions in group A and B are well below the question mean, thus indicating a positive opinion towards course collaboration and communication.

From the entire questionnaire, there was one question in Group C that all students agreed on, i.e. Question 19 about the ‘Student Profile’ being a useful factor in understanding students had a mean of 2.50. 15 students agreed and 11 students strongly agreed with this question, hence establishing the importance of the ‘Student Profile’.

8.4.4 Comments in Question 21

In question number 21 on the questionnaire, students had the choice to comment on any challenges with the course. Out of the 29 respondents, 15 chose to make a comment. A review of the comments (Appendix F), showed that five of the comments were related to the course format as students expressed their challenges with the fast pace of the course, the many group assignments or the fact that the course required a high degree of student participation. Other students commented on the course platform itself in terms of flexibility on the discussion board or lack of a chat-feature.

Some of the comments were related to the role of the professor as some students indicated that the professor did not participate in the course or failed to provide clear guidelines

about the various assignments. Two students commented that there group communication could have been better as they felt that there was a lack of communication between group members or that some group members took over without considering the other students. Course collaboration also seemed to be a challenge for some students as they commented that some group members did not participate as they should in the group assignments.

8.4.5 Standard Deviation

Although, it is important to know the average or mean for each group of questions and how the result vary from student to student or ethnicity to ethnicity, it also becomes important to see whether some students from a particular ethnic background differ significantly from the mean answer, hence the standard deviation becomes important in the analysis. Since the primary focus for the empirical research was students' online intercultural communication and collaboration, the standard deviation was calculated from the mean found for group A and group B questions in relation to student ethnicity.

The standard deviation (*SD*) was found by taking the square root of the variance (the variance is the average from the squared deviation from the mean) according to each ethnicity (Frankfort-Nachmias & Leon-Guerrero 2002, p.175). For Group A questions about collaboration, the mean was 51% which is 2.5% , a little above the mean value for each question. The *SD* was 8.7% , hence it means that 8.7% of students can deviate from the mean answer, either in a negative or a positive direction from the mean. Details are shown in Table 1. It is important to point out that since the *SD* is a relatively small percentage, the ethnicities that do deviate from the mean by either $\pm 8.7\%$ would still have a positive opinion about group A questions as it falls within <3 or 60% scores. For example, if one ethnicity deviates one standard deviation above ($+8.7\%$) the mean, the result would be $51+8.7=59.7\%$, which indicates that this ethnicity's answers falls within the positive opinion.

	Values for group A questions	Deviation from Mean	Square of Deviation
Canadian	0.45	-0.06	0.0035
Chinese	0.48	-0.03	0.0007

French	0.40	-0.11	0.0120
Greek	0.60	0.09	0.0082
Indian	0.53	0.02	0.0006
Irish-Canadian	0.43	-0.08	0.0058
Italian-Canadian	0.40	-0.11	0.0120
Italian	0.42	-0.09	0.0086
Jewish	0.50	-0.01	0.0001
Pakistani	0.63	0.12	0.0153
Trinidadian	0.57	0.06	0.0033
Ukrainian	0.63	0.12	0.0153
Guyana	0.47	-0.04	0.0018
Nil	0.62	0.11	0.0115
Total	7.133.333	0.00	0.0987
	Mean=51%		SD=8.7%

Table 2: Deviation from mean, variance and standard deviation for Group A questions

Similarly, the standard deviation was calculated for Group B questions about online communication, where the mean was 49% and the standard deviation was 4.8%, details are available in Appendix D under ‘Variance B’. The *SD* being even smaller for group B than group A shows that the different ethnicities differ even less from each other in regards to their attitude towards online communication.

In regards to the result in group A questions, if one looks at deviation from the mean, the above table shows that the greatest negative deviation score, -0.11, is represented by students with ‘French’ and ‘Italian’ ethnicity and the greatest positive deviation score, +0.12, is represented by students with ‘Pakistani’ and ‘Ukrainian’ ethnicity.

8.4.6 The Students with Chinese, Indian and French Ethnicity

The three ethnic groups that most students belong to are ‘Chinese’, ‘Indian’ and ‘French’. The below figures show the overall mean for group A, B and C questions for these ethnicities. It becomes important for the further analysis and discussion to see whether students with the same ethnicity and cultural background display similar response patterns, thus indicating similar attitudes.

The mean score for the 8 students with a Chinese ethnicity:

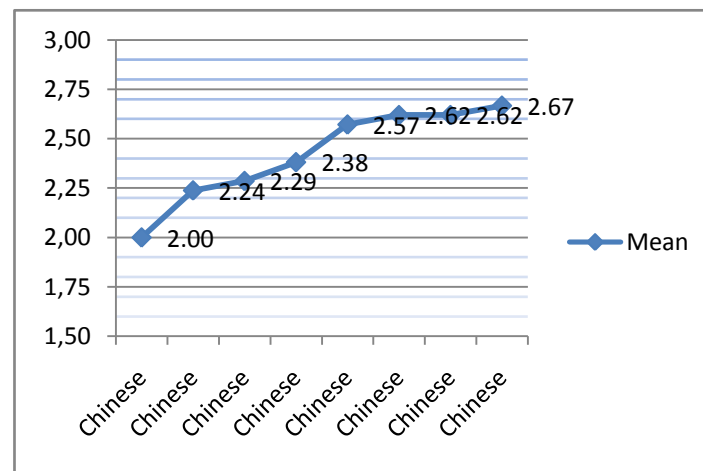


Figure 3: Mean score for students with Chinese ethnicity

The mean values for students with Chinese ethnicity do not indicate a correlation between student ethnicity and their attitudes towards the online course. The mean value ranges from 2.0 to 2.67 which is a considerable difference. However, four students out of the eight does display a very low degree of variation in their mean values as these ranges from 2.57 to 2.67, where two students even share the exact same mean value, 2.62. If one takes a closer look at these four students, in terms of other variables such as gender, there is again no obvious relation between ethnicity, mean value and gender, i.e. two out of the four students are male and two are female, thus one cannot conclude that the male or the female students with Chinese ethnicity display similar responses and attitudes.

Mean score for the 4 students with the Indian ethnicity:

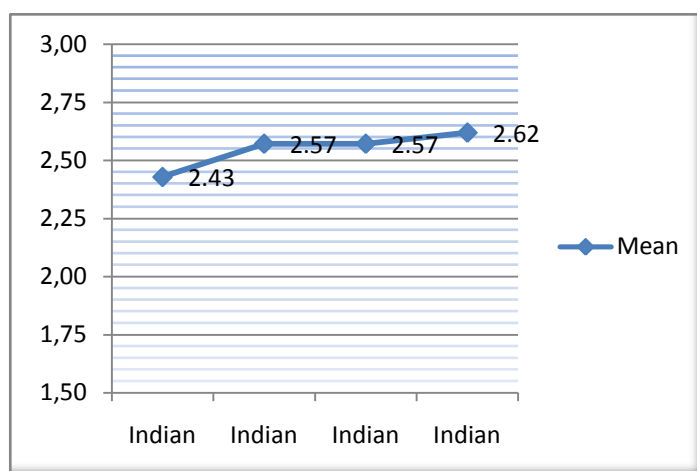


Figure 4: The mean core for students with Indian ethnicity

The students with Indian ethnicity have a mean value that ranges from 2.43 to 2.62. The degree of variation in the mean value is lower between three of the four students (2.57, 2.57 and 2.62) and it is notable that all three students gave answers that are above the mean value for each question, i.e. $2.5 < 2.57$, 2.57 , 2.62 , indicating a slightly bend towards a more negative opinion about the course collaboration, communication and course activities. One student in particular, respondent number 21 (see Appendix B), display negative attitudes towards course collaboration as he answers ‘disagree’ to questions 2-6 in Group A, regarding collaboration among students etc. (Appendix A)

The mean score for the 3 students with French ethnicity:

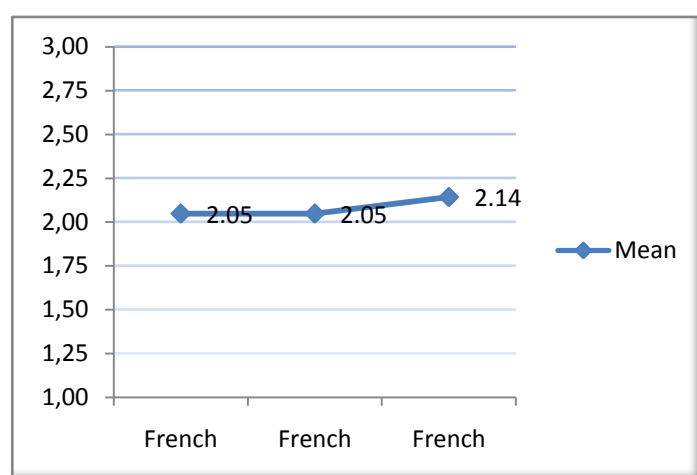


Figure 5: Mean score for students with French ethnicity

The three students with French ethnicity show somewhat similar response patterns as their mean values, 2.05, 2.05 and 2.14, range well below the question mean of 2.5. This indicates a positive response pattern to most of the questions in Group A, B and C. Again, there seems to be no correlation to other variables such as gender or age, i.e. the two students who have 2.05 as their mean value, is one male and one female student. The male student is 47 years of age and the female student is 33 years of age.

8.5 Summary: Data Analysis and results

The survey questionnaire was sent and received by email by the two course professors in order to ensure complete anonymity for the students. The questionnaire was sent to 48 students, out of which 29 responded, thus the response rate was 60.4%. The mean age for the respondents was 34.7 years. The student sample was highly diverse, as the 29 respondents belonged to 13 different ethnicities; Chinese, Indian and French being the largest groups.

The mean score for the entire questionnaire, 2.41, indicated an overall positive opinion about the various questions on the survey. The very little difference from the mean in the responses from male and female students showed that responses are tightly clustered around the mean value and therefore it indicates homogeneity in student opinions.

The questions were coded in groups, i.e. group A (online collaboration), group B (online communication and group C (online activities). The mean score for questions particularly in groups A and B showed that students had a positive opinion about the importance and impact of course collaboration and communication. There were however a few questions in group A and B where students either seemed divided or in disagreement with the questions. There was only question on the entire questionnaire that all students agreed on, Question 19 about the 'Student Profile' forum and assignment at the beginning of the course.

As the primary focus for this survey was student online collaboration and communication, the standard deviation for questions in group A and B became important in the analysis. However, the calculations showed a small percentage in standard deviation for both

groups, thus indicating again an overall positive attitude towards students' online collaboration and communication.

The three major ethnic groups were Chinese, Indian and French. However, a closer study of students' mean score for these ethnicities did not show any significant correlation between ethnic or cultural backgrounds and responses and attitudes.

9. Discussion

The following chapter discusses the circumstances and findings of the empirical study in relation to the theoretical framework.

9.1 Pedagogical features

The pedagogical approach to the two online courses is learning through problem-solving by case-based learning methods. This can be seen in the light of Wenger's social theory of learning which combines the individual's learning with specific actions that lead to learning. Flynn & Klein (2001) point out that supporters of this instructional method argue that cases make learning relevant and meaningful to the student as they have to engage in analyzing, discussing and solving real world problems. In addition, the case method shifts the focus of learning away from memorization of facts, instead students have to concentrate on the application of concepts, theories, and techniques to a practical problem (ibid). Since the primary focus for this study was not the learning outcomes for students, it is difficult to conclude if students actually accomplished the learning objectives for the course by using the case-based instructional methods. In relation to knowledge building, Scardamalia & Bereiter (2006) also stated the importance of problem-based learning. They argued that working with problems supports knowledge building so students gain knowledge *about* instead of just knowledge *of*.

However, the case-analyses were done through group discussions, which make the role of discussion important in this course. The result of question 9 on the survey showed that majority of the students found it easy to carry on a discussion with the other students indicating that the collaborative discussions were successful for most parts – though some students did express their disagreement with this question. According to Scardamalia & Bereiter (1994, 2006) collaborative discussions are the key to knowledge building. In regards to defining collaboration from a knowledge building perspective, one could in fact interpret Scardamalia & Bereiter's notion of collaboration as a progressive discourse among students, very much like an ongoing group discussion which is intended in case-based learning.

In question 21, several students commented on the number of group-assignments that need to be solved collaboratively. According to Roberts (2004), many researchers have emphasized that autonomous and highly independent students generally prefer working alone. The MBA program is intended for working professionals with a certain academic background and the average age showed that most students are in their thirties, hence students could be characterized as independent. This could be the reason for the following comments from two students:

“The course format itself is very challenging as students have to do group cases every week. It would be better if students could work on their own and only had a couple of group cases.” Student #19, Female, Chinese ethnicity.

“I do not like the large number of group assignments. It should be perhaps one or two group cases and then rest should be individual assignments. We are all people with jobs and families, it is hard to spend a lot of time online waiting for replies from your other group members.” Student # 27, Female, French ethnicity.

Paulus (2004) states that in computer-mediated distance education, where participants are geographically separated, students often view cooperative strategies as more efficient than collaborative ones. He further argues that assignments designed to be done collaboratively may be interpreted as a cooperative project by the students, hence they will prefer to divide up tasks, complete them individually, and then combine their independent efforts into a final product like cooperative learning, hence the intention of collaborative learning is lost as the students divide the work instead of working on it in collaboration (ibid).

Wenger (1998) argued that mutual engagement binds members together and is important for learning in a CoP. In the online courses, the first strategy, to facilitate a sense of community among students, was the student profile assignment and the personal interview exercise. The student profile seemed to be a successful exercise as all 29 respondents either agreed or strongly agreed with question 19 which asked students whether the student profile was a useful factor to understand your fellow students. Weisband & Atwater (1999) argue that, the sharing of personal information at the beginning of team formation influences the liking of group members, it can boost member satisfaction and communication and can increase feelings of social cohesion. Whether the students truly

felt closer to each other is questionable as the result for questions 13 and 20, indicates that the majority of students did not feel a closer relationship with each other due to course communication and collaborative group-projects. However, as noted before, the female students did express a more positive attitude towards question 13 which could indicate that they are more relationship-focused than the male students. The feeling of closeness is important to establish for a CoP as it increases the mutual engagement among members.

In the two online courses, the online collaborative discussions were student-led as the professors preferred not to actively engage in the discussions, hence the practice of assigning an IR (Initiator and Recorder) for each case-analysis became an important pedagogical tool. This addresses the issue of division of labour in collaborative learning. Dillenbourg (1999) pointed out that in a horizontal division of labour, there are no set roles as peers take turns to moderate or regulate joint activities. This is very much the case of the two courses where students take turn each week to be the designated IR for the weekly case-analysis. However, a student did raise her concern with this as she commented that students only contributed to the case-analysis when they were the weekly IR. It seems that although there are pedagogical tools implemented to create a horizontal division of labour, it might not be successful in all cases.

Nonetheless, the rather hands off approach, about the group discussions from the professors, is in line with Scardamalia (2002) who states that in knowledge building communities the teacher becomes a guide who allows students to take over a significant part of the responsibility for their own learning, including planning, execution, and evaluation. On the same note, Dillenbourg (1999) argues that the teacher becomes a ‘facilitator’ who is not there to “provide the right answer or to say which group members is right, but to perform a minimal pedagogical intervention...in order to redirect the group work in a productive direction or to monitor which members are left out of the interaction” (ibid, p.6).

The professors highlighted that the Team-Contract (Appendix E) is meant as an important factor for successful collaboration among students. However, many students expressed their disagreement with questions 17 and 18 about the Team-Contract which indicates that there seems to be some issues related to this. However, I believe that clarifying learner

roles and responsibilities early on in the group projects can be very important. Especially in the case of CSCL, where learning groups are distant in time and space and cannot work out rules about the group interaction by being face-to-face with each other. Also, I have experienced that e-learning is often structured around modules and courses that last for a short period of time, hence the groups do not have time to identify and form norms about how to interact with one another on their own.

As the end of the online courses, students were required to complete a “Team Effectiveness Climate Inventory”. This pedagogical tool helps students evaluate each group member’s performance, in terms of collaboration, communication and so on. The scores given by group members are considered in the participation grades given by the professor. Thus, the students are graded not just on the knowledge acquired during the course but also assessed on their level of participation in the collaborative activities. This method of assessment combines the individual perspective of learning with the social perspective and student assessment becomes integrated into the instruction methods of the course.

9.2 Students’ Ethnicity

For this thesis, I had chosen to define intercultural communication as *communication between people of different cultures*. In light of this, the communication among students in the online courses can be defined as intercultural communication as students belong to various ethnicities. However, if one took a closer look at their communication as Gupta (2003) suggested, their communication might not reflect their cultural characteristics and assumptions and therefore cannot be characterized as intercultural. In order to study the online communication more in depth in the course, it would have been an advantage to have complete access to the discussion board where contributions to the case-analysis discussions could be analyzed and it might have become evident whether students’ communication reflects their cultural characteristics.

Gullestrup (2002) argued that most people belong to more than one culture at any given time, hence it becomes important to decide which cultural influence is dictating a person’s behaviour in intercultural communication. He suggested analyzing a person’s cultural

background based on his three cultural dimensions and his complex analytical framemodel. It was difficult to apply his cultural dimensions without the use of more qualitative research methods in the empirical study, hence ethnic differences became the primary source to identify differences among students. It is however important to acknowledge that these students could belong to a number of other cultures and sub-cultures which are equally important in the analysis of a person's culturally grounded communication, expectations, behaviour and so forth. For example, a student entered 'Jewish' as her ethnicity, which indicates that she relates to her Jewish background, more than she relates to a specific nationality. Thus, her attitudes towards communication and collaboration could be grounded in her Jewish ethnicity or even some other ethnic or cultural background which remains undisclosed. Again, qualitative interviews could have been a help to narrow down the culture or cultures influencing her attitudes, expectations etc.

A comparison of the result for the four students with Indian ethnicity showed that these students' mean scores were slightly above the mean score of 2.41, hence indicating a slight bend towards a more negative opinion about the various questions on the survey. These students' slightly above average answers could be culturally grounded due to their Indian ethnicity. India is characterized as having high power distance in their society (Hofstede & Hofstede 2005), which according to Hofstede (1986) means that students are used to teacher-centered education where students expect the teacher to initiate the communication. Interpreting these students' attitudes based on this cultural dimension, means that they might feel hesitant engaging in student-led group discussions or initiating online conversations with their fellow students. In regards to Hofstede's collectivism dimension, Indian culture, though not characterized as a severely collectivist, has, traditionally, emphasized collectivism in the society. For instance, in the Indian society the presence of the concept of 'dharma' or righteous duty is given importance to such a degree that the family often takes precedence over professionalism (Pio 2007). In the light of this, one could explain following comment from this student with Indian ethnicity, where he emphasizes the importance of being with a family member in case of sickness:

"It was challenging when in the middle of the semester one student had to travel because his relative was sick. He was IR that week, so someone else had to step in. This course

does not provide any flexibility for students who have family emergency during the course. I feel that is the most challenging aspect.” Student #11, Male, Indian ethnicity.

The result showed that the greatest positive deviation from the mean score were by two students with Pakistani and Ukrainian ethnicity. However, since there was only one student with this ethnicity, it becomes difficult to conclude whether this could be grounded in their cultural expectations about teacher-student/student-student interaction, appropriate student behaviour in a learning situation and so forth, as for instance Hofstede (1986) referred to. These two students also strongly disagreed to Question 5 which asked about reaching a group decision, which indicates that there were some issues in the group or groups that these students were in.

In retrospect, it would have been an advantage to have general questions on the survey that asked students about which group and specific course they belonged to, as this could help determine if certain groups had had better collaboration and communication. For example, it would have been interesting to see if the above students, who have showed great level of dissatisfaction in their responses regarding online collaboration, perhaps belonged to the same group thus indicating that there were some issues with the group and the collaboration was less successful.

9.3 Question Number 21

In question 21, 15 out of 29 respondents chose to make a comment. Muijs (2004) argues that in surveys people who feel more strongly or have a particular axe to grind about the subject are more likely to respond. Based on the latter, one can expect that the comments made by students would indicate their displeasure with some aspect of the course. For example, one of the students made the following comment about the level of participation by some students in his group:

“It was challenging that there were some students who did not participate and did not do their part in the group cases. I don’t think that we need social loafers in this high graduate

level course meant for adults. The professors should monitor this better so it does not affect the group participation grades for everybody.” Student # 7, Male, Pakistani ethnicity.

According to Ashcraft & Treadwell (2007), the term ‘social loafing’ refers to a state where a student is “expending less energy on a task than if one were working alone on that same task” (p.143). They argue that ‘social loafing’ is a common complaint in collaborative learning situations and can be a deciding factor for unsuccessful group work in collaborative learning. The social loafer can cause a redistribution of the assignments within the group as well as a certain level of frustration among the other students who feel that they are left with the work. However, Ashcraft & Treadwell point out that some students become social loafers because they are uncertain about what to do when working with the other group members or they feel that other students are better informed thus better equipped to complete the task (ibid).

The above comment shows another interesting aspect about this student, which might be related to his expectations about the role of the instructor in a learning situation, grounded in his Pakistani cultural background. Hofstede & Hofstede (2005) has characterized Pakistan as a country with fairly high power distance and uncertainty avoidance (pp.43 and 121). Hofstede (1986) argued that students from large power distance and uncertainty avoidance societies are used to teacher-centered education and structured learning situations where students are rewarded for accuracy in problem-solving. This could be related to this student’s comment about first of all the other students’ performance in the course and the lack of disciplinary steps from the professor.

In regards to misunderstandings in intercultural communication, Allwood (1985) argued that mastery of the language used for communication is a factor that can lead to misunderstandings in intercultural communication. One of the respondents made following comment in question 21 which is related to students’ writing proficiency in English:

“The biggest challenge was that all students don’t have the same level of writing proficiency. As IR I had to go through many postings that were written incoherently. You wonder how people made it this far in the program and their professional careers. People

should pay more attention to their writing as it affects the entire group, it takes time away from other students if they have to edit everything other people write. When I pointed out this fact to the group, I was told that if I find something wrong with other people's analysis, I can correct it myself." Student #23, female, no ethnicity indicated.

Although this comment does not explicitly indicate an actual misunderstanding among students, it does show that the fact that all students do not have the same mastery of English, did seem challenging to this particular student. The result of the survey shows an interesting fact about this particular student. This student has a large positive deviation from the mean score for the overall questionnaire, the mean score is 2.41, but this student's mean score is 3.00. As mentioned earlier, Hopper (2003) outlined a number of problems with collaborative learning. He argues that collaborative learning is not meant for every student and gives a comprehensive defence for the 'solitary learner'. Hopper states that there are some students who by temperament prefer to work and learn alone. Therefore, it is undemocratic to compel these students to participate in collaborative learning environments (ibid). Although, the above comment or the great deviation from the mean does not directly indicate this student's dissatisfaction with collaborative learning itself, it could be a sign that this student would choose to work on the assignments by herself if she had a choice.

9.4 The Result

The result of group A and B questions on the survey showed an overall positive attitude about course communication and collaboration by majority of the respondents, with no obvious correlation to ethnicity, gender or age of the respondents. Based on the survey, it is difficult to conclude whether the students' attitudes, towards the communication and collaboration with each other, reflected the students' cultural characteristics and assumptions. Hence, the intercultural dimension does not seem to pose a problem among students although the students are a culturally diverse group as indicated by the various ethnic backgrounds. This could be related to the fact that students' subculture, being related to the accounting and financial profession, makes them more homogenous than heterogeneous in spite of their various ethnic backgrounds (Gullestrup 2002). Joy & Kolb (2009) did in fact refer to Fridland (2005) who indicates that academic specialization might

have more influence on learning than culture. Also, Roberts (2004) refers to Muffoletto (1997) who suggests that collaboration works well with a professional or graduate course where the level of homogeneity among students is much higher. Thus, in these online courses, the academic specialization might be the deciding factor for successful online communication and collaboration among culturally diverse students.

Also, the presence of a common Canadian culture might have aided the intercultural communication and collaboration among students. Although, it is unknown how long students have been in Canada or whether they are born and raised in the Canadian society, their adjustment to a common Canadian culture might be related to Gullestrup's vertical cultural dimension and the cultural dimension of time. Gullestrup (2002, 2006) argued that the manifest layers of culture are easily changeable, compared to the core layers of one's culture. As a culture is constantly being subjected to change-initiating factors, it can be presumed that living in Canada has altered students' manifest layers according to the Canadian society to such an extent that living and successfully functioning in a multicultural society is by no means problematic.

Nonetheless, I would like to add that although students' cultural characteristics, expectations etc., were not evident from the survey result, qualitative interviews might have made any cultural differences among students more visible and perhaps changed the outcome of the empirical study, thus supporting the findings of the theoretical framework that cultural differences do impact communication and collaboration in CSCL.

It was discussed in the early chapters that CSCL is built around collaboration among learners. The survey result showed that the collaboration in the online courses was perceived as being fairly successful by most of the respondents. It might be possible that CSCL, by the means of collaborative learning methods, facilitates communication and collaboration among culturally diverse learners. Thus, learners set aside cultural differences in order to collaborate with one another and reach a successful outcome of their CSCL process. CSCL could therefore perhaps be perceived as a tool to support intercultural communication and collaboration in diverse societies as it can be said to enforce collaboration among learners, regardless of their differences.

In regards to differences, it was established earlier that students are different in terms of ethnicity, age, gender and professional background and at the same time distant in both time and space with no face-to-face contact with each other. Although this is not something that the theoretical framework touched on, one could perhaps see the lack of face-to-face contact as an advantage, as it eliminates the instant prejudices and bias one might have by seeing another person face-to-face. We strongly depend on our visual cues in order to determine what we think and feel about a given object. Let us suppose that we do not have these visual cues to guide our opinion about another person which in return does not prevent us from keeping an open mind about people. For example, if we saw a person wearing a Sikh turban or Jewish skullcap on their head, we would be likely to instantly make certain judgements about this person. However, if we were not able to see their head attire, we might not be able to make any prejudgements or become bias in any way even before we get to know this person, hence the lack of face-to-face contact among students is in fact a positive factor and can perhaps aid intercultural communication and collaboration.

On a different note, I would like to add that cultural differences might impact intercultural communication and collaboration, *if* people are led to believe that interaction with other cultures could be problematic. For example, Canada has since 1971 adopted a multiculturalism policy which basically promotes diversity and integration of all ethnicities and cultures into the Canadian society. Hence, government policies on all levels of government, whether it is federal, provincial or municipal, work together to ensure that all Canadian citizens can keep their identities, take pride in their cultural ancestry and at the same time feel that they belong in the Canadian society. The official policy is that multiculturalism creates mutual respect which helps develop common attitudes. On the official Canadian website for Citizenship and Immigration, one finds following statement:

“Our diversity is a national asset. Recent advances in technology have made international communications more important than ever. Canadians who speak many languages and understand many cultures make it easier for Canada to participate globally in areas of education, trade and diplomacy.” Citizenship and Immigration Canada,
<http://www.cic.gc.ca/multi/inclusv-eng.asp>

Thus, diversity is seen as an asset and not a possible problem for the nation. Although, it was established earlier that the students in the online courses are ethnically diverse, they are all part of a diverse Canadian society and therefore I assume used to diversity and intercultural communication. One could therefore also assume that they understand that people around them might have a different cultural background and have learned to work with or around this factor in their daily interaction with other people whether it is at the workplace or their online graduate program.

10. Conclusion

The purpose of this thesis was to examine whether cultural differences impact the communication and collaboration between culturally diverse learners in computer supported collaborative learning environments. This was done partly by examining various theoretical aspects of CSCL, intercultural communication and culture, and partly by empirically studying the attitudes and opinions of culturally diverse learners in regards to communication and collaboration in a CSCL environment. In the following, I will try to conclude what the outcome has been.

10.1 A Theoretical Explanation to the Problem Statement

Collaborative learning was defined as a situation where two or more people learn together. There are several learning theories concerned with collaborative learning, however, the focus for this thesis was the socio-constructivist approach. Collaborative learning was said to have both benefits and drawbacks and it is wrong to assume that collaborative learning is for every kind of learner in any context.

CSCL is concerned with the study of how people learn together with the help of computers. There are a number of learning theories that have been dominant in CSCL research, which among others include the socio-constructivist theories of learning. The two theories of learning chosen for this thesis were Wenger's Communities of Practice and Scardamalia and Bereiter's Knowledge Building theory. Wenger's social theory of learning is based on the principle that learning takes place by actively participating in social communities. Learning is closely linked with identity as learning has an impact on who we are or what we can become.

Scardamalia and Bereiter's knowledge building refers to a process of creating new knowledge by collaborative, critical discussions of ideas. Idea improvement is the key principle in knowledge building. To create 'knowledge of' requires true understanding of a problem, therefore knowledge building communities should focus on problems to enhance learning. Scardamalia & Bereiter have introduced 12 working principles which can guide the work of teachers and students who would like to implement knowledge building. They

argue that by the means of technology, traditional classrooms should be transformed into knowledge building communities.

Collaboration is a key feature for CSCL. In this thesis collaboration was discussed in terms of collaborative situations and collaborative interaction. According Dillenbourg (1999), collaboration is conditioned by a certain level of symmetry between peers working in collaboration, whether it is in the form of symmetry in knowledge, action or status. In addition, collaboration can also be characterized in terms of interaction, which in turn can be explored from an interactivity, negotiability and synchronicity aspect.

In regards to communication in CSCL it was discussed that it should consider elements of group interaction and collaborative learning, clearly defined technological features that support collaborative communication, the relationship between individual, group and community learning and, consider the overall social and cultural context of the communication in CSCL. Most importantly, it became evident that the less complicated and less specified the circumstances and tools are for communication in CSCL the more it facilitates the communication process among learners.

I examined the concept of intercultural communication from a number of different scholarly perspectives. It became obvious that it is a complex concept both in terms of what intercultural communication is and how it differs from other kinds of communication. It was discussed that the notion of misunderstanding is a key characteristic of intercultural communication, however intercultural communication encounters cannot be analyzed based on this alone. However, a discussion of the notion 'being intercultural' proved that intercultural communication and encounters goes beyond the simple meeting of people from different cultures. In order to become intercultural, it is necessary to accept other people's beliefs and values and at the same time reflect on your own cultural beliefs and values as well.

I argued that culture is a complex concept and can be defined in numerous ways. Scholars such as Allwood, Hofstede and Gullestrup defined culture in terms of a cognitive pattern or schema that drives an individual's behavior, form his or her norms and values etc. in a way that distinguishes one group from another. According to both Hofstede and

Gullestrup, culture manifests itself on different layers. It was discussed how the upper layers, also called the manifest layers, are changed more easily, whereas it is harder to change the deeper layers of culture, also called the core culture.

Based on the various theories of CSCL, intercultural communication and culture, I concluded that lack of social interaction among learners in a CSCL environment will influence the communication and collaboration process and impact the outcome of CSCL. In addition, the communication between culturally diverse learners, which can be characterized as intercultural communication, could pose issues and misunderstandings can occur. In regards to culture and cultural differences, I argued that it is expected that learners's attitudes, expectations, communication and so forth will be culturally grounded and impact a multicultural CSCL environment. Therefore, in the light of the theoretical framework, I concluded that the various theories support that in computer supported collaborative learning, cultural differences will influence the communication and collaboration among culturally diverse learners.

10.2 Examining the Problem Statement Empirically

Using quantitative research methods, an attitude survey was sent out to students of two online courses in a MBA program at a Canadian University. The MBA program is specifically designed for holders of a Canadian accounting designation hence the students have a common academic background. The survey was administered online through email by the two course professors in order to ensure complete anonymity for the respondents.

The two courses were built around collaborative learning methods and were conducted fully online, thus students never met face-to-face. Students worked in small groups on weekly case analyses which required a high degree of social interaction and online communication and collaboration among the students. There were a number of pedagogical tools established in the courses, for instance the team-contract or the 'IR' role. Each week one member of the group was the designated 'Initiator & Recorder' (IR) who acted as the moderator for the online discussion, hence the discussions were entirely student-led.

The questionnaire was sent to 48 students divided on both courses, out of which 29 students responded. The 29 respondents belonged to 13 different ethnicities, thus it was evident that the students were highly diverse.

The data analysis of the survey result showed that majority of students had an overall positive attitude towards the questions about course collaboration, communication and online activities. Although, some students did express their disagreement in regards to course collaboration or communication and some students chose to make strong comments at the end of the questionnaire, the online course communication and collaboration seemed difficult to find any clear correlation between students' attitudes and perceptions and their ethnic background, gender or age.

As students' attitudes did not seem to reflect their cultural characteristics, I have to conclude that based on this particular case study, it is difficult to decide whether cultural differences have an impact on the communication and collaboration among culturally diverse learners in computer supported collaborative learning environments.

10.3 Theoretical and Methodological Approach

In regards to the theoretical framework, I would like to point out that the theoretical interpretations presented in this thesis are my interpretations and should be regarded as only one of a number of plausible interpretations. One could at any given point argue in favour of it or against it. However, one can discuss that there is a necessary leap or jump involved when going from the descriptive, as seen in the theoretical framework, to the more interpretive level in your thesis, since the descriptive material is often not your own, you are interpreting someone else's work, hence the leap occurs.

Every research method has its limitations and I believe that it has become obvious during my work with this thesis that so does the quantitative research method. The quantitative research methods did not provide any opportunity to gain a deeper understanding of students' various cultural backgrounds which could help determine whether a given student's attitudes and expectations were culturally grounded. As I pointed out before, the outcome of the empirical study could have changed significantly if I had been given

permission to perform interviews with a few selected students. Alas, this was not possible and I had to work with the somewhat limited empirical data generated through the questionnaire.

In regards to the empirical process itself, the bureaucratic nature of universities proved to be the foremost challenge when one is dealing with a limited time period and scope of research as this thesis; first, I was not permitted to conduct interviews and second, I was explicitly told that the university, as well as the professors and students should remain completely anonymous which unfortunately led to less transparency in the thesis.

10.4 Moving Forward...

At the beginning of this thesis, I pointed to the fact that this thesis was not meant as a cross-cultural comparison of learners from different nations. However, in an expansion of this form of quantitative research, one could extend the research to a larger group of participants or even participants in various multicultural nations. This would lead to a more extensive data, which could perhaps show different results in terms of any culturally grounded expectations about course communication and collaboration among diverse students among culturally diverse students within a multicultural society and nation.

Also, as stated earlier, one could take advantage of combining quantitative and qualitative research methods which could give an opportunity to gain better understanding of students' cultures and culturally grounded behaviour in CSCL. From a CSCL development point of view, one could study which specific online CSCL activities facilitate intercultural communication and collaboration among students. By conducting specific tests of CSCL activities among students, the immediate reactions to a given intercultural encounter in CSCL could be studied. These are just some examples of further research, however it is by no means an exhaustive list. Computer supported collaborative learning is a vast field that provides researchers endless opportunities to study not only issues related to learning, but for example also topics such as collaboration, human group dynamics, development of educational technology and so forth, or as I chose, the impact of cultural differences on CSCL.

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Appendices

Appendix A – The Questionnaire

Computer Supported Collaborative Learning Environment

Using the five-point scale given below, please indicate to what extent you personally agree or disagree with each of the following statements. Please, insert an x above the point on the scale that most closely corresponds to your personal assessment. Please save the document with your answers and email it back to your professor once it is complete.

- 1 = Strongly Agree
 2 = Agree
 3 = Disagree
 4 = Strongly Disagree
 5 = Don't Know

Online Collaboration

1. The online collaboration among students has been beneficial to your personal learning process.

1	2	3	4	5
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

2. The lack of face-to-face contact made collaboration among students more challenging.

1	2	3	4	5
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

3. The collaboration between students has been beneficial to the entire group.

1	2	3	4	5
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

4. Students' collaboration led to positive learning outcomes for the entire group

1	2	3	4	5
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

5. It was easy to reach a group decision.

1	2	3	4	5
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

6. You feel satisfied with the level of collaboration among students.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

Online Communication

7. The online communication with fellow students has been an important factor for the success of the course.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

8. Initiating a conversation with the other students was easy.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

9. It was easy to carry on a discussion with the other students

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

10. You felt at ease expressing yourself in the virtual course environment.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

11. Misunderstandings among students often occurred during the course.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

12. You felt understood by your fellow students.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

13. Online communication during the course led to a closer relationship with the other students

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

14. The communication between the professor and the students was successful during the course.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

Online activities

15. The discussion board provided the opportunity to further discuss and explore key concepts of this course

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

17. The discussion board was a helpful tool in conveying students' point of views

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

18. The "Team Contract" was a key element for successful teamwork throughout the course

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

19. All students adhered to the "Team Contract"

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

20. The "Student profile" was a useful factor in understanding your fellow students

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

21. Working in collaboration on the team projects led to a better relationship with fellow students

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know

General

How many courses have you taken in this program?

Gender?
Male/Female?

Age?

Ethnicity?

Please provide comments to the following question.

22. What feature or aspect of this online course format has been particularly challenging?

Appendix B - Data

Category				A	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	Total	Mean						
Students	Gender	Age	# of Courses	Ethnicity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
1	M	29	1	Chinese	2	2	2	5	2	2	2	4	4	4	5	3	5	2	1	2	3	3	1	2	0	56	2.67	
2	M	30	2	Irish-Canadian	1	2	2	3	2	3	5	2	2	1	3	2	3	2	2	2	3	3	2	3	1	49	2.33	
3	M	32	2	Indian	2	2	2	2	3	2	3	3	3	3	5	3	3	2	2	2	2	2	2	2	0	51	2.43	
4	M	32	2	Trinidadian	2	2	2	5	3	3	2	2	2	2	3	3	5	2	1	2	3	3	2	3	0	52	2.48	
5	M	33	1	Chinese	3	2	2	2	2	2	2	3	3	2	3	2	5	2	5	3	5	2	2	3	0	55	2.62	
6	M	34	1	Italian	1	3	2	2	2	2	1	2	2	1	5	2	3	2	2	2	3	3	2	3	1	46	2.19	
7	M	35	2	Pakistani	3	2	4	3	4	3	3	2	2	2	2	2	3	3	3	5	3	4	2	3	1	59	2.81	
8	M	35	3	Chinese	1	3	2	2	2	2	1	2	2	2	3	3	3	2	1	2	3	2	1	3	0	42	2.00	
9	M	37	3	Canadian	2	3	3	2	2	3	2	2	2	2	5	2	2	2	2	2	2	3	1	2	1	47	2.24	
10	M	37	2	Chinese	3	2	2	5	2	2	1	2	2	3	3	2	3	2	1	3	2	5	1	3	1	50	2.38	
11	M	37	1	Indian	3	3	2	3	3	3	2	3	2	2	2	2	3	3	2	2	5	3	2	3	1	54	2.57	
12	M	39	4	Chinese	2	3	2	2	2	2	2	2	3	3	2	3	3	2	2	3	3	3	1	3	0	48	2.29	
13	M	39	2	Indian	5	2	3	2	2	3	2	2	2	2	3	2	3	2	2	2	3	5	5	3	0	55	2.62	
14	M	44	4	Ukrainian	3	1	4	3	4	4	3	2	2	2	2	2	3	3	3	2	3	4	2	3	1	56	2.67	
15	M	45	3	Greek	5	3	3	3	2	2	2	2	3	2	3	2	5	2	1	5	3	3	2	3	0	56	2.67	
16	M	47	5	French	2	1	2	2	2	2	2	2	2	2	3	2	3	2	1	2	2	2	2	3	1	42	2.00	
17	F	26	1	Chinese	5	3	3	3	2	3	5	2	2	2	5	3	3	1	2	2	5	2	1	1	0	55	2.62	
18	F	27	1	Italian-Canadian	2	3	2	1	2	2	1	2	2	2	3	2	3	2	2	2	3	3	2	3	1	45	2.14	
19	F	27	1	Chinese	2	3	2	1	2	2	1	2	2	2	3	2	3	2	1	1	3	5	5	2	1	47	2.24	
20	F	29	2	nil	5	3	2	2	2	2	2	2	4	4	5	3	5	2	2	3	3	3	2	3	0	59	2.81	
21	F	29	2	Indian	2	3	3	3	3	3	2	4	3	3	3	2	3	1	5	2	2	2	2	1	3	1	54	2.57
22	F	30	2	Guyana	2	2	3	2	3	2	2	3	2	2	2	3	2	2	1	3	3	5	1	3	0	48	2.29	
23	F	33	1	nil	2	3	5	5	2	4	2	3	2	2	3	2	3	3	3	5	5	2	2	3	1	63	3.00	
24	F	33	3	French	1	3	2	2	2	2	2	2	2	2	3	2	2	2	1	1	3	5	2	2	0	43	2.05	
25	F	34	2	Chinese	2	3	3	3	3	2	2	3	2	2	2	2	3	3	2	3	3	3	5	3	0	54	2.57	
26	F	35	2	Canadian	1	3	2	2	2	2	2	2	2	1	3	2	2	1	1	1	2	5	1	2	1	40	1.90	
27	F	37	4	French	2	3	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	3	1	3	1	45	2.14	
28	F	39	5	Italian	2	1	4	2	2	2	2	3	2	2	5	2	2	2	5	2	2	3	2	2	0	49	2.33	
29	F	42	4	Jewish	2	2	3	2	3	3	2	2	2	2	3	2	3	2	2	2	3	5	1	3	1	50	2.38	
Total				71	73	78	80	74	77	69	77	76	74	106	78	104	74	75	86	105	115	75	98	15				
Mean/Average				2.37	2.43	2.60	2.67	2.47	2.57	2.30	2.57	2.53	2.47	3.53	2.60	3.47	2.47	2.50	2.87	3.50	3.83	2.50	3.27	1.20				
Resulting Satisfaction based on each question																												
1 = Strongly Agree				5	3	0	2	0	0	5	0	0	0	0	3	10	3	0	0	3	10	3	0	11	1	15		
2 = Agree				15	10	17	15	20	18	19	20	22	19	6	21	6	21	13	17	7	6	15	7	0				
3 = Disagree				5	16	8	8	7	9	3	7	5	5	16	8	18	5	3	6	18	14	0	21	0				
4 = Strongly Disagree				0	0	3	0	2	2	0	2	2	2	2	0	0	0	0	0	0	0	2	0	0	0			
5 = Don't Know				4	0	0	1	4	0	0	2	0	0	0	7	0	5	0	3	3	4	7	3	0	0			
Total				29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	15			
Total with Opinion (+ive or -ive)				25	29	28	25	29	29	27	29	29	29	22	29	24	29	26	26	25	22	26	29	15				
Total with Opinion (+ive)				20	13	17	17	20	18	24	20	22	22	6	21	6	24	23	20	7	6	26	8	15				
Total with Opinion (-ive)				5	16	11	8	9	11	3	9	7	7	16	8	18	5	3	6	18	16	0	21	0				
% of +ive Opinion				80%	45%	61%	68%	69%	62%	89%	69%	76%	76%	27%	72%	25%	83%	88%	77%	28%	27%	100%	28%	100%				
% of +ive Opinion				20%	55%	39%	32%	31%	38%	11%	31%	24%	24%	73%	28%	75%	17%	12%	23%	72%	73%	0%	72%	0%				

Appendix C- Grouped Mean

Category				A							Grouped	B							Grouped	C				Grouped			
Respondent	Gender	Age	# of Courses	Ethnicity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
9	M	37	3	Canadian	2	3	3	2	2	3	50%	2	2	2	2	5	2	2	2	48%	2	2	2	3	1	2	40%
26	F	35	2	Canadian	1	3	2	2	2	2	40%	2	2	2	1	3	2	2	1	38%	1	1	2	5	1	2	40%
1	M	29	1	Chinese	2	2	2	5	2	2	50%	2	4	4	4	5	3	5	2	73%	1	2	3	3	1	2	40%
5	M	33	1	Chinese	3	2	2	2	2	2	43%	2	3	3	2	3	2	5	2	55%	5	3	5	2	2	3	67%
8	M	35	3	Chinese	1	3	2	2	2	2	40%	1	2	2	2	3	3	3	2	45%	1	2	3	2	1	3	40%
10	M	37	2	Chinese	3	2	2	5	2	2	53%	1	2	2	3	3	2	3	2	45%	1	3	2	5	1	3	50%
12	M	39	4	Chinese	2	3	2	2	2	2	43%	2	2	3	3	2	3	3	2	50%	2	3	3	3	1	3	50%
17	F	26	1	Chinese	5	3	3	3	3	2	63%	5	2	2	2	5	3	3	1	58%	2	2	5	2	1	1	43%
19	F	27	1	Chinese	2	3	2	1	2	2	40%	1	2	2	2	3	2	3	2	43%	1	1	3	5	5	2	57%
25	F	34	2	Chinese	2	3	3	3	3	2	53%	2	3	2	2	2	2	3	3	48%	2	3	3	3	5	3	63%
16	M	47	5	French	2	1	2	2	2	2	37%	2	2	2	2	3	2	3	2	45%	1	2	2	3	2	3	43%
24	F	33	3	French	1	3	2	2	2	2	40%	2	2	2	2	3	2	2	2	43%	1	1	3	5	2	2	47%
27	F	37	4	French	2	3	2	2	2	2	43%	2	2	2	2	3	2	2	2	43%	2	2	3	3	1	3	47%
15	M	45	3	Greek	5	3	3	3	2	2	60%	2	2	3	2	3	2	5	2	53%	1	5	3	3	2	3	57%
22	F	30	2	Guyana	2	2	3	2	3	2	47%	2	3	2	2	2	3	2	2	45%	1	3	3	5	1	3	53%
3	M	32	2	Indian	2	2	2	2	3	2	43%	3	3	3	3	5	3	3	2	63%	2	2	2	3	2	2	43%
11	M	37	1	Indian	3	3	2	3	3	3	57%	2	3	2	2	2	2	3	3	48%	2	2	5	3	2	3	57%
13	M	39	2	Indian	5	2	3	2	2	3	57%	2	2	2	2	3	2	3	2	45%	2	2	3	5	5	3	67%
21	F	29	2	Indian	2	3	3	3	3	3	57%	2	4	3	3	3	2	3	1	53%	5	2	2	2	2	3	50%
2	M	30	2	Irish-Canadian	1	2	2	3	2	3	43%	5	2	2	1	3	2	3	2	50%	2	2	3	3	2	3	50%
6	M	34	1	Italian	1	3	2	2	2	2	40%	1	2	2	1	5	2	3	2	40%	5	2	2	3	2	3	50%
28	F	27	5	Italian	2	1	4	2	2	2	43%	2	3	2	2	5	2	2	2	50%	5	2	2	3	2	2	53%
18	F	27	1	Italian-Canada	2	3	2	1	2	2	40%	1	2	2	2	3	2	3	2	43%	2	2	3	2	2	3	47%
29	F	42	4	Jewish	2	2	3	2	3	3	50%	2	2	2	2	3	2	3	2	45%	2	2	3	5	1	3	53%
20	F	29	2	nil	5	3	2	2	2	2	53%	2	2	4	4	5	3	5	2	68%	2	3	3	3	2	3	53%
23	F	33	1	nil	2	3	5	5	2	4	70%	2	3	2	3	3	2	3	3	53%	3	5	5	2	2	3	67%
7	M	35	2	Pakistani	3	2	4	4	3	4	63%	3	2	2	2	2	2	3	3	48%	3	5	3	4	2	3	67%
4	M	32	2	Trinidadian	2	2	2	5	3	3	57%	2	2	2	2	3	3	5	2	53%	1	2	3	3	2	3	47%
14	M	44	4	Ukrainian	3	1	4	3	4	4	63%	3	2	2	2	2	2	3	3	48%	3	2	3	4	2	3	57%
Total			35		71	73	78	80	74	77		69	77	76	74	106	78	104	74		75	86	105	115	75	98	
Mean/Average					2.37	2.43	2.60	2.67	2.47	2.57		2.30	2.57	2.53	2.47	3.53	2.60	3.47	2.47		2.50	2.87	3.50	3.83	2.50	3.27	

Appendix D – Standard Deviation

Standard Deviation - Group A questions:

	Values for group A questions	Deviation from Mean	Square of Deviation
Canadian	0.45	-0.06	0.0035
Chinese	0.48	-0.03	0.0007
French	0.40	-0.11	0.0120
Greek	0.60	0.09	0.0082
Indian	0.53	0.02	0.0006
Irish-Canadian	0.43	-0.08	0.0058
Italian-Canadian	0.40	-0.11	0.0120
Italian	0.42	-0.09	0.0086
Jewish	0.50	-0.01	0.0001
Pakistani	0.63	0.12	0.0153
Trinidadian	0.57	0.06	0.0033
Ukrainian	0.63	0.12	0.0153
Guyana	0.47	-0.04	0.0018
Nil	0.62	0.11	0.0115
Total	7.133.333	0.00	0.0987
	Mean=51%		SD=8.7%

Standard Deviation - Group B questions:

	Values for group A questions	Deviation from Mean	Square of Deviation
Canadian	0,43	-0,06	0,0037
Chinese	0,52	0,03	0,0011
French	0,43	-0,05	0,0027
Greek	0,50	0,01	0,0002
Indian	0,52	0,03	0,0011
Irish-Canadian	0,50	0,01	0,0002
Italian-Canadian	0,43	-0,06	0,0037
Italian	0,48	-0,01	0,0001
Jewish	0,45	-0,04	0,0013
Pakistani	0,48	-0,01	0,0001

Trinidadian	0,53	0,04	0,0016
Ukrainian	0,50	0,01	0,0002
Guyana	0,45	-0,04	0,0013
Nil	0,60	0,11	0,0131
Total	6,795833	0,00	0,0303
	Mean=49%		SD= 4.8%

Appendix E – Team Contract

Final Team Contract

The initial contract was made this 'date' ; and was revised on 'date' AMONG:

(Group members)

Whereas the individual members are all students of the University Online MBA Program in the Leading by Design Course (COMM 5405/OR2) in Group E;

It is agreed as follows:

COMMON OBJECTIVES

We would like to complete the course not only with a grade of 85% or greater, but also with a good team cooperation experience.

We expected a great learning experience from the course and from each other, and we have learned lots so far.

Our team members were in a full agreement with the team objectives, and these objectives were clearly understood by all the team members. We realized these objectives are achievable.

WORK ORGANIZATION

The assignments were distributed to each member at the beginning of the course. Each team member had at least one opportunity to be the IR so far.

We were able to divide the responsibility of the integrative cases and midterm project, with Joanne Wang accepting, and offering her company for the project and the rest of the members are willing to help

If the assigned IR schedules have any conflicts with the personal schedule, the team members are responsible to communicate with other team members in advance to rotate.

Team members cooperated and we understood one another circumstances, and we all had a (We are together) attitude.

MUTUAL RESPECT

Our team aimed at developing a happy learning environment. The team members are encouraged to express their own opinions and comments. If there is any comment or criticism, it was discussed professionally.

Team members provided their input and feedbacks on a timely manner. Team members understood when a team member could not be available for part of the work
Team members felt understood and accepted

FUNCTIONAL RELATIONS

Due to the facts that this is the online program, there is no face-to-face interaction between members. Most team members visited the discussion forum frequently and responded promptly. Comments and inputs are posted according to the timelines specified by the IR.

Personal contact information is exchanged between members in case the EdNet is down.

45% of the final grade will be based on team work. We all realized that this is tied directly to each member's performance. We will continue to try to dedicate enough time and contribute as much as we can to achieve our academic goals.

CONFLICT RESOLUTION

There were some opinion conflicts between team members. We realized that this is a great way to help us to learn and grow. Team members were encouraged to sell their opinions with supporting facts. However, if there is no agreement reached, we voted and follow the majorities.

INDIVIDUAL OBJECTIVES

We worked with open minds and we listened to the other team members' different opinions. Motivation, appreciation, acknowledgement and encouragement are highly recommended to build the team's morals and spirits. Each team member was respected by the others

ONLINE ETIQUETTE

The IR acknowledged the team members on his/her proposed timelines for the assignment at the beginning of each module. Team members provided their inputs and feedbacks on the timelines specified.

Team members are to review the draft report posted by IR and to provide their comments for each draft, and gave the ok before submission. Team members did their best to follow the instructions was given by the IR.

FINAL WORDS

Group E expected open and respectful learning experience from OL2 study. And we believe that we are a great team and will achieve our academic goals of 85 or better.

TERM

The contract begins with the commencement of the Course on 'date' and ends with the final examination.

Agreed by:

(Sign please)