

**Problems of communication, collaboration and cooperation in
multicultural groups engaged in e-Learning through synchronous
text-based communication**

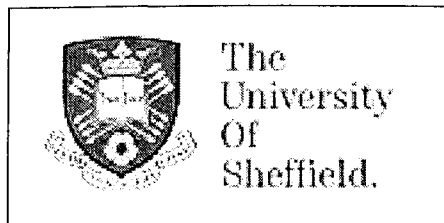
G. Katakalos

A thesis submitted for the degree of Doctoral Philosophy to the
Faculty of Science

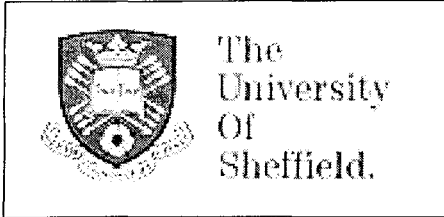
South East European Research Center

Department of Information School

The University of Sheffield



June 2012



**Department
Of
Information Studies**

**Problems of communication, collaboration and cooperation in
multicultural groups engaged in e-Learning through synchronous
text-based communication**

Ph.D. Thesis

By

George Katakalos

A thesis submitted for the degree of Doctor of Philosophy in the
Department of Information School at the University of Sheffield for the
Faculty of Science

Sheffield, June 2012

Abstract

Research Aim: This PhD thesis is focused on investigating whether culture can pose conflicts to the communication, collaboration and/or cooperation of multicultural groups comprised by students coming from South East Europe (SEE) and studying in Greece, by using synchronous text-based chat. Thus, this PhD attempts to answer the following research question: “Are there problems of communication, collaboration and cooperation in multicultural groups engaged in eLearning activities by using synchronous text-based communication?”

Methodology: In order to investigate the existence of cultural conflicts, the research design for the study adopted logical positivism as an epistemology through the use of quasi-experiments. More specifically the research is based on two components: questionnaires to re-evaluate Hofstede’s Cultural Dimensions Theory and provide an initial expectation of the interaction behavior between the students from the cultures participating; and quasi-experiments to explore multicultural communication conflicts in the context of a meaningful learning activity. The students, who participated on this research, were undergraduate students from Computer Science and Business Administration and Economics departments of CITY Liberal Studies. . The students who volunteered to participate were fourteen Greeks, fourteen FYROMs (Former Yugoslav Republic of Macedonia), four Serbians, four Albanians, and four Bulgarians were selected. Students were allocated to four monocultural (control) or to four multicultural groups (experimental). In particular, the students were split into four control groups (two groups with five (5) students each from FYROM and two groups with five (5) students each from Greece) and four (4) multicultural groups (having one student from each nationality).

At the first stage, Hofstede’s questionnaires were used in order to provide a better understanding of the cultural backgrounds of each participant. The dramatic changes that SEE region faced during the recent years have made the replication of Hofstede’s questionnaires and the re-calculation of new values for each dimension a necessity. At the second stage, quasi-experiments were performed in order to explore areas of multicultural communication conflicts. After the identification of the conflicting multicultural communication areas, through the analysis of logs of communication

during a purposely-designed activity, one-to-one interviews were employed in order to clarify and further explain the identified communication conflicts that resulted from the log analysis and their relation to culture.

Research Findings: The outcome of the analysis process showed that although group communication was interrupted due to cultural misperception, misinterpretation and misunderstanding it never broke down and the groups were all able to fulfil the goals of the activity more or less. A summary of the behaviours identified in this PhD thesis (see section 7.3.3) is described in the next two paragraphs.

Control groups, for instance, groups consisted from students from the same culture, tend to face less communication problems and develop mechanisms in order to trigger the involvement of silent members and control the structure of the conversation. Moreover, control groups showed the tendency to develop the “joyful mood” behaviour that led the discussion to become informal, causing the disturbance of the group and the failure of reaching the goal on the given time.

Multicultural groups made the discussion more open in order to include all the different opinions presented in the discussion formulating a general answer. This behaviour of “generalizing the answer” exhibited in the multicultural groups led to the development of communication conflicts by students that were not satisfied by the generalized answers triggering behaviours like “vitiating of different opinion” having as a result the disturbance of the group communication for some turns or behaviours like “abrupt end” having as a result an immediate and coercive agreement of the group members.

Conclusions: By examining the interaction of students in a synchronous eLearning activity, this PhD concludes that culture influences communication, collaboration and/or cooperation, even if the cultures of the participants are close. The initial expectations of the potentially conflicting areas provided from the questionnaire analysis were confirmed in the group interaction of the participants. Although, communication of the participants in the activity never broke down, multicultural conflicting areas were identified, in which the participants demonstrated a delay in providing an answer. These identified multicultural conflicting areas can provide the basis for an analytic tool for assessing and analysing cross-cultural communication conflicts. The communication

experience, and the collaboration/cooperation of the users of eLearning environments can be enhanced, by tackling the identified conflicting areas.

Research Limitations: The research was limited in terms of resources and time, which are the typical characteristics of a PhD study. Limitations in time did not allow the researcher to test potential solutions on re-runs of the experiments and replicate the experiment on different institutions and/or different cultures, allowing the results to be used outside this country's context. Moreover, the small numbers of the participants used in this research can add further to the problem of generalizing outside the study's context. Finally, the results could potentially be different if students were participating in actual eLearning courses from different places such as their home.

Originality and contribution to current research: This PhD study is one of the few that examines cultural communication problems between students coming from close cultures with common history and background. On this premise, the findings that although cannot be generalised can contribute to current research by adding the consideration of students' cultural backgrounds into the communication elements offered in e-Learning environments. This PhD provided a first attempt into highlighting the importance of this consideration even from close/similar cultures. Moreover, the identified multicultural communication conflicts can be used to identify, prevent and manage miscommunication in multicultural group discussion. Finally, educational vendors in their existing e-Learning environments can use the identified conflicting areas in order to minimise the occurrence of cross-cultural conflicts.

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Abbreviations and Acronyms

WWW	World Wide Web
ICT	Information and Communication Technologies
HE	Higher Education
CMC	Computer Mediated Communication
EU	European Union
f2f	Face-to-face
HEIs	Higher Education Institutions
SEE	South East Europe
SEERC	South East European Research Centre
MoE	Ministry of Education
EAP	Hellenic Open University
GUNet	Greek University Network
AUTH	Aristoteleio university of Thessaloniki
ECTS	European Credit Transfer System
GDP	Gross Domestic Product
REAL	Rich Environments for Active Learning
ERA	European Higher Education and Research Area
TEI	Technological Educational Institutions
NSSG	National Statistical Service of Greece
PDI	Power Distance Index
IDV	Individualism Index
MAS	Masculinity Index
UAI	Uncertainty Avoidance Index
FYROM	Former Yugoslav Republic of Macedonia

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Chapter 1 Introduction

1.1 Background and Problem Statement

Higher Education (HE) in the European Union (EU) is changing both in terms of pedagogical models, international reach of the universities and an increasing utilisation of Information and Communication Technology (ICT) for teaching and learning purposes (Katakalos and Nunes 2007; Nunes et al. 2008). Greece being a country member of the European Union (EU) follows the general policies and guidelines that the EU sets. EU's main focus is the creation of a globally competitive European Higher Education and Research Area (ERA) (Taugh, 2004).

Moreover, the introduction of ICT is starting to remove the traditional time and geographical barriers that limited access to the different education systems (Wild 1997). The increasing demand for distance learning, e-Learning and remote access to learning materials without these traditional barriers is already affecting the ways in which education is perceived and is even causing competition between different educational systems as an export factor between countries (Harasim et al. 1995).

In fact, with the introduction of the World Wide Web (WWW) in formal educational settings, an increasingly diverse cohort of students is being asked to interact with each other in multicultural environments for which they may be ill-prepared (Katakalos and Nunes 2007). Computer communication tools can increase the reach of the university by providing distant access, but also add in the complexity of communication (Berge and Collins 1995, Wolz et al. 1997).

Computer Mediated Communication (CMC) tools, available through e-learning environments, aim at enhancing the interactivity between students engaged in collaborative learning activities. However, these communication tools add complexity to the interaction. For example, CMC tools can make even shy users feel more confident because of the disappearance of social distinctions like disability, race, and facial expressions. But this same absence of social cues poses complex barriers to communication. On the other hand, they can further increase the passive role that some

students tend to take in such types of conversations and encourage social loafing (uneven participation by group members). The complexity in communication that CMC tools pose in the communication, as it is argued in chapter 5, can be further increased if synchronous text-based communication is used.

Greece, being until recently the only country of the South East European (SEE) region the only member of the EU, has attracted the interest of students of surrounding countries like: Bulgaria, Serbia, Albania and others. As it is further discussed in chapter 2, despite of the existence of some barriers that can hinder the accommodation of different cultures in the HE setting; Greece has made steps towards improving the ICT infrastructure aiding the process of further increasing the attraction and accommodation of students from the SEE region. Since, the use of the ICT infrastructure allows for the consideration of e-Learning implementations, this research is focused on investigating the multicultural communication conflicts of students coming from SEE and studying in Greece when they are engaged in synchronous text-based communication activities.

This chapter provides an outline for the PhD thesis. The remainder sections of this chapter provide a brief description and discussion on the research questions and objectives, research focus, research motivations and audiences, research methodology, and research constraints of this project. Finally, this chapter concludes by presenting an overview of the structure of this PhD thesis.

1.2 Definition of key terms

A set of key terms was crucial to this research project, namely culture, collaboration and cooperation, and cross-cultural communication conflicts. It is important to define and distinguish these key terms at this point in order to clearly formulate the research question in the next section.

1.2.1 Culture

As stated by Hofstede et al. (2005:7) culture in most Western languages commonly means “civilisation or refinement of the mind and in particular the results of the refinement including education, art, and literature”. This is a narrow view of the culture

restricted in a “Western-type” definition. Moreover as argued by Henderson (1996) and further supported by Wild and Henderson (1997) and Hofstede (2005) the most pervasive view, sees that culture is a demonstration of ways in which an identifiable group adapts to its changing environment. Moreover, people may belong to more than one cultural group and therefore, possess a subset of a culture’s total identifiable characteristics. Finally, individuals may not remain totally committed to their birth culture and exhibit aspects of other cultures were they are immersed or adopted.

Culture should be distinguished from human nature (Hofstede et al. 2005). Human nature encompasses the common characteristics of all human beings, like the ability to feel fear, the need to associate with others, and the facility to observe the environment and to communicate it with other humans. However, what one does with these feelings and how one expresses them is modified by culture.

This PhD thesis adopts the view of Hofstede (1991) that sees culture as “the collective programming of the mind that distinguishes the members of one human group from those of another culture. Culture in this sense is a system of collectively held values” (Hofstede 2005:5). This definition helps us better understand cross-cultural behaviours, perspectives, and values. In this way it aids in the process of better defining behaviours and perspectives that can further be attributed to specific cultures.

1.2.2 Cooperation and Collaboration

Students inside groups can either decide to work collaboratively or cooperatively. There is a large debate in research concerning definitions of cooperative and collaborative learning (Dillenbourg 1999; Dillenbourg and Schneider 1995). Common in both cooperative and collaborative learning is the influence from Dewey’s view, as it is further explained by Matthews et al. (1995:36), that perceives education as “a social enterprise in which all individuals have an opportunity to contribute and to which all feel the responsibility”.

The main difference between collaborative and cooperative learning lies on the form of output (Dillenbourg and Schneider 1995; Dillenbourg 1999; Matthews et al. 1995; Johnson et al. 1991, 1998). In the case of cooperative learning the output is the

synthesis of work produced by the individual member of a group. On the other hand, collaborative learning output is the joint production of the work produced by the joint learning, taking place between group members. Other differences include: the involvement of the teacher in the learning activity, the authority and power relationships between teacher and student and between students, and the extent to which students need to be trained to work together in groups.

1.2.3 Cross-cultural communication conflicts

Problems in a multicultural group conflict arise from the cultural diversity inside the group (Adler 1991). Appelbaum et al. (1998) discussing the research work of Adler (1991) argued that culture can affect the groups in two ways:

- Mistrust – According to Appelbaum mentioning the work of Triandis (1965) group members tend to adhere to other group members of their own culture rather than to those of other cultures;
- Miscommunication – based on cross-cultural communication problems.
 - Cross-cultural misperception based on the premise that an individual perceives what he/she expects to perceive;
 - Cross-cultural misinterpretation based on the principle of stereotyping – individuals categorize situations from their own countries perspective and apply it to other countries;
 - Cross-cultural misevaluation based on the premise that individual's culture is used as the base for evaluating and thus categorizing other cultures as good and normal if they are similar and bad and abnormal if they are antithetic.

1.2.4 CMC and Synchronous communication

CMC at its broader sense is: “Any form of interpersonal communication that uses form of computer technology to transmit, store, annotate, or represent information that has been created by one or more participants” (ITiCSE’97 1997; Wolz et al. 1997). CMC technologies can be separated into two main categories according to their use: Synchronous and Asynchronous.

Asynchronous communication technologies do not require the concurrent online presence of the parties involved in the communication. With asynchronous communication the receiving party has time to read process and accordingly respond to the post (Berge 1997). Asynchronous communication will provide the time needed for the students to overcome any barriers that culture may pose to communication in e-Learning environments by having time to process, reflect and consult other peers on the creation of an 'appropriate' reply.

On the other hand, synchronous communication requires the simultaneous online presence from the involving parties just like face-to-face (f2f) conversations. As argued by Sproull and Kiesler (1991) synchronous communication is closer to f2f communication and it enables real time communication but without requiring them to be present in the same physical location like in f2f communication. Synchronous communication, as argued by Burgstahler and Swift (1996), and specifically in text-based synchronous communication technologies can make even shy users feel more confident social distinction like disability, race, and facial expression can be easily removed. But synchronous text-based communication can further add to the complexity of the communication due to the absence of social cues. Thus, this PhD research should focus in synchronous text-based communication tools as they are more likely to cause conflicts due to the lack of time to reflect and respond to the other members' posts.

Having presented the basic definitions used in this thesis, this chapter continues on discussing the research question and objectives.

1.2.5 e-Learning

Providing a single definition of e-Learning is a rather difficult task (Wagner et al. 2008). In generally, according to Wagner et al. (2008) quoting Ong Lai and Wang (2004) e-Learning can broadly describe any form of instructional content or learning experience that use electronic technologies like computers and the web as a method of delivery. For this PhD eLearning refers to the use of Internet to provide learning with specific focus to the communication technologies.

1.3 Research Question and Objectives

The research aim of this study is to investigate the existence of communication conflicts in multicultural groups of students that can or cannot be attributed to culture. Thus, the research question underpinning this PhD research addresses the difficulties and problems that learners face in a multicultural learning environment when collaborating, cooperating and communicating. More specifically, the research question that has been formulated is:

Are there problems of communication, collaboration and cooperation in multicultural groups engaged in e-Learning activities by using synchronous text-based communication?

Therefore, this research aims at establishing the potential problems of students when cooperating, collaborating and communicating with other students in a multicultural group in an e-Learning activity, if problems actually exist, or e-Learning can be seen as a potential solution. In order to generate more specific directions to guide the research project, the central research question was divided into a set of sub-questions:

- What are the culturally induced problems that group members can face when they collaborate or cooperate?
- What are the culturally induced problems of students when they communicate?
- Do these problems persist when the group members are from the same culture?

In order to provide a response to the research questions and the research aims the following research objectives have been established:

- To identify theories in literature discussing problems of students in multicultural environments;
- To identify the existence of such problems by performing quasi-experimentation by using control (multicultural) groups and normal (mono-cultural) groups;
- To characterize, define, and explain these problems by using in-depth interviews with participants;
- To propose a framework of potential problems students from different cultures in a foreign cultural environment may encounter when interacting in synchronous communication in e-Learning environments;

- To propose possible solutions that can aid and continue the communication between students from different cultural backgrounds within this type of learning environment.

1.4 Research Focus

As discussed in this chapter in section 1.1., and further exploited in chapter 2, the focus of this research is limited to students coming from SEE countries studying in Greece. The students are all undergraduate university students studying in a foreign language, i.e. English, which is not their mother language. The students participated in a single e-Learning activity by using synchronous chat as the only way of communicating with the other group members.

1.5 Research Motivations

As more and more universities are offering online learning programmes, they will be confronted with the dilemma of offering fully online programmes and degree. Thus, the participating students will be asked to cooperate and/or collaborate with other students from different cultures and by using CMC as the only way of communicating with their co-students and teachers. However, little research has been undergone concerning the investigation of culture as the source generating the conflicts between group members when they interact by using CMC. This PhD project aimed at contributing to a research area that is becoming increasingly attractive to researchers. This research project attempts to examine communication conflicts from students from close cultures with common history and influences. This seems to be an important study since the process of literature search could not return such studies.

The following incentives motivated the researcher to initiate, conduct and complete this research project:

- To contribute to a research field (i.e. Cross-Cultural communication conflicts) that is becoming increasingly important but lacks sufficient and significant study when students are coming from closer countries;

- To provide foreign and Greek researchers with a comprehensive study on cross-cultural communication conflicts in the Greek context;
- To help educators, to at least show an appreciation on the cultural diversity of the online student cohorts.

The results and findings of this study are important contributions for researchers, practitioners and educational system vendors and consultants, who are therefore potential audiences of this research study:

- Greek and Foreign cross-cultural communication researchers. Findings of this research project are of interest to Greek as well as foreign researchers, who are interested in investigating the potential conflicts in communication inside multicultural groups in the context of Greek Higher Education (HE) in particular and in HE in general. Other researchers can use the main areas of cultural communication conflict, which was developed as output of this research, as a starting point to carry out further studies on cross-cultural communication problems. Researchers can re-use and extend the identified problematic areas, and test the suitability of our research within their interested research contexts.
- Greek practitioners and companies. Greek practitioners and companies should be also interested in the findings of this PhD project. The identified areas of cross-cultural communication conflicts of this research may provide useful guidelines for helping practitioners to identify and prevent and also manage possible miscommunication in multicultural groups. As a consequence, it may help to increase the possibility of companies to better utilize and enhance their training systems in the long-term.
- Greek and Foreign Educational system vendors and consultants. This project highlighted problematic areas of communication regarding the communication cooperation and collaboration of multicultural groups by using a synchronous chat. Educational system vendors and consultants targeting on the Greek and SEE market should be aware of these communication issues, in order to tailor better help and support to address these problems.

1.6 Research Methodology

As described in detail in chapter 5 of this thesis, the study that composes this PhD is based on quasi-experiments. More specifically, as it is further argued in chapter 5, In order to investigate a complex phenomenon like culture and its relation with communication in multicultural groups requires inductive and holistic understanding as well as explaining the phenomenon. This suggests that this study could be better supported by adopting interpretivist as the underpinning epistemology. Instead, as the researcher realised, it could not be expected that enough students with experience in e-Learning and especially using text-based communication in multicultural group activities could be found. Thus, it was raised the need of creating an environment that could provide such an experience. Therefore, for pragmatic reasons, the researcher decided to adopt logical positivism epistemology, which through quasi-experiments could provide the environment to accommodate such an experience.

The research design consists of two main components: Hofstede's questionnaire to explore and re-evaluate Hofstede's theory; and quasi-experiments to explore multicultural communication conflicts in the context of a multicultural and meaningful learning activity. This research is based on students from CITY Liberal Studies, a private university located in Thessaloniki, Greece, which attracts students from all over SEE.

At the first stage, this research used Hofstede's VSM'94 questionnaires in order to re-evaluate and re-calculate new values for the cultural dimensions as defined by Hofstede (2005). This decision to re-evaluate Hofstede's questionnaires was based on the general instability that governs the SEE region as it is further discussed in chapter 7 (Bartlett, 2000; Sandholtz, 2005). The analysis of the questionnaire provided a better understanding of potential students' behaviours inside the group communication and gave a better insight of potential conflicts that could emerge from the interaction of different cultures inside a group.

At the next stage, the participants were divided into groups and took part in the quasi-experiment. During the experiment the students engaged in an e-Learning activity by using synchronous communication chat as the only way of communication with the other group members. The analysis of the communication logs of these experiments

provided an identification of the areas, where multicultural communication conflicts existed. In order to further evaluate the emerging conflict areas, the researcher performed one-to-one interviews with each of the participant. The analysis of the interviews gave a more clear view of the areas of multicultural communication conflicts that have either disrupted the groups' communication process or have led to the failure of the activity.

1.7. Research Constraints

1.7.1 Academic Constraints

General academic constraints refer to research limitations that are prevalent in PhD projects. In particular, these constraints relate to the facts of those PhD students:

- They are new researchers, who have limited experience in doing research;
- They are required to work individually in an isolated environment;
- They are limited by resources and a period of time of three years for completion;
- And they can receive limited academic support from the department.

The current project has been a challenging one for the researcher. Based in South East European Research Centre (SEERC), a newly created institution, the researcher has tried to cope with all the advantages and disadvantages that this research centre implied. These problems have been overcome with the support of the supervisors. Moreover, the difficulties in entering two different fields (culture and e-Learning) using two different terminologies, conceptualisations and research methods have posed a major barrier that has eventually been overcome.

1.7.2 General Research Constraints

The main constraint of this research is the problem of generalising the result. More specifically this study is done in Greece and concerns students of a particular type of institution. Therefore, the results will be generalizable only to institutions in the Greek context. Future work will then be necessary to generalise the findings of this research.

Another limitation of this research is that it is done as a part of a 3 year individual PhD project. The implications arising from the previous statement is that on one hand there is a clear time limit restricting multiple reruns of the specific experiments that will result in a more reliable and valid generalisation of the conclusions and on the other an individual PhD researcher may lack the time and resources to produce an ideal non-culturally biased learning environment. Therefore, general tools were used in building the quasi-experiment learning environment.

1.8. Thesis Structure

The remainder of this thesis contains another 7 chapters, as briefly introduced below:

Chapter 2: Learning Theories

The researcher performed a background review of the wider research literature regarding the learning theories. In this chapter, the researcher highlights the appropriate learning theory that could be applied in the traditional HE setting in order to help the accommodation process of cultures.

Chapter 3: Group Dynamics

The researcher goes into an investigation of the way groups operate and communicate, specifying areas identified by the literature that could raise potential communication problems attributed to culture.

Chapter 4: Multicultural Education

After the selection of an appropriate learning theory, the researcher begins with an effort to specify culture, cultural levels and how eventually culture can be measured. Moreover, an extensive research review is performed, regarding the influence of culture in both the design and interpretation of e-Learning systems. It is highlighted in this chapter that Hofstede's VSM'94 questionnaire will be used for providing a better understanding of the cultural behaviours of the participating students. Moreover,

Hofstede's questionnaires provided us with the initial theory of our research in relation with potential conflicts that could emerge from the interaction of different cultures inside a group.

Chapter 5: Research Design

Chapter five focuses on the research design adopted on this PhD project. The reasons of selecting quasi-experiments and logical positivism epistemology are being discussed and justified. Finally, this chapter discusses the methods and procedures used in this research regarding the analysis of the questionnaires, communication logs, and interviews data collection.

Chapter 6: Data Collection & Analysis

The researcher presents the results of the analysis of this study by discussing the key issues emerging from the analysis. This chapter is separated in three subsections representing the three research components described in chapter 4: questionnaire, communication log, and interview data collection and analysis.

Chapter 7: Conclusions

In this chapter a summary of the project and the findings used to formulate the answer to the research question, the methodology and guidance for further research is presented.

Chapter

2

Learning Theories

2.1 Introduction

In this chapter an investigation into the Learning Theories is made concluding that e-Learning, by having as underlying learning theory constructivism, social negotiation of meanings, and Computer Mediated Communication (CMC) through a collaborative learning environment can be seen as potential solution to the problem of cultural exclusivity.

The problem of the cultural exclusivity in the Greek HE setting originated primarily from the paternalistic role and influence of the State which increased the national and religious identities of the citizens, central but incoherent educational policies leading to the degradation of the curriculum quality and the not recognition of the private education, and poor educational funding and spending gives us a chance to investigate the current learning theories that exist in HE. On the other hand, the general ICT infrastructure can help initiatives like eLearning to arise as solutions to the cultural exclusivity problem. In order to understand how e-Learning can assist the cultural accommodation process, an investigation of learning theories, as they are used in the traditional HE setting, is needed.

This chapter starts by trying to define learning in general and academic learning. Then, an investigation into the teaching and learning process is performed. Following this section, an investigation of the learning theories is been made putting more emphasis in constructivism and the concepts it includes like situated cognition, social negotiation of meanings and collaborative learning. After constructivism, Rich Environments for Active Learning (REALs) are being analysed. Last but not least, a discussion of e-Learning environments and CMC to facilitate the process of communication in a learning environment is being discussed.

2.2 Defining Learning in HE

Learning has been defined in numerous ways by many different theorists, researchers and educational practitioners (Ertmer and Newby 1993). Although a single definition cannot be given, many common elements can be observed in various definitions. According to Ertmer and Newby (1993:53)

The following definition by Shuell (as interpreted by Schunk, 1991) incorporates these main ideas: "Learning is an enduring change in behaviour or in the capacity to behave in a given fashion, which results from practice or other forms of experience"(p.2)

According to the previous quote learning is a continuous change in the observable behaviour of an individual, which can be acquired by interacting with situations like every day experiences. Because of the fact that the definition of learning is problematic, one can assume that a single definition for academic learning will also be problematic. According to Laurillard (2002:70) 'when asking academics to define learning they come up with ambitious definitions'. According to Laurillard (2002:71):

"They (academics) usually use descriptions of high-level thinking. Academics see learning as not simply a product, but as a series of activities, and developing skills and capabilities as much as formal knowledge."

But learning is not only about acquiring high-level knowledge; it is the process through which the student handles knowledge. Therefore an investigation into the teaching and learning process is necessary.

2.3 Teaching and Learning Process

2.3.1 View of Learning Process

Education is a long process that involves both teaching and learning. The process of learning is the process through which learners acquire their knowledge, skills, attitudes, values, beliefs, emotions and senses (Jarvis et al., 2003: 4). Generally, as stated by Jarvis et al. (2003:4) learning can be seen as:

- A process that transforms experiences into human attributes;
- The behavior exhibited as a result of the learning;
- A social institutional meaning.

Traditionally learning is viewed as an individual process (McConnell 1994). More specifically learning involves the individual, who interacts with the world. This interaction leads to the acquisition of experiences obtained by this interaction. Thus, the learning process can either lead to the transformation of these experiences into human attributes, or – as behaviourists have suggested – learning is seen as the behaviour exhibited as a result of the learning.

Moreover, it is becoming increasingly difficult to distinguish between learning as a human process of learning and learning as a governmental strategy achievable mainly through institutional processes (Jarvis et al. 2003). Thus, learning has acquired a social institutional meaning in terms like learning society, the learning organisation, and e-Learning.

2.3.2 Situations of Learning

The previous view of the learning process contrasted with the institutional character of the education led to the separation of the situations that learning can occur. According to Colardyn and Bjornavold (2004:71) these learning situations are:

- **“Formal:** consists of learning that occurs within an organized and structured context (formal education like schools universities, or in-company training) and that is designed as learning;
- **Non-Formal:** consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. Non-formal learning is intentional from the learner’s point of view;
- **Informal** or self-directed learning: is defined as learning resulting from daily life activities related to work, family or leisure. It is often referred to as experiential learning. It is not structure in terms of learning objectives, learning

time and/or learning support. Informal learning may be intentional but in most cases it is non-intentional (or incidental/random).”

According to Jarvis et al. (2003) more learning occurs outside the formal educational institution as the learning market expands. Phenomena like globalisation have led to the expansion of the learning market outside the national borders of each country. In this increased learning market the learner is seen as central to the process driving changes in the nature of teaching as well (Jarvis et al., 2003). This means that formal educational institutions are changing to accommodate the Non-Formal and the Informal learning within their fixed and formal structure. Moreover, with the expansion of learning market, educational institutions attract students for all over the world. These global students bring with them their national culture and therefore accommodation of the global students' culture within the formal structure of the educational institution is considered to be a necessity. As related to this PhD an investigation into learning theories leads into the conclusion, which is the most appropriate than others to embrace and accommodate the cultural diversity of students. Thus, in the following sections an investigation of the Learning Theories is performed.

2.4 Learning Theories

Many learning theories are developed that try to interpret and analyse the way students learn. These theories can be classified into three main schools of thought: the objectivist/behaviourist, cognitivist and constructivist. A brief analysis of the objectivist/behaviourist and cognitivist will be made. A more detailed analysis of constructivist will follow as a lot of attention is put on this learning theory covering concepts like collaborative learning, authentic activities, reflection and dialogue, and learning communities that could enhance the Non-Formal and the informal learning in a strict formal educational setting (Mayes and De Freitas, 2004). Moreover as it will be discussed and further argued in this chapter, it is through constructivism and the process of social negotiation of meaning that culture accommodation can take place.

2.4.1 Behaviourism

Behaviourism is often referred to as directed instruction. According to Kozloff et al. (1999) directed instruction is one branch of the 'instructivist' approach in education. Behaviourism – as the instructivist's approaches to education – views learning as an acquisition of associations and skills which can be re-used in other situations (Greeno et al., 1996)

“Learning is the process in which associations and skills are acquired, and transfer occurs to the extent that behaviours learned in one situation are utilised in another situation”

(Greeno et al., 1996: 16) .

Behaviourist's knowledge could be defined as connections between stimuli and responses and learning as the formation of such connections by using reinforcement or punishment (Greeno et al., 1996; Jarvis et al. 2003). In other words it focuses on the measurable behavioural outcomes of learning, rather than with knowledge, attitudes, values, beliefs. Its main focus is behaviour, but this is not merely observable action. It concerns with any form of response to a stimulus that can be measured (Jarvis et al., 2003).

There are other approaches to learning that follow a similar view within the Behaviourist learning. According to Greeno et al. (1996) these are:

- Neural Networks that view knowledge as connections between 'neurons' and learning as the increase or decrease of the strength of these connections;
- Associationism that views knowledge as connections between ideas and learning as creation or destruction of connection of ideas.

Moreover according to Jarvis et al. (2003) two diametrically opposing approaches to teaching and learning emerge:

- **Trial and error learning:** It might also be called discovery learning or problem solving. It has as a primary principle that learning is happening by trial and error during everyday life;

- **Instrumental Teaching:** The learning outcomes are specified in behavioral terms. For example, teachers and lecturers are expected to write their lesson plans in terms of:
 - **At the end of the lesson, students will be able to.....;**
 - **At the end of the lesson, students will know.....;**
 - **At the end of the lesson, students will have the skills.....**

By following the behaviourist theory of learning, teachers are expected to use whatever positive or negative reinforces are needed to ensure that 'correct' outcomes are achieved.

A powerful example of how behaviourism is applied on the current educational system is the concept of directed learning (or directed instruction). In this process, the teacher is providing knowledge to the students either directly or through a set of incidents. Another example is the use of exams as a way of measuring observable behaviour of learning. The grades that a student takes are a way of punishment and reward.

In a behaviourist-learning environment, the teacher, according to Ertmer and Newby (1993:57), has to:

- "Determine which cues can elicit the desired responses;
- Arrange practice situations in which prompts are paired with the target stimuli that initially have no eliciting power but which will be expected to elicit the responses in the "natural" (performance) setting;
- Arrange environmental conditions so that students can make the correct responses in the presence of those target stimuli and receive reinforcement for those responses."

Therefore, behaviourism follows a teacher-directed approach to learning that promotes rote learning - i.e. simple memorisation of the true knowledge – by having the teacher as the centre of the learning process. In this type of classroom the different cultural backgrounds and the experiences of the learners are not taken into consideration, as only one and true knowledge exists. Therefore, in relation to this PhD it could be argued that behaviourism does not take into consideration multicultural differences between students as reality is one and common to all and thus, needs to be memorised.

2.4.2 Objectivism

According to Vrasidas (2000) objectivism has dominated the field of education for several years. Most of the traditional approaches to learning and teaching that are based on behaviourist and cognitive theories, share philosophical assumptions that are fundamental in objectivism (Vrasidas 2000). As stated by Vrasidas (2000:2) quoting Jonassen (1991) and further supported by Bednar et al. (1995) the major assumptions of objectivism are:

- “There is a real world consisting of entities structured according to their properties and relations. The categorization of these entities is based on their properties.
- The real world is fully and correctly structured so that it can be modeled.
- Symbols are representations of reality and can only be meaningful to the degree that they correspond to reality.
- The human mind processes the abstract symbols in a computer-like fashion so that it mirrors nature.
- Human thought is symbol-manipulation and it is independent of the human organism.
- The meaning of the world exists objectively, independent of the human mind and it is external to the knower. ”

Therefore, according to objectivists, there is one true and correct reality, which we can examine and understand by following the objective methods of science and thus, learning is simply defined as a change in behaviour and/or change in the learner's cognitive structures (Vrasidas 2000). As a result of the learning, the teacher designs the learning task or course having in mind to effectively transfer the objective knowledge in the learner's head. This model is called ‘transmission model’ of instruction and assessment (CTGV, 1996). Thus, objectivism does not recognise the cultural backgrounds of the learners as there is one true and correct reality.

2.4.3 Cognitivism

The behaviourist approach had limitations regarding the understanding of learning. For example, behaviourism was unable to explain some social behaviour (Alonso et. al. 2005:218). This led to the development of the cognitivism.

In Cognitivism learning refers to the process of acquiring and reorganising the individual's basic cognitive structures through which information is being processed and stored (Alonso et. al 2005). Thus, cognitive theories focus on the conceptualization of students' learning processes and address the issues of how information is received, organized, stored, and retrieved by the mind (Ertmer and Newby 1993). Therefore cognitivism is interested in what the learners know and how they acquire it and not how to do it (like behaviourism does) (Jonassen 1991). Knowledge is acquired through internal structuring and coding from the part of the learner and understanding is perceived as a knowledge base comprised from rules, concepts and discriminations (Duffy and Jonassen, 1991).

In order that cognitivism takes place, the environment in which the learning is happening plays an important role. According to Ertmer and Newby (1993) this learning environment must guide the process of learning by using instructional explanations, demonstrations, illustrative examples, and matched non-examples as tools at the teachers' disposal.

Due to the close relation that both cognitivism and behaviourism have, the two approaches of teaching and learning as stated by Jarvis et al. (2003) and described in the behaviourism section of this document, (i.e. Trial and Error Learning and Instrumental Teaching) can be better explained through the cognitivist learning rather than the behaviourist learning. According to Ertmer and Newby (1993:58):

“...cognitive theories are usually considered more appropriate for explaining complex forms of learning (reasoning, problem-solving, and information-processing) rather than there are those of a more behavioural perspective.”

Thus, the teacher tries to make the knowledge as meaningful as possible and guide the learners in the process of and relating the meaningful knowledge to their existing mental

structure. We could argue here that cognitivism takes into consideration the disparity of mental structures between learners. Thus, one could say that cognitivism can accommodate the notion of cultural diversity inside the learning environment. This is partly correct, but cognitivism again is a teacher-directed model of learning leaving no freedom on the learner to communicate and negotiate different types of meanings.

Therefore, this PhD argues that cognitivism is not considered to be the appropriate learning theory that could embrace the cultural diversity of students inside the learning environments. The next learning theory that is discussed and analysed is constructivism.

2.4.4 Constructivism

Constructivism has been developed to accommodate the problems that behaviourist and cognitivist theories had in the instruction. As stated by the literature constructivism is derived from the field of cognitive science (McPherson and Nunes, 2004; Jarvis et al., 2003; Ertmer and Newby, 1993). More specifically, as McPherson and Nunes (2004:43) state:

“The theory of constructivism stems from the field of cognitive science, particularly from the works of Jean Piaget, Lev Vygotsky, Jerome Bruner, Howard Gardner and Nelson Goodman.”

According to Duffy and Cunningham (1996) constructivism can be summarised in two points:

- Learning is an active process of constructing rather than acquiring knowledge;
- Instruction is a process of supporting that construction rather than communicating knowledge.

Moreover, Doolittle and Camp (1999) state four tenets of constructivism. These are:

- “Knowledge is not passively accumulated, but rather it is the result of active cognizing by the individual;
- Cognition is an adaptive process that functions to make an individual's behavior more viable given a particular environment;

- Cognition organizes and makes sense of one's experience, and is not a process to render an accurate representation of reality;
- Knowing has roots both in biological/neurological construction, and in social, cultural, and language-based interactions.”

Therefore, as in the previous theories, learning can be seen as an individual process (Alonso et al. 2005) but learning is viewed as the creation of meaning taking into account the learners prior experiences (Jonassen 1991; Bednar et al. 1991). Thus, the first distinguishing element between constructivism, cognitivism and behaviourism is that knowledge is not mind-independent and therefore, cannot be ‘mapped’ onto a learner (Ertmer and Newby, 1993). In other words, the mind is not viewed as a reference tool to the real world, but is seen as a filter that receives input from the real world in order to produce a unique reality (Jonassen 1991).

Moreover, constructivism does not deny the existence of the real world but the knowledge of the world depends highly from our own interpretations of the experiences (CTGV, 1993: 65). Therefore in order to understand the teaching and learning process we must examine the actual experience (Bednar et al. 1991).

Basically constructivism proposes that knowledge or meaning is not fixed for an object, but rather it is constructed by individuals through their experience of that object in a particular context (Honebein et al., 1992). According to Spiro et al. (1991), constructivists emphasize the flexible use of pre-existing knowledge rather than the recall of pre-packaged schemas. As Brown et al. (1989) state, ‘we must see knowledge as indexed by experience and context and thus embedded in them’. Therefore ‘indexicalising’ of knowledge according to Brown et al. (1989) permits the student to use it outside the formal educational setting.

During the process of constructivist learning the student develops internal and external associations while interacting with a concept (Grabinger and Dunlap 1995; CTGV 1993). According to Grabinger and Dunlap (1995) internal associations are connections among the criteria attributes of a principle and reflect the learner understanding of the concept. External associations refer to connections between the principle and everyday experiences or context and indicate the usability of concept. Also Grabinger and Dunlap

(1995) state formal learning as occurring in formal academic institutions provides the internal links.

In an environment where the information presented has no relevance or meaning and the students cannot perform internal or external associations, learning takes place through memorisation of the information and thus, it leads to inert knowledge – knowledge that cannot be applied to real problems and situations (Grabinger and Dunlap 1995). Thus, learners acquire knowledge in ways that will help them use it in similar future situations. This reuse of knowledge in similar situations has two main consequences, which according to McPherson and Nunes (2004:44-45) are:

- Learning activities must be ‘authentic activities’, which must be embedded in realistic and relevant contexts (situated learning);
- Learners must be provided with the opportunity to explore multiple perspectives on an issue, that is, one activity is not enough to acquire a comprehensive view of a particular concept.

The variety of the constructivist ideas from the cognitive to the radical constructivism expressed in the previous discussion can be summarised into a single idea. According to Winn (1993) this idea is: students construct knowledge for themselves. Thus, difference of the various constructivist strands arise from the differences in perceptions of this main idea. As Winn (1993:200) states:

For some, the knowledge construction, requires a little more than the addition of coaching or help systems to traditional instructional strategies. For others, who take a more radical position, knowledge construction implies that each of us knows the world in a different way.

According to Winn’s (1993) view constructivist learning can be seen as either an individual process (Alonso et. al 2005) or as a social negotiation of meanings occurring through collaborative interactions (Grabinger and Dunlap 1995; Bednar et al. 1991). Therefore various strands inside constructivism exist.

2.4.4.1 Cognitive and Socio-cultural Constructivism

Duffy and Cunningham (1996) demonstrate this disparity of constructivist views by contrasting cognitive constructivism with socio-cultural constructivism. The cognitive constructivism is derived from the work of Piaget (Laurillard 2002). Piaget viewed learning as related to the stage of children’s cognitive development, and the closer the content to be learnt matched the level of cognitive development the better (Jarvis et al. 2003). More specifically learning takes place from the conflict between the actual learner’s outcome (learner’s conception) and the expected one. Then through the process of logical reasoning the reconstruction of conceptions is being done that leads to learning. This view presupposes that “reality” is knowable (Doolittle 1998). The following figure (figure 1) represents the teaching and learning process in cognitive constructivism.

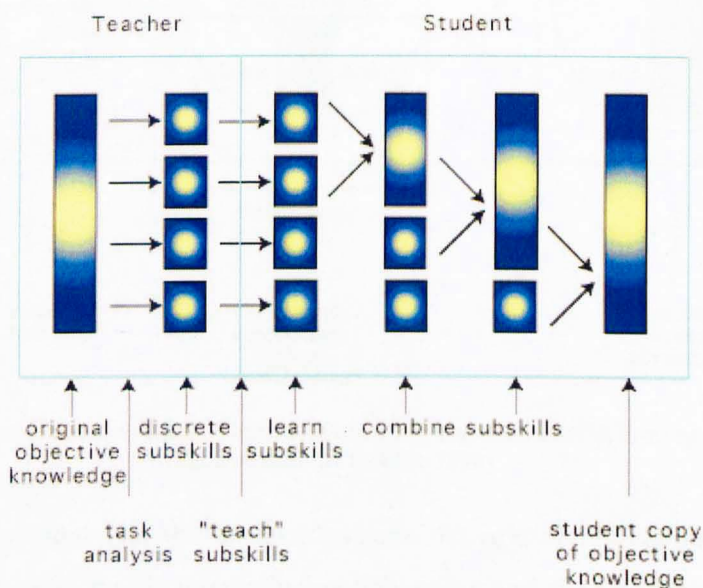


Figure 1: Cognitive Constructivism - Teaching and Learning Process
 (Excerpted from Doolittle 1998)

Socio-cultural constructivism derives from Vygotsky’s description of knowledge through social interaction and situated cognition (Laurillard 2002). Knowledge is the result of social interaction and language usage, and, thus, is a shared, rather than an individual, experience (Doolittle and Camp 1999). This social interaction always occurs within a socio-cultural context, resulting in knowledge that is bound to a specific time and place

Vygotsky’s perspective sees learning as the process of creation of higher functions. In this process learners construct their own knowledge according to their cultures. Thus, knowledge construction by cultures is as an essential element of classroom. Therefore, classroom is viewed as a community having the task to develop knowledge (Simons 1993). Learning in social constructivism is not limited to an individual’s mind, but is viewed as interactions between the participants. The following figure (figure 2) shows the teaching and learning process from a socio-cultural constructivism perspective.

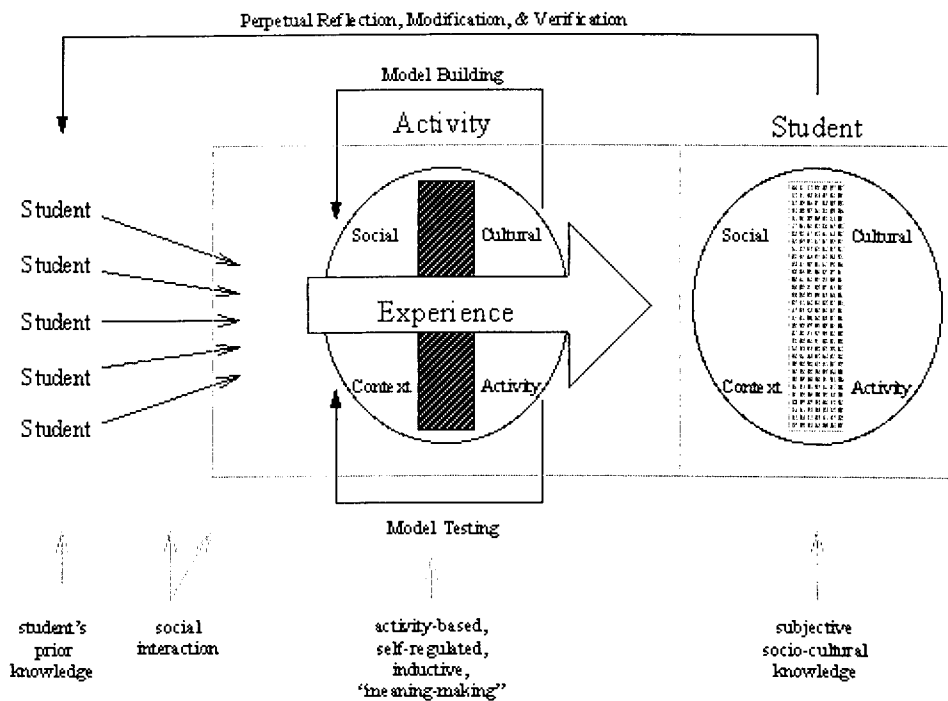


Figure 2: Socio-cultural Constructivism Teaching and Learning Process (excerpted from Doolittle 1998)

In social constructivism the teachers assume the role of facilitators and the students engage in learning that is interactive, collaborative and shared among a community of learners (Maor and Zariski 2003).

2.4.4.2 Context of Constructivism

Constructivism and thus, constructivistic learning is of particular relevance to higher education institutions (Jonassen et al. 1993). In his article, Jonassen et al. (1993) gave the context in which the constructivistic learning should take place. Thus, Jonassen et

al. (1993) stated that knowledge acquisition is a process, taking place in three learning phases leading from ignorance to expertise. These phases are: introductory, advanced, and expert.

In introductory phase the learner holds little transferable prior knowledge about a skill or content area. In this learning phase the learner must be guided more than in the advanced knowledge acquisition. Therefore classical instructional design techniques like: predetermined learning outcomes, constrained and sequential interactions, and criterion referenced evaluation should be used (Jonassen et al. 1993). Thus, in this introductory learning phase the model that should be used is an instructivist model following the ideas of the behaviourist/objectivist learning.

The second phase of knowledge building is the advanced knowledge acquisition. In this phase, learners acquire more advanced knowledge in order to solve more complex, domain- or context-dependent specific problems. Constructivistic learning environments that oversimplify and pre-package knowledge should be used to support advanced knowledge acquisition (Jonassen et al. 1993).

The final phase of knowledge acquisition is the expertise phase. Experts have more internally coherent and more richly interconnected knowledge structures (Jonassen et al. 1993). This expert knowledge is the outcome of extensive experience and knowledge transfer between the previous phases. The constructivistic learning environments used at this phase should be based on fostering situated experiences which are provided by most of the constructivistic models (Jonassen et al. 1993).

Therefore, the constructivistic learning environments are the most appropriate to be used in the higher education institutions as initial knowledge is acquired in secondary education and or early university preparation and advanced knowledge acquisition takes place at university level (Jonassen et al. 1993).

2.4.4.3 Situated Learning

In traditional education an activity can be defined as anything that students are expected to do apart from reading and listening that will lead in learning, practicing, application

and evaluation. (Brophy and Alleman 1991). This definition belongs to a more instructivist or teacher-centred paradigm (Reeves et al. 2002). In response to this, instructivist or teacher-centred view of learning Brown et al. (1989) state that learning will be meaningful if it is embedded in the social and physical context in which it will be used. They also argued that formal learning is often quite distinct from authentic activity or the 'ordinary practices' of the culture (Brown et al. 1989). Thus the activity must be authentic, i.e. situated in the domain and context it is used.

Herrington and Oliver (1995) give a number of critical characteristics of situated learning for consideration when designing instruction in the learning environment. These characteristics according to Herrington and Kervin (2007:222) are:

- Provision of authentic context that reflect the way of the knowledge will be used in real-life
- Provision of authentic activities
- Provision of access to expert performances and the modeling process
- Provision of multiple roles and perspectives
- Support for collaborative construction of knowledge
- Provision of coaching and scaffolding in critical times
- Promotion of reflection so as to enable the formation of abstractions
- Promotion of articulation so as to enable the tacit knowledge to be made explicit
- Provision of integrated assessment of learning within tasks.

Brown et al. (1989) proposed a model for achieving authenticity. This model was cognitive apprenticeship that is used to en-culturate students into authentic practices through activity and social interaction (Brown et al. 1989). Therefore, a critical element of the situated learning is the concept of the apprentice observing the community of practice (Herrington and Oliver 1995). This observation of the community of practice can first be observation from the boundary and as learning and involvement with the culture increases the participant moves from the role of the observer to a fully functioning agent (Lave and Wenger 1991).

Herrington and Oliver (1995) discussed the way the situated cognition can be applied in designing interactive multimedia. They stated that in terms of the instructional design of interactive multimedia, the critical characteristics of situated learning can also be

examined within a framework of the roles and responsibilities of three constitutive elements of the learning process: the learner, the implementation and the interactive multimedia program summarised in figure 3.

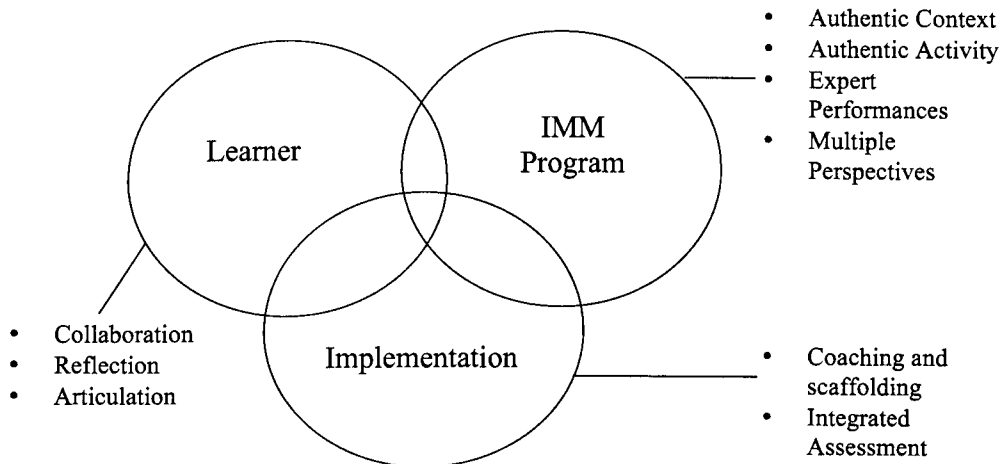


Figure 3: Constitutive elements of situated learning in interactive multimedia (excerpted from Herrington and Oliver 1995)

2.4.4.4 Social Negotiation of Meanings

As stated before constructivist learning can be seen as either an individual process (Alonso et. al 2005) or as a social negotiation of meanings occurring through collaborative interactions (Grabinger and Dunlap 1995; Bednar et al. 1991). Common to these views is that knowledge does not exist independently of the world and understanding comes from the exposure of the learner in multiple perspectives of a concept (McPherson and Nunes 2004). Because of the social nature of the society and the education (Jarvis et al. 2003), the process of social negotiation is of great importance in learning.

As Bates (1991) states there are two types of interactivity. The first is the interaction taking place between the learner and the learning material (content). Through the use of a variety of methods ranging from the traditional textbook to computer based simulations the learner may acquire knowledge from this learner to content interaction. The second is a social interaction taking place between the learner and the tutor, and between other learners. This learner to teacher and learner to learner interaction results in a common understanding, which is supported by collaborative construction of knowledge (Jonassen 1991). Moreover, as pointed out by Jonassen (1991) outcomes of

the social negotiations will vary and thus, cooperative learning in which learners are exposed to multiple viewpoints that challenge their understandings should be emphasised. Therefore, the learner must be surrounded by a rich learning environment, that supports the communication and negotiation processes between members of a social community (McPherson and Nunes 2004).

2.4.4.5 Collaborative Learning

A broader and more general definition defines collaborative learning as a situation in which two or more people learn or attempt to learn something together. A distinction is made between collaborative and cooperative learning. Cooperative learning puts emphasis on the social process of the group for achieving a desired goal. According to McConnell (1994) 'cooperative learning involves working together on some task or issue in a way that promotes individual learning through collaboration processes'.

On the other hand, McConnell (1994) argues that collaborative learning is associated with helping the students become members of a knowledge community and more broadly it refers to situations where students engage in solving problems together. Collaborative learning involves learners engaging in a social process having a particular importance in achieving their desired goal. Thus the students' engagement in this social process can help learners overcome the potential cultural problems that they will phase.

Therefore, as related to this PhD, it is through collaborative learning based on authentic learning activities that promote social negotiation of meanings that the cultural diversity of the students could be accommodated. Rich Environments for Active Learning is such type of environment that promotes cultural accommodation.

2.5 Rich Environments for Active Learning (REALs)

Grabinger and Dunlap (1995) proposed a series of 'new' assumptions about teaching and learning encompassing the elements of social negotiation and thus, the collaborative process of learning, the active role of the learner in the process of knowledge construction, the stipulation of rich learning activities in the process of learning to include the learners' prior needs and experiences, the provision of realistic or authentic

activities and thus the authentic assessment. These 'new' teaching and learning assumptions raise the need of the application of different learning strategies.

According to Grabinger and Dunlap (1995) a REAL is a learning environment that adopts the different learning strategies. A REAL can be called also constructivist learning environment, information rich learning environment, interactive learning environment, or knowledge building learning communities (Grabinger et al. 1995). REAL is not a delivery technology like video, CD-ROM, or audio tapes but media technologies can be an integral part of REALs. REALs promote learning in authentic context, and increase the student responsibility, initiative, intentional learning, questioning, and self-reflection making the learners capable of taking responsibility for their own learning. Grabinger and Dunlap (1995) stress a REAL should have the following main attributes:

- Student Responsibility and initiative emphasizing that the student should be an integral part of the learning process and intentional learning skills should be developed;
- Generative learning activities emphasizing the actively engagement of the student in the construction of knowledge. Thus, students are viewed as investigators, seekers and problem solvers;
- Authentic Learning Contexts emphasizing that learning should be as realistic as possible. Creation of the authentic learning context implies more than the presentation of realistic problems and situations – it also implies that students must address the situations or problems realistically too;
- Authentic Assessment Strategies emphasizing the use of appropriate authentic assessment methods to evaluate the student performance;
- Cooperative support emphasizing the idea that the students work together to learn and are responsible for one another's learning as well as their own.

Therefore, REALs provides a way for addressing the constructivist assumptions of learning in order to meet the educational demands of a changing society. Therefore, in relation to this PhD it is REALs and especially the social negotiation of meanings through collaborative interactions that can facilitate the accommodation of the cultural diversity of students. In an eLearning environment it is through CMC that social

negotiation of meanings take place. Thus, in the following section e-Learning and CMC are briefly discussed.

2.6 e-Learning and CMC

Providing a single definition of e-Learning is a rather difficult task (Wagner et al. 2008). In generally, according to Wagner et al. (2008) quoting Ong Lai and Wang (2004) e-Learning can broadly describe any form of instructional content or learning experience that use electronic technologies like computers and the web as a method of delivery. Jones (2003) goes one step beyond the previous definition and states that “e-learning is online training that is delivered in a synchronous (real-time; instructor-led) or asynchronous (self-paced) format”. This definition, as it is further stated by Jones (2003), is being followed in the business oriented e-Learning sector putting more emphasis on the way of interactivity and communication. Common in all definitions is that they all focus in improving the learning of the students by using electronic technologies. In this thesis e-Learning refers to the use of Internet to provide learning with specific focus to the communication technologies.

An important element in constructivist learning environments is the exchange of knowledge in the form of social negotiation of meanings through collaborative interactions. This social negotiation takes place inside a classroom environment that favours the face-to-face communication. With the introduction of the technology and more specifically computers in education the communication that was once taking place in face-to-face situations was transformed into computer mediated communication. This transformation gave birth to the term Computer Mediated Communication (CMC).

As argued by Tella et al. (1998) quoting Trentin and Benigno (1997) “Computer-Mediated Communication (CMC) embraces all those activities in which the computer is used for distance communication: access to and transfer of information, thematic conferencing via e-mail, audio- and video communication, etc.” (Trentin and Benigno 1997, 32). According to Tella et al. (1998) quoting Jones (1995) state that CMC defines the space, which is continuously reconstructed by the social nature of the communication and the relationships of individual and groups:

“CMC ... not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space. It is more than the context within which social relations occur (although it is that, too) for it is commented on and imaginatively constructed by symbolic processes initiated and maintained by individuals and groups.” (Jones 1995: 16)

Thus, CMC is used as a tool for dialogic communication. According to Tella et al. (1998) “dialogism presupposes that people who are communicating with each other respect one another's opinions”. As it is further argued by Tella et al. (1998), visual signs, objects, cultural differentiations (like gender, race, religion etc.) can be obstacle to the dialogic communication.

By using CMC for the dialogic communication such impediments could be diminished. An example of such a tool is e-mail through which the various barriers like age, gender and/or geographical restrictions could be reduced or even eliminated. On the other hand, the absence of the of visual cues may lead in “writing something that would have been left unsaid in face-to-face communication” (Tella et al. 1998).

2.7 Summary of the discussion

By summarising all the previous discussion, constructivistic learning environments are considered to be the most suitable environments for accommodating the cultural diversities of the learners. The important element of these environments is that learning must be placed in a situated authentic activity that will be accommodating the disparity of the cultural backgrounds of the learners. Moreover, these environments offer the social negotiation of meanings through collaborative learning activities. Thus, the learners would not feel alone in achieving the learning goals as they are introduced in a group of discussion having the form of community of practice.

Therefore, the important elements of communication, situated learning, authentic activities and tutoring can be accommodated in such environments that Grabinger and Dunlap (1995) name them REALs. Furthermore, the concept of REALs can further be supported in the online learning efforts where CMC plays an important role in handling this cultural diversity from the communication part.

2.8 Conclusions

In this chapter the following conclusions have been drawn concerning this PhD thesis. Learning and especially learning concerning students from different cultural backgrounds can be facilitated by constructivistic learning environments that Grabinger and Dunlap (1995) name REALs. Fundamental in constructivistic learning environments are the collaboration of students through authentic learning activities supported by social negotiation of meanings and collaborative interaction. The constructivistic learning environments as argued in this chapter are considered to be important for the accommodation of the cultural diversity of students. Moreover, e-Learning environments that support authentic learning activities through social negotiation of meanings and collaborative interaction supported by CMC tools can also assist in the accommodation of the diversity of cultures inside such environments. Therefore, this PhD is focused on investigating potential multicultural communication conflicts in constructivistic learning environments that promote cultural diversity through authentic learning activities supported by social negotiation and collaborative interactions.

3.1 Introduction

In this chapter it is described and discussed:

- Synchronous and asynchronous CMC tool putting specific emphasis on the comparison of each of them for selecting the appropriate method of communication for this PhD;
- Cooperative and Collaborative discussions;
- Group Interactions by making specific reference on Tuckman's and Jensen's Group Development Model;
- Conflicts of Online Interactions.

As discussed in Appendix D, there is a need to consider the inclusion of different students' cultures inside the formal Greek HE setting. Greece's National Technological Infrastructure can accommodate the implementation of ICT based educational solutions. Thus, e-Learning can be seen as a potential tool that will help in solving the cultural exclusion problem that Greece and especially Greek HE faces. The introduction of e-Learning may trigger widely in-depth changes on information management, organizational behaviour, pedagogical approaches and staff attributes (Duke 2002).

More specifically, in order for e-Learning or online learning environments to be effective a lot of consideration should be put on pedagogy than simply putting professors' lectures on the web (Duke 2002). Therefore, appropriate educational approaches and epistemologies, like constructivism, collaborative learning, as discussed in Appendix D have been identified as possible ways of maximising e-Learning environments.

As discussed in Chapter 2 learning in HE as defined by Laurillard (2002) must:

- Be situated in the domain of the objective, the activities must match the domain;

- Contain both direct experience of the world, and the reflection on that experience that will produce the intended way of representing it.

As argued by McPherson and Nunes (2004) this view rejects the classical tradition of transferring some body of knowledge in the form of unchangeable and authoritarian idea, concepts or definitions to the learner. Now learning in HE is seen as a much more than a mere process of passive reception and acquisition of knowledge. Academics as argued by Laurillard (2002) are concerned in the way learners handle knowledge. Learning occurring in isolation remains inert – i.e. the knowledge is on the learner’s memory but he/she never recognises when to use it (CTGV 1991).

Therefore, learning requires the student to be engaged in the learning activity in order to construct his/her own view of this world. Thus meaning is seen as rooted and indexed by experience (Brown et al. 1989). In this type of situation the learner according to Grabinger and Dunlap (1995) need to develop internal and external associations with the concepts. Internal associations reflect the learner understands of a particular concept. External associations refer to connections between the concept and the context.

According to Nunes and Fowell (1996) the view that the learner must acquire knowledge in ways that help them use them in similar situations has two major consequences:

- The learning activities must be authentic activities, which must be embedded in realistic and relevant contexts (situated learning) (Nunes and Fowell 1996; Laurillard 2002; Brown et al. 1989);
- Learners must be provided with the opportunity to explore multiple perspectives on an issue, that is, one activity is not enough to acquire a comprehensive view of a particular concept (Nunes and Fowell 1996; Bednar et al. 1995).

Moreover learning takes place in a social context and conceptual growth comes from the sharing of perspectives and testing of ideas with others (Brown et al. 1989). “This need for situated learning, social negotiation and multiple perspectives implies the adoption of different learning strategies to assist the learner in the construction of knowledge” (Nunes and Fowell 1996). This adoption creates learning environments that

Grabinger and Dunlap (1995) named them Rich Environments for Active Learning (REALs).

Therefore, e-Learning environments in HE encourage collaborative social negotiation of meanings and understandings between the members of a learning community – i.e. peers, tutors, and experts. Thus, e-Learning environments through constructivism, collaborative learning, social negotiation of meaning, situated learning, and multiple perspectives can be seen as potential solution to the cultural exclusion problem. E-Learning is the most suitable learning environments for accommodating the cultural diversities of the learners. The important element of these environments is that learning must be placed in a situated authentic activity that will be accommodating the disparity of the cultural backgrounds of the learners. Moreover, these environments offer the social negotiation of meanings through collaborative learning activities. Thus, the learners would not feel alone in achieving the learning goals as they are introduced in a group of discussion having the form of community of practice.

This PhD thesis is based on the assumption that e-Learning is the most suitable learning environment for accommodating the cultural diversities of learners. This assumption is based on the premise that learners when placed in a situated authentic learning activity the disparity of their cultural backgrounds and any problems encountered will be solved. Moreover, through collaborative learning activities fostering social negotiation of meanings cultural barriers could be resolved and break down of communication will be diminished. Therefore, in the following sections it will be discussed the technologies that are used to implement e-Learning environments, their respective strategies and problems that will arise in group interactions inside such learning environments.

3.2 e-Learning and CMC

Implementing e-Learning requires much more than designing of web pages and specifying their navigation sequence (Nunes and Fowell 1996). E-Learning environments require more than simple navigation structure. Instead interaction is needed between learners with peers and tutors by including elements of computer-mediated communication (CMC). The definition presented on the following quotation

by the ITiCSE'97 working group (Wolz et al. 1997) gives an overview of what CMC is at its broader sense:

“Any form of interpersonal communication that uses form of computer technology to transmit, store, annotate, or represent information that has been created by one or more participants.” (ITiCSE'97 1997; Wolz et al. 1997)

CMC as argued by Mason and Kaye (1989) and further supported by Paulsen (1995) includes a variety of systems enabling people to communicate separated in space and/or time via computers. Today these CMC technologies are used to support communication in an eLearning environment.

More specifically, Paulsen (1995) identified the following interactions taking place in environments supporting CMC according to the number of individuals that are involved:

- One-alone techniques referring to the fact that the student can perform the learning task without communication with the teacher or other students like information retrieval from online resources;
- One-to-one techniques which are usually conducted through email;
- One-to-many techniques provided by bulletin boards or email distribution lists;
- Many-to-many techniques, which can be organized within computer conferencing systems, bulletin boards or distribution lists.

Moreover, Berge (1997:7) in his discussion concerning computer conferencing systems identified the following characteristics of CMC application as used in the educational setting:

- “Enable accommodation of different learning styles and the empowerment of learners;
- Allow learners to use the same tools and methods as the professionals;
- Facilitate interdisciplinary, project-oriented approach to teaching and learning, all of which creating authentic practice.”

Therefore, the selection and use of the appropriate CMC technology will vary according to different learning activity designs, and teaching and learning needs (Wolz et al. 1997). Moreover, Berge and Collins (1995) argued that computer-mediated education can be tailored to the individual learner accommodating different capabilities, learning styles, disabilities, and cultural backgrounds. Thus, this PhD project is focused on the possible problems that culture can cause when students uses CMC technologies that enable them to either collaborate and/or cooperate.

3.3 Synchronous and Asynchronous CMC

CMC technologies can be separated into two main categories according to their use: Synchronous and Asynchronous.

Asynchronous communication technologies do not require the concurrent online presence of the parties involved in the communication. With asynchronous communication the receiving party has time to read, process it and accordingly respond. The most well-known example belonging to this category is email where a message can be sent and time is given to the receiver of the message to process it and respond. Other example as described Woodfine et al. (2008) quoting Paulsen (1995) and Wolz et al. (1997) are:

- “Mailing lists;
- Shared network group folders;
- Annotatable web pages and databases;
- Discussion boards;
- Frequently updated hyperlinked web pages;
- Bulletin boards;
- Web-logs;
- Streaming audio/video;
- Document libraries;
- Surveys and polls.”

On the other hand, synchronous communication requires the simultaneous online presence from the involving parties just like face-to-face (f2f) conversations. As argued

by Sproull and Kiesler 1991) synchronous communication is closer to f2f communication and it enables real time communication but without requiring them to be present in the same physical location like in f2f communication. Examples as described by Woodfine et al. (2008) quoting the work of Paulsen (1995) and Wolz et al. (1997) are:

- “Audio conferencing;
- Text conferencing;
- Video conferencing
- Chat;
- Instant messaging;
- White boarding.”

The major barrier that synchronous communication tools face is that certain types of synchronous communication – for example video/audio conferencing – require a large amount of bandwidth to be able to broadcast video and audio in a decent quality. This technological problem may create problems for students that do not have access to broadband Internet technology.

Conversely, synchronous learning technologies according to Sproull and Kiesler (1991) can present some advantages:

- Students like to know that there is someone there that they can respond and get an immediate reply back;
- Discussions can be tutor led;
- Questions can be answered immediately without time delay;
- It is more close to traditional classroom f2f interactions, requiring both the tutor and the students to be present at the same time;
- Ability to have real time discussions even in geographically dispersed groups.

On the other hand, synchronous communication technologies can present some disadvantages, which according to Sproull and Kiesler (1991) are:

- Time synchronization between the parties involved;
- Availability of equipment and ability to log on;
- Pace is determined by the course designer;

- A record is not always kept;
- Not always able to jump with a reply when required;
- Tight control is required by an assigned moderator.

The most widely used synchronous communication technology used until recently over the Internet is synchronous text-based communication (Ingram et al. 2000) like Internet Relay Chat (IRC), ICQ programs, text-based MUDs, MOOs, and MUSHs and Chatrooms. By using synchronous text-based communication technologies, discourse can be accomplished fast, the involving parties are online at the same time and thus responses to questions are given in real time.

However, according to Sherry (2000), these technologies may further increase the passive role that some students tend to take in such types of conversations. This passive role can further be augmented by the students' cultural backgrounds, as it will be discussed in section 4.6, given that the time to respond back and get involved in the chat does not permits reflection.

On the other hand, as argued by Berge (1997), asynchronous communication “[gives flexible] time independence, permit 24-hour access to other peoples and resources, ... be more convenient for student meeting work, family, and other responsibilities, ... [allows] self-paced learning, allow time to reflect and compose responses”. The previous advantages as stated by Berge (1997) can give a clear indication that probably asynchronous communication will provide the time needed for the students to overcome any barriers that culture may pose to communication in e-Learning environments by having time to process, reflect and consult other peers on the creation of an ‘appropriate’ reply.

In common to both types of CMC, as argued by Burgstahler and Swift (1996), the fact that both text-based synchronous or asynchronous communication technologies can make even shy users feel more confident because social cues and social distinction like disability, race, and facial expression can be easily removed.

Therefore, as argued in the previous paragraphs, this research should focus on text-based synchronous communication technologies that may trigger more problems in

communication mainly due to the absence of social cues, which on their hand may add to the complexity of the interaction.

After discussing and analysing the role of the technologies in the e-Learning environments the next section will focus on the theories and strategies that promote and encourage collaborative social negotiation of meanings and understandings between the members of a learning community – i.e. peers, tutors, and experts.

3.4 Group Learning Theory

As discussed briefly in the introduction of this chapter, e-Learning environments through constructivism, collaborative learning, social negotiation of meaning, situated learning, and multiple perspectives can be seen as a potential solution to the cultural exclusion problem. The important element of these environments is that learning must be placed in a situated authentic activity that will be accommodating the disparity of the cultural backgrounds of the learners. Moreover these environments offer the social negotiation of meanings through collaborative learning activities.

Moreover CMC was discussed in the previous section in terms of synchronous and asynchronous communication as a tool for enhancing the interactivity between groups in an e-Learning environment and thus, providing and encouraging social negotiation. In this section an identification of the theories underpinning group learning will be made.

Group learning theory distinguishes cooperative from collaborative learning. There is a large debate in research concerning definitions of cooperative and collaborative learning (Dillenbourg 1999; Dillenbourg and Schneider 1995). Common in both cooperative and collaborative learning is the influence from Dewey's view, as it is further explained by Matthews et al. (1995), that perceives education as "a social enterprise in which all individuals have an opportunity to contribute and to which all feel the responsibility". As argued by Matthews et al. (1995) cooperative and collaborative learning are two separate theories that have been developed separately but common points can be found between them.

“The roots and history of each approach have yielded a rich and varied body of literature and wisdom practice ... there are significant differences among adherents, while at the boundaries there is a great deal of overlap between the two.”

(Matthews et al. 1995:37)

Moreover Johnson et al. (1991, 1998) stated that both cooperative and collaborative learning are based on constructivist epistemology. In the following sections an attempt of defining cooperative and collaborative learning will be made as well as discussion on their differences and similarities.

3.4.1 Cooperative Learning

Dillenbourg and Schneider (1995) distinguish cooperative from collaborative learning by being "... a protocol in which the task is in advance split into sub-tasks that the partners solve independently". A similar definition is given by Roschelle and Teasley (1995) stating that cooperative learning is “accomplished by the division of labour among participants, where each person is responsible for a portion of the problem solving”. In other words collaborative learning is defined as the product or outcome of students working in small groups who interact with each other assuming control over their performance. Moreover, Cuseo (1992:7) defines and distinguishes cooperative learning from collaborative learning in terms of six procedural elements:

- “Intentional group formation in order to create the ‘optimal social learning environment’ in which the groups are formed according to pre-determined criteria so as to maximise heterogeneity and diversity of perspectives between the members of the group;
- Continuity of group interaction in order to develop the essence of a community;
- Interdependence among group members in order to develop a sense of collective responsibility between group members;
- Individual accountability in order to assess the individual member of the groups as students will not pull their weight when placed in groups if there is not a clear assessment;

- Explicit attention to the development of social skills that are considered an important objective of cooperative learning in which students develop communication and team skills needed for group working;
- Instructor as facilitator acting as coach facilitating the learning process of the various groups.”

Therefore, according to the previous procedural elements, Cuseo (1992:6) defined cooperative learning as:

“A learner centred instructional process in which small intentionally selected groups of 3-5 students work interdependently on a well-defined learning task; individual students are held accountable for their own performance and the instructor serves as a facilitator/consultant in the group learning process”

(Cuseo 1992:6)

3.4.2 Collaborative learning

Dillenbourg (1999) discussed why defining collaborative learning is problematic and states that the closest to an accurate definition is the one used by Roschelle and Teasley (1995) which defines collaborative learning as “a coordinated synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem”. Moreover, McConnell (1994) argues that collaborative learning is associated with helping the students become members of a knowledge community and more broadly it refers to situations where students engage in solving problems together. Collaborative learning involves learners engaging in a social process having a particular importance in achieving their desired goal.

As argued by Matthews et al. (1995) collaborative learning is developed as a separate field from cooperative learning and thus it is based on different theory. The theory underpinning collaborative learning derives mainly from the humanities and social sciences emphasising on the nature of knowledge as a social construction and thus presupposing that the students are already familiar with the use of social skills for group tasks (Matthews et al. 1995; Curtis and Lawson 2001).

Therefore, according to Matthews et al. (1995), groups are either randomly selected or they are formed by the students themselves. The roles and tasks between group members are allocated internally by the group members. Control is given to group members that are responsible for resolving conflicts internally between themselves and not with the help of tutor. Finally the facilitator does not actively monitor the groups but rather observes the learning task and refer identified problems back to the group in order to solve them internally

3.4.3 Cooperative versus Collaborative Learning

In the context of constructivist learning, activities must be situated in the domain of the objective, the activities must match the domain. Contain both direct experience of the world, and the reflection on that experience that will produce the intended way of representing it. Important in achieving the two previous characteristics of activities is the concept of collaborative learning, social negotiation of meaning, situated learning, and multiple perspectives.

The main difference between collaborative and cooperative learning lies on the form of output (Dillenbourg and Schneider 1995; Dillenbourg 1999; Matthews et al. 1995; Johnson et al. 1991, 1998). In the case of cooperative learning the output is the synthesis of work produced by the individual member of a group. On the other hand, collaborative learning output is the joint production of the work produced by the joint learning, taking place between group members.

As briefly discussed cooperative and collaborative learning have common areas. These commonalities as identified by Matthews et al. (1995:37) are:

- “Learning in an active mode is more effective than passively receiving information;
- The teacher is a facilitator, coach, or mind wife rather than a ‘sage on stage’;
- Teaching and learning are shared experiences between teacher and students;
- Balancing lecture and small-group activities is an important part of a teacher’s role;

- Participating in small group activities develops higher-order thinking skills and enhances individual abilities to use knowledge;
- Accepting responsibility for learning as an individual and as a member of a group enhances intellectual development;
- Articulating one's ideas in a small-group setting enhances a student's ability to reflect on his or her own assumptions and thought process;
- Developing social and team skills through the give-and-take of consensus-building is a fundamental part of a liberal education;
- Belonging to a small and supportive academic community increases student success and retention;
- Appreciating (or at least acknowledging the value of) diversity is essential for the survival of a multicultural democracy.”

However, Matthews et al. (1995:36) have identified a list of differences and similarities between cooperative and collaborative group learning. The differences identified are based on the divergent views about:

- “The style, function, and degree of involvement of the teacher;
- The issue of authority and power relationships between teacher and student;
- The extent to which students need to be trained to work together in groups;
- How knowledge is assimilated or constructed;
- The purposed of groups to emphasize different outcomes such as the mastery of facts, the development of judgment, and/or the construction of knowledge;
- The importance of different aspects of personal, social, and/or cognitive growth among the students;
- A variety of additional implementation concerns including group formation, task construction, and the degree of individual and/or group accountability to ensure equitable distribution of work and accurate grading.”

The choice of using either cooperative or collaborative group learning lies on the hands of the particular teacher and is influenced, as argued by Matthews et al. (1995), by personal style and values, local or cultural preferences, the mores and languages of a particular discipline, and levels of students preparedness.

Moreover, the major difference between cooperative and collaborative learning is that the latter is based on collaboration between group members emphasising the need for social negotiation in order to produce a combined common goal.

Due to the nature of this research – i.e. the investigation of cultural problems – the tools and activities that will be provided to the groups will emphasise collaborative group learning. The preference on collaborative learning is apparent as the cultural problems are expected to emerge and influence the communication between groups when collaborating rather than working individually in separate bits of a problem.

Moreover this research should break the group selection method, an important element of collaborative learning, which will be controlled by the researcher in order to form groups consisting of different and antithetic cultures as specified by Hofstede's et al. (2005) cultural dimensions. More specifically in order to investigate the culture, the groups that will be formulated must be multicultural in nature, which if the selection of the groups will be left free for the students to decide, the groups will be formed by members of the same cultures as stated by Hofstede et al. (2005) when discussing the cultural dimensions of his research. Thus, by formulating culturally homogeneous group's problems is not always possible in the real world where the group members should have the skills of social negotiation that will lead to the continuation of a group and not to the breakdown of it due to cultural conflicts in communication.

As related to this PhD, it is concluded in this comparison, that students can either decide to cooperate or collaborate for an e-Learning activity, but emphasis is put on the collaborative interaction of the group members.

3.5 Group interactions

In order to identify if culture poses a problem and affects the communication cooperation and collaboration inside a learning environment it is of great importance to analyse the various types of discourse. According to Johnson and Johnson (2002:6) groups have the following general characteristics:

- “Goal Orientation: People joining together for some purpose or to achieve some goals;
- Interdependence: People who have some type of relationship, see connections among themselves, or believe that they share a common fate;
- Interpersonal Interaction: People who communicate and interact with each other;
- Perception of membership: Recognition that there is a unity or collectiveness to which people belong;
- Structured Relations: Roles, rules, and norms that control people’s interactions;
- Mutual Influence: People having an impact on each other due to their connections;
- Individual Motivation: People’s personal needs satisfied by their membership in the group.”

Moreover, Tuckman and Jensen (1977:421) identified the following stages of group development:

- “Forming – Orientation: Members getting to know each other;
- Storming – Conflict: Disagreement about roles and procedures;
- Norming – Structure: Establishment of rules and social relationships;
- Performing – Work: Focus on completing the task;
- Adjourning – Dissolution: Completion of the task and end of the group.”

According to the previous characteristics described by Johnson and Johnson (2002) and further supported by Hofstede et al. (2005) research, people tend to form groups with members of similar or the same cultural backgrounds. Common in all groups – either homogeneous or culturally diverse groups are the stages identified by Tuckman et al. (1977) as it is further supported by other researchers like Watson et al (1993), Lebie et al. 1996 and Sherry (2000). In Tuckman’s model intragroup conflict can take place in the second stage where group members express their individuality and resist the formation of the group. Therefore, in this PhD research potential problems can occur in the norming stage of the Tuckman’s and Jensen’s group development model.

Furthermore, Salmon (2000) based on the previous stages of group development by Tuckman and Jensen (1977) created a five stage model for teaching and learning online as shown in figure 4.

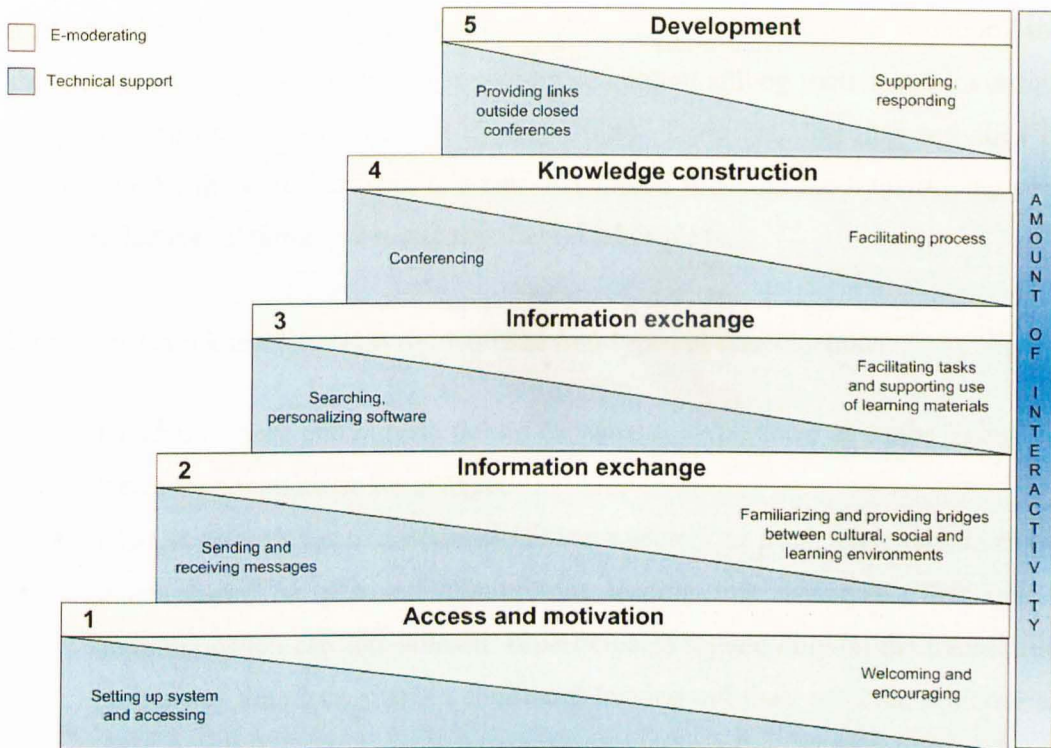


Figure 4: Model of teaching and learning online (excerpted from Salmon 2000)

In Salmon's (2000) model stage 1 is the basis and refers to two essential prerequisites that online conference participants should possess: individual access and induction of participants into online learning.

According to Jenlink and Carr (1996) the communication taking place in an environment can be driven in three broad ways:

- **Transacting:** taking place for negotiation and exchange within a problem setting;
- **Transforming:** taking place for reflective thinking and negotiation with others' view points by suspending the current personal opinions and assumptions;
- **Transcendent:** where the purpose is that of moving beyond existing mindsets and structures.

Sherry (2000) discussing on the previous three purposes of conversation stated that in the transacting category novices and experts in an electronic discussion exchange mutually valued information. In the transforming conversations progressive discourse takes place. According to Sherry (2000) quoting the loose definition of Bereiter (1994)

progressive discourse consists of clarifications and resolutions of doubts that generate ideas and thus advancing the general communication. In transcendent communication the dialogue taking place produces a coordinated action among participants in order to bring about genuine social change (Sherry 2000). Therefore, learning activities can include all the three of them, but this research should focus on the transforming phase where reflective thinking and social negotiation takes place.

Moreover Jenlink and Carr (1996) identified four types of conversations:

- Dialectic where participants debate for what they perceive as truths living little space for negotiations for change;
- Discussion which is transactional in nature where one participant negotiates with others based on personal assumptions leading this discourse. This type of communication can 'breakdown' if participants remain only on the transactional purpose of the discussion – i.e. without leaving out their personal opinions and rigid mindsets – and never reach the transformative stage as identified by Jenlink and Carr (1996);
- Dialogue where meaning is constructed through sharing. It requires by the individuals to suspend their personal opinions and thus leading to a transformative in nature dialogue;
- Design that requires suspension of participants' mindsets. In design conversations the perspective of the ideas generated in the previous conversation type is being altered resulting in creative thought and higher-order thinking.

Learning activities must provide all the above types of conversation. Important to this PhD research is the Discussion and the Dialogue type where collaborative learning, social negotiation and multiple perspectives as discussed in the introduction can take place.

Pea (1994) in contrast with Jenlink and Carr (1996) describes two types of conversation that takes place in a learning community:

- Ritual communication emphasising participation, sharing, taking part, fellowship, and continuous interaction, between the participants, maintaining the social order;

- Transmission of messages that takes place between participants via written text and with CMC.

Pea (1993) discusses how people use the conversational space to construct their common meanings and understandings collaboratively. First norms arise from shared beliefs that structure the collaborative activities within a sociocultural learning group. Meaning-making occurs by the repeated turns of talk and action. Through this repetition members share, negotiate, and interpret one another's symbolic culture. Meaning is resulted by the internalisation of the previous social interaction. In a conversational space driven by electronic messaging and conferencing the communication tool is an integral part in which the dialogue takes place (Sherry 2000). Therefore a culturally appropriate communication tool should be selected in order to facilitate the culturally organised activities (Pea 1993).

Rafaeli and Sudweeks (1997) distinguish three modes of communication: one-way, two-way and interactive communication, and illustrate the difference through a temporal sequence. One-way interaction refers to a situation in which the interaction is dominated by one student, for example a peer tutoring setting. Interactive and two-way cannot be distinguished as straightforwardly as Rafaeli and Sudweeks assume, because 'interactive' is by definition always 'two-way'. Their difference is better expressed by two other labels: 'reactive' ('two-way') and 'reciprocal' ('interactive'), and can be illustrated through an episodic representation (Fig. 5). Episodes are defined by meaningful statements and represent a temporal communication sequence: arrows represent a message within an episode.

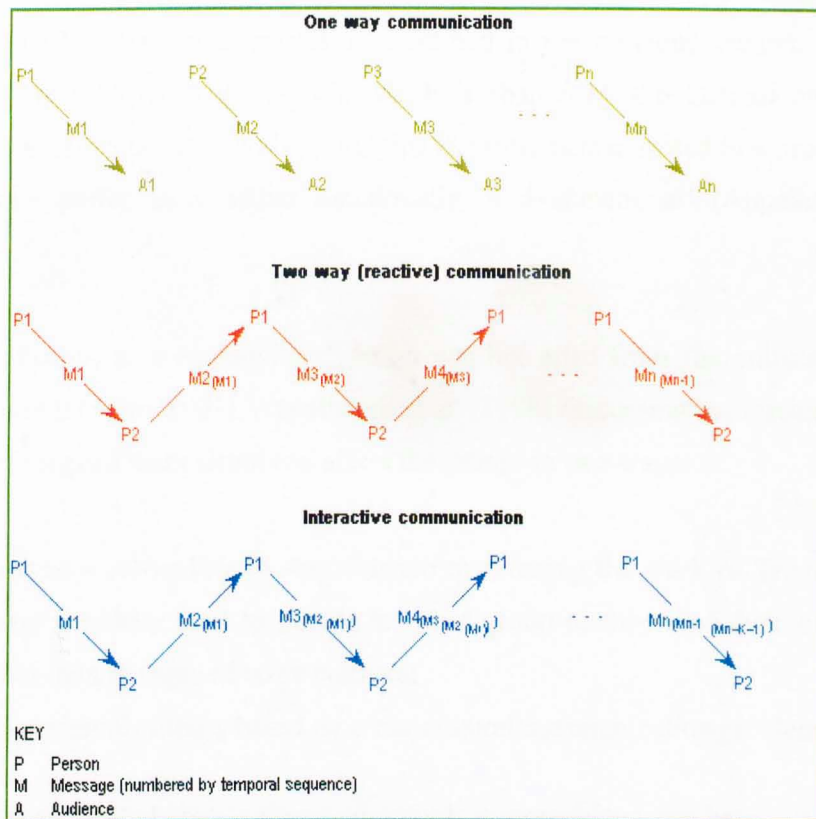


Figure 5: Taxonomy of communication tools (excerpted from Rafaeli and Sudweeks 1997)

Therefore this PhD should focus on investigating the problems that culturally diverse groups can encounter when communicating in an interactive way as described in the previous paragraph emphasising what Rafaeli and Sudweeks (1997) name ‘reciprocal’ interaction.

3.6 Conflicts of online interactions

In an organisational setting, group interactions with homogeneous and culturally diverse groups are a well-researched topic (e.g. Anderson 1983; Cox et al. 1991; Watson et al. 1993; Vallaster 2005; Adler 1991). On the other hand, on the educational setting little research has been done concerning culture and group dynamics in traditional classroom settings and fewer in online learning environments. Because of the nature of the activities in e-Learning environments – i.e. are authentic – much of the work done by Hofstede et al. (2005) and Adler (1991) can be of particular relevance in the HE setting.

According to Appelbaum et al. (1998) intragroup conflict is inherent in the second stage of Tuckman's developmental model as described in the previous section. Conflict is defined as 'an interpersonal dynamic which is shaped by the internal and external environments of the parties involved and this dynamic is manifested in a process which affects group performance either functionally or dysfunctional' (Appelbaum et al. 1998).

More specifically, in a multicultural group conflict arise from the cultural diversity inside the group (Adler 1991). Appelbaum et al. (1998) discussing the research work of Adler (1991) argued that culture can affect the groups in two ways:

- Mistrust – According to Appelbaum mentioning the work of Triandis (1965) group members tend to adhere to other group members of their own culture rather than to those of other cultures;
- Miscommunication – based on cross-cultural communication problems.

Adler (1991) stated that cross-cultural communication problems can be:

- Cross-cultural misperception based on the premise that an individual perceives what he/she expects to perceive;
- Cross-cultural misinterpretation based on the principle of stereotyping – individuals categorize situations from their own countries perspective and apply it to other countries;
- Cross-cultural misevaluation based on the premise that individual's culture is used as the base for evaluating and thus categorizing other cultures as good and normal if they are similar and bad, and abnormal if they are antithetic.

Concerning the online interactions Sherry (2000) identified that problems of online interactions fail into three categories:

- Technological factors – the technology and its related tools and mediating artifacts. On the one hand, asynchronous conferencing may allow for time and space independence but may not be compatible with individual students' lifestyles, personal philosophy or communication skills. On the other interactive

multimedia programs utilizing synchronous communication tools make sessions dependent on time and space. Moreover asynchronous text based communication provides a certain degree of anonymity that may allow the student to concentrate on the content of the message and not on the presenter setting the stage for more uninhibited behavior as well as misunderstandings and misinterpretations than face-to-face interactions;

- Individual learner characteristics and perceptions. Sherry (2000) discussing Fischman's (1996) work stated that the use of CMC tools was dependent on individual characteristics including experience with computers, social influence of peers and teachers, parental education, gender, and communication apprehension. Asynchronous text-based communication tools may be helpful to shy, thoughtful or hesitant conversationalists and to members of those cultures where answers and responses are considered and carefully framed before presentation (Berge 1997).
- Organizational factors such as administrative and technical support, staff development time, distribution of equipment.

However, Sherry is missing two crucial elements in her discussion:

- Teaching and learning theory and approaches;
- Group learning styles.

According to the previous categories of problems, the categories of Technological factors and Individual learner characteristics raise the need for a consideration of individual cultures. As discussed in chapter 3 of this PhD thesis the differences in the general cultural dimensions between countries can give us a brief knowledge about what Sherry (2000) categorises as Individual learner characteristics and perceptions.

Moreover, Zinkiewicz et al. (2003) in their report identified that cross-cultural difference – i.e. difference between cultures and/or between a dominant culture and subcultures in the same group – can influence learning and needs to be considered when designing and implementing learning environments. Furthermore Zinkiewcki et al. (2003) identified that problems can include low level group cohesiveness, poor communication within groups, poor decision making, and social loafing (uneven participation by group members) and can balance out the productivity gains when working with groups. Similar to the previous problems, Lebie et al. (1996) in their

research comparing interaction between computer-mediated and face-to-face group discussed three types of problems: production blocking, impersonality, and communication difficulty.

These problems as identified by Zinkiewicz et al. (2003), Lebie et al. (1996), and Sherry (2000) can further be augmented when the groups are consisting by antithetic cultures according to Hofstede et al. (2005)

Apart from these problems, an important element in an online interaction is the role of the moderator/teacher. Berge (1997) emphasises that the role of the moderator can drive the success or failure of an online interaction.

“The teacher assumes the roles of a facilitator, a resource provider, or a research librarian rather than an expert dispensing knowledge to the student”

(Berge 1997:14)

All the involved actors in the discourse – teachers, students, and experts – must participate in an extended communication that will lead to the construction of joint knowledge. By having the role of moderator as described by Berge (1997) will help the dispersed students to share beliefs, values, and assumptions.

Therefore this PhD should focus on investigating the cultural barriers in communication between groups by eliminating the interference of the tutor. The decision to leave out tutor component was based on the distraction that tutor can cause if he/she does not possesses the required skills as identified by Winter et al. (2001). Moreover, the problems that will come out as a result of this thesis will probably fall into the categories that Adler (1991) identified as barriers for cross-cultural communication.

3.7 Summary of the Discussion

This chapter began from the need for multicultural education based on the preliminary analysis performed in Appendix D. The important element is that technological infrastructure in Greece permits the consideration of e-Learning as potential solution to the cultural exclusion problem of the Greek HE system. In order to achieve this goal the

introduction of this chapter continued by discussing the need for consideration of pedagogical approaches like constructivism, which raises the need for collaborative learning, social negotiation of meaning, situated learning, and multiple perspectives.

Then, a discussion of CMC was made in terms of synchronous and asynchronous communication as a tool for enhancing the interactivity between groups in an e-Learning environment. It is summarised in this section that asynchronous CMC may facilitate the solution of cultural problems that can cause a breakdown in communication or a misunderstanding by giving enough time to receiver of such communication message to reflect and construct a culturally appropriate response. On the other hand, synchronous communication may increase the frequency of communication problems.

Following the CMC section, the group learning theories: cooperative and collaborative learning, were discussed that can promote and facilitate the concepts of collaborative learning, social negotiation of meaning, situated learning, and multiple perspectives important in constructivist e-Learning environments. Although they have been developed as separate theories inside group learning theory some commonalities can be found in the intersection of them. The important element that separates these two learning methods is the nature of getting to the output. In collaborative learning the students collaborate with other peers in order to produce a work and in cooperative learning the output is comprised by a collection of individual works of the members.

The next section raises the issue of the interactions taking place in groups. In this section the ways of making a communication and their respective types of conversations as defined by Jenlink and Carr (1996) and Pea (1994) were presented. Then the three modes of communication were analysed as related to this PhD research.

Finally in the final section of this chapter a discussion was performed concerning the problems of the traditional and online group interactions as viewed by Adler (1991) and Sherry (2000).

3.8 Conclusions and Relation to this PhD

The conclusions drawn, which are related to the PhD research is that communication in an online learning environment is problematic by itself. This communicational problem can further be augmented by the various learner characteristics that are directly influenced by the students' or teacher's culture. Therefore, there is an apparent need of considering the culture as an important element in an online communication. Throughout this chapter it was discussed and concluded that this PhD should focus on examining the emergence of multicultural conflicts by using synchronous text-based CMC when students are involved in collaborative learning activities without the moderation of a tutor. In a synchronous text-based chat, students are more likely to exhibit cross-cultural communication conflicts mainly due to the absence of social cues.

This PhD, more specifically, focuses on identifying problems as discussed in section 4.5 that can arise at the norming stage of Tuckman's group development model and through discussion and dialogue as specified by Jenlink and Carr (1996), which are:

- Mistrust;
- Miscommunication
 - Cross-cultural misperception;
 - Cross-cultural misinterpretation;
 - Cross-cultural misevaluation.

In order to investigate multicultural communication conflicts, it is of paramount importance the identification of a way of characterising cultural behaviours that can be attributed to specific cultures. In order to accomplish that, Hofstede's cultural dimensions, as well as the identification of cultural sensitive design models are being discussed in the next chapter.

4.1 Introduction

In this chapter, it is discussed:

- the need for cultural inclusive education;
- the definition of culture and the cultural levels;
- Hofstede's cultural dimensions that are used as a tool to better understand cultural specific behaviors;
- the communication in e-Learning environments;
- Culture sensitive Design Paradigms.

As argued in the previous chapters, the main problem that HE in Greece faces is the cultural exclusivity inside the formal HE setting. E-Learning environments can aid in this cultural exclusivity problem by facilitating the process of cultural accommodation of students in HE. These e-Learning environments must be based on authentic collaborative learning activities facilitated by CMC in order to enhance the need of social negotiation that will provide solution to the barriers that culture can pose in the accommodation.

4.2 The need for cultural inclusive education

The influence of globalisation in education has caused changes in the ways formal educational learning is perceived; thus, this led to the induction of informal and non-formal ways of learning in the formal educational setting. This influence of globalisation is argued by Seuffert (2002) that causes a rapidly increasing need for consideration of cultural differences (McLoughlin and Oliver 1999, 2000; Joo 1999; Wild and Henderson 1997). This need for cultural inclusion is further supported by the increase of the WWW and the way learning is being viewed without space and time limits (Wild and Henderson 1997). The increasing demand for learning without the traditional barriers will affect the traditional way education is perceived causing it to become an export factor between countries (Harasim et al. 1995). According to Seuffert

(2002), these educational products produced could not be adaptable to every country and cultural environment.

The cultural inclusive education can be viewed either from an institutional or from a learning perspective (Seufert 2002). From an institutional perspective, culture-related adaptable solutions should be offered to cover the training needs of multinational companies. On the other hand, with the introduction of the WWW in the formal education, learners study in collaborative multicultural teams, and teachers teach and facilitate students from all over the world. Thus, students will increasingly being asked to interact with other students in multicultural environments for which they may be ill-prepared (Katakalos and Nunes 2007). According to Wild and Henderson (1997) 'distributed learning systems' on the WWW have the potential and often the intention of reaching greater numbers of culturally diverse students. With the introduction of technologies cultural dimensions should be taken into account as technology can be viewed as a 'cultural amplifier' increasing the cultural dimensions of communication, task analysis and problem solving (McLoughlin 1999b; Seufert 2002; Wild and Henderson 1997). Therefore, WWW sites should be viewed as pedagogical vehicles for the provision of flexible learning following a student-centred model of learning, where the learner is both intrinsically motivated and active in the learning environment (Wild and Henderson 1997).

4.3 Culture and Cultural levels

In order to understand and further explain culture in HE, Hofstede's research is used in this PhD. Thus, in this section the definition of culture, cultural levels and how cultural can be measured are further explained.

4.3.1 Definition of culture

In an effort to demonstrate the disparity of definitions of culture, Hofstede et al. (2005) stated that culture in most Western languages commonly means "civilisation or refinement of the mind and in particular the results of the refinement including education, art, and literature". This is a narrow view of the meaning of culture. In a broader perspective culture can be viewed as the beliefs, value systems, norms, mores,

myths and structural elements of a given organization, tribe, or society (Seufert 2002; Chen et al. 1999; Collis 1999; Watson et al. 1994; Hofstede et al. 2005). Moreover, as argued by Henderson (1996) and further supported by Wild and Henderson (1997) and Hofstede (2005) the most pervasive view, sees culture as a demonstration of ways in which a group adapts to its changing environment. Moreover, as argued by Hofstede (2005) people belong to more than one cultural group and therefore, they possess a subset of a culture's total identifiable characteristics and that they do not remain totally committed to their birth culture.

Culture is always a collective phenomenon, because it is at least partly shared with people who live or lived within the social environment in which it was learned... It is the collective programming of the mind that distinguishes the members of one group or category of people from others. (Hofstede, G., and Hofstede, J., G. 2005: 4)

Common in the definitions of culture is the view that it is learnt and not innate, and that it is a response to peoples' environments. According to Gregory (2000:2) that

"Hall (1977) suggests that anthropologists agree on three characteristics of culture, which "it is not innate, but learned; the various facets of culture are interrelated - you touch a culture in one place and everything else is affected; it is shared and in effect defines the boundaries of different groups". He further argues that it is those aspects of culture that are least recognised that "have the greatest influence on behaviour.", (Hall 1977)".

Hofstede et al. (2005) make the distinction of culture from human nature and an individual's personality as represented in figure 7. Human nature encompasses the common characteristics of all human beings. For example, the ability to feel fear, the need to associate with others, and the facility to observe the environment and to communicate it with other humans who belong to human nature (Hofstede 2005). However, what one does with these feeling and how one expresses them is modified by culture.

On the other hand, the individual's personality includes the individual's unique personal set of patterns of thinking, feeling and acting that need not to be shared with other

individuals (Hofstede et al. 2005). Individual personality patterns are partly inherited within the individual's unique set of genes and partly modified by the influence of culture as well as by unique social experiences (Hofstede 2005). Therefore, as identified in the previous chapter the learning theories that will express the cultural issues is one that uses situated authentic and collaborative learning activities with the use of CMC to enhance the social negotiation of meanings in order to overcome the barriers that culture can pose inside a learning activity.

This PhD thesis adapts the view of Hofstede (1991) that sees culture as “the collective programming of the mind that distinguishes the members of one human group from those of another culture. Culture, in this sense, is a system of collectively held values” (Hofstede 2005:5). This definition helps us better understand cross-cultural behaviours, perspectives, and values. In this way, it aids in the process of better defining behaviours and perspectives that can further be attributed to specific cultures.

4.3.2 Cultural levels

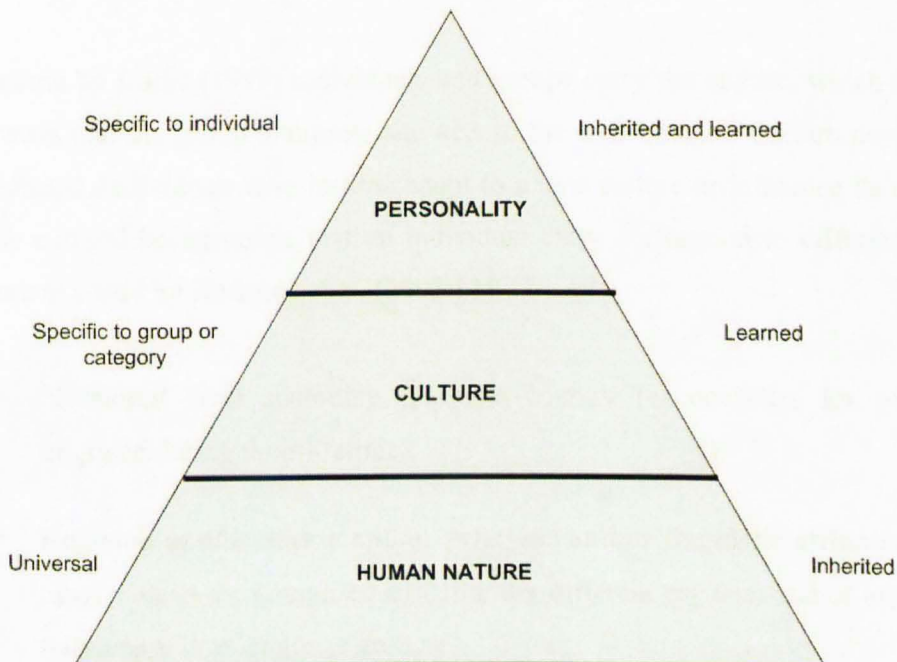


Figure 6: Levels of Uniqueness (excerpted from Hofstede et al. 2005)

Cultural differences manifest themselves in several ways. As stated by Hofstede et al. (2005) symbols, heroes, rituals, and values, as can be observed in Figure 8 as part of an

onion, cover the total concept rather neatly and they can be influenced and modified by a conscious way of learning through practices.

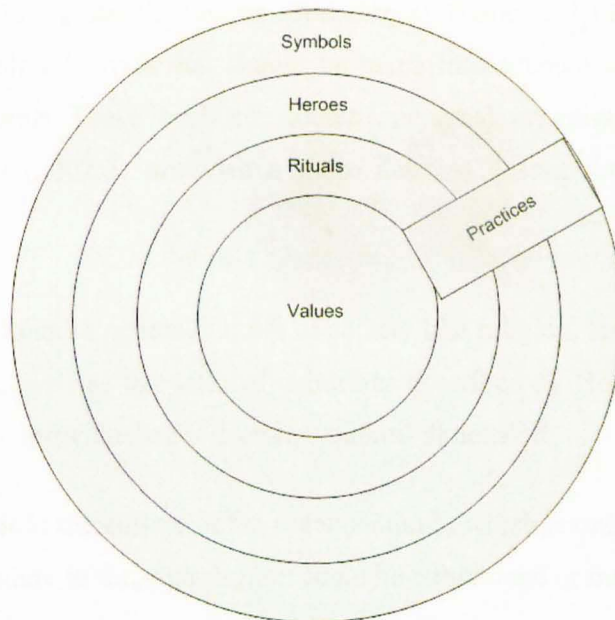


Figure 7: Manifestations of Culture (excerpted from Hofstede et al. 2005)

As stated by Collis (1999) individuals and groups carry the culture, which determines the ways that the group interprets and acts to the environment. Culture never remains unchanged. Individuals may in time adapt to a new culture or influence its adaptation. These cultural backgrounds that an individual carry correspond to different levels of culture as stated by Hofstede et al. (2005:11):

- **“National level** according to one’s country (or countries for people who migrated during their lifetime);
- **Regional and/or ethnic and/or religious and/or linguistic affiliation level** as most nations are composed of culturally different regional and/or ethnic and/or religious and/or language groups;
- **Gender level** according to whether a person was born as a boy or as a girl;
- **Generation level** separating grandparents from parents from children;
- **Social class level** associated with educational opportunities and with a person’s occupation or profession;

- **Organizational, departmental, and/or corporate level** according to the way employees/students have been socialized.”

In respect to the above cultural levels as defined by Hofstede et al. (2005), Collis (1999) defined several cultural levels that should be taken into account when implementing learning environments. These levels are: societal, personal, organisational, disciplinary. Moreover, Seufert (2002:5) provided a more detailed description of these cultural levels:

- **“Society:** includes general culture of society like religion, language, values, and attitudes, as well as the national culture as described by Hofstede (1991) when defining the individualist/collectivist cultural dimension;
- **Organization:** the culture of the organization in which learning takes place. The learning culture in the organization could be either open or incentive to learning;
- **Group:** group norms, values, attitudes. The types of group could be either work, study, peer group, dispersed, multicultural group or local groups. A multicultural dispersed team or community faces the problem of communication, attitude and perception, harness advantages of cultural diversity, lack of cohesion, time and distance;
- **Individual:** Teacher’s and learner’s culture influenced by society or group norms. People with high confidence of knowledge of other cultures tend to be more willing to explore cultural topics;
- **Discipline/Domain:** subject-related culture.”

These cultural levels as argued by Seufert (2002) are influencing the acceptance, use and impact of online learning environments. Moreover, Wild and Henderson (1997) argue that it appears to be a general consensus that ‘culture has a definite and very strong influence on the design and use of information, communication and learning systems, as well as on their management, despite the lack of identifiable research in these areas’. Apart from the cultural levels discussed in this section distinction between national/societal with the individual identity should be made.

4.3.3 National/Societal versus Individual Cultural Identity

In order to focus on the cross-cultural communication taking in a learning environment, it must be stated that the investigation should be based on the identification of national/societal cultural barriers and not in the individuals cultural. Therefore in this section the separation of the national and individual cultural identity is made.

As stated by Hofstede et al. (2005) the existence of the term nation is a rather new concept and was introduced in mid-twentieth century, following the colonial period. As it is further argued by Hofstede (2005), the concept of a common culture can be applied to societies and not to nations. But there are some cases that common culture can be identified in some examples of nations. This category includes nations with the following characteristics: one dominant national language, common mass media, a national education system, a national army, a national political system and other (Hofstede et al. 2005).

On the other hand, there remains a tendency for ethnic, linguistic, and religious groups to fight for recognition and independence inside nations/societies like the ethnic groups of the former-Yugoslavia and the Chechens in Russia. Moreover, what identifies one nation from another is differences exhibited from the influence of culture and which can be observed in varieties of set of laws and legal systems, religious communities, school systems and family structures (Hofstede 2005). Therefore, it could be argued that as culture can shape the differences between nations, culture can also shape differences of a group of students inside another educational system and the way this diversity influence their learning. Thus, an investigation into the relation of students' cultures and their relation with the learning process and more specifically the communication should be made.

4.3.4 Hofstede's Cultural Dimensions

This PhD is based on investigating the cultural diversity of students coming from SEE, inside the Greek HE setting by utilising the 4+1 cultural dimensions as identified by Hofstede (1991, 2005). A dimension as defined by Hofstede (2005) is an aspect of a culture that can be measured relatively on the other cultures. The dimensions that were

identified and they are described in the following subsections are power distance (from small to large), collectivism versus individualism, femininity versus masculinity and uncertainty versus avoidance. Hofstede's research is used in this PhD as a framework to provide better understanding of the different cultures and analyse the potential impact that cultural disparity might have on the educational process by relating behaviours to culture.

The study of Hofstede's dimensions may assist in understanding some of the issues for students from Greece and SEE working together, as they provide a way of looking at the different world views and patterns of behaviours held by different cultures. They also raise the idea of cultural distance, that is, how far apart two cultures are on any given dimension. This is important because the greater the distance, the greater the difference and, therefore, the greater the difficulty in finding common ground.

4.3.4.1 Power Distance Dimension

According to Hofstede et al. (2005) power distance is defined as "the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally". The term institution includes the basic elements of a society like: family, school (including HE), and community. The term organisation includes the places where people work. A High Power Distance ranking indicates that inequalities of power and wealth have been allowed to grow within the society. These societies according to Hofstede et al. (2005) are more likely to follow a caste system that does not allow significant upward mobility of its citizens. On the other hand a low Power Distance ranking indicates a society that de-emphasizes the differences between citizen's power and wealth. In these societies equality and opportunity for everyone is stressed.

More specifically, as it is argued by Hofstede (2005) and further displayed in table 6, in countries with large power distance scores there exist the teacher-student inequality that caters the need for dependence well established in the student's mind. Thus, it could be expected that in this group of countries teachers are treated with respect and in some cases students may have to stand up when teachers enter classroom. Inside the classroom it is the teacher that initiates all communication; students speak up only when

invited to do so. Therefore, the educational process is highly personalised and what is transferred is not seen as an impersonal ‘truth’, but as the personal wisdom of the teacher. Thus, in this group the learning process is following the teacher-centre approach as described in chapter 3 when discussing the behaviourism and the objectivism learning theory. This model of teaching excludes the cultural backgrounds and the students’ prior experiences as communication takes place when the teacher permits and the teacher’s knowledge is never questioned.

On the other hand, in countries with small power distance scores are supposed to treat students as equals and expect to be treated as equals by the students. The educational process could be considered student centred. Therefore, in such type of countries students are responsible for their learning and teacher plays the role of the facilitator rather than the role of the processor of the absolute true knowledge that is never questioned. Therefore, the educational process by being more student-centred asks for the communication to be a two-way communication between students-to-students and between students-to-teacher.

All the above discussion is summarised in table 1.

SMALL POWER DISTANCE	LARGE POWER DISTANCE
Inequalities among people should be minimized	Inequalities between people are expected and desired
Social relationships should be handled with care	Status should be balanced and restraint
There should be, and there is to some extent, interdependence between less and more powerful people	Less powerful people should be dependent; they are polarized between dependence and counter-dependence
Students treat teachers as equals	Students give teachers respect even outside of class
Teachers expect initiative from students in class	Teachers should take all initiative in class
Teachers are experts who transfer impersonal truth	Teachers are gurus who transfer personal wisdom
Quality of learning depends on two-way communication and excellence of students	Quality of learning depends on excellence of teacher
Less educated persons hold more authoritarian values than more educated persons	Both more and less educated persons show equally authoritarian values
Educational policy focuses on secondary schools	Educational policy focuses on universities.

Table 1: Key Differences between Small and Large Power Distance Societies: General Norm and School (excerpted from Hofstede et al. 2005)

4.3.4.2 Individualism versus Collectivism Dimension

According to Hofstede et al. (2005) “extreme individualism and extreme collectivism can be considered as the opposites poles of a second global dimension of national cultures’. Individualism, as it is further argued by Hofstede (2005) relate to societies in which the ties between individuals are loose – everyone is expected to look after themselves or their immediate family – and collectivism relates to societies in which people are integrated early into strong and cohesive in-groups, which through the lifetime continue to protect them in exchange of unquestioning loyalty

A High Individualism ranking indicates that individuality and individual rights play an important role in the society. Thus, it could be expected that in such societies the individual will make more and loose relationships with other individuals. A Low Individualism ranking typifies societies of a more collectivist nature with close ties between individuals. Therefore, concepts like families become a priority for the individuals who assume the responsibility of group members belonging to their family.

Hofstede (1991) in his research found that countries that scored high on the power distance index scored low on the individualism and vice versa. In other words, this relationship between the two indexes show that people that score high in IDV, i.e. they are more collectivist in nature indicating a dependence in the group rather than the individual, usually demonstrate a dependence on power figures with the families that as it is argued by Hofstede (2005) they tend to follow “a patriarchal structure with the head of the family exercising strong moral authority”.

As stated by Hofstede (2005), and summarized in table 7, a teacher coming from an individualistic culture in a collectivist environment will face problems like: students not speaking up even when the teacher asks a question (a typical collectivist student behaviour). Instead, students from collectivist cultures speak up only when they are addressed to by the teacher. A possible solution to this problem of cultural miscommunication between individualistic teachers and collectivist students could be the creation of small subgroups with one representative who will speak on behalf of the whole group in order to increase the student participation.

As it is argued by Hofstede (2005) it is a common phenomenon for the students from the same culture to form groups with students from the same or similar cultures.

On the other hand, in the individualist societies, as shown in table 2, the purpose of learning is less to know how to do as to know how to learn. In this sense as it is argued by Hofstede et al. (2005) the individualist societies try to provide the competencies necessary for “modern man”.

COLLECTIVIST	INDIVIDUALIST
Students only speak up in class when sanctioned by the group	Students are expected to individually speak up in class
The purpose of education is learning how to do	The purpose of education is learning how to learn
Diplomas provide entry to higher-status groups	Diplomas increase economic worth and/or self-respect

Table 2: Key Differences between Collectivist and Individualist Societies: School
(excerpted from Hofstede et al. 2005)

4.3.4.3 Masculinity and Femininity Index

According to Hofstede (1991) femininity and masculinity are defined as follows:

A society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life.

A society is called feminine when emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life.

In High Masculine countries it is exhibited also a high degree of gender differentiation. Thus, in these cultures, males dominate a significant portion of the society and power structure, with females being controlled by male domination. A Low Masculinity ranking indicates the country has a low level of differentiation and discrimination between genders. In these cultures, females are treated equally to males in all aspects of the society.

In relation to the education, as it is also summarised in table 8, in feminine cultures the teacher will rather praise weaker students in order to encourage them, than openly praise good students (Hofstede 2005). Thus, it could be argued that awards and praise for excellence both in students and teachers is a concept that is used in masculine cultures. The difference in how excellence is rewarded could influence in-classroom behaviour as students from masculine cultures try to make themselves visible in class and compete openly with each other (i.e. seek actively to show their excellence). Thus, failing in school is considered to be a disaster in masculine countries.

Furthermore, the criteria for evaluating both teachers and students differ between masculine and feminine cultures. Thus, as shown in table 8, in masculine cultures teachers' brilliance, and academic reputation and students' academic performance are the dominant factors. On the contrary, as argued by Hofstede (2005), in feminine cultures the factors that play an important role are teachers' friendliness and social skills and students' social adaptation. All the previous discussion is summarised in table 3

FEMININE	MASCULINE
Average student is the norm; praise for weak students	Best students is the norm; praise for excellent students
Jealously on those who try to excel	Competition in class; trying to excel
Failing in school is a minor incident	Failing in school is disaster
Competitive sports are extracurricular	Competitive sports are part of the curriculum
Children are socialized to be non-aggressive	Aggression by children is accepted
Students underrate their own performance: ego-effacement	Students overrate their own performance: ego-boosting
Friendliness in teachers is appreciated	Brilliance in teachers is admired

Table 3: Key Differences between Feminine and Masculine Societies: School
(excerpted from Hofstede et al. 2005)

4.3.4.4 Uncertainty Avoidance Index

Uncertainty avoidance is defined as the extent to which the members of a culture feel threatened by ambiguous or unknown situations (Hofstede, 2005). Uncertainty avoidance as stated by Hofstede et al. (2005) should not be confused with risk avoidance. The major difference between these terms is that risk is often expressed as a percentage of probability that a particular event may happen, but uncertainty has no probability attached. It is a situation in which anything is probable to happen.

Thus, a High Uncertainty Avoidance ranking indicates that the country has a low tolerance for uncertainty and ambiguity (Hofstede, 2005). Thus, for this type of countries, focus is put on rules, laws, regulations and general controls in order to reduce the amount of uncertainty. On the other hand, a Low Uncertainty Avoidance ranking indicates that this type of countries can embrace uncertain and ambiguous situations. Thus, this tolerance in ambiguous situations can indicate that changes in this type of countries could be implemented faster without considering all the possible risks beforehand.

In relation to education, uncertainty avoidance in a society can affect the educational system in determining the proper amount of structure in the teaching process (Hofstede 2001). In countries that do not accept ambiguous and uncertain situation, it is more probable that activities will be structured, with precise objectives, detailed assignments and strict timetables and evaluation will be based on accuracy (Hofstede 2005). On the other hand, the educational system should embrace ambiguity by showing preference in unstructured activities and open-ended learning with not clear objectives.

Moreover, as shown in table 9, students from strong uncertainty avoidance countries expect the teachers to be experts and provide all the answers. For example, teachers, who use academic language that is not easily understood, are respected (Hofstede 2005). Therefore, by accepting that teachers are experts, intellectual disagreement is perceived as personal disloyalty.

On the other hand, as shown in table 9, students that embrace uncertainty can accept a teacher who says 'I don't know'. The teacher is respected if he or she uses plain language and books that explain difficult issues and concepts in ordinary terms (Hofstede 2005). Therefore, by accepting that the teacher cannot always be an expert, intellectual disagreement is perceived to be a stimulating exercise. In situations of low uncertainty avoidance score, students were more likely to attribute their achievements to their own ability, and in countries with high scores to circumstances of luck. All the previous discussion can be summarised in table 4.

WEAK UNCERTAINTY AVOIDANCE	STRONG UNCERTAINTY AVOIDANCE
Students are comfortable with open-ended learning situations and concerned with good discussions	Students are comfortable in structured learning situations and concerned with the right answers
Teachers may say 'I don't know'	Teachers are supposed to have all the answers
Results are attributed to a person's own ability	Results are attributed to circumstances of luck
Teachers involve parents	Teachers inform parents

Table 4: Key Differences between Weak and Strong Uncertainty Avoidance Societies: School (excerpted from Hofstede et al. 2005)

4.3.4.5 Long and Short-Term-Oriented Index

Long-term orientation is defined as “the fostering of virtues oriented toward future rewards – in particular, perseverance and thrift and short-term orientation as the fostering of virtues related to the past and the present – in particular, respect for tradition, preservation of ‘face’, and fulfilment of social obligations” (Hofstede 2005).

High Long-Term Orientation score, as it is further argued by Hofstede (2005), indicates that the country prescribes to the values of long-term commitments and respect for tradition. This is thought to support a strong work ethic where long-term rewards are expected as a result of today's hard work. However, business may take longer to develop in this society, particularly for an "outsider". A Low Long-Term Orientation ranking indicates a country where change can occur more rapidly as long-term traditions and commitments do not become barriers to change.

In relation to the education, as stated by Hofstede et al. (2005), rote learning as perceived by Western minds might be in fact a way toward understanding, because teaching and learning are culturally conditioned and similar behaviours may have different deep meanings. As it is shown in table 5, in countries with short-term orientation students attributed their success or failure mostly to luck and have demonstrated a talent for theoretical and abstract sciences. On the other hand, countries with long-term orientation the students attributed their success to their personal effort and they demonstrated a talent for applied and concrete sciences. These key differences can be summarised in table 5.

SHORT-TERM ORIENTATION
 Students attribute success and failure to luck
 Talent for theoretical, abstract sciences
 Less good at mathematics and at solving formal problems

LONG-TERM ORIENTATION
 Students attribute success to effort and failure to lack of it
 Talent for applied, concrete sciences
 Good at mathematics and at solving formal problems

Table 5: Key Differences between Short- and Long-Term Orientation Societies: School (excerpted from Hofstede et al. 2005)

4.3.4.6 Greece's Cultural Dimension

Figure 9 below clearly demonstrates the need of investigating the individual cultural dimensions of the dimensions analysed above. This happens because as in most of the cases the country's scores fall between the 0 and 100 measurement of the Hofstede's measurement scale. The graph below can give us a brief expectation of the results that this research will aim for. Therefore the aim of this research is to investigate the individual cultural differences in a group of student consisting of different nations.

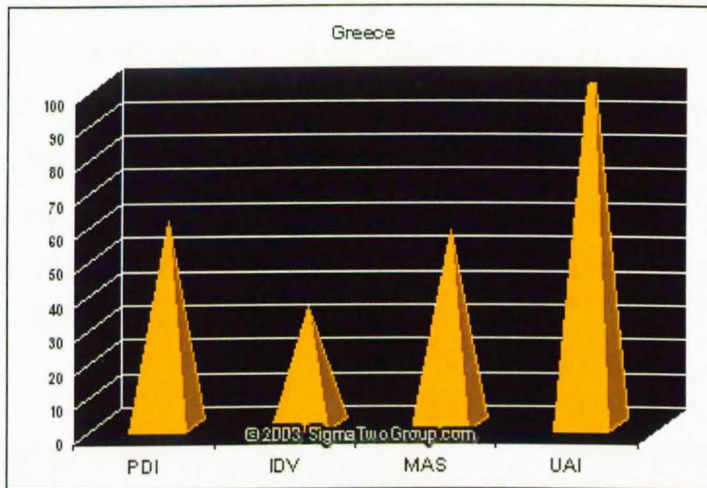


Figure 8: Hofstede's Values for Greece (excerpted from Hofstede et al. 2005)

4.4 Communication and Culture in On-line Environments

Apart from the consideration on the cultural backgrounds of the learners and their view and preference concerning their learning process, the teacher should focus on the communication element and the influence that culture exercises on it. According to Seufert (2002) the cultural environment affects the eLearning environment in two perspectives: the design and development of the system and the acceptance and use of the system as shown in figure 9.

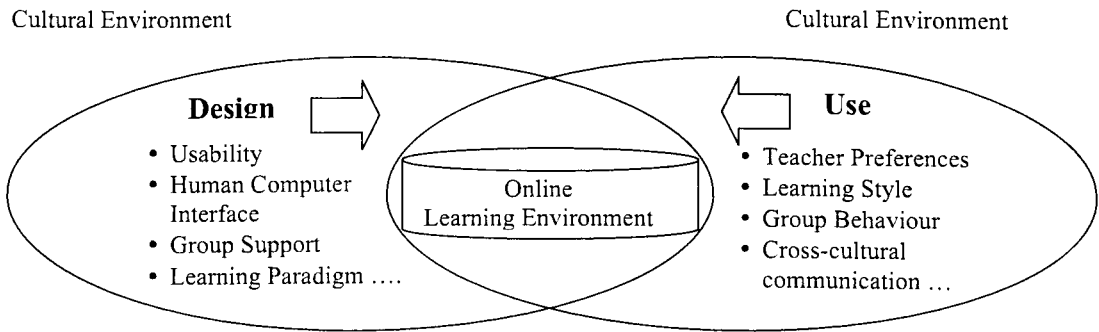


Figure 9: Cultural Environments (excerpted from Seufert 2002:3)

In the design, development of the system view, the cultural environment on which the system is developed affects also the design of the system (Seufert 2002). That means that a product produced in one culture may not be appropriate for another culture. Watson et al. (1994) argue that learning software cannot be transferred isolated without its culture-related root and the cultural context in which it is produced. Moreover, McLoughlin and Oliver (1999b, 2000) point out that designer plays an instrumental role in the process of creating and developing interactive multimedia, courseware and learning environments often influencing the material created and its symbolic culture. In their article McLoughlin and Oliver (2000) make the distinction between two categories of web site: local in the sense that they are made in one context and culture (monoculture) but visited by other cultures and cross cultural sites aiming at accommodating various context and various cultures (multicultural), for cross cultural participation as demonstrated in Figure 10.

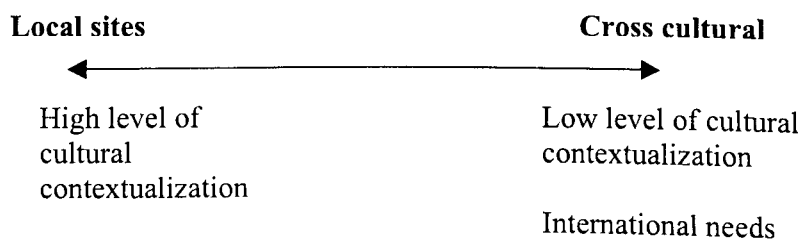


Figure 10: Categories of Web sites (excerpted from McLoughlin and Oliver 2000)

Thus, incorporation of local values, styles of learning and cognitive preferences is needed for a culturally localised learning environment. Therefore, effort should be put in how the designer designs culturally localised user interfaces. In relation to the educational setting, the teacher plays the role of the designer by selecting the communication tools and the learning path for its activity in the eLearning environment.

This view can be further supported by Ackerman (2002) who envisions the future of WWW design and development where the designers will have a set of tools: templates and libraries of images that will help them in designing culturally appropriate user interfaces. Moreover Marcus (2002) identifies five design components that a user-interface designer has to cope with. These are:

- Metaphors which are fundamental concepts used as ‘short-cuts’ to get across complex concepts and are communicated via words, images, sounds, and tactile experiences;
- Mental models which are concepts people have in mind including what a person thinks is true (not necessarily what is actually true);
- Navigation, which is the ‘movement’ through the mental model. This movement can be facilitated by using appropriate menus, dialog boxes, control panels, icons, and tool palettes;
- Interaction, which is the communication between a user and a computer. It can be either direct interaction which involves a channel of communication with feedback and control throughout the performance of the task or indirect which involves background or batch processes;
- Appearance, which is how a product appears to the senses. It includes all essential perceptual attributes (visual, auditory and tactile characteristics).

But it is not only the design that can be influenced by culture; communication in e-Learning environments can also be affected. Generally, communication in a learning environment can be defined in respect to cultural context, interaction mode, and communication form as presented in figure 11. The cultural context is defined in terms of global, multicultural groups versus local, monoculture groups. Interaction mode determines the degree of computer-mediated communication varying from face-to-face to pure computer-mediated.

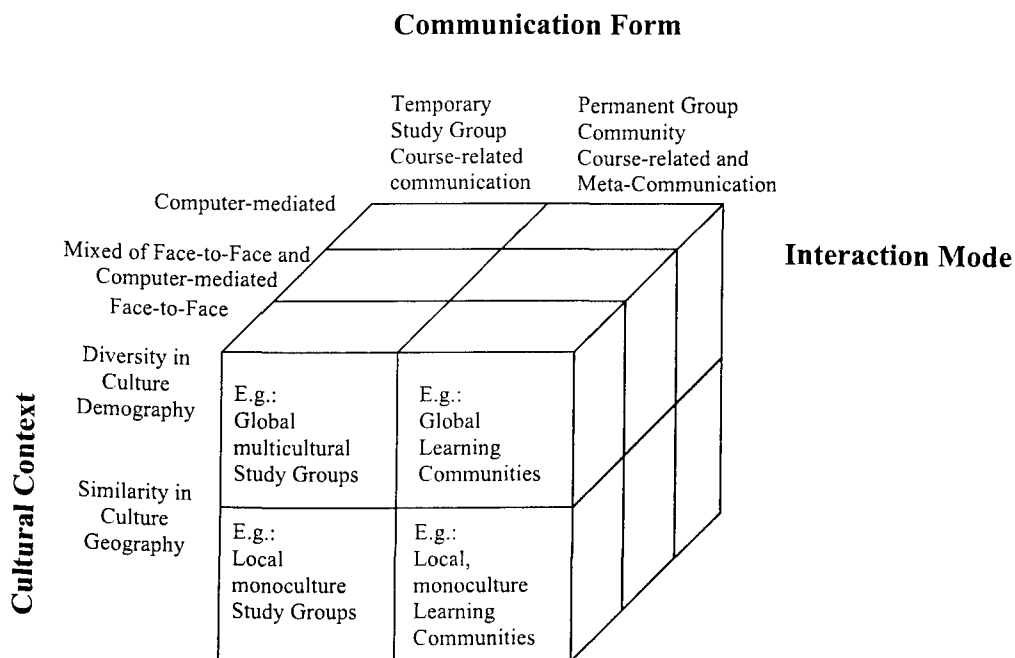


Figure 11: Interaction in Cultural Environments (excerpted from Seufert 2002:4)

Communication form can take place either in a ‘temporary study group’ – a group having no common history, no common future, no common value and beliefs – communicating about course related topics or in permanent groups – a group with common history, common future, common value and beliefs – communicating at a meta-level (meta-communication). As defined by Yetim (2001) is communication about communication – can be viewed as communication that takes place when there is a breakdown in communication. Thus, in cultural environments meta-communication is the communication that continues even if a break down originated by cultural differences.

Concerning the use of the system, the cultural backgrounds of students and teacher play an important role in the communication between learner-to-learner and learner-to-teacher. In this communication the focus should be put either on the communication method per se, i.e. synchronous and asynchronous, or in the cross-cultural communication, which as defined by Addler (1991), is concerned with the cross-culture differences in the communication. Thus, the designers apart from the role of designing cultural localised or cross cultural user interfaces should have in their minds to provide the appropriate tools for enhancing the communication in an online learning environment. Thus, designers should provide the appropriate set of tools that can enhance communication in cultural diverse groups at the teacher’s disposal.

In relation to this PhD, the communication that is investigated involves the participation of local multicultural groups that have diversity in culture and geography in an e-Learning activity by using CMC tools.

Moreover, as the study of Wang (2007) showed that effort should be put on engaging more effectively learners from diverse cultural backgrounds by utilising a set of guidelines about how to avoid cross-cultural conflict. The Wang's study is based on examining the effect of a single dimension of Hofstede's (2001) framework, the PDI dimension, on learners' perceptions of their online experiences. The cultures that participated on this study were American, Chinese and Korean. Wang's (2007) study used online surveys (pre and post surveys) in order to measure "students' cultural attributes and to collect their perceptions on course design and delivery". Then Wang's study used qualitative content analysis in order to compare the online courses based on: the use of communication tools, format of the assignments, assessment, and course conduct. The results of this study showed that culture influenced the perception of students regarding online communication, PDI particularly affected students' ways of approaching other students and their teacher.

Wang's (2007) although showed that a set of guidelines can be produced guiding teachers into enhancing the learning experience of their students, the guidelines can be applied only to the participating institutions. Moreover, as it is argued by Wang (2007) the PDI dimension is chosen as the only measure because of the greater influence that this dimension can have on student learning as compared to the other dimensions. Thus, further research is needed on measuring the influence of the other dimensions.

As related to this PhD, Wang's (2007) study added to the argument made on this PhD study that there is a need for measuring the influence of online communication for all of the Hofstede's dimensions. At this point the researcher decided that Wang's research could not assist in the support of this PhD study's results because of differences on:

- **Samples:** Wang's study investigated China, Korea and USA which belongs to the opposite poles for each dimension based on Hofstede scores. This PhD study investigated geographically close countries with common history (Balkan and Turkish wars);

- **Research methodology:** Wang's study measured perceptions of course design and delivery in existing e-Learning courses from different universities through surveys, and interviews. This PhD study investigates conflicts of online interactions that are attributed to cultural differences
- **Hofstede's Dimensions:** Wang's study examined only one of Hofstede's dimensions. This PhD study examined four of Hofstede's dimensions.

4.5 Design Paradigms

There is growing evidence that supports the importance of culturally appropriate design for educational courseware, interactive multimedia and learning environments (McLoughlin, 1999a, 1999b; Barron and Rickerman, 2003; Pfremmer, 2004; Seufert, 2002). There are several culture-based models that do exist in educational design; however they are not commonly used models (Henderson, 1996; Lee, 2003; Thomas, Mitchell & Joseph, 2002; Young 2008).

Henderson (1996:92) identified several design paradigms for culturally localised learning environments, which were separated into three main approaches:

- “Inclusive or perspectives approach which imports the social, cultural and historical perspectives of minority groups, but does not challenge the dominant culture;
- Inverted curriculum approach which attempts to design an instructional component from the minority perspective but fails to provide the learners with educationally valid experiences as it does not admit them into the mainstream culture;
- Culturally uni-dimensional approach which includes or denies cultural diversity and assumes that educational experiences are the same for the minority students as they are for others.”

Lal (2003) quoting the work of Henderson (1996) argues that “cultural minorities are often made invisible and are being disadvantaged in their learning”. The reasons, as they are further discussed by Lal (2003), for this are:

- “It often happens due to designers being unintentionally culture blind or adopts a culturally homogeneous approach to design. This leads to exclusion and silencing of issues of cultural contextualization and the universalization of a dominant groups knowledge and culture;
- Words like multiculturalism, cultural diversity and cultural pluralism create feelings of general controversy and this leads designers to adopt avoidance strategies, which result in deracialisation. Designers need to recognize that knowledge acquisition is very much a socio-cultural process as Vygotsky’s learning theories put it;
- Not much significance provided to cultural context in learning theories which inform instructional design. This leads to courseware in which the user has no identity other than that of “the learner”;
- Incorporation of multiculturalism in courseware is really “political correctness run rampant”. Those who consider certain disciplines of knowledge like mathematics to be culturally neutral often hold this view. Even constructivist designers, who understand that all knowledge is open to criticism and different interpretations, ignore in their design the different realities that exist in non-western cultures;
- It is naive to accommodate multiculturalism in design. Those who feel it is not cost effective to attempt to include everyone’s ethnicity and learning style in our diverse society often hold this perception.”

Henderson proposed an instructional design model, which is a ‘multiple cultural model’ of instructional design (McLoughlin 1999b, 2000). This model sets the requirement for the designer to adopt a global or international perspective as well as be sensitive in cultural differences and be familiar with the numerous ways culture can affect learning.

Moreover, Collins (1997) proposed several design issues for consideration when designing constructivist learning environments and are related to learning goals (memorisation vs. thoughtfulness, whole tasks vs. component skills, breadth vs. depth of knowledge, diverse vs. uniform expertise, access vs. understanding and cognitive vs.

physical fidelity), learning style (highly interactive or not, incidental or direct, fun or serious, natural or efficient, learner control or not), sequence (grounded vs. abstract learning, structured vs. exploratory learning, systematic vs. diverse learning, simple vs. complex learning) and methods (modelling, scaffolding, coaching, articulation, reflection). These issues raise the need for considering issues about the knowledge learned and the social setting in which learning occurs.

McLoughlin and Oliver (2000:70-71) based on Henderson's 'multiple cultural model', proposed ten design principles for culturally inclusive instructional design:

- “Adopt an **epistemology** that is consistent with and supportive of constructivist learning and multiple perspectives. Thus, they propose the adoption of the ‘community of practice model’ (Lave and Wenger 1991);
- Design **authentic learning activities** that help educational programs to build upon existing skills and values of the community, its cultural tradition;
- Create **flexible tasks and tools for knowledge sharing**;
- Ensure **different types of support within and outside the community**;
- Establish **flexible and responsive student roles and responsibilities**;
- Provide **communication tools and social interaction**;
- Create **tasks for self-direction**, ownership and **collaboration**;
- Ensure **flexible tutoring and mentoring roles that are responsive to learners needs**;
- Create **access to varied resources to ensure multiple perspectives**;
- Provide **flexibility in learning goals, outcomes and modes of assessment**.”

Therefore, as discussed in this section, there is a need for investigating the cross cultural communication that will help promote the creation of a permanent community of learners using meta-communication, the structure of information through authentic activities having as an influential factor the role of a flexible tutor.

The most important element in achieving this unidentified need is that e-Learning environments should adopt an epistemology that is consistent with and supportive of constructivist learning. Thus, it is of paramount importance to focus on the intersection of the principles of authentic activities, communication tools and flexible tutoring and mentoring as they are proposed by McLoughlin and Oliver (2000).

4.6 Summary of the Discussion

This chapter performed an investigation into multicultural education by first providing the broader definition of culture. Culture in its broader sense can be viewed as the beliefs, value systems, norms, mores, myths and structural elements of a given organization, tribe, or society. Culture should be separated from the personality of the individual as well from the human nature. Culture lies between these concepts clearly influencing them.

Then an analysis of the Hofstede's cultural dimensions was performed clearly relating them the educational setting. The relation can be summarised in table 6

<p>SMALL POWER DISTANCE</p> <p>Students treat teachers as equals</p> <p>Teachers expect initiative from students in class</p> <p>Teachers are experts who transfer impersonal truth</p> <p>Quality of learning depends on two-way communication and excellence of students</p> <p>Less educated persons hold more authoritarian values than more educated persons</p> <p>Educational policy focuses on secondary schools</p>	<p>LARGE POWER DISTANCE</p> <p>Students give teachers respect even outside of class</p> <p>Teachers should take all initiative in class</p> <p>Teachers are gurus who transfer personal wisdom</p> <p>Quality of learning depends on excellence of teacher</p> <p>Both more and less educated persons show equally authoritarian values</p> <p>Educational policy focuses on universities.</p>
<p>COLLECTIVIST</p> <p>Students only speak up in class when sanctioned by the group</p> <p>The purpose of education is learning how to do</p> <p>Diplomas provide entry to higher-status groups</p>	<p>INDIVIDUALIST</p> <p>Students are expected to individually speak up in class</p> <p>The purpose of education is learning how to learn</p> <p>Diplomas increase economic worth and/or self-respect</p>

FEMININE
 Average student is the norm; praise for weak students
 Jealously on those who try to excel
 Failing in school is a minor incident
 Competitive sports are extracurricular
 Children are socialized to be non-aggressive
 Students underrate their own performance: ego-effacement
 Friendliness in teachers is appreciated

WEAK UNCERTAINTY AVOIDANCE
 Students are comfortable with open-ended learning situations and concerned with good discussions
 Teachers may say 'I don't know'
 Results are attributed to a person's own ability
 Teachers involve parents

SHORT-TERM ORIENTATION
 Students attribute success and failure to luck
 Talent for theoretical, abstract sciences
 Less good at mathematics and at solving formal problems

MASCULINE
 Best students is the norm; praise for excellent students
 Competition in class; trying to excel
 Failing in school is disaster
 Competitive sports are part of the curriculum
 Aggression by children is accepted
 Students overrate their own performance: ego-boosting
 Brilliance in teachers is admired

STRONG UNCERTAINTY AVOIDANCE
 Students are comfortable in structured learning situations and concerned with the right answers
 Teachers are supposed to have all the answers
 Results are attributed to circumstances of luck
 Teachers inform parents

LONG-TERM ORIENTATION
 Students attribute success to effort and failure to lack of it
 Talent for applied, concrete sciences
 Good at mathematics and at solving formal problems

Table 6: Summary on cultural differences

These cultural differences have been defined by Hofstede when investigating national cultures. The effort of this research is to identify potential relation to the individual's cultural dimension and their national one as identified by Hofstede. In other words, this research is based on the Hofstede's cultural dimensions to better understand the participating cultures. Moreover, students' cultures are referred to national/country cultures in this research.

After the analysis of the cultural dimension the relation of the culture and e-Learning environments was made. The cultural environment affects the e-Learning environment in two perspectives: the design and development of the system and the acceptance and use of the system and that web design is clearly influenced by designers' own culture as well as the culture of the country it is uploaded. After that, it was stated that

communication in a learning environment is of particular importance when involving permanent groups – i.e. building a community of learners with common history, common future, common value and beliefs – communicating at a meta-level (meta-communication).

Finally multicultural design paradigms were analysed leading to the focus on three basic concepts: authentic activities, communication tools and flexible tutoring and mentoring.

4.7 Hofstede's initial characterization of cultural behaviors

As discussed in this chapter, Hofstede's cultural dimensions have been selected by the researcher in order to better understand the participating cultures and their potential communication conflicts that can be attributed to cultural diversities. From all the discussion taking place in the section, where the cultural dimensions are discussed, Hofstede's research argues that for:

- **PDI:** it could be expected that cultures, which score high on this index may exhibit behaviors like: preference on teacher whom they consider possessing all the true knowledge about the world, respect and asking for teacher's authority in classrooms, and speak only when they are requested to do so. On the other hand, students may show behaviors like: preference on student-centered learning with expectance of a teacher more as a facilitator in their learning process, expect a two way communication between teacher-to-student and between student-to-student, actively seek to show their excellence by openly competing inside the classroom even when they are not asked to do so;
- **IDV:** it could be expected that cultures scoring high on the previous dimension will score low on IDV. Students from cultures that score high on this dimension may exhibit behaviors like: actively seeking to individually speak in class, and seek excellence in diplomas that could provide a better after-university life. On the other hand, students are more likely to exhibit behaviors like: never actively speak but speak only when they are addressed by the teacher, and excellence in diplomas can provide access to a better social class.

- **MAS:** it could be expected that in masculine countries, students may exhibit behaviors like: expectance of the teachers' appraisal on their excellence, compete openly with other students inside classroom in order to excel often when they do not possess the required knowledge to do so, and complicated teachers' use of academic language and recondite subjects and learning process are admired and expected. On the other hand, students may exhibit the opposite behaviors from the ones previously described.
- **UAI:** it could be expected that students from cultures that embrace uncertainty (i.e. scoring low in UAI) are more likely to exhibit behaviors like: preference in open-ended learning situations, actively seek discussions as more important than the outcome and expect a teacher to not possess all the 'true' knowledge. On the other hand, students that do not want uncertainty are more likely to show behaviors like: preference on structured learning situations, actively seeking and concerned with the outcome and not for the discussion, and expect the teacher to possess all the 'true' knowledge.

Therefore, as argued in this PhD, Hofstede's previous general characterisation of cultural dimensions with specific behaviours can indicate what the researcher can expect to encounter in the analysis phase of the communication logs. More specifically the previous potential behaviours as related to the score for each dimension have provided the researcher an initial theory of what could be characterised in the later stages of the research as cultural behaviour that could lead to potential cross-cultural miscommunication when antithetic cultures communicate, cooperate and/or collaborate in an e-Learning activity.

4.8 Conclusions

As stated in Appendix D, despite the incoherent policies that may in turn hinder the development of e-Learning initiatives, Greece can support e-Learning solutions by having the required ICT infrastructure. As further argued in Appendix D, Greece faces an immigration explosion by attracting immigrants from SEE countries. Therefore,

solutions like e-Learning can provide accommodation of the diversity of cultures that exist in Greece. Thus, this PhD research is based on investigating communication problems of students coming from SEE and studying in Greece.

In order for e-Learning to culturally accommodate the diversity of cultures, an investigation of learning theories performed in chapter 2 showed that the appropriate theory underpinning e-Learning is constructivism, which through negotiation of meanings, authentic and situated learning, and collaborative activities can provide accommodation of the cultural diversities of students. Therefore, this PhD is also focussing on investigating the multicultural communication of SEE students studying in Greece, which communicate, collaborate and/or cooperate in an e-Learning activity.

But in e-Learning environments communication takes place through CMC tools. Thus, an investigation of CMC tools was performed in chapter 3 indicating that synchronous text-based communication can trigger potential communication conflicts due to the lack of social cues. Therefore, this PhD focuses on investigating the existence of multicultural conflicts of students, studying in Greece and coming from SEE countries, when they communicate, collaborate and/or cooperate inside an e-Learning activity by using synchronous text-based communication.

Finally, in order to investigate these multicultural conflicts, this PhD research is based on previous researches of Hofstede as discussed in this chapter in order to re-evaluate and categorise cultural behaviours, and on the work of Adler (1991) to characterise and categorise cross-cultural communication conflicts: misperception, misinterpretation, and misevaluation.

Chapter 5 Research Design

5.1 Introduction

In order to respond to the research question as presented in chapter 1 of this thesis quasi-experiments were used. As it is further discussed in this chapter, quasi-experiments were selected because it could not be expected that enough students with experience in e-Learning and especially using text-based communication in multicultural group activities could be found. Thus, in order to provide the experience of multicultural interaction in an e-Learning activity by using synchronous communication tools, an environment needed to be created. Such an environment can be offered by quasi-experiments.

As it is discussed in the following sections of this chapter, in order to run the quasi-experiments the researcher needed to:

- Understand the population;
- Produce an initial Theory according to the population;
- Define conditions and variables for quasi-experiments;
- Define data collection and analysis methods.

Therefore, the chapter provides a detailed analysis of the research stages which is made as they are presented in figure 14. More specifically, this chapter begins with the research question of this PhD. Then, it continues by discussing the research philosophy/epistemology, in order to inform the reader of the philosophical stance taken by the researcher. The research approaches and methods used are then detailed, along with how the data collection tools used were developed.

5.2 Research Question

As explained in the previous chapters, the area of research underpinning this PhD research is related to the difficulties and problems that learners coming from SEE face in a multicultural learning environment when collaborating, cooperating and communicating. Thus, the research question that has been formulated is:

Are there problems of communication, collaboration and cooperation in multicultural groups engaged in e-Learning activities by using synchronous communication in SEE?

Therefore, this research aims at establishing the potential problems of students from SEE when cooperating, collaborating and communicating with other students in a multicultural group in an e-Learning activity. Furthermore, the research aims at finding out if these problems actually exist and if eLearning can be seen as a potential solution to communication conflicts. In order to generate more specific directions to guide the research project, the central research question was divided into a set of sub-questions:

- What are the culturally induced problems that group members can face when they collaborate or cooperate?
- What are the culturally induced problems of students when they communicate?
- Do these problems persist when the group members are from the same culture?

In order to provide a response to the research questions and the research aims the following research objectives have been established:

- To identify theories in literature discussing problems of students in multicultural environments;
- To identify the existence of such problems by performing quasi-experimentation by using control (multicultural) group(s) and normal (monoculture) group(s);

- To characterise, define, and explain these problems by using in-depth interviews with participants;
- To propose a framework of potential problems students from different cultures in a foreign cultural environment may encounter when interacting in synchronous communication in e-Learning environments;
- To propose possible solutions that can aid and continue the communication between students from different cultural backgrounds within this type of learning environment.

In the following section the philosophical underpinnings of this research are being discussed.

5.3 Research Philosophy/Epistemology

Epistemology concerns the ways, views and paradigms that we use to understand how knowledge is developed, which in turn will affect the way that we do research (Saunders et al., 2003). In other words, it specifically deals with what is considered acceptable knowledge within the study field/discipline, and how this can be gained and disseminated (Galliers 1992). There are two antagonistic research paradigms that are being debated between philosophers of science: logical positivism and interpretive science (Trochim 2002; Galliers 1992):

- The former uses quantitative and experimental methods to test hypothetical-deductive generalisations. In other words logical positivism is generally adopted by physical and natural scientists that assume that objects exist independently and the nature of the object remains static, and thus the reality about the object can be deductively tested and explained through experiments. The term deductive is a method of reasoning that states that reasoning starts from the more general to the more specific as demonstrated in figure 13. Positivism calls for the independence of the observer from the subject and for the need to formulate hypotheses for subsequent verification (Trochim 2002);

- Interpretive science is an epistemological stance that is opposite to logical positivism. It uses qualitative and naturalistic approaches to inductively and holistically understand and explain a phenomenon, rather than search for external causes or fundamental laws (Trochim 2002; Galliers 1992). The term inductive is a method of reasoning that states that reasoning starts from specific observations to broader generalisations and theories as demonstrated in figure 14 (Trochim 2002).

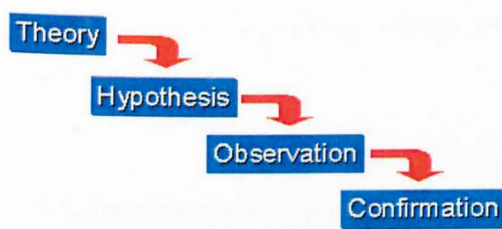


Figure 12: Deductive approach to reasoning (excerpted from Trochim 2002)

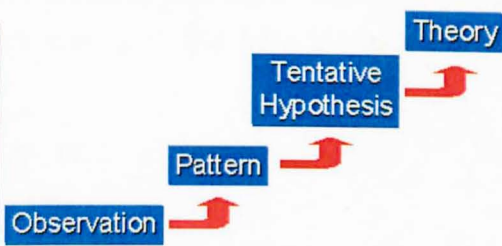


Figure 13: Inductive approach to reasoning (excerpted from Trochim 2002)

As argued by Silverman (1998) the important aspect in defining the research design is not an issue of the selection and the prescribed implementation of the rules of a specific school of thought, either positivism or interpretivism, but if the researcher has made a decision based on sensible methods according to the purpose of the study, the investigative question and the available resources. Based on the view of Silverman (1998), the researcher needed to decide which school of thought could provide the appropriate tools for this specific study.

In order to investigate a complex phenomenon like culture and its relation with communication in multicultural groups requires inductive and holistic understanding as well as explaining the phenomenon. This suggests that this study could be better supported by interpretivism as the underpinning epistemology. However, at this point the researcher realised that it could not be expected that enough students with experience in e-Learning and especially using text-based communication in multicultural group activities could be found. Therefore, it was decided that an environment should be created in order to provide participants with this experience. In order to create such an experience a quasi-experiment design was adopted. By following the previously described rational interpretivism was not the ideal

epistemology. Instead, it was decided for pragmatic reasons that positivism by using quasi-experiments could provide appropriate support for this study. In the following section experiments and quasi experiments are being discussed.

5.4 Research Design: Quasi-experiment Approach

As argued by Grant et al. (2008) and further discussed in Kampenes et al. (2008) experimental research can be separated into two broad categories: Experimental and Quasi-experimental designs. This section provides a discussion about each of these research designs explaining briefly which was used and how it was used in this research.

5.4.1 Experimental Design

As stated by Saunders and Bell (2003), pure or natural experiments are traditionally used in natural sciences, like chemistry, biology and physics, but are increasingly adopted by social sciences researchers, particularly psychologists. Experiments start with the development of research hypothesis (Bryman and Bell 2003). Moreover, as stated by Grant et al. (2008) experiments are used to determine cause and affect relationships between two or more factors in specific conditions. Galliers (1992:150) complements the previous view that experiments identify cause and effect by adding that this identification can be performed either via a designed laboratory environment by using quantitative analytical techniques aiming at deriving generalizable findings applicable to real-life situations, or via a real or natural environment. Finally, experiments require the random assignment of subjects to treatment (Grant et al. 2008; Kampenes et al. 2008). In this section pure or natural experiments are described.

In pure or natural experiments, as defined in the previous paragraph, two groups are established: the experimental group, which is the object of the experiment and the control group, which does not (Bryman and Bell, 2003). During the experiment the researcher may manipulate conditions and thus, altering the treatment of the experimental groups in order to assess the effect the changes have as compared to the control group (Easterby-Smith et al., 2002). As Bryman and Bell (2003) state, the

purpose of using control groups in pure or natural experiments is to control the possibilities of other explanation and reduce confounding variables regarding the causality of the findings.

As stated by Grant et al. (2008) although experiments have much strength, they cannot always be performed mainly due to the lack of:

- Opportunity for experimenters to control random assignment to treatment conditions;
- Experimenter control over key variables.

Moreover, as it is argued by Bryman and Bell (2003) and further supported by Grant et al. (2008), pure or natural experiments can encounter threats that can in the end become disadvantages. These threats as described by Bryman and Bell (2003) quoting the work of Campbell (1957) and Cook and Campbell (1979) are:

- Testing: referring that, participants in the experiment can realise and be influenced by the aims of the experiment. This potential threat cannot be considered as disadvantage by eliminating the differences that exist between the experimental and the control group;
- History: referring to external events that happened in the general environment might have caused changes in the environment of the experiment;
- Maturation: referring to the general principle that people change and thus their change may have caused also change to the experiment's measurements.
- Selection: referring to the nature of the selection process of the participants. For example, if participants have been by a non-random process then differences between the experimental and the control group could be attributed to inherited differences resulted from the differences in the selection process;
- Ambiguity about the direction of the causal influence: referring to the fact that the use of dependent and independent variables presupposes a direction of

causality. In some cases the direction of the causality is hard to be established.

Bryman and Bell (2003) further discussed that the previous threats can be eliminated by using control groups and random assignments.

From the discussion in the previous paragraphs, it could be argued that this research should use pure or natural experiments. This type of experiments would require that: the observation of the participants should take place in a real environment, and the participants should have been randomly selected from the general population. However in our case both of the previous requirements are not practical or even possible. On the one hand, the eLearning environment using synchronous text-based communication tools was absent in the private institution in which the whole research was carried out. On the other hand, the researcher as it is argued later in this chapter could not have randomly selected students from the general student population of the institution because of the existence of low numbers on some nationalities.

Thus, quasi-experiments were considered and discussed in the next section.

5.4.2 Quasi-Experimental Design

As argued by Grant et al. (2008) and further supported by Easterby-Smith et al. (2002) and Bryman and Bell (2003), quasi-experiments can offer the benefits of true or field experiments and tackle the disadvantages of lack of control over experimental conditions and over key variables. In other words, the quasi-experiment can address the practical difficulties of producing pure or natural experiments like the random selection of participants.

A quasi experiment is what Campbell and Stanley (1963) refer to as “the who and to whom of measurement” but it lacks control over “the when and to whom of exposure”, which would be essential if this was to be a pure or natural experiment. As Bryman and Bell (2003) defines them, it is “a research design that is close to being an experiment but does not meet the requirements fully, and therefore does not exhibit complete internal validity”. As it is further argued by Hom (2003) quoting Vogt (1993) and Everitt (2002), quasi-experiments are a research design used for performing field or

real-life situation studies where the researcher manipulates independent variables and could not randomly formulate the control and the experimental group. Thus, quasi-experimental designs can help in building up strong cause and effect relationships by controlling all the misleading variables of a pure natural experiment with random groups as it was described in the previous section.

Although a laboratory experiment can often be criticised as artificial, it is not necessarily non-natural in its carrying out the task (Leach 1991). Therefore, quasi-experiments can give the freedom to this researcher to create an environment that can provide the experience of multicultural interaction in an eLearning activity by using synchronous communication tools. In the following section it is explained, how the researcher used the quasi-experiment to create the experience required in order to investigate multicultural group communication conflicts.

5.4.3 Quasi-Experiments in this Research

After deciding that quasi-experiments were the most appropriate for testing multicultural group communication conflicts, the researcher continued on designing the quasi-experiment. As discussed in the previous sections, in order to setup an experiment it is needed to define:

- The environment;
- Variables needed to be studied;
- Experimental and Control groups;
- Confounding Variables.

Thus, the researcher created the e-Learning environment by selecting an appropriate platform and by setting up the e-Learning activity. Then, the researcher identified from the literature review performed in the previous chapters the variables for investigation. These variables are Hofstede's cultural dimensions and Addler's cross-cultural communication conflicts: misperception, misevaluation, and misinterpretation.

Moreover, the researcher defined the types of groups that were needed for this experiment. On the one hand, the researcher created groups that were promised by a single nationality and named them control groups. On the other hand, the researcher defined the experimental groups as the groups that are consisted from students of different nationalities. As discussed in section 5.5.3.1.2 of this chapter, the researcher created equal numbers of control and experimental groups.

Finally, the researcher defined the confounding variables for this research. In this way the researcher tried to ensure that variables would not affect the discussion of the students and create false multicultural communication conflicts. The confounding variables for this research are the following:

- Typing: for example slow typing can make students lose the focus of the discussion;
- English language: use of bad English can create confusion and misunderstanding between group members;
- Familiarity with CMC tools: frequent use of CMC tools can diminish the incidents of students losing the focus and current understanding of the topic discussed, by not being able to follow the synchronous posts.

In the following section, the research design is presented in more detail.

5.5 Research Design

In order to implement quasi-experiments the five stage research design proposed by Galliers (1992) was adopted. More specifically, as shown in figure 14 this research design is comprised by the following stages:

- Research Question;
- Literature Review;
- Theory Building – theory to be tested;

- Questionnaire;
 - Quantitative Analysis;
- Experiment;
 - Logs;
 - Quantitative Analysis;
 - Qualitative Analysis;
 - Interviews;
 - Qualitative Analysis.

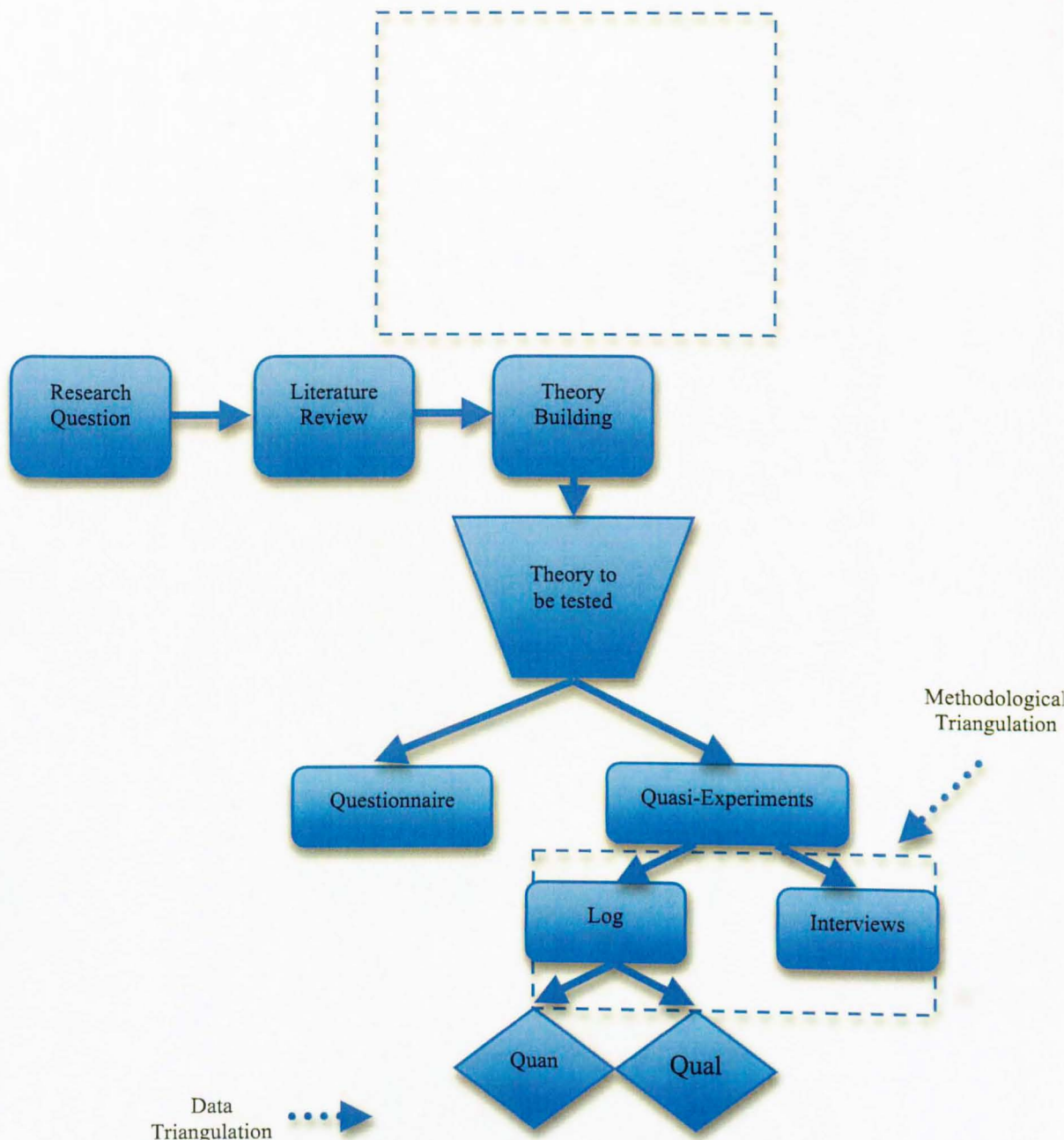


Figure 14: Research Stages

5.5.1 Literature Review and Theory Building

The literature review of this PhD, see appendix D, started from the premise of investigating the HE in Greece, i.e. the context in which this research is performed. The investigation was performed by using PEST as the analysis tool that provided us with information about the Political, Economic, Social, Technological environment in Greece. In this Appendix it is concluded that Greece, by being until recently the only EU member in SEE, attracts students from SEE. Moreover, with the developments of ICT infrastructure solutions like e-Learning can help Greece to increase its role of attracting more and more students from SEE. On the other hand, Greece faces the problem of culturally accommodated students from SEE primarily originated from the paternalistic role and influence of the State in HEIs. Thus, it was proposed e-Learning could be considered as a solution to the cultural exclusivity problem. Thus, a further investigation was required in order to examine, which theories of learning underpinning e-Learning are appropriate for the accommodation of cultural diversities.

Therefore, Chapter 2 performed an investigation into learning theories as they are used in the traditional HE setting. This chapter concluded that e-Learning by having as underlying learning theory constructivism, which implies learning through social negotiation of meanings, and Computer Mediated Communication (CMC) can provide accommodation of cultural diversities.

Chapter 3, continued the previously opened discussion about CMC and collaborative learning by investigating synchronous and asynchronous CMC tools, cooperative and collaborative discussions, group interactions by making specific reference on Tuckman's and Jensen's Group Development Model, cross-cultural communication conflicts. The chapter concluded that it is through synchronous text-based chat that students may face higher cross-cultural communication conflicts that have been identified in this chapter.

In order to investigate multicultural communication conflicts, it is of supreme importance the identification of a way of characterising cultural behaviours that can be attributed to specific cultures. Thus, in Chapter 4, the researcher performed an investigation into cultural models concluding that that Hofstede's model of measuring

culture through cultural dimensions should be considered as the theory of this research that needed to be further examined.

Hofstede's model of measuring culture through cultural dimensions was the only large-scale study that involved the identification of cultural behaviours attributed to specific cultures and the investigation of the interaction between cultures having as a result the drawing of conclusions concerning behaviours including education.

The researcher, after the literature review, decided to use Hofstede's model of cultural dimensions as the initial theory of this research. This decision was based on two reasons Hofstede's cultural dimensions: was a large-scale study that measured cultural dimensions for countries including SEE, and could be used to provide an initial identification of potential conflicting behaviours between students from different cultures. This initial identification of potential conflicting areas has been acknowledged in the data analysis of the quasi-experiment and of the interviews.

5.5.2 Hofstede's Questionnaire

The questionnaire used in this study is the latest version of the questionnaire that Hofstede used in his original study identifying cultural dimensions between IBM employees during the period 1966-1973. The latest version of the questionnaire is the Values Survey Module 1994 (VSM 94) questionnaire as seen in the appendix A. The VSM questionnaire was first presented in "Culture's and Consequences" by Hofstede in 1980, it was an improved version of the IBM's questionnaire that was used for international comparison of work-related values in seventies. Until VSM 94, the questionnaire passed through several revisions as follows:

- VSM 81 experimental version was issued;
- VSM 82 which included forty seven questions plus six demographic;
- VSM 94 which included 26 questions plus six demographic. It is in the VSM 94 that a fifth dimension was added.

Thus, VSM 94, being the most accurate and updated version, was selected for this

research. The outcome of the use of this questionnaire is the understanding of cultural behaviours that can be attributed to nations.

The choice of using VSM 94 and re-calculating the values of each dimension was not based only on the fact that it is the most up-to-date version. On the contrary, the reason of selecting and replicating the questionnaire for our sample was based from:

- Geo-political changes taking place in South East Europe (SEE) based primarily on cultural diversities. The major change concerning the geographical status of SEE region was the separation of former Yugoslavia into six smaller countries: Bosnia and Herzegovina, FYROM, Montenegro, Serbia, and Slovenia (Klain, 1998). (Bartlett, 2000). As it is argued by Klain (1998) and further supported by Kubilius (2007), the Serbs, FYROM Slavs, and Montenegrins are Orthodox Christians, while the Croats and Slovenes are mainly Roman Catholics. The Muslim Slavs and Albanians were primarily Muslims. From 1991 to 1995 former Yugoslavia descended into civil war caused by the inadequacy of communism to embrace the cultural diversities of former Yugoslavia (Lipset, 2000, Sekulic, 1994). After the end of the war, the democratisation process started with the help of the EU in the newly created countries. But difficulties stalled this process like in the case of Serbia and Montenegro resulting in economic embargos between the involved countries Hofstede's dimensions were calculated for former-Yugoslavia. But now new countries have emerged representing the cultural diversity that existed in former-Yugoslavia. Thus, re-calculation of Hofstede's dimensions was decided;
- The evolving nature of human activity systems and societies. Activity systems and thus human activity systems do not remain unchanged through time; they continuously evolve and are affected both in a national and in regional level. Therefore, cultures belonging to these systems are evolving also.

Thus, the continuously evolving nature of the human activity systems combined with the cultural changes that led to the separation of former-Yugoslavia into new countries reflecting the cultural diversities of former-Yugoslavia, constituted the use of any previously calculated dimensions resulted from Hofstede's research referred to SEE region and especially to former Yugoslavia as invalid. Thus, the use of the VSM 94 questionnaire and the recalculation of the values for the cultural dimensions gives to the

researcher a more up-to-date view of the dimensions that as argued by Hofstede (2005) can explain cultural behaviours of the students taking part in the experiment; making the use of these dimensions as appropriate tool to help the interpretation of conflicts in the experiments.

5.5.2.1 Questionnaire structure

The questionnaire used in this research is comprised by twenty-six questions. For each of the five cultural dimensions there exist four questions, which are combined in a mathematical formula. The five cultural dimensions as identified by Hofstede are: Power Distance Index (PDI), Individualism Index (IDV), Masculinity Index (MAS), Uncertainty Avoidance Index (UAI), and Long Term Orientation Index (LTO). As described in Chapter 6, this research is based only in the first four dimensions and does not use LTO since the experiment was only tested for a short period of time, approximately two hours. Therefore, LTO could not be measured and thus be included in this research. More specifically the questions used, as presented in VSM 94 in Appendix A, for calculation of the indexes are presented in the following table:

	PDI	IDV	MAS	UAI
Questions	3,6,14,17	1,2,4,8	5,7,15,20	13,16,18,19

Table 7: Questions used for Calculation

The remaining six questions are demographic and used for statistical purposes. The six questions ask for gender, age, and education level, type of job, present nationality, and nationality at birth. The questionnaire is comprised by scale questions with numbered boxes or statement boxes on a scale from 1 to 5 based on the five-point Likert scale as defined in Cooper and Schindler (2001). The values for the scale numbers take the following meanings throughout the questionnaire:

- From 1 = of utmost importance to 5 = of very little importance;
- From 1 = never to 5 = always;
- From 1 = very seldom to 5 = very frequently;
- From 1 = strongly agree to 5 = strongly disagree

As stated by Remenyi (1998) the process of editing requires thorough and critical examination in terms of compliance with collecting meaningful data and questionnaires dully completed. In other words the completed questionnaires have been checked for completeness and accuracy. Any questionnaires with missing or incomplete data were not discarded.

The next step of the questionnaire analysis is the coding phase, which according to Remenyi (1998) is the process where codes are assigned to answers of the respondents. Because of the simplicity of the questions in the questionnaires such a level of analysis is not required as the questionnaire used original Hofstede's questionnaire. Thus, the questionnaire was analysed by using the existing formulas of Hofstede's questionnaire in order to calculate the values for each dimension. Moreover, the researcher did not calculate the values for the LTO index because the duration of the experiments (i.e. group meet online and discussed only one time) did not allow for the groups to be observed over time. Moreover, due to time restriction posed by the fact that this PhD is a 3-year project, it was decided that the groups will be meet for one experiment.

5.5.2.2 Questionnaire analysis

In order to perform the analysis of the questionnaire's cultural dimensions, the researcher used the original Hofstede's formulas. These formulas are:

- $PDI = -35m(03) + 35m(06) + 25m(14) - 20m(17) - 20$
- $IDV = -50m(01) + 30m(02) + 20m(04) - 25m(08) + 130$
- $MAS = +60m(05) - 20m(07) + 20m(15) - 70m(20) + 100$
- $UAI = +25m(13) + 20m(16) - 50m(18) - 15m(19) + 120$

Where $m ()$ denotes the mean for each respective question. For example $m (03)$ is the mean score for question 03. Thus, the researcher at this stage replicated Hofstede's questionnaire by re-using its original formulas.

5.5.2.3 Use of Questionnaire finding in Quasi-Experiments

As it is stated in the previous sections, Hofstede's questionnaire provides an initial understanding of communication conflicts that can be exhibited in the communication between students coming from SEE in an e-Learning activity. These potential communication conflicts have been taken into consideration in the analysis of both the communication experiment and the interviews.

More specifically, concerning the communication experiment, Hofstede's potential conflicting behaviours have helped the researcher in the coding phase of the experiment in order to categorise what could be interpreted as a conflicting behaviour.

Concerning the interviews, the researcher has used the potential conflicting behaviours resulted from Hofstede's questionnaires as a tool that can provide better understanding through the interview and the analysis process.

5.5.3 Quasi-Experiment

As discussed in this chapter, ideally, an interpretivist research approach would have been preferred, however, as most of the subjects will not have previously participated in the type of e-Learning environment so as to have the experience of multicultural interaction with synchronous text-based communication the experimentation cannot be truly classified a natural experiment. Therefore, it can be seen as a laboratory based experiment, since the setting would not be completely natural for the participants.

For the purpose of this experiment an authentic learning task was created, for which the subjects were required to read a scenario (the scenario used was "Is Organisational Security Comfort Level Too High?", a general case study applied into every interest.). After reading the scenario, they were asked to enter a chat room, and to discuss a given set of questions as a group, to come to the best group consensus they could in the time allowed. The researcher utilised the synchronous communication facility provided by the open source e-Learning and e-Working platform Claroline (<http://www.claroline.net>).

Claroline is an open source learning management system providing various tools at the teacher's disposal for creating and monitoring the learning process. The following set

of tools is available to the teacher:

- Write a course description;
- Publish documents in any format (text, PDF, HTML, video...);
- Administer public and private forums;
- Develop learning paths;
- Create groups of students;
- Prepare online exercises;
- Manage an agenda with tasks and deadlines;
- Publish announcements (also by e-mail);
- Propose assignments to be handed in online;
- See the statistics of the users activity;
- Use the wiki to write collaborative documents.

A more detailed description as well as screenshots on the features of the claroline system can be found on Appendix E.

The experiment was set up to embrace and influence cultural diversity through authentic learning activity based on the case study supported by social negotiation and collaborative interactions through the synchronous chat room. Thus, it should be stated that the experiment followed the constructivist paradigm as it was explained in detail on section 2.4 when discussing Learning Theories.

Moreover, the researcher intervened in the programming of the chat facility to alter the refresh time of the synchronous discussion. It should be noted that the synchronous chat space refreshed every 30 seconds to display the new messages, this refresh time was not fast enough and could have created confusion in the discussion.

5.5.3.1 Strategies and implementation of the experiment

5.5.3.1.1 Case Study

The case study used in this research was adopted from CIO-Insight: Strategies for

Business Leaders¹. The case study is titled: “Is Organisational Security Comfort Level Too High?” The choice of the specific case study was based on a topic that can embrace the two disciplines from where the participants are coming from: Computer Science and Business Administration and Economics Department. Because the case study was referring to “Business Leaders” with working experience and not to university students as our participants, the researcher altered the original case study in order to be more comprehensible to students. The original and the altered version of the case study can be seen on Appendix B.

The researcher then devised a scenario and provided a set of four questions in order to draw the interest of the participants so as to get them more involved with the activity. Each of the four questions was devised in such a way that will reinforce the potential problems identified for each of the Hofstede’s cultural dimension resulted from the analysis of the questionnaire as described in section 6.2 of chapter 6.

More specifically, the first question is referring to the PDI dimension. The students were provided with two choices of answers each of which tried to reinforce discussion towards the PDI dimension. The first choice tried to reinforce that power is distributed unequally and thus, dictatorially imposed meaning that the employees would expect the company should be the only possessor of the knowledge and thus, implementation of the security policies (low score on PDI). The second tried to reinforce the equality in power distribution meaning that the employees possess the knowledge to choose between which security policies they should adopt (high score on PDI).

The second question refers to the Individualism dimension of Hofstede’s framework. The two choices presented to the students were reinforcing the discussion towards the choice of collectivist end of the pole by having the company deciding on the security (low score on IDV). The second choice led on an individualist end of the pole was the employees were responsible for their individual and thus, the company’s security (high score on IDV).

The third question refers to Masculinity/Femininity dimension. In this question a more direct argument is made clearly separating the two genders. On the first choice the students were lead toward gender inequality (high score on Masculinity) and on the

¹ CIO-Insight is a business web resource available at <http://www.cioinsight.com>

second towards gender equality (low score on Masculinity). If the choice of the students is gender differentiation then according to Hofstede, this indicates a High Masculine culture.

The last question refers to Uncertainty Avoidance Dimension. In the first choice, if the answer is yes, it indicates a Low Uncertainty meaning high tolerance on ambiguous situations. If the answer is no, it indicates a High uncertainty meaning that there is no tolerance on uncertain situations leading to the implementation of security policies. This question does not have a probability attached to the risk; it rather refers to a risk as an uncertain situation with no probability attached.

	PDI	IDV	MAS	UAI
Question 1	1 st choice - Leading towards unequal distribution of power			
	2 nd choice - Leading to equal distribution of power in the organization			
Question 2		1 st choice - Leading to collective responsibility		
		2 nd choice - Leading to individual responsibility		
Question 3			1 st choice – Leading to gender differentiation	
			2 nd choice – Leading to gender equality	
Question 4				1 st choice – Leading to uncertain investments
				2 nd choice – Leading to no investments in uncertain situations

Table 8 – Case Study Questions Relation to Dimensions

5.5.3.1.2 Student Selection

The experiment was based on volunteering students. The researcher at the first stage of the volunteering process used e-mail distribution lists to administer the advertisement for the experiment. At the next stage the researcher informed the students by entering each classroom and advertising the experiment. During classroom visits the volunteer administered the same advertising text that was sent through emails.

CITY College is the International Faculty of the University of Sheffield and is located in Thessaloniki, Greece. Bridging the UK with the South East and Eastern Europe, CITY College offers to students the opportunity to study for a top class British degree of the University of Sheffield in their region. In its aims, CITY College tries to maintain the highest standards of quality as an Institution of Higher Education, follow the developments of the real worlds in order to educate students to become experts in their disciplines and at the same time develop into well-rounded cultures personalities. Respectively, Computer Science and Business Administration aim at: reinforcing students' mastery of concepts and their application to real-world problems, developing and enhancing in students those capabilities and skills which together with the acquired theoretical knowledge will form a solid foundation on which to base lifelong learning and to cope with the enormous pace of change that underlies their discipline, and integrating in the curriculum a practical industrial dimension.

Thus, this research used undergraduate students from Computer Science and Business Administration and Economics departments of CITY Liberal Studies. City Liberal Studies is a private institution offering HE services in Thessaloniki, Greece, attracting students from Greece and SEE. More specifically, the researcher by collecting confidential data from the institution identified that the majority of students were coming from Greece, FYROM and Serbia. On the other hand, minorities of students were also coming from Albania, Bulgaria, Romania and China. From these countries the researcher identified that sufficient number of students to participate for this research were originated from Albania and Bulgaria. Because this research based on students volunteering for this study countries like Romania and China were not selected for the experiments. Therefore, the countries that were selected to participate in this PhD research are Greece, FYROM, Serbia, Albania and Bulgaria.

It is important to mention at this stage that the demographic data of students' participating at this study are confidential and although the researcher was allowed access no further reference on the total student population and their nationalities is made.

The students were selected in volunteering basis. In the total population of students, fourteen (14) Greeks, fourteen (14) FYROMs, four (4) Serbians, four (4) Albanians, and four (4) Bulgarians were selected. These numbers represent a smaller image of the total student population where Greeks and FYROMs constitute the majority of students whereas Serbians, Albanians and Bulgarians are considered the minority. Therefore, the Greek and FYROM nationality were selected in order to comprise the control groups, i.e. groups consisted from students from the same nationality for our experiments. On the other hand, the other nationalities were used to devise the multicultural groups. Thus, the following groups of students were created:

- Four (4) control (monoculture groups) consisting of students from Greece and FYROM. Two (2) groups of five (5) students each from Greek students and two (2) groups of five (5) students each from FYROM students.
- Four (4) multicultural groups consisting of five (5) students each from Greece, FYROM, Albania, Serbia, and Bulgaria.

5.5.3.1.3 Time

Each group performed the activity once. The researcher decided that the duration of the activity should be no more than 1 hour.

5.5.3.1.4 Ethical Procedures

In every stage of this research the researcher informed the participants, both orally and in written form, that they were all volunteering, they could leave at any time during each stage, they could always refer back to the researcher if they wish to, and every data obtained throughout the stages will remain confidential and no one could have access to this information apart from the researcher and the supervisors. The written

form can be found at appendix F.

5.5.3.1.4 Data Collection methods

In this section the different research approaches or else called strategies are described. A research strategy is a general plan that contains clear objectives derived from the research question and provides specific direction and methods for collecting data to answer this research question (Saunders et al., 2003; Cresswell, 2003). As further argued by Cresswell, (2003: 13-15) there exist three categories of research strategies: quantitative, qualitative and mixed-method strategy. This section continues by describing the research strategies, and argues why the mixed-methods strategy was adopted as the most suitable for this PhD project.

A quantitative approach as argued by Cresswell (2003:19), and further supported by Trochim (2002) and Galliers (1992), is based on positivism by using cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories. Typically research strategies include: experiments and surveys.

On the other hand, qualitative strategies as argued by Cresswell (2003:18) and further supported by Trochim (2002) and Galliers (1992) based on interpretivism. In qualitative strategies, the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e. the multiple meanings of individual experiences, meanings socially and historically constructed, with an intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e. political, issue-oriented, collaborative or change oriented) or even both (Cresswell 2003:18). Qualitative strategies as supported by Trochim (2002) include: Ethnography, Case Study, Grounded Theory, Discourse Analysis, Biography, and others.

Finally, a mixed method strategy as argued by Galliers (1992) and further supported by Cresswell (2003), is based on using both quantitative and qualitative data collection techniques either sequentially or in parallel. Researchers often use mixed method research to overcome the limitations of single strategies. The combination of quantitative and qualitative methods is used to achieve triangulating data or methods.

According to Cresswell (1994) 'triangulation' is a term used to describe the combination of methodologies in the study of the same phenomenon. These methods might be drawn either from within methods such as different types of quantitative data collection like a survey and an experiment, or between methods drawing on quantitative and qualitative data collection procedures (Cresswell 1994). More specifically, as discussed by Farmer et al. 2006 while citing Denzin's (1978) work, there are four types of triangulation techniques:

- Methodological Triangulation, which involves the use of more than one research method or data collection technique (e.g. deploying questionnaire with interviews);
- Data Triangulation, which employs the use of multiple data sources (e.g. two types of reports) or respondent groups (e.g. professionals vs. lay);
- Theoretical Triangulation, which involves the use of alternative theories to examine the results;
- Investigator Triangulation, which involves two or more researchers in the analysis phase.

This research used two different types of data collection and analysis methods: quantitative and qualitative. More specifically, concerning the actual communication quasi-experiment the researcher analysed the communication logs by performing both quantitative and qualitative analysis. Thus, the researcher performed data triangulation at this stage by employing different methods of analysis for the same data.

In the interview analysis the researcher used only qualitative methods by using thematic content analysis and selective coding. Interviews were used as an evaluation method of the results that were produced by the communication log analysis. Thus, at the end, the researcher performed methodological triangulation by using constant comparison between the communication conflicts that emerged from the interview analysis with the existing communication conflicts as they have emerged from the communication logs.

5.5.3.1.5 Data Analysis

As stated in the previous section, the analysis of the communication logs is performed by triangulating the data through the use of quantitative and qualitative analysis. Moreover, the interviews were analysed by using qualitative methods.

5.5.3.2 Communication Log Analysis

Although the analysis of the communication logs is performed in chapter 6, brief descriptions of the analysis methods are presented in this section. The researcher analysed the communication logs in two stages as they are described in the following sections.

5.5.3.3.1 Quantitative Analysis of Logs

The first stage involved the quantitative analysis of the communication logs by counting the number of posts for each group and for each nationality. The results of the quantitative log analysis will provide a:

- Better understanding of the group dynamics by identifying dominant and silent members;
- Rough of conflicting or problematic communication areas that will be further analysed in the second stage.

The researcher analysed the contents of the communication by categorising the posts based on their meaning. The categories are shown in table 9.

Colour	Post Meaning
Yellow	Neutral
Blue	Meaningful
Green	Agreement
Red	Disagreement
Dark Red	Conflict

Table 9 – Colour Coding

The researcher used selective coding, by selecting only the identified posts that could fall into the categorisation as shown in table 9. The analysis was carried out by looking at each entry on the log, and deciding which category the entry belongs to. In order to make easier the counting process of the instances after the categorisation was done, each different category was given a different colour, and the input was highlighted to show the relevant category. The table produced in this stage of analysis involved the counting of each member's posts and summing up at the end the total number of contributions that the group as a whole had. After all posts for all groups have been calculated, the posts of the control groups were compared with the posts of the multicultural groups. The results drawn provided the researcher with a first indication of the conflicting areas of the communication logs.

To ensure that the results are valid, there should be independent checks on the data by a second party to ensure agreement of the analysis. However, as this is a PhD project, and only the researcher has full access to the data, and no staff to assist them, some of the data results were checked with the researcher's supervisor at regular meetings, to both show progress of the analysis, and to ensure that the results were valid.

5.5.3.3.2 Qualitative Analysis of the Logs

In the second stage of the log analysis, logs are analysed qualitatively by characterising each identified problematic area as misperception, misinterpretation and misevaluation which are further related to cultural dimensions as identified in section. As stated by Coffey and Atkinson (1996) there exist three ways of performing the qualitative analysis:

- Thematic Content Analysis where themes are extracted from the text;
- Indexing where specific words are viewed in context;
- Quantitative Descriptive Analysis or word counting where the frequency of the words usage throughout the text is counted.

The researcher used thematic content analysis in order to analyse the communication

logs revealing information that is not situated at the surface of the communication logs. Therefore, themes were identified inductively in order to assure that themes emerged naturally and that analysis was not researcher biased and respectively coded. The emerging themes were linked with the case study question and further related into Hofstede's cultural dimensions. There are three types of coding as discussed by Trochim (2005):

- Open coding where researchers 'sweep' through their data marking up the text;
- Axial Coding where researchers relate one code to each other according to conditions, context, action/interactional strategies and consequences;
- Selective coding where researchers go back to the data to find instances that might add further dimensions to the codes after the data in terms of developing new codes is exhausted.

For this analysis, the research performed the codification of the communications logs by using the open coding technique. Then, by using axial coding, the researcher identified causes and consequences, thus links have been created between the codes identified in the transcripts and cause and effect relationships between them.

In more detail this research's coding phase used the analytic procedure as explained by Coffey and Atkinson (1996) and which involves the following steps:

- The labelling of different segments or instances in the data;
- The previously coded segments are brought together to create categories of data having some common property or element. This grouping will produce a particular topic or theme;
- The final step involves the creation of the main concepts or problems which will consist of one or more themes that were identified in the previous grouping.

The result of this analysis was the creation of concept maps. In general resulting data of the qualitative analysis phase can be represented either by a piece of text, or a diagram,

or a chart, or a matrix providing ways of arranging and thinking about the textual data (Trochim 2005; Miles and Huberman 1994). The researcher selected concept maps for representing the results of this phase because as first stated by Miles and Huberman (1994) and further supported by Coffey and Atkinson (1996) graphic representations – such as concept maps – may be important heuristics for the researcher in the course of the analytic process and can be used effectively in cultural analysis which is the scope of this research.

The analysis of the communication logs by using two methods of analysis: quantitative and qualitative have allowed the researcher to triangulate the resulted data. According to Cresswell (1994) ‘triangulation’ is a term used to describe the combination of methodologies in the study of the same phenomenon. In the log analysis, the researcher used data triangulation, which employs the use both quantitative and qualitative methods of analysis. Triangulation according Cresswell (1994) ensures internal validity of the experiment.

In conclusion, the communication logs were analysed in two steps:

- Quantitatively: by using selective coding in order to identify quotes that can be categorised as agreement, disagreement, neutral, meaningful, conflict.
- Qualitatively: by using open coding to identify the list of themes that can be categorised as cultural miscommunication. Then, the communication logs were analysed by using axial coding in order to identify related quotes that can be either cause or consequence. At the end of this analysis the concept maps have been produces.

5.5.4 Interviews

As discussed above, this research used interviews as a way of data collection and verification as discussed in the previous sections of this chapter. This stage is an additional stage used to verify the outcome of the log analysis by either altering or defending its structure. Interviews as a way of collecting qualitatively data can be separated into two initial categories: one-to-one and group interviews or else named as

focus group interviews (Trochim 2002). Moreover, interviews can be separated into three types Miles and Huberman (1994):

- Structured using a standardised set of questions based on a detailed interview schedule or guide. It includes both open and closed questions;
- Semi-structured by using a non-standardised set of questions based on a general interview guide that is comprised by a list of topics or themes to be covered. The order of questions may vary from interview to interview and the researcher is free to add extra questions. The disadvantage of this type of interviews is that the researcher should not treat the answers to the questions in isolation to the others but rather to try and relate them with the others;
- Unstructured using a non-standardised set of questions without being based on an interview guide. In this type the researcher does not control the flow of the conversation and leaves the interviewee in a free and open discussion.

5.5.4.1 Interview Design and Coding

Concerning the interview part of this PhD's research, the interviews were one-to-one interviews based on semi-structured type. The semi-structure type gave the flexibility and the control in the interview in order to better analyse and understand the themes that have arisen from the log analysis and required further investigation. The interview script that was produced was based on predefined questions used to further explore the student's view of the specific situation that took place. The researcher in the duration of the interview was altering or adding questions to clarify and better interpret the responses of the interviewee during the log communication. An example of the interview script can be seen in Appendix C. Similarly to the log coding process, the researcher used selective coding and thematic content analysis based on the conflicting areas identified in the communication logs analysis. It should be stated that the interviews were not piloted due to the limitation of the sample as it is being discussed in detail in section 6.2.

5.5.4.2 Interview Analysis

As discussed in the previous section, the researcher used the communication conflicts as they were identified in the log analysis in order to code the interviews by using selective coding. The previously built theory from the logs was also used in the analysis part. In other words, the communication conflicts resulted from the log analysis constituted a starting point for the coding and the analysis of the interviews.

During the analysis phase the researcher used constant comparison in order to expand and improve the concepts that were produced in the log analysis. That is, at this stage the researcher did not produce new concept maps. As argued by Partington (2000), constant comparison is defined as the simultaneous and concurrent process of coding and analysing the collected data. Thus, by constantly comparing each new emerged concept of the interviews with the existing concepts that have emerged from the log analysis the researcher was able to triangulate the results. According to Cresswell (1994) the triangulation process followed by the researcher is called methodological triangulation and involves the use of more than one research method or data collection technique (e.g. deploying questionnaire with interviews).

5.5.5 Synthesis and Discussion

Using the information obtained from the analysis of communication logs (i.e. communication logs concept maps), and the one-to-one interviews (i.e. interviews concept maps), this section of the next chapter will join them together to provide a discussion of the problems apparent in the group, and especially affecting the interaction between participants.

5.5.6 Theory Extension

After the completion of the research of the PhD and the identification of the problems if any such problems exist, the outcomes were published and presented in academic conferences (Katakalos et al. 2008). In this way the resulted data was subjective to criticism by the academic community leading to the possibility of extending the theory

that was derived in this research.

5.6 Experiment Setup

At the first stage of the experiment the researcher administered the questionnaires to be filled in by the students. The researcher used e-mail as a communication method to administer the questionnaires to the volunteering students. The students did not know at this stage in which group they belong and who are the other group members.

After the administration of the questionnaire, the researcher organised a day that is convenient to the groups to meet for the experiment by using the synchronous chat facility and the case study. Each group met on a different day. When a group was scheduled for the lab activity, they all entered the lab and each group member had his/her own computer. At this point, the researcher explained briefly the procedure of how to enter the synchronous communication facility and how to navigate by using the interface. The interface consisted of two links on the left menu including a description of what was asked from them. The involvement of the researcher at this stage was limited only to solve problems that had to do with the interface and navigational issues. The researcher was present in the lab until the end of the experiment. At the end of the experiment, the students summarised the answers and sent them, e-mailed them to the researcher. The questionnaires were also returned at the end of the experiment.

At the final stage, the researcher interviewed each one of the participants. The interviews were one-to-one interviews and the researcher used an interview script that was based on predefined questions used to further explore the student's view of the specific situation that took place.

5.7 Researcher's Role

As it was discussed in the previous section, the role of the researcher was only limited to providing help about navigational and procedural issues concerning the experiment. This decision to minimize the role of the researcher was based on the premise that the researcher if intervened in the communication process would probably have helped the dispersed students to share beliefs, values, and assumptions. Therefore, it could have

made the effort of analyzing potential communication conflicts more difficult.

5.8 Constraints and Limitations of the Study

The main constraint of this research is the problem of generalising the result. More specifically this study is done in Greece and concerns students of a particular type of institution. Therefore the results will be generalizable only to institutions in the Greek context. Future work will then be necessary to generalise the findings of this research.

Another factor that affects the generalisation of the results of this study is the initial limitation of Hofstede's research that for his initial study the numbers of employees could be considered small (Hofstede, 2005). In his latter book Hofstede (2005) responds to the several critics that have been exercised on his work. The response that is given on the usage of small numbers was that at the time of his initial study Hofstede relied on the fact that he examined cultural dimensions representing the "national" traits of the IBM's employees. He acknowledged the fact that generalisation should be done carefully. From the initial Hofstede's results, many other studies have replicated Hofstede's study. These results of the replicated studies have confirmed the initial results of Hofstede and led to the republication of Hofstede's book "Software of the Mind" with all the additional information included as well as with a reply to the critics that have been exercised on his research. In relation to the results of this PhD, the number of the participants used is small and generalisation of the results cannot be easily accomplished.

Another limitation of this research is that is done as a part of a 3 year individual PhD project. The implications arisen by the previous statement is that on one hand, there is a clear time limit restricting multiple reruns of the specific experiments that will result in a more reliable and valid generalisation of the conclusions and on the other, an individual PhD researcher may lack the time and resources to produce an ideal non-culturally biased learning environment. Therefore, general tools were used in building the quasi-experiment learning environment.

5.9 Conclusions

This chapter has introduced the research methods and methodologies used in this research. More specifically, this research adopted a positivist epistemology. Although, for researches that investigate culture an interpretivist epistemology is more likely to be used, the researcher decided to adopt a positivist stance because it could not be expected to find enough people with experience in e-Learning and especially using text-based communication in multicultural group activities. The chapter also details the methods used for data collection, and how it was analysed.

In summary, the analysis process includes:

- Questionnaires: Analysis is performed by using the predefined formulas of Hofstede
- Communication Logs: Analysis is performed in two stages:
 - Quantitatively: by using selective coding in order to identify quotes that can be categorised as agreement, disagreement, neutral, meaningful, conflict.
 - Qualitatively: by using open coding to identify the list of themes that can be categorised as cultural miscommunication. Then, the communication logs were analysed by using axial coding in order to identify related quotes that can be either cause or consequence. At the end of this analysis the concept maps have been produced
- Interviews: the researcher used the communication conflicts as they were identified in the log analysis in order to code the interviews by using selective coding.

The analysis process and the actual results are described in the next chapter.

Chapter 6 Data Collection & Analysis

6.1 Introduction

As discussed in Chapter 5: Research Design, this research adopts a positivist epistemological stance and uses quasi-experiments in order to identify cross-cultural communication conflicts. More specifically, the researcher used Hofstede's theory of cultural dimension as a way to explore and understand better potential behaviours exhibited when students communicate that can be caused by culture. The outcome of the questionnaire analysis provided significant input that helped the process of altering a case study so as to trigger potential problems. More specifically, the researcher devised a set of four questions that according to Hofstede can trigger potential communication conflicts. The students then entered a synchronous text-based chat in order to exchange opinions and answer the set of the four questions. The resulted communication logs were analysed both quantitatively and qualitatively. The results of this analysis lead to the creation of concept maps highlighting the conflicting communication areas their caused and their consequences. Finally, the researcher performed one-to-one interviews with each participant in order to validate the analysis outcome of the communication logs. The results of the interviews provide the researcher a better understanding of the conflicts and problems encountered as well as an explanation of individual behaviours. Finally, the resulted data of the interview analysis was then contrasted with the results drawn from the communication log analysis. The new resulted data identified the areas of the communication conflicts of students, who come from SEE and study in Greece, when they communicate, collaborate and/or cooperate in an e-Learning activity by using synchronous text-based communication.

In the following sections of this chapter, the analysis of the data of the questionnaire and quasi-experiment stages are described and discussed.

6.2 Pilot Run

During the first stages of this research, the researcher performed a pilot run of the entire experiment to test the data collection instruments that included the questionnaire. The participants of the pilot study were PhD research students from South East European Research Centre (SEERC) and were selected according to their nationality. More specifically the nationalities used in the pilot study were Albanian, Serbian, Greek and Turkish. As discussed on chapter 5 in the sampling selection, this research used undergraduate students from Computer Science and Business Administration and Economics departments of CITY Liberal studies, an affiliated institution of University of Sheffield based in Greece. After an investigation of the university's enrolment data, the researcher realised that the numbers of students of some of the cultures needed for this research were close to the minimum required number, i.e. four students from each nationality. The number of students participating in the actual experiment was: fourteen (14) Greeks, fourteen (14) FYROMs, four (4) Serbians, four (4) Albanians, and four (4) Bulgarians. The actual discussion experiment and the interviews were not piloted, due to low numbers on the student population of Albanians and Bulgarians in respect to the total university's undergraduate population. The researcher could not use undergraduate students for the pilot as this action would have decreased significantly the participants for the actual experiment.

The purpose for conducting the pilot was to: test appropriateness and technical quality of the environment, and familiarise with the platform, case study and synchronous chat facility.

In hindsight, the administration and analysis of the pilot questionnaire was not needed at this stage since the questionnaire was thoroughly tested by Hofstede and other researchers replicating Hofstede's study. The decision of piloting the questionnaire was made as a way for the researcher to familiarise with the formulas used for the calculation of the cultural dimensions and how they can be analysed. The actual results of the pilot questionnaire did not provide valid result since the sample analysed was small.

Moreover, the pilot of the platform and the case study showed that the participants for the pilot did not have any difficulties with the platform and the case study was well

understood. In relation to the researcher, the pilot provided an initial experience with the way of conducting the experiment and the analysis of the communication logs.

Finally, in relation with the cmc chat facility, the pilot showed that no major problems were encountered. In conclusion, the pilot showed that the experiment could be conducted with these instruments and the researcher was able to get familiar with a first attempt of handling and analysing the data resulting from the questionnaires and the experiments.

6.3 Questionnaire

As stated in chapter 5 the questionnaire used in this study is the latest version of the questionnaire that Hofstede used in his original study identifying cultural dimensions between IBM employees during the period 1966-1973. The latest version of the questionnaire is the Values Survey Module 1994 (VSM 94) questionnaire as seen in the appendix A. The choice of using VSM 94 and recalculating the values of each dimension was not based only on the fact that is the most up-to-date version. But it is based also, as described in section 5.5.1 of chapter 5, on the continuously evolving nature of the human activity systems combined with the geo-political changes that took place in SEE region. Therefore, the use of the VSM 94 questionnaire gives to the researcher a more up-to-date view of the dimensions that according to Hofstede (2005) explain cultural behaviours of the students taking part in the experiment; making the use of these dimensions as appropriate tool to help the interpretation of conflicts in the experiments.

6.3.1 Administration of the Questionnaire

Questionnaires were administered to all participants prior to engaging with the experiment. In total forty, questionnaires were administered, collected and analysed. The questionnaires were handed back to the researcher during the second phase of the experiment; the synchronous communication chat in lab session.

6.3.3 Analysis of the actual Questionnaire

As stated in section 5.5.1.1 the questionnaire included general demographic questions asking about gender, age, education level, type of job, present nationality, and nationality at birth. At the first stage of the questionnaire analysis, the researcher performed an analysis of the demographic characteristics of the participants by using Microsoft Excel spread-sheet as the analysis tool. Microsoft Excel was selected because the researcher used an existing questionnaire that was tested for validity and reliability issues and predefined formulas. Thus, a usage of a simple analytic tool was decided. The second stage of the analysis of the cultural dimensions was then performed by using the original formulas of Hofstede. No other statistical test or analysis was performed because the questionnaire aimed only to calculate the values for the four cultural dimensions that will provide a tool to help the interpretation of conflicts in the next stages of the research. Moreover, the numbers of students participated in this research could not allow methods like factor-analysis or regression analysis or any other statistical method.

6.3.2.1 Demographic Details

The total number of cultures participating in the experiment is represented in figure 15. In total of forty (40) students, fourteen (14) Greeks (35%), fourteen (14) FYROMs (35%), four (4) Serbians (10%), four (4) Albanians (10%), and four (4) Bulgarians (10%). As explained in the previous section (section 7.2.4.1) the Greek and FYROM nationalities are the dominant in the total population of undergraduates in CITY Liberal Studies, whereas Serbia, Albania, and Bulgaria nationality are the minorities.

Culture Distribution

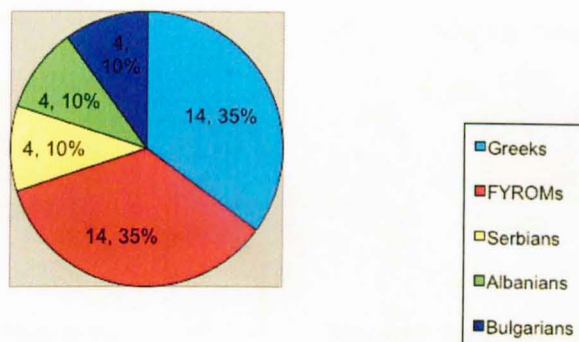


Figure 15: Culture Distribution

Moreover, it was noted, as seen from figure 16 and figure 17, that there was an unequal distribution of male and females in the total population. More specifically, in the total of forty (40) students, eight (8) were females and thirty-two (32) were males. This unequal distribution of males and females in our sample is reflected in the general population of CITY Liberal studies. The reason why females were the minority in our research can be explained by the tendency of female under-representation in technical fields of studies like Computer Science (Greening, 1999, Schinzel, 2002). Thus, the general tendency of female under-representation combined with the volunteering nature of student selection for our experiments is the explanation of the unequal distribution in the participating student population of this research.

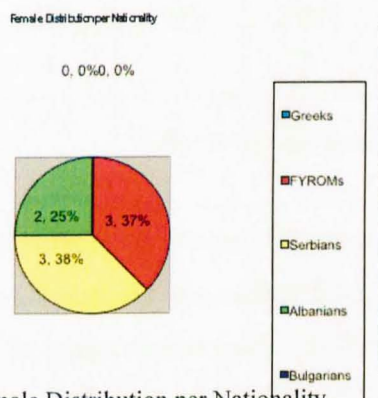


Figure 16: Female Distribution per Nationality

Male & Female Total Distribution

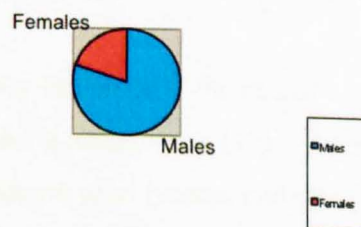


Figure 17: Male & Female Total Distribution

As expected and represented in figure 18 and figure 19, the majority of the student population has responded that they belong to the twenty (20) – twenty-four (24) age group. This was initially expected by the researcher since this study was aiming at attracting undergraduate student volunteers from both Computer Science and Business

Administration and Economics departments.

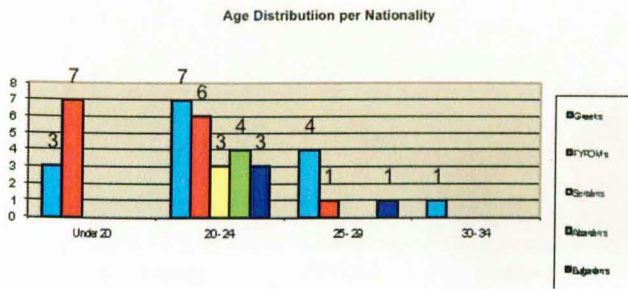


Figure 18: Age Distribution per Nationality

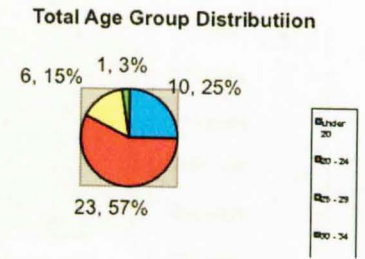


Figure 19: Total Age Group Distribution

The next demographic question refers to school education starting from primary school and onwards. In the examination of the students' responses to the question, it can be noted a great variance in the answers in the specific question. It was initially expected that the answers would be between twelve (12) years and fifteen (15) years, since they refer to the normal schooling from primary school to high school, and the respondents are undergraduate students from CITY Liberal Studies. In other words, it was expected a variation of the form 12+1, 12+2, 12+3 depending on the year in which each participant was studying at the time the experiment was performed.

For instance, the Greeks provided with the following responses:

	12 years	13 years	14 years	15 years	16 years	17 years	18 or higher
Number of Responders	1	1	3	3	1	0	5

Table 10: Greeks Responses for School Education

The Greek education takes twelve (12) years from primary school until the end of high school (lyceum). Therefore, the variations in answers ranking from twelve (12) – fifteen (15) years can be interpreted as twelve (12) years of education until lyceum and one (1) or two (2) or three (3) years of University Education. The other responses can probably be interpreted as twelve (12) years of education until lyceum and six (6) years in University Education. Because the researcher had not enough data in order to make a valid interpretation of the results and because the responses to this question are of less or no importance to this study, a specific conclusion will not be drawn concerning the responses of the students. In general the answers show that the sample is constituted by highly educated young people and it is compatible with what it is expected in HE.

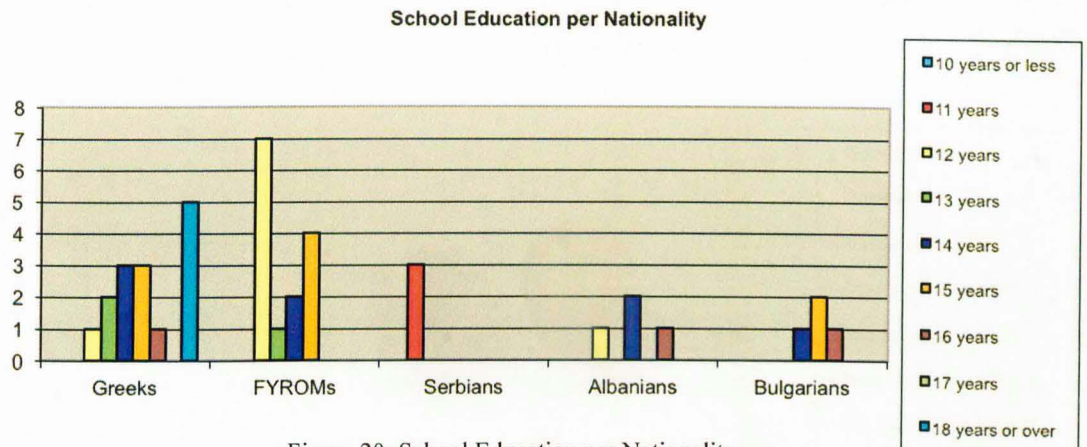


Figure 20: School Education per Nationality

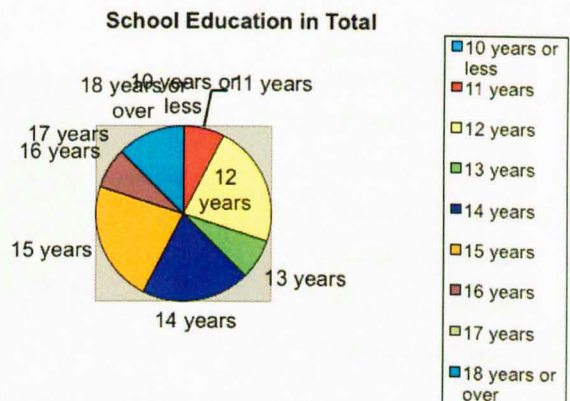


Figure 21 – School Education in Total

The final demographic question refers to any working experience that the participants had. It is of particular importance the fact that, thirty-nine (39) out of forty (40) participants responded to this question. The majority of the respondents seventeen (17) (42.5% of the total responses) stated that they were vocationally or generally trained, nine (9) (17.5% of the total responses) stated that they were managers of subordinates or other managers, ten (10) (25% of the total responses) stated that they were working on unpaid or unskilled work, and five (5) (12.5% of the total responses) stated that they were academically trained as seen in figure 22 and figure 23.

Working Experience per Nationality

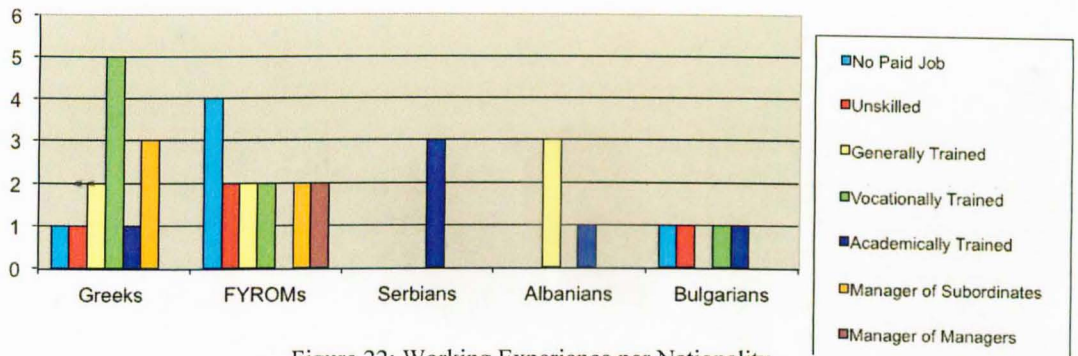


Figure 22: Working Experience per Nationality

Working Experience in Total

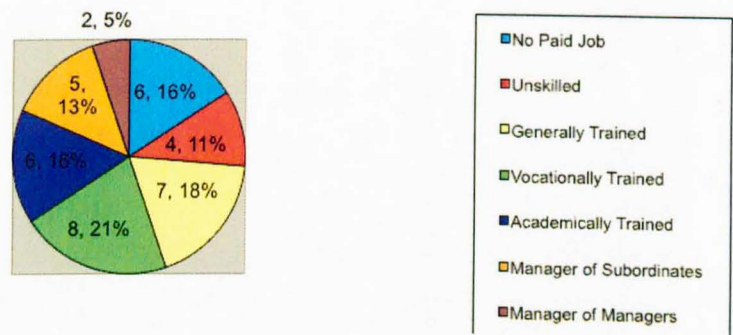


Figure 23: Working Experience in Total

From all the discussion of the demographic data as presented in this section, the basic characteristics of the student population participated in this research can be extracted. The males constitute 80% of the sample population, whereas the females are the minority with 20% of the total student population. The participants' age mostly fell in the 20 to 29 years of age. There were two major cultures taking part in the study: Greeks and FYROMs, as it was as well reflected in the total undergraduate student population of CITY Liberal Studies. This was done in order to have two controlled groups for Greeks and two for FYROMs. In total twenty (20) students were used for the controlled groups and twenty (20) for the multicultural. Finally, it should be noted that most of them had some kind of working experience.

6.3.2.2 Cultural Dimensions

In order to perform the analysis of the questionnaire's cultural dimensions, the researcher used the original Hofstede's formulas. These formulas are:

- $PDI = -35m(03) + 35m(06) + 25m(14) - 20m(17) - 20$
- $IDV = -50m(01) + 30m(02) + 20m(04) - 25m(08) + 130$
- $MAS = +60m(05) - 20m(07) + 20m(15) - 70m(20) + 100$
- $UAI = +25m(13) + 20m(16) - 50m(18) - 15m(19) + 120$

Where $m ()$ denotes the mean for each respective question. For example, $m (03)$ is the mean score for question 03. In the following paragraphs a discussion of the results of the questionnaires will be represented, as well as the relationships between the cultural dimensions will be shown.

6.3.2.2.1 Experiment Results

Hofstede's Theory of cultural dimensions, as described in Chapter 4, includes 4+1 cultural dimensions: Power Distance Index (PDI), Individualism vs. Collectivism Index (IDV), Masculinity vs. Femininity Index (MAS), Uncertainty Avoidance Index (UAI) and Long-Term Orientation (LTO). As explained in chapter 5 section 5.5.1.2, this research focuses on the first four indexes and not on LTO. The results of the analysis of each dimension are presented in the following sections.

6.3.2.2.1.1 Power Distance Index (PDI)

Power Distance represents: "the extent to which the less powerful members of institutions and organisations within a society expect and accept that power is distributed unequally" (Hofstede 2005). Therefore, in countries scoring low in this index will be observed the behaviour of de-emphasising the differences between citizens' power and wealth and vice versa. In figure 24, the results of the analysis of the questionnaire and those of the Hofstede's research are presented.

Power Distance Index (PDI)

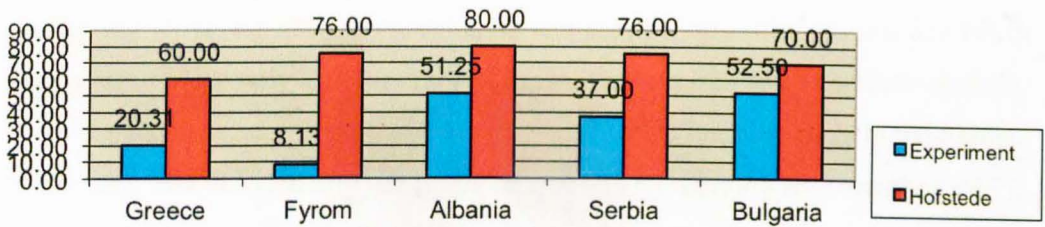


Figure 24: Power Distance Scores

The results showed that there is a great variation between countries with FYROM scoring 8.13 and Bulgaria scoring 52.56. This change can be attributed to the post-war and post communism effect (Lipset, 2000). More specifically as argued by Barlett (2000) after the fall of the communist regime in the SEE region, democratisation process has begun with the help of EU. But democratization in the region is difficult to be achieved as there are open issues between the newly created countries like the case of Serbia and Montenegro resulting in economic embargos between the involved countries (Bartlett, 2000). This situation is clearly reflected in the results of our study since the scored indicate a small decrease. The only exception is FYROM indicating a huge difference from Hofstede's results that cannot only be explained by the separation of Former Yugoslavia. This difference clearly reflects the situation as described by Barlett (2000) that Croatia and FYROM are rapidly implementing and accommodating democratisation and economic reforms.

As described in Chapter 4 of this thesis, according to Hofstede (2005) countries scoring high in this index are more likely to develop behaviours that follow the teacher-student inequality which caters the need for dependence well-established in the student's mind. Thus, the learning process is based on a teacher-centred approach to teaching and learning. On the other hand, countries scoring low on this index do not reinforce teacher-student inequality but rather follow a more student-centred primarily focusing on student initiatives. Therefore, it could be expected that potential issues in communication will be found in the interaction between students from FYROM and Bulgaria, which are related to this dimension.

6.3.2.2.1.2 Individualism versus Collectivism Index (IDV)

Individualism as stated by Hofstede (2005) typifies societies in which “the ties between individuals are loose: a person is expected to take care of himself or herself and his or her immediate family only”. A low Individualism score refers and describes societies more collectivist in nature with close ties between individuals. A high individualism score indicates that individuality and individual rights are playing an important role in the society. In figure 26 the results of the analysis of the questionnaire and those of the Hofstede’s research are presented.

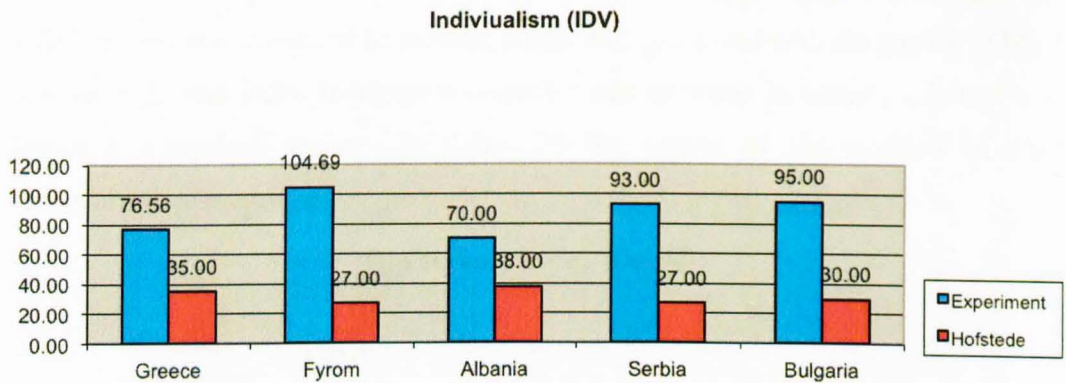


Figure 25: Individualism Scores

The results showed that there is no significant variation on the country scores for this index. All countries scored high on this index denoting that, individuals within these societies are given an important and dominant role. More specifically, the lowest score for this index is 70 for Albania and the highest is 104.69 for FYROM. This high scoring can be explained by the fall of the communism that caused all the involved countries in the regions to rapidly adapt to the democratic regime (Bartlett, 2000, Lipset, 2000). As further argued by Sekulic et al. (1994), communism influenced these countries to become more collectivist in nature. Thus, after the fall of the communist regime individual roles became important and reinforced as argued by Lipset (2000) a strong state authority. Therefore, it could be expected that these countries would have scored high on the individualism as a post communism effect.

As stated in chapter 4, educational systems in individualistic societies aim at preparing individuals for a place in a society of other individuals by adopting the view that learning is less to know how to do as to know how to learn (Hofstede, 2005). In relation

to this research it could be expected that no communication issues will arise between students related to this dimension due to the similarities in the index scores for all participating countries.

6.3.2.1.2.3 Masculinity versus Femininity Index (MAS)

According to Hofstede (2005) MAS dimension refers to the distribution of the roles between the genders. As further explained by Hofstede (2005) in a masculine society gender roles are clearly distinct: men are supposed to be assertive tough and focused on material success and women to be modest, tender and concerned with the quality of life. A low score in this index indicates a country more feminine in nature; a low score indicates a masculine society. In figure 26 the results of the analysis of the questionnaires are presented.

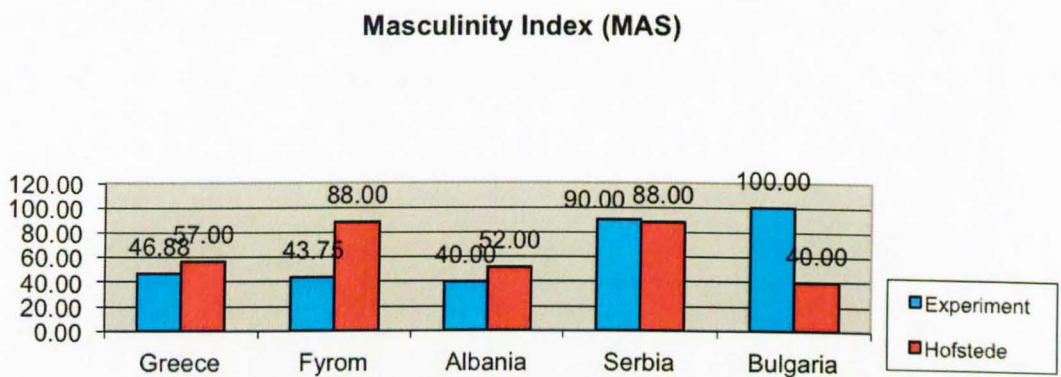


Figure 26: Masculinity Scores

The results showed that there is a great variation between Greece (46.88), FYROM (47.35) and Albania (40.00) with Serbia (90.00) and Bulgaria (95.00). Bulgaria scored high on this dimension because only male Bulgarian students from Computer Science participated in our study. According to Schnizel (2002) and Greening (1999) more male students enrol in Computer Science course indicating that this phenomenon is common to all Computer Science departments in Europe and the researchers could not locate Bulgarian students in the other department. Thus, Computer Science department in CITY Liberal Studies is no exception to that rule.

As described in chapter 4, according to Hofstede (2005) countries that score high in this index are more likely to develop behaviours like overrating their own performance and

admire the excellence of the teacher. More specifically, students from masculine societies are more likely to exhibit behaviours in the experiment like: their opinion is true, get leading roles in the discussion, and respect the teacher that displays more knowledge. Thus, in our experiment students from masculine societies are more likely to display an ego-centric behaviour in their posts, get the leading role of the conversation and prefer a teacher as a leader in our case a moderator of the discussion.

6.3.2.2.1.4 Uncertainty Avoidance Index (MAS)

According to Hofstede (2005) Uncertainty Avoidance is defined as “the extent to which the members of institutions and organizations within a society feel threatened by uncertain, unknown, ambiguous or unstructured situations”. A low score indicates that a country has weak Uncertainty Avoidance and vice versa. In figure 27, the results of the analysis of the questionnaire and those of the Hofstede’s research are presented.

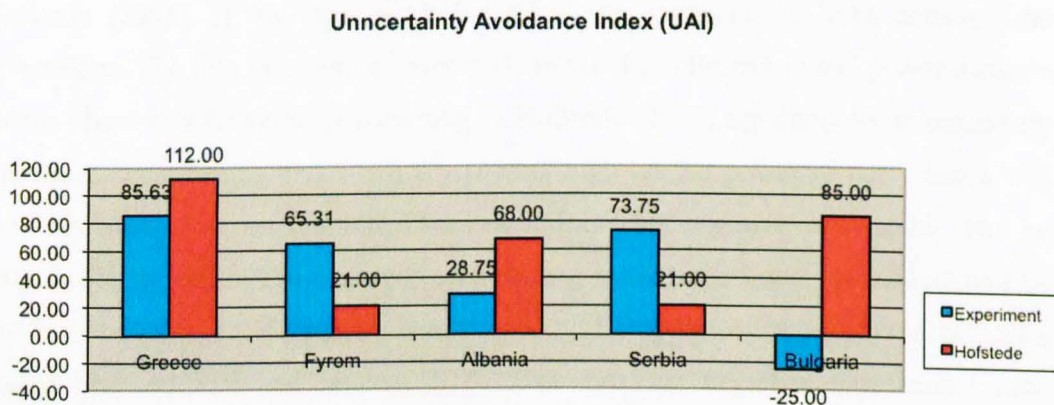


Figure 27: Uncertainty Avoidance Scores

The results showed that there exists a large variation between Greece (85.35) and Albania (28.75). The score of -25 for Bulgaria is a possible result (Hofstede G., 1997). As it is further argued in the official web page of the VSM 94 questionnaire, the ideal number of respondents is fifty (50), the minimum number per country is set to twenty (20). Below twenty respondents per country, single individual responses can alter significantly the results. The only country score similar to Hofstede’s is for Greece. The differences in scores for the other countries can reflect the instability in SEE region. Albania is so far below the EU level concerning the political and economic infrastructure clearly affecting the individuals uncertainty levels (European Commission, 2005). Concerning Bulgaria, the EU’s accession negotiations has made considerable impact on the Bulgaria’s political agendas by harmonising policies to the

EU standard (Spendzharova, 2003). According to Spendzharova (2003) this continuous EU accession has created a feeling of uncertainty for Bulgarians. The difference in scores for FYROM and Serbia can be attributed to the post-war effect.

As described in chapter 4, according to Hofstede (2005) countries that score low in this index may probably show the following behaviours: students are more comfortable with open-ended learning situations and discussions; they don't expect the teacher to know everything and results are attributed to own abilities. On the other hand, in high scoring countries students are more likely to feel comfortable in structured learning situations, may be concerned if an answer is right or wrong, and expect the teacher to have all the answers.

6.3.2.2 Relationships of Dimensions

Hofstede (2005) in his later work identified the existence of links between the dimensions. The first link can be observed between the collectivism and power distance index. These two dimensions according to Hofstede (2005) are likely to be negatively correlated. This means that a country scoring high on the power distance index will probably score low on the individualism index. This negative relationship can be observed in figure 28. The countries participating in our experiment scored low on PDI and high on IDV. In Hofstede's results exactly the opposite happened, the countries scored high on PDI and low on IDB. Therefore, the negative correlation exists. Concerning our experiment this diagram shows that potential issues may arise in the communication between Albania and Bulgaria with FYROM related to the PDI.

Experiment vs. Hofstede - PDI vs. IDV

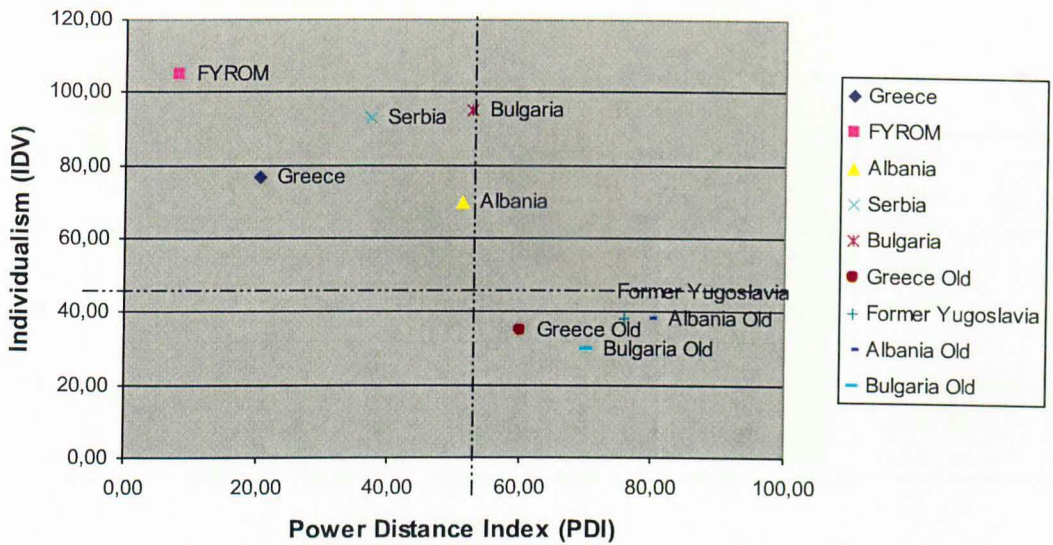


Figure 28: PDI vs. IDV

The second link as stated by Hofstede (2005) is between the MAS and IDV indexes. This relation between these two indexes shows in Hofstede's research that they should be considered as independent indexes. This statement is supported for the findings of his scores in which a feminine type of country can score both high and low in the individualism index and vice versa. As observed in figure 29, the comparison between the experiment's and Hofstede's results show that there is no relation between MAS and IDV and thus should be considered as separate indexes. For example, in our experiment Bulgaria scored both high on the MAS and IDV indexes whereas FYROM scored low on MAS and high on IDV. In our experiment it should be expected that differences of communication problems related to this indexes may concern discussions between FYROM or Greek or Albanian and Bulgarian or Serbian students.

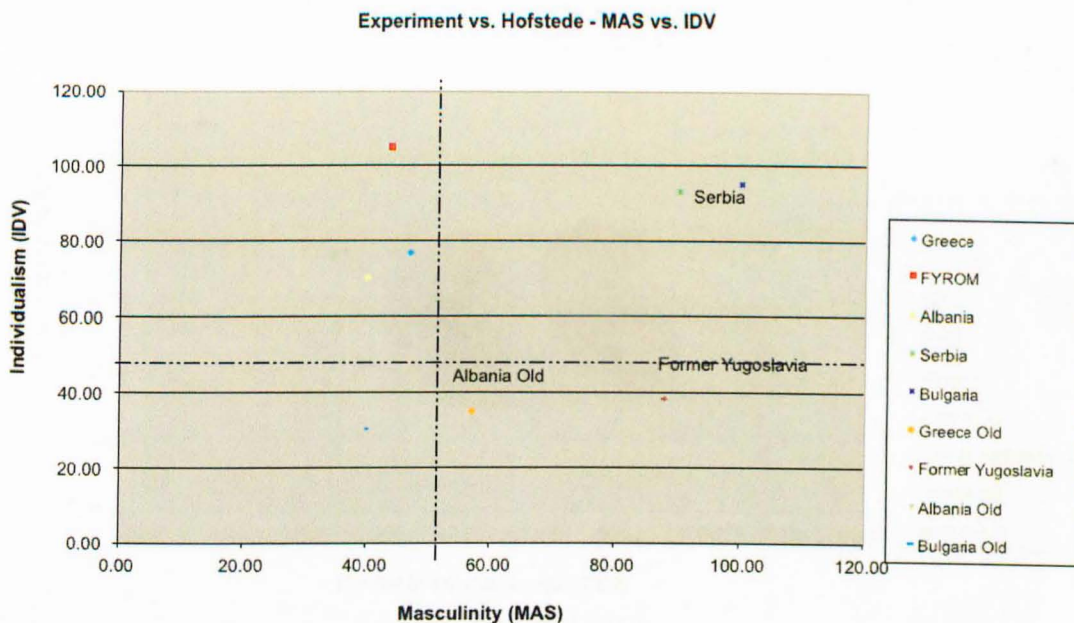


Figure 29: MAS vs. IDV

The third link is between MAS and PDI. According to Hofstede (2005) these dimensions are related with each other. Hofstede (2005:128) states that “the stability of gender role patterns is almost entirely a matter of socialization”. This means that if the society reinforces differences in power between social classes and reinforces the male dominance, then the women in this society will probably want the male dominance. As described in section 6.2.4.3.1.1 discussing PDI, the geo-political changes taking place in the region and which are based on the fall of the communist regime combined with the separation of the former Yugoslavia combined with the successful entering in the EU of some of the SEE countries are clearly demonstrated in the results of our study. For example, former Yugoslavia scored high on PDI and high on MAS. In our experiment, Serbia scored low in PDI and high in MAS reflecting the democratic changes taking place in the country. Moreover, FYROM scored low on PDI and low on MAS indicating a country that de-emphasises differences between social classes with specific focus on quality of life. Concerning our experiment potential issues in communication related to PDI and MAS may arise in the discussion between FYROM and Greek students with Bulgarian students. In respect to PDI, potential problems may arise between Albanian and Bulgarian students.

Experiment vs. Hofstede - PDI vs. MAS

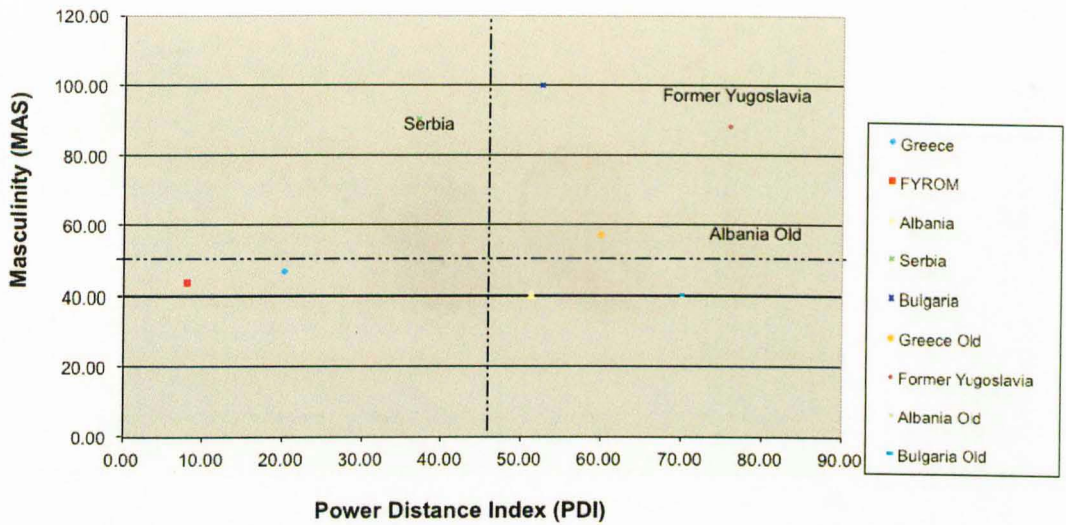
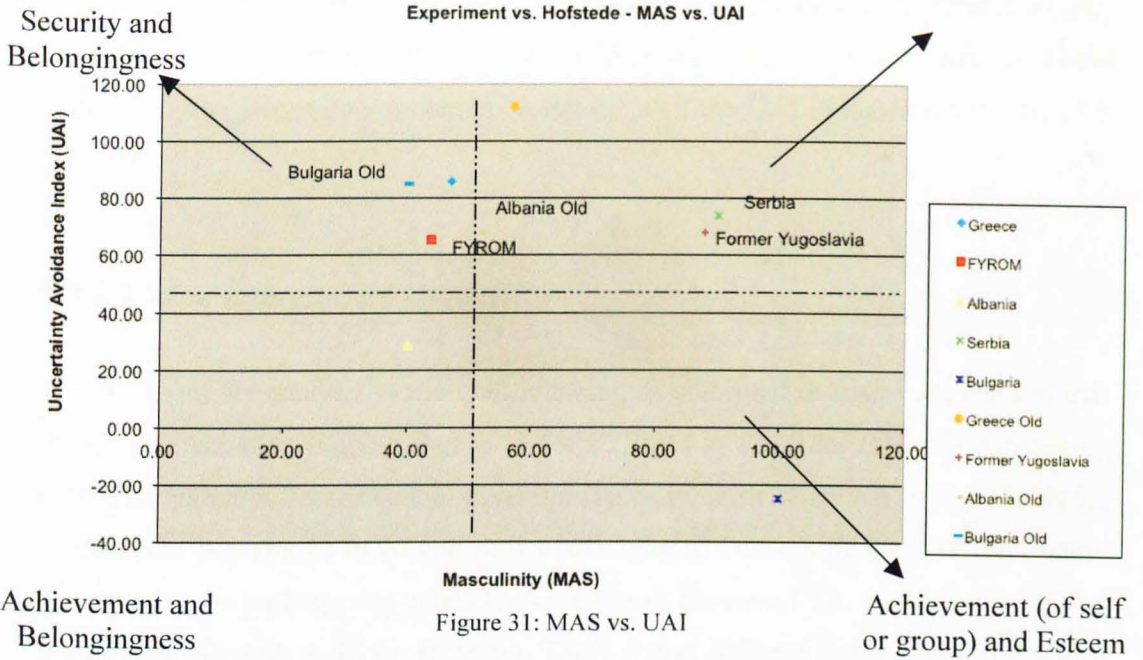


Figure 30: PDI vs. MAS

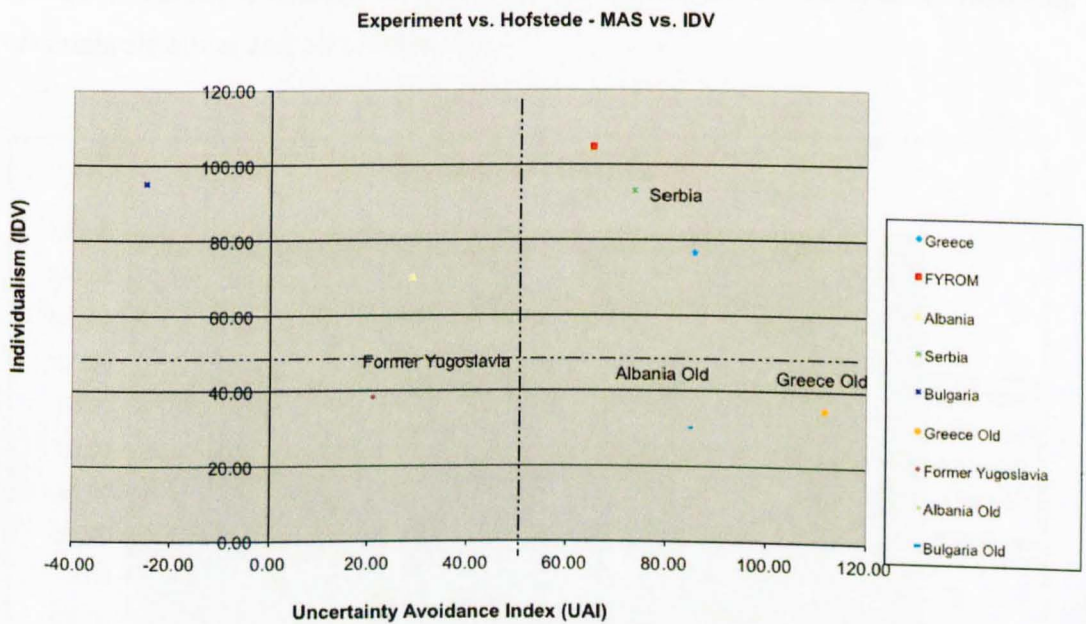
The fourth link is between UAI and MAS. As argued by Hofstede (2005) the relation of this dimension can be used in order to study motivation patterns. For example, safety or security will prevail versus other needs when the uncertainty avoidance score is high and human relationships will prevail versus respect in a feminine culture (Hofstede 2005). Thus, as stated by Hofstede (2005) the relationship between these two dimensions can provide explanation on the motivators used by each culture. As related to this study, motivators can be important in order to get the most out of the students. The relationship of UAI and MAS is represented in figure 31.

Security and Esteem



More specifically in relation with our research, figure 31 shows that potential issues in communication may be encountered during the discussion between Albanian and Serbian students.

The fifth and final link that Hofstede (2005) discusses in his work is between UAI and Individualism. Hofstede (2005) argues that countries scoring high in UAI have a tendency to have more precise laws than those scored low.



Regarding our experiment, figure 32 shows that potential issues of communication may arise between Bulgarian and Albanian with Greek and Serbian students. These communication issues may probably be related with the UAI dimension and less with the IDV.

6.3.2.2.3 Summary of the Dimensions

The results of the analysis of the questionnaire, as presented in figure 34, showed that there was a variation ranging from 8.13 for FYROM to 52.50 for Bulgaria concerning PDI. This variation indicates that potential issues in communication will probably be encountered between FYROM and Bulgarian students. Concerning the IDV dimension, the scores of the participating countries were almost the same. The scores were varying from 70 for Albania to 95 for Bulgaria. These scores indicate that all countries are of individualistic nature, looking more for the individual and less for the collective groups. In the MAS dimension is where the highest variation is encountered. The minimum score is 40 for Albania, indicating a country more feminine in nature focusing on the quality of life, and the maximum is 135 for Bulgaria indicating a country more masculine in nature. Finally, in the UAI dimension, inequalities in scores can be observed. The minimum score is 28.25 for Albania indicating that individuals are more likely to follow uncertain situations and procedures, and the maximum is 85.63 for Greece indicating a country in which the individuals are not so keen at following uncertain situations and procedures.

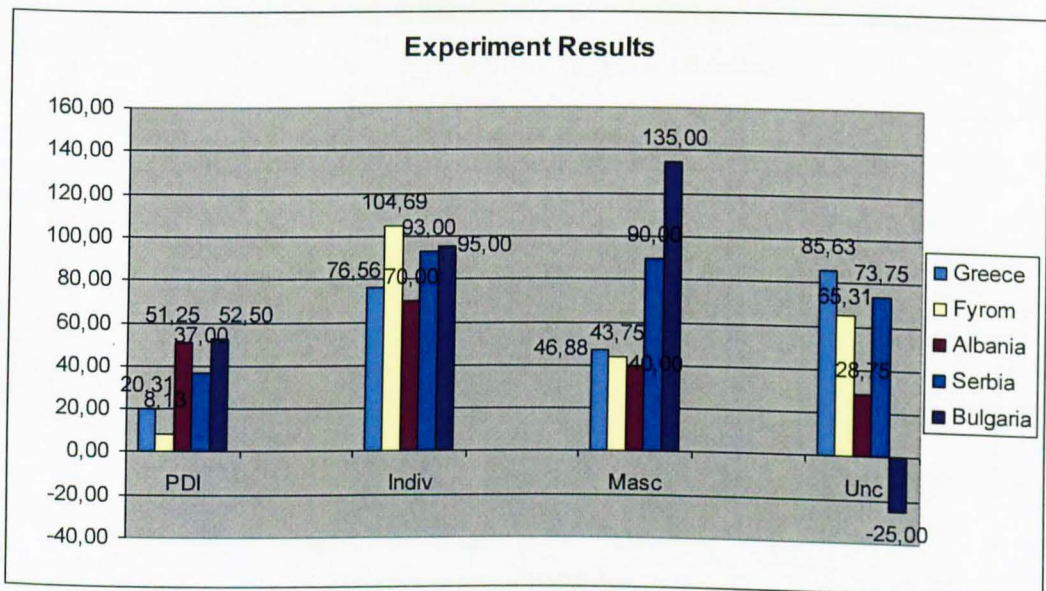


Figure 33: Dimensions Totals

6.3.2.2.4 Differences between Experiment's and Hofstede's Results

After the analysis of the questionnaire data, the researcher continued by comparing his results with the scores of Hofstede in order to identify and explain the differences in scores. One obvious difference that initiated this comparison was the general instability in the region of former Yugoslavia that led to the separation and creation of new countries. The figure 34 and 35 represent the experiment's and Hofstede's data respectively.

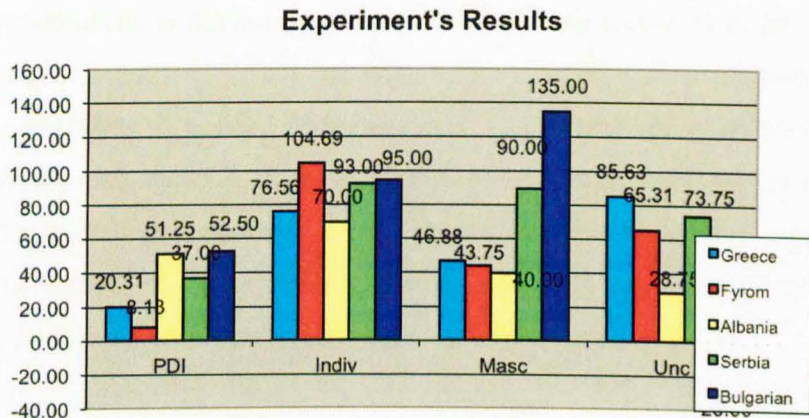


Figure 34: Experiment's Results

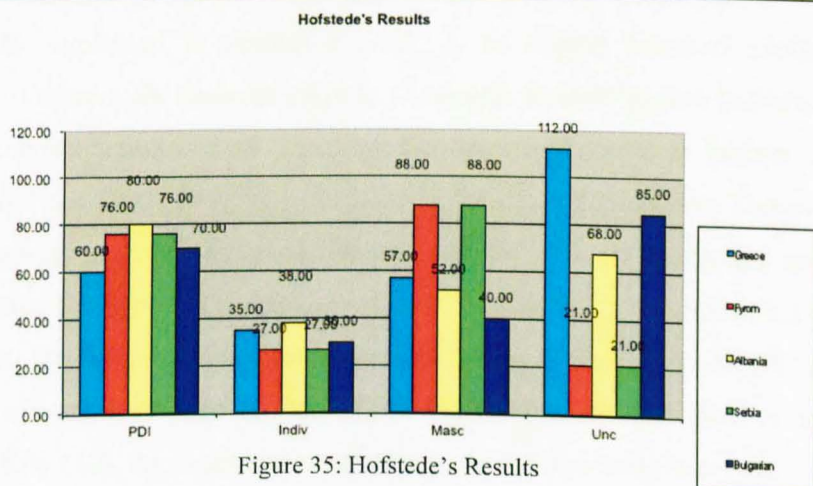


Figure 35: Hofstede's Results

As observed in the figures above changes were apparent concerning the scores for PDI and IDV. In Hofstede's results concerning PDI all countries scored above 60, in our experiment countries' scores are below 52.50 with FYROM scoring the lowest 8.13. Concerning IDV a similar variation takes place. Regarding Hofstede's results, countries' scores are below 38, in our experiments all countries scored above 70.00. The result of Hofstede was accurate at that time since in communist and post-communist countries corruption levels are high reinforcing inequalities in social classes rooted in the cultures of these countries (Sandholtz, 2005). Even democratisation of these countries has not succeeded (Bartlett, 2000). This situation is clearly reflected in the results of our study since the scores indicate a small decrease. The only exception is FYROM indicating a huge difference from Hofstede's results that cannot only be explained by the separation of Former Yugoslavia. This difference clearly reflects the situation as described by Barlett (2000) that Croatia and FYROM are rapidly implementing and accommodating democratisation and economic reforms.

Concerning the Individualism dimension, it is expected for the scores to be low since this Individualism is negatively correlated with Power Distance dimension as it is argued by Hofstede (2005). According to Sekulic et al. (1994) and further supported by Hann (1994), communism influenced these countries to become more collectivist in nature. Thus, after the fall of the communist regime individual roles became important and reinforced as argued by Lipset (2000) a strong state authority. Therefore, more effort was expected in catering for individual needs in these countries.

In the other dimensions the variation in scores was not as high as in PDI and IDV. Regarding the Masculinity dimension the only case that differs dramatically is the case of Bulgaria. As explained in section 6.2.4.3.1.3, as argued Schnizel (2002) and Greening (1999) more male students enrol in Computer Science course indicating that this phenomenon is common to all Computer Science departments in Europe and the researchers could not locate Bulgarian students in the other department. This explains the high masculinity score for Bulgaria. Concerning the UAI dimension the awkward result is the score of Bulgaria. This can be explained, as discussed in section 6.2.4.3.1.4 the score of -25 for Bulgaria is a possible result (Hofstede G., 1997). As it is further argued in the official web page of the VSM 94 questionnaire, the ideal number of respondents is fifty (50), the minimum number per country is set to twenty (20). Below

twenty respondents per country, single individual responses can alter significantly the results.

6.3.3 Discussion of Results

The analysis of the questionnaire was done in two stages: the first stage referred to the analysis of the demographic questions and the second stage on the analysis of the cultural dimensions. It is of particular importance to note that due to the small numbers of participants in all of the nationalities participating in this study, the results drawn in the analysis cannot be generalised to the extent of relating any of the results with the national culture of each country. In addition, any generalisation would be made invalid since according to the official web page of Hofstede's questionnaire the ideal number of respondents is fifty and the minimum number per country is set to twenty. Thus, any generalisation made in this research concerning the findings from the questionnaire's analysis would have been invalid. The results of the questionnaire of each dimension, as argued in section 5.2, will provide the researcher with the tool to help the interpretation of communication conflicts in the next stages of the experiments. Thus, there was no need to generalise and extend the results of the questionnaires outside the context it was used.

Concerning the first stage of the questionnaire analysis the following conclusions were drawn as related to the sample population:

- Males constitute the 80% of the total population, whereas females are the minority by 20% of the total;
- Participants were mostly belonging to the 20-29 age group, a result that was initially expected by the researcher;
- 39 out of participants responded positively to the question about working experience, thus diminishing any potential issues in communication that working experience may have posed;
- 4 controlled groups were formulated consisted of 10 Greeks and 10 FYROMs and 4 multicultural groups consisting of 4 Greeks, 4 Bulgarians, 4 FYROMs, 4 Serbians and 4 Albanians.

In the second stage of the analysis the respondents' answers were interpreted into the four cultural dimensions. Although, Hofstede (2005) stated the existence of a fifth dimension (Long Term Orientation), this dimension was not used since the length of the group experiment lasted approximately 2 hours making the calculation of this dimension not possible. The differences in the results of our analysis with Hofstede's were based in the following main reasons:

- No human activity system and society remain unchanged through time;
- Geo-political changes based on the war in former Yugoslavia and the fall of the communism in the SEE region.

The results of analysis of the questionnaire showed a great variation in the PDI, MAS, and UAI dimensions. In PDI the countries with the greatest differences are FYROM and Bulgaria. Concerning the MAS dimension, Albania and Bulgaria have the greatest difference. In the UAI dimension Greece and Albania as opposed with Bulgaria having the largest difference in score. Concerning our research the conclusions that were drawn in respect to the dimensions were:

- **PDI:** Potential communication problems may probably take place between FYROM and Bulgaria. On the one hand, FYROM students may follow a more student-centered approach to teaching and learning assuming more responsibilities and leading roles. On the other hand, Bulgaria students may prefer a more teacher-centered approach to teaching and learning by requiring the presence of a teacher leading and guiding the discussion. Moreover, it is expected that Bulgaria students are more likely to cooperate, since they may expect the presence of the teacher in the discussion defining clear roles and tasks for each group member, whereas FYROM students are more likely to collaborate, i.e. resolve problems arising by themselves and assign roles and tasks internally;
- **IDV:** No communication problems are expected to arise since the countries' scores are close and high;
- **MAS:** Potential communication problems may arise between Greece, FYROM and Albania with Serbia and Bulgaria. On the one hand, Greeks, FYROMs and

Albanians will probably follow general simple answers but not sacrifice quality for quantity. On the other hand, Serbians and Bulgarians are more likely to display an ego-centric behavior in their posts, get the leading role of the conversation and prefer a teacher as a leader, in our case a moderator of the discussion. Moreover, it is expected that Serbians and Bulgarians are more likely to cooperate. Greeks, FYROMs and Albanians are more likely to exhibit collaborative behaviors;

- **UAI:** Potential problems of communication may probably arise in the discussion between Albanians and Greeks. On the one hand, Albanians may probably prefer open-ended learning situations and discussions as they don't expect to know everything and results are attributed to own abilities. On the other hand, Greeks are more likely to prefer structured learning situations, may be concerned if an answer is right or wrong, and expect the teacher to have all the answers.

6.3.4 Evolution of initial Hofstede's Expectations

As it was discussed in section 4.7 in chapter 4, Hofstede's theory of cultural dimensions has evolved after the analysis of the questionnaires. The results indicate that potential cross-cultural communication problems may be encountered in the quasi-experiment concerning for:

- **PDI:** FYROM and Bulgaria;
- **IDV:** FYROM, Albania and Bulgaria;
- **MAS:** Albania and Bulgaria;
- **UAI:** Greece and Albania.

6.4 Quasi-Experiments

The second stage of this research, as it is explained in Chapter 5, aims at analysing the interaction in a specific learning activity by performing quasi-experiments. As stated in

the previous section (6.3), the results have provided us with a better understanding on which cultures are antithetic and how the students may probably act in the discussion. In this stage the researcher identifies instances of communication conflicts that can be explained by the cultural behaviours as discussed in the section 6.3. The communication between students was taking place in the synchronous communication facility provided by the Claroline system (see section 5.5.3 of chapter 5 for a description of Claroline). Then, the researcher has randomly assigned participants in groups of five students each. The participants of this study were separated in eight groups of five students each. Four of them were comprised by students of the same nationality: two groups with Greeks and two groups with FYROMs, and four of mixed nationalities.

After the separations of the students into groups, the researcher arranged for the group members to meet in a Lab in order to perform the activity. During the activity, the participants were given a case study to read. The case study is shown in Appendix B and its structure was analysed in section 5.5.3.2 of chapter 5. After the end of the experiment, the participants were asked to email the answers of the group to the researcher. Although, the answers were not examined by the researcher were not used in any part of this research, their importance was decided so as to give the motivation to the students that they needed in order to provide answers that someone should read and understand. All the group communication was logged by the Claroline's synchronous chat facility in order to be further analysed.

6.4.1 Creation of Groups

As described in chapter 5, participants were students from Computer Science and Business Administration and Economics departments of CITY Liberal Studies an affiliated institution of the University of Sheffield located in Greece. Participants were separated into eight groups according to their nationality. In the total of 40 participants the following groups were created:

- **4 controlled groups** of five students each. 2 groups were formed by Greek students and 2 groups were formed by FYROM students. In total 10 students from Greece and 10 from FYROM were used to formulate the control groups;

- **4 multicultural groups** of five students each. These groups were comprised of 4 Bulgarian, 4 Albanian, 3 Serbian, 4 FYROM, and 5 Greek students.

6.4.2 Analysis of Communication Logs

As stated in Chapter 5: Research Design, this research employed a mixed method approach by using both quantitative and qualitative research methods of data collection and analysis. More specifically, as described in section 6.2, Hofstede's questionnaire was administered and analysed providing a better understanding of the communication conflicts that may arise in the group communication. Concerning the communication logs, the researcher analysed the communication logs in two stages. The first stage involved the quantitative analysis of the communication logs by counting the number of posts for each group and for each nationality. The results of the quantitative log analysis will provide a:

- Better understanding of the group dynamics by identifying dominant and silent members;
- Rough of conflicting or problematic communication areas that will be further analyzed in the second stage.

In the second stage of the log analysis, logs are analysed qualitatively by characterising each identified problematic area as misperception, misinterpretation and misevaluation which are further related to cultural dimensions as identified in section 7.2.

6.4.2.1 Quantitative Log Analysis

The first stage of the log analysis involves the quantification of the communication logs produced by each group. As previously stated in section 5.3.2.1 students participating in this research were split into eight groups of five students each. The researcher devised four controlled groups with students from the same nationality: two groups from Greeks and two groups from FYROMS, and 4 groups with students from different nationalities. As initially expected by the researcher, the number of posts of the students

in the controlled groups is higher than the posts of the students in the multicultural groups as it is represented in figure 36.

Total Number of Posts

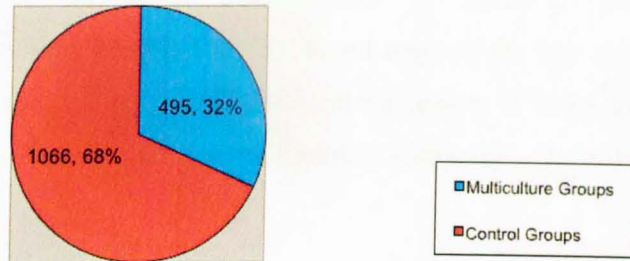


Figure 36: Total Number of Posts: Control vs. Multicultural Group

As first argued by Hofstede (2005) and further supported by Applebaum (1998), students tend to form groups with members of the same or similar cultures because they believe that they share common understanding that could lead to better interaction and thus, better results. Although this number of total posts gives us an initial indication that students in control groups may have interacted better and thus produced better results, a further analysis of the nature of the posts should be made in order to identify the type of the conversation that the group made. This is crucial because as described in chapter 3 section 3.5, when the conversation between the group members remains at the discussion type then break-down in communication might occur (Jenlink and Carr, 1996). On the other hand, if the group members use dialogue where meanings are constructed through sharing of opinions, the conversation continues and produces better results. Thus, posts were categorised according to their contribution in the conversation as follows:

- Neutral Contributions: referring to contributions that have minimum input to the ongoing discussion but do not cause a distraction;
- Meaningful Contributions: referring to contributions that add to the discussion process and lead the group towards a fruitful discussion;
- Agreement Contributions: referring to contributions that state the agreement on opinions discussed;
- Disagreement Contributions: referring to contributions that state the disagreement on opinions discussed;
- Conflict Contributions: referring to contributions that seem to cause problems in

communication by misinterpreting, misunderstanding or misperceiving words and opinions.

It should be noted that, the Conflicting Contributions category was used at this stage by the researcher to provide an initial identification of potential problematic communication areas that will be analysed in the second stage of the log analysis (see section 6.3.2.2). At this stage, the researcher used colour coding in order to identify instances of the type of posts as described in the previous paragraph. The colours used by the researcher were:

Colour	Post Meaning
Yellow	Neutral
Blue	Meaningful
Green	Agreement
Red	Disagreement
Dark Red	Conflict

Table 11 – Colour Coding

The results of the analysis of the categorisation of posts after the coding process are displayed in figures 38 and 39 below.

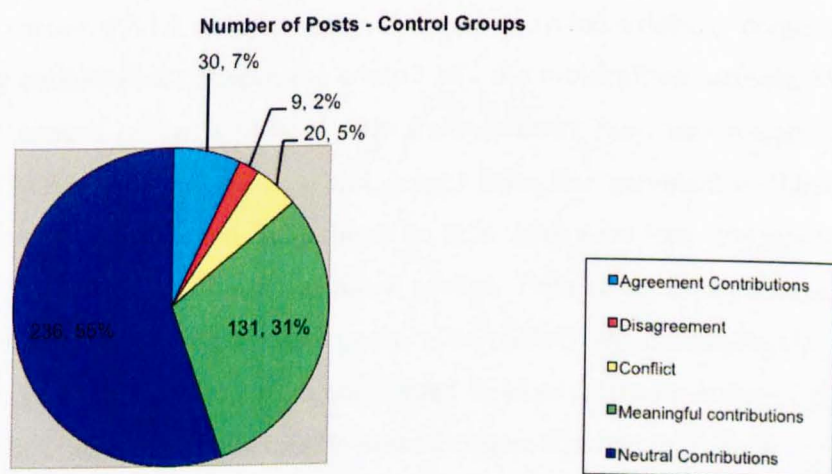


Figure 37: Number of Posts: Control Groups

Number of Posts - Multicultural Groups

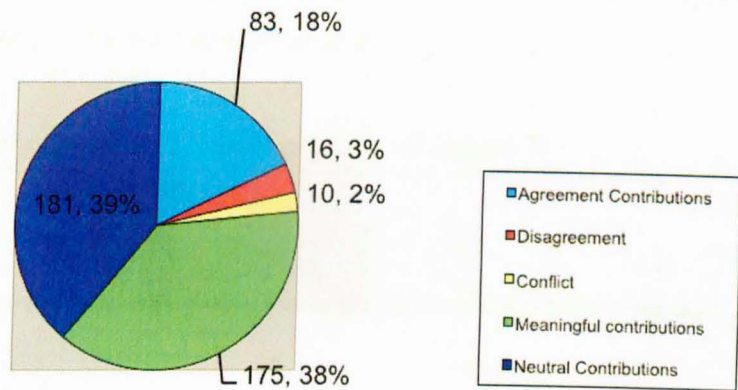


Figure 38: Number of Posts: Multicultural Groups

From figures 37 and 38, it can be observed that multicultural groups have the tendency to post more agreement, disagreement and meaningful statements, and less neutral and conflict statements than the control groups. The existence of higher numbers in the multicultural groups concerning agreement, disagreement and meaningful posts indicate a tendency of the group members to focus on carefully shaping their opinion by posting more meaningful and less neutral and conflict contributions. The behaviour of careful posting displayed by the group members of the multicultural group is in accordance with the belief of Hofstede (2005) that students tend to form groups with members of the same or similar cultures based on the belief that, they share common understanding that could facilitate the interaction process.

As described in section 6.3.1.1 of this chapter, there exists an inconsistency concerning the participating nationalities between the control and the multicultural groups. More specifically, the control groups consisted only from students from two nationalities (Greeks and FYROMs) and the multicultural groups from five nationalities (Greeks, FYROMs, Albanians, Serbians and Bulgarians). In total there were four students from each nationality participating in the multicultural groups. Thus, in order to perform the comparison between the posts for each group (i.e. control vs. multicultural), the numbers of the control groups have to be normalised so as to refer to number of posts from four students. Thus, the formula used to make the normalisation process is:

$$\frac{(\text{Number of posts control groups} \times \text{Number of student multicultural groups})}{\text{Number of students control groups}}$$

For example, in our case we have ten (10) Greek and ten (10) FYROM students in the control groups and we have four (4) FYROM students participating in the multicultural groups. The resulting formula for normalising the posts is:

$$\frac{\text{Number of posts for FYROMs in Control Groups} \times 4}{10}$$

The resulting values after the normalisation process are shown in the following table:

GREEKS			FYROMS		
Contributions	Original Posts	Normalised Posts	Contributions	Original Posts	Normalised Posts
Meaningful	191	96	Meaningful	138	69
Neutral	340	170	Neutral	249	125
Agreement	46	23	Agreement	30	15
Disagreement	16	8	Disagreement	7	4
Conflicts	36	18	Conflicts	13	7

Table 12: Normalising Posts Greeks FYROMs – Control Groups

The number of posts for the remaining three nationalities is shown in table 13.

Contributions	Greeks	FYROMs	Bulgarians	Albanians	Serbians
Meaningful	18	45	64	28	27
Neutral	18	49	47	45	29
Agreement	21	23	11	15	17
Disagreement	4	1	0	7	4
Conflicts	2	3	1	3	1

Table 13: Posts Multicultural Groups

By examining tables 12 and 13, it can be clearly observed that FYROMs and Greeks in the control groups have posted more than in the multicultural groups. The conflict category will be explored in the qualitative stage of the Log analysis. More specifically, the results indicated that multicultural groups have the tendency to post more agreement, disagreement and meaningful statements, and less neutral and conflict statements than the control groups. The existence of higher numbers in the multicultural groups concerning agreement, disagreement and meaningful posts indicate a tendency of the group members to focus on carefully shaping their opinion by posting more

meaningful and less neutral and conflict contributions. The behaviour of careful posting displayed by the group members of the multicultural group is in accordance with the belief of Hofstede (2005) that students tend to form groups with members of the same or similar cultures based on the belief that they share common understanding that could facilitate the interaction process. The outputs of this sub stage also provided a clear identification of the general conflicting posts of the communication logs. In the following section the researcher continues on the qualitative analysis of the logs in order to expand further and explain the conflicting behaviours roughly identified at this stage.

6.4.2.2 Qualitative Analysis

During the qualitative process the researcher devised an analytic tool consisting of two tables that evolved throughout the analysis process and helped the researcher to produce the narratives and the respective theory. The three tables constructed were: Code Definitions and Coding Table (including actual quotations).

6.4.2.2.1 Process of Analysis - Coding Matrix

The primary categories used in this analysis phase were identified by the works of Hofstede (1980) and Applebaum et al. (1998). More specifically, the work of Hofstede (1980) provided to the researcher the main themes (cultural dimensions) that helped in the understanding and grouping the identified conflicts. In addition, the work of Applebaum (1998) provided a more detailed description on the communication conflicts by categorising the conflict as a cross-cultural communication problem falling into the following three categories: misperception, misinterpretation, and misevaluation. Moreover, during the coding process of the communication logs, the researcher identified quotations explaining and identifying the main problem and then identified quotations describing causes and consequences. Therefore, the coding matrix that is produced and used for the analysis and categorisation of the codes is presented in the following table:

		misinterpretati on	mispercepti on	misevaluati on	Quotatio n
--	--	-----------------------	-------------------	-------------------	---------------

Power Distance	Cause				
	Consequence				
Individualism/Collectivism	Cause				
	Consequence				
Masculinity/Femininity	Cause				
	Consequence				
Uncertainty Avoidance	Cause				
	Consequence				

Table 14: Coding Matrix

6.3.2.2.2 Log Analysis Findings

In this section the findings of the analysis will be presented according to our four main themes (cultural dimensions). The quotations identified may fully or partially be categorised as misinterpretation, misperception and misevaluation. Because the questions that triggered the conflicts were specifically altered to raise conflicts related to cultural dimensions, the identified quotations is presumed that are originated from cultural differences. The lens for categorising the quotations is always assumed to be culture and not a generally cognitive cause that lead to interpretation. For example, someone in general, can misperceive a learning goal or an argument due to difference in personal learning style etc. In the case of this study, for this analysis stage, the misperception is happening due to cultural difference.

Case Study Question 1 – Addressing Power Distance

For the Power Distance theme (dimension) the following categories of conflict description have emerged as they are presented in table 15

Misinterpretation	Misperception	Misevaluation
Use of Term	Embrace All Views	Wait Members To Answer
Vitiation of Different Opinion	Mixing 2 Questions	Shift Focus Out Of
Joyful Mood		Force Opinion

		Disagreement
		Confusion of Role, Topic, Procedure

Table 15: Categories of Conflicts – Power Distance

Use of Term

This category specifies the situation where the students misinterpret words and give their own meaning based on their cultural background. This misinterpretation causes the discussion to open in order to resolve the misinterpretation. A solution adopted by the other members of the groups is to write general statements to embrace all the possible views of the current discussion in order to reach an agreement. This behaviour was exhibited in the communication in multicultural groups.

For example in such a situation the following discussion could take place.

Serbian 4 “up to a point there need to be some policies imposed on employees”.

Albanian: 3: “I don't think dictatorially is the best way of approaching things”.

Fyrom 8: “it depends on the company's, organization's culture and nature of business, for example in a banking company it is better to be decided and dictatorially imposed”

Bulgarian 3: “In my opinion there should be strict policy rules decided from the top and system administration department should take care of them, however employees should be trained. Exception can be done only in special cases where security really prevents the job to be done”. This triggers the reaction of Serbian 4 saying to generalize more on the topic.

Vitiation of Different Opinion

This category refers to specific behaviours of students that are triggered after a specific student insists on his/her opinion. It was observed that, specific cultures that scored Low on the PDI like FYROM and Greece expressed a general answer to embrace all the views currently present on the discussion. This general answer can trigger behaviours like insisting on one's own opinion trying to force their perception of the correct answer. This misinterpretation causes the discussion to either lead on an abrupt end based due to time restrictions or to a further continuation of the discussion. This behaviour was observed only in the multicultural groups. This category falls into the

cultural misinterpretation category because the behaviour was triggered from the question that was purposely leading to a cultural conflict.

The following example describes such a situation:

FYROM 9 at line 16:12: “my opinion is that it depends from the nature of the company and the nature of the users... however Greek 17 has right”.

Albanian 4 at line 16:13: “I think that there must be a combination of the two techniques”

FYROM 9 at line 16:13: “company has to make its own set of rules regarding security and the other people to follow it”

[...]

Albanian 4 at line 16:18: “there is not a single technique when we it comes to security”

FYROM 9 at line 16:19: “I agree with Albanian 4... However, I find this shooting around all over and not scoring anything... you have to have at least one point of view regarding your security if it fails... then you will change it meaning improve it”

Greek 17 at line 16:19:”yes.”

Bulgarian 4 at line 16:20: “Q 2 is a hard one.”

FYROM 9 at line 16:20: “what about you guys?”

[...]

Albanian 4 at line 16:22: “always the company”

[... **Discussion to convince Albanian 4 to follow the group answer**]

Albanian 4 at line 16:28: “that is all for Q 1”

In the previous situation although FYROM 9 believes on a view embracing both of the given views, agrees with Greek 17 on one’s one view statement. This causes a misinterpretation by Albanian 4 triggering his statement at line 16:13 trying to open the discussion as FYROM 9 does. Although FYROM 9 at line 16:13 tries to make more clear his statement the group entered into an open discussion trying to vitiate Albanian’s general previous view. This discussion is of no point since Albanian 4 at line 16:18 continues his/her persistence in the original general view. This “shooting around” as argued by FYROM 9 at line 16:19 and focuses the group on a single answer by characterising the whole discussion useless. This triggers the partial agreements of Greek 17 at line 16:19 agrees with FYROM 9. Immediately after this agreement Bulgarian 4 at line 16:19 hurries the group to go to the next question. This triggers the immediate answer of FYROM 9 at line 16:19 trying to make all members to agree. This has a consequence the non-agreement of Albanian 4 at line 16:22 and the continuation of the discussion to vitiate the reasons behind Albanian’s 4 answer. Then, the whole discussion takes 14 turns and it finally reaches an abrupt end by the statement of

Albanian 4 at line 16:28.

Joyful Mood

This category describes situations where the students continue a general discussion often not related to the topic by making jokes. This situation is triggered probably by the cultural familiarity since this situation was only observed in the control groups. This joyful behaviour resulted to a long disturbance of the groups and the restart of the discussion. The discussion is terminated by single general answers. This behaviour is triggered by the policy impose action and is thus related to the Use of Term behaviour. Thus, this behaviour belongs to the same category with Use of Term.

An example demonstrating such behaviour is described in the following quotation:

FYROM 14 at line 18:45: “I think that security policies should be decided and dictatorially imposed on organizations and employees”

FYROM 10 at line 18:45: “tell us about u something”

[...]

FYROM 11 at line 18:45: “FYROM 14 for president”

FYROM 14 at line 18:46: “first question”

[...]

FYROM 10 at line 18:50: “the security is mostly important because of controlling the companies whole work process ...”

FYROM 14 at line 18:45 starts answering the question. Although, the statement uses the term dictatorially imposed, the group ignores it and continues the joking statements. The group is disturbed for 10 turns.

Embrace All Views

This category refers to behaviours of students that resulted from misinterpreting statements, and describes situations that students try to generalise their answer so as to include all the possible opinions expressed currently on the discussion. This behaviour is observed to have no effect in the resolution of the discussion as it leads to conflict continuation by either continue a general discussion with no end or persist in difference of opinions. This situation is caused by two conflicting views. This behaviour was exhibited by students of multicultural groups.

The following example shows the discussion describing such a situation:

FYROM 8 at line 12:43: “it depends on the company's, organization's culture and nature of business, for example in a banking company it is better to be decided and dictatorially imposed”

Bulgarian 3 at line 12:44: “ In my opinion there should be strict policy rules decided from the top and system administration department should take care of them, however employees should be trained. Exception can be done only in special cases where security really prevents the job to be done”

Bulgarian 3 at line 12:45: “I worked over this kind of issue for 5 years and employees cannot asses the danger no matter how you train them”

In the previous dialogue FYROM 8 at line 12:43 widens the topic of the discussion. In an effort to embrace the two conflicting views Bulgarian 3 makes his/her statement. The conflict is resolved after the intervention of Bulgarian 3 at line 12:45 that forces directly his/her perception of the answer by putting forward the working experience an advantage over the other students.

Mixing 2 Questions

This category describes situations where the group members answer two questions at the same time by misperceiving the need for structure and “rules” in the discussion. This situation is triggered either because group members have a confusion regarding their role (based on their score on the PDI) and activity's procedure, or from informal conversation caused by the groups' joyful mood, or by the short and fast agreement of the group. A solution, as observed by the communication logs, is for a member to get the leading role of the conversation and re-establish the sequence. This behaviour was noted in the interaction of students in both the controlled and multicultural groups. The controlled groups were more familiar in electing a leader either formally (through voting) or informally.

For example in such a situation the following discussion could take place.

Greek 5 at line 11:31: “Greek 1? When is your show taking place?”

Greek 1 at line 11:31: “in 2 minutes”.

Greek 2 at line 11:32: “Nice question!!! ... I don't know man ... ☺”.

[...]

Greek 5 at line 11:36: “bad word Greek 2!!!!!! Go out please otherwise I will ban you”.

Greek 3 at line 11:36: “did you read question 3? ... if not read it”.

Greek 1 at line 11:37: “do you agree with the question 3?”

Greek 5 at line 11:38: “yes the 2nd please?”

[...]

Greek 4 at line 11:41: “STOP TYPING FOR A SECOND”

In line 11:41 Greek 1 and in line 11:42 Greek 4 and Greek 2 are using joking phrases badly translated word by word in English are continuing the informal chat.

Confusion of Role, Procedure, Topic

This category refers to quotations describing the confusion of the group members regarding each member’s role, the communication procedure and the topic. This behaviour is caused when the group members immediately start answering the question. A solution to the confusion created is for the group members to vote for a leader. This behaviour was observed in the control groups. This can partly be attributed to culture since the students are of the same nationality and share the common score in cultural dimension. Thus, the group members of control are more likely to initiate discussions concerning their role, procedure, and topic and solve them by electing a group leader. This category can partly fall into the misevaluation category since it seems that there is not enough cultural coherence in the group to resolve the confusion by using formal procedures for electing a leader.

An example demonstrating this kind of behaviour is explained in the following quotations:

FYROM 5 at line 16:33: “ok let’s start the first question”.

FYROM 2 at line 16:34: “who is the group leader?”

FYROM 5 continues answering the question despite the post of FYROM 2 described below.

The group decides who will be the leader at line 16:35 and the group continues *the discussion*

Wait Members to Answer

This category refers to behaviours of students that stop the current discussion in order to get the silent members to get involved. This behaviour is triggered after the group

members have elected a leader for the specific conversation – i.e. someone to control the turns in the discussion –. This behaviour leads the group members to reach a short agreement. It is of particular prominence to note that this specific behaviour was exhibited by the control groups indicating a probability that the culture affects the way of interaction inside a group. Thus, this category can be classified as misevaluation since it relates to the previous category (Confusion of Role, Procedure, Topic) and silent members are not encouraged to participate in the multicultural groups.

An example of such situation is described as follows:

FYROM 5 at line 16:35: “My opinion is that a company is obliged to have a top-down security because if not the employees can ignore the security protocols”

FYROM 2 at line 16:35: “@FYROM 5: mine exactly...if u leave security to the employees...u r <insert not suitable word here> up :)”

FYROM 1 16:36: “I think that the company is supposed to be responsible for the security”

FYROM 2 at line 16:36: “w8 FYROM 1”

FYROM 2 at line 16:37: “FYROM 5 also...”

FYROM 3 at line 16:39: “yes I agree”

The previous quotation describes the behaviour of the group members that caused the group to reach a short agreement. More specifically, FYROM 2, FYROM 1 and FYROM 5 express their opinions at line 16:35 and 16:36 that were the same. FYROM 2 having the leading role at line 16:36 stops the conversation to get the other group members involved since the other members have agreed with the answer. FYROM 3 at line 16: 39 agree. It should be note how the group members utilise the method `@group_member_name` to reply to specific posts of group members.

Shift Focus Out Of

This category describes situations of students where they try to shift the focus of the topic discussed to a more general one so as for all members to indirectly agree and continue the discussion. This behaviour is triggered either by the joyful mood of the group members after the embrace all views behaviours as discussed previously – i.e. the effort of the group members to generalise their answer to embrace all the views currently in the conversation –. This Shift Focus Out Of behaviour leads either to a short agreement by all members or a continuation of a general discussion. This

behaviour is observed in both the control and the multicultural groups. This category can partially be categorised as misevaluation, because students from a culture cannot “afford” to tackle behaviours like joyful mood and embrace all views. Thus, it is leading to a solution of short agreement or a continuation of the general discussion.

An example demonstrating this type of behaviour is:

Greek 5 at line 11:31: “Greek 1? When is your show taking place?”

Greek 1 at line 11: 32: “in 2 minutes”.

Greek 2 at line 11:32: “Nice question!!! ... I don’t know man ... ☺”

[...]

Greek 4 at line 11:35: “did you think the whole thing alone Greek 3?”

Greek 5 at line 11:35: “yes I did and he starts burning!!!! ... Today I am going to take out **Greek 1**: “!!!!!!! And if he says no I will burn him and his house!!!!!!!”.

[...]

Greek 1 at line 11:36: “we are here to discuss about the topic”.

The first three of the above quotations indicate the group’s joyful mood. The joyful mood has a consequence of making the discussion informal throughout the whole conversation despite the efforts of Greek 1 at line 11:36 to get the group back into answering the questions.

Force Opinion

This category refers to quotation describing instances when students force the group towards a single answer and compel an end to the discussion. This behaviour is triggered when students persist in a different view than the other members that is followed by an embrace all views behaviour. After the Force Opinion behaviour the group members reach a short agreement. This behaviour is observed in multicultural groups. This category falls in the misevaluation since it could lead to misevaluation for a whole culture as antithetic based on the specific dialogue of the on-going discussion. Thus, leading to forced short agreements on an answer leaving more questions on the interaction than answers.

For example in such a situation the following discussion could take place.

Albanian 1 at line 13:48: “employees may not accept because their ignorance in the field of security”.

[...]

Bulgarian 1 at line 13:54 states: “so you believe that the employees should decide on the security policy, Greek 14?”.

Greek 14 at line 13:55: “not the employees but the company”.

Greek 13 at line 13:55 interrupts stating: “so Top-Down?”.

Bulgarian 1 at line 13:55: “that's top-down”.

Greek 14 at line 13:55: “with the employees”.

Greek 13, Greek14, Albanian 1 and Bulgarian 1. FYROM 6 at line 13:57 and 13:58 all agree.

Albanian 1 at line 13:48 persists in a previous opinion of Greek 13 by using heavy terms. Bulgarian 1 at line 13: 54 enters the discussion in an effort to help Greek 14 to formulate “better” his/her answer in order to resolve the conflict.. Then, Greek 13 at line 13:55 entered the discussion by further supporting the interference of Bulgarian 1. This intervention of Bulgarian 1 and the supported behaviour of Greek 13 in order to help Greek 14 to “better” phrase his/her opinion do not leave enough time for Greek 14 to finish the previous sentence.

Disagreement

This category describes situations where students show disagreement on the opinions currently presented in the discussion. This behaviour is caused by either an informal discussion, taking place at that time or by a general answer embracing all the views currently presented on the discussion. The consequence of this behaviour for the group members is either to reach a partial agreement due to time restrictions or a short agreement. This behaviour is observed in both control and multicultural groups. This category can be categorised as misevaluation due to the risk of misevaluating a whole culture as antithetic based on the specific dialogue of the on-going discussion.

The following quotations present examples of such a situation.

In line 11:41 **Greek 1** and in line 11:42 **Greek 4** and **Greek 2** are using joking phrases badly translated word by word in English are continuing the informal chat.

Greek 1 at line 11:43: “I disagree with the top down security”

[... **Informal Discussion continued**]

Greek 1 at line 11:46 in an effort to focus the group and lead them towards an answer states: “ok its time to find the solution for the first”.

At lines 11:46 to 11:47 the group members reach a partial agreement.

Bulgarian 4 at line 16:36: “Companies should not invest highly on a security policy if this investment is not properly justified”.

[... **General discussion continued**]

Albanian 4 at line 16:40: “The better approach is to invest continuously in security policies”

[... **General discussion continued**]

FYROM 9 at line 16:41: “a like Priftis idea... starts from one point of the investment and then broadly covers the various risk aspects that will appear through the period”

Case Study Question 2 – Addressing Individualism/Collectivism

For the Individualism/Collectivism theme (dimension) the following categories of conflict description have emerged as they are presented in table 16

s

Misinterpretation	Misperception	Misevaluation	Uncategorised
Embrace All Views	Mixing 2 Questions	Say Same Opinion As New	Disagreement
Force Opinion	Wait Members To Answer	Short Agreement	

Table 16: Categories of Conflicts – Individualism/Collectivism

Embrace All Views

This category refers to behaviours of students, like in the Power Distance theme discussing the embrace all views behaviour, that provide generalised answers in order to embrace all the views presented in the discussion. The causes are slightly different under this theme. More specifically, the causes for such behaviour are an abrupt end or using heavy words like “imposing policy” or generalised discussions. The consequences of such behaviour are either for the students to make a joke to lighten the tension created by the conversation and continue a general discussion or to continue conflict and lead to forcing an opinion or embracing all views due to time restrictions. This behaviour is observed in multicultural groups. This category falls into the misinterpretation category because it is originated by a misinterpretation of heavy

words.

The following quotations present an example of such behaviour.

Albanian 4 at line 16:28: “that is all for Q 1”

Greek 17 at line 16:29: “I believe the company ... As I proposed earlier, employees should be trained and be persons with company security aware”.

FYROM 9 at line 16:29: “... EMPLOYEES OBEY THEIR EMPLOYER :) and have to work under the rules given”

[...]

FYROM 9 at line 16:31: “I must notice that the question 1 and question 2 are rather similar”

Bulgarian 4 at line 16:31: “In some cases employees contact clients through Skype”

Force Opinion

This category refers to quotations describing instances, like in the Power Distance theme discussing the force opinion behaviour, when students force the group towards a single answer and compel an end to the discussion. The causes for this behaviour are different than the ones discussed in the previous theme (dimension). The force opinion is caused by a continuation of a general discussion caused by an embrace all views behaviour. The consequence of this behaviour is an adaptation of a general answer by the group members. This behaviour was observed in multicultural groups. This category can be characterised as misinterpretation since it could lead to some group members to force their perception of the right answer leading to immediate conflict like Albanian 4 in the following example.

An example indicating such behaviour is presented in the following quotations.

FYROM 9 at line 16:31: “I must notice that the question 1 and question 2 are rather similar”

Bulgarian 4 at line 16:31: “In some cases employees contact clients through Skype”

Albanian 4 at line 16:31: “The company. Everyone move to Q 3, now!”

[...]

Bulgarian 4 at line 16:33: “OK do we all agree that the company should be responsible but should not overdo it with the restrictions”.

Mixing 2 Questions

This category describes situations, like in the Power Distance theme discussing the mixing 2 questions behaviour, where the group members answer two questions at the same time by misperceiving the need for structure and “rules” in the discussion. This behaviour is triggered either by informal discussions caused by the joyful mood of the students or by a previously reached short agreement. The consequences of such behaviour are for a student to get the leading role by refocusing the discussion, an informal discussion, and an abrupt end. This behaviour was observed during the interaction of students in both the controlled and the multicultural groups. The controlled groups were more familiar with electing a leader either formally (through

voting) or informally. This behaviour was observed in groups that have not dealt with the leader election in the previous question.

An example showing this type of behaviour is:

Greek 1, Greek 2, Greek 3 and Greek 4 in lines 11:52 until 11:55 continue the informal type of the discussion in joyful mood.

At lines 11:55 until 11:57 the group members discuss the 2nd question **Greek 5** at line 11:57: “ok so I think that is true the men are not so cautious because ...” answering the next question

[...]

Greek 4 at line 11:59 states: “I’m totally lost did we decide for the first question I cannot continue like this we should use headphones and microphones” denoting an effort to refocus the group members.

[... Informal discussion continues in lines 12:01 until 12:07]

Greek 1 at line 12:07, stating in authoritative manner for everyone not to speak and proceed to question 3.

Say Same Opinion as New

This category describes situations of students where they express the same opinion in different posts causing the misunderstanding of being a new opinion. This behaviour is triggered by unclear general answers of students. The consequence of this type of behaviour is for the group members to reach a short agreement. This behaviour is observed in multicultural groups. This category can be categorised as misevaluation due to the risk of misevaluating a whole culture as antithetic based on the specific dialogue of the on-going discussion trying to reformat the same opinion again and again.

FYROM 10 at line 18:52: “in other ways it is a way of spying on the employees but there has to be some control over the companies in put”

In this statement **FYROM 10** provides a general start of an answer. This generic statement triggers an immediate response from **FYROM 14**.

FYROM 14 at line 18:53: “yeah but the company should be responsible for the security”

FYROM 14 misunderstands what **FYROM 10** wanted to say and makes it more specific. Answer is finalised after **FYROM 10** specifies what he meant.

FYROM 10 at line 18:54: “yes that’s what I refer to”

Wait Members to Answer

This category refers to behaviours of students, like in the Power Distance theme discussing the Wait Member To Answer behaviour, that stop the current discussion in order to get the silent members to get involved. This behaviour is triggered after the group members reach a short and fast agreement. The consequence of this type of behaviour is for the group members to continue the discussion in turns. This behaviour was observed in the controlled groups. This category falls into the misperception category because of the creation of procedures for even the silent members to participate in the discussion. This behaviour was particularly exhibited in cultures that favoured the equality between group members – i.e. scored low on the PDI dimension - (e.g. Greece, Fyrom).

An example demonstrating this type of behaviour is presented in the following quotations:

FYROM 1 at line 16:45 “I agree with FYROM 5 that it is the company who is responsible for the security”

FYROM 3 at line 16:46: “FYROM 5 yes I agree with u on that”

FYROM 2 at line 16:46: “@FYROM 1: reasons?”

FYROM 2 at line 16:47: “@FYROM 3: pleas wait for your turn...the chat will get complicated if everybody says something whenever he likes”

From lines 16:47 until 16:50 the group continues the discussion by taking turns

Short Agreement

This category refers to behaviours of students that tend to reach agreement quickly. No obvious causes are identified at this stage of the analysis. The consequence of such behaviour is for the group members to lose the focus of the discussion and fail to answer one question. This behaviour was observed in the multicultural groups. This category falls into misevaluation category due to the risk of misevaluating a whole culture as antithetic based on the effort to avoid conflicting areas like comparison between women and men.

FYROM 10 at line 18:58: “type of discussion in my view is not as important ... for people that say that women could proceed less than man. It is just a lack in observation.”

...

FYROM 10 at line 19:00 states: “some women are not as capable as men and the same around”. With this statement FYROM 10 tries to argue that gender doesn't matter.

...

FYROM 10 at line 19:04 continues by stating: “well we just observed the women behavior in business but we didn't speak about the question” differentiating any talk done previously as no business related (unimportant).

In the above quotation, FYROM 10 tries to minimise that gender difference is not as important trying to remove the focus from the article that stated differences in gender could be important in some aspects of business. The group conditions to discuss the difference and how it can affect the behaviour in business environments. Because the discussion is taking some time and the group members could not agree, FYROM 10 intervenes with two other statements again drawing the attention out of the focus of the current discussion. This led to a quick resolution of the discussion and a short agreement by the group members.

Disagreement

This category describes situations, like in the Power Distance theme discussing the Disagreement behaviour, where students show disagreement on the opinions currently presented on the discussion. This behaviour is caused by either an informal discussion taking place at that time or by a general answer embracing all the views currently presented on the discussion. The consequence of this behaviour for the group members is either to reach a partial agreement due to time restrictions or a short agreement. This behaviour is observed in control groups. This category does not belong to any of the categories

The following quotations present examples of such a situation.

Greek 8 at line 13: 42 states: “Again in question 2 there has to be a "hybrid" approach...”

Greek 10 at line 13:43 states: “I personally feel that the company should be responsible for security”

Greek 9 at line 13:43 and **Greek 10** at line 13:44 state to vote for Hybrid again

End of discussion ignoring the statement of Greek 10 at line 13: 44: “can we define it?”

Case Study Question 3 – Addressing Masculinity/Femininity

For the Masculinity/Collectivism theme (dimension) the following categories of conflict description have emerged as they are presented in table 17.

Misinterpretation	Misperception	Misevaluation
Gender Difference Complicated	Shift Focus Out Of	Shift Focus Out Of
		Break in Communication

Table 17: Categories of Conflicts – Masculinity/Femininity

Gender Difference Complicated

This category describes the instances in the logs that although the initial belief is that there should be gender differentiation it cannot be applied because the application on security is characterised as being complicated. This behaviour is triggered by the belief that gender is equal due to complicated issues. The consequence of this behaviour is to force an opinion by using heavy terms such as discrimination. This category can be characterised as misinterpretation since every group member gives his/her own meaning as in the following example of Bulgarian 3 that states that females are more obedient than males.

An example of such behaviour can be observed in the following interaction.

Bulgarian 3 at line 13:01 states that: “ha-ha 3rd issue I do think females are more obedient and company should be more careful with the males, however, they should have the same restriction or it will become too complicated and many problems will arise”.

Greek 16 at line 13:02 “yes, how can they have different policies on females? ... Same policies for everyone are easier and more efficient.

Serbian 4 at line 13:03 states that “it would be explicit discrimination”

Shift Focus Out Of

This category describes situations of students, like in the Power Distance theme discussing the shift focus out of behaviour, where they try to shift the focus of the topic discussed to a more general one so as for all members to indirectly agree and continue the discussion. This behaviour is triggered by using a heavy term such as “very strict response” or “discrimination”. The consequences of this behaviour are for the group members to either reach a short agreement, or agreement in an answer not related to the topic. This behaviour is observed in both the control and the multicultural groups. On one hand, this category can partially be categorised as misevaluation, because students from a culture cannot “afford” to tackle behaviours like joyful mood and embrace all views. Thus, it is leading to a solution of short agreement or an unrelated answer through the use of heavy terms. On the other hand, they were instances where it can be characterised as misperception since the difference in opinions presented in the discussion lead to no agreement in accordance with the scores for the dimension of each participating culture

An example of such behaviour is presented in the following quotations.

FYROM 10 at line 18:58: “type of discussion in my view is not as important ... for people that say that women could proceed less than man. It is just a lack in observation”

[...]

FYROM 10 at line 19:00: “some women are not as capable as man and the same around”.

[...]

FYROM 10 at line 19:04: “well we just observed the women behavior in business but we didn’t speak about the question”.

FYROM 14 at line 19:05 ends the discussion for this question by stating: “well we came to a conclusion that we should have the same policies”.

Break in Communication

This category describes behaviours of the students when a break in communication is observed after a continuous informal discussion. This behaviour is triggered after a continuous informal discussion that causes a group member to try refocusing on the

discussion by getting the leading role. A consequence cannot be observed at this stage, since the group member who tried to get the leading role and formalise the discussion breaks the communication. This category falls into the misevaluation category because the group member, who assumes the leading role and takes control of the discussion, is not accepted by the other group members leading the communication to break.

For example, after a continuous informal discussion continue in joyful mood for the second question from lines 11:52 until 11:55. This joyful mood triggered the response from a group member to speak in an authoritative manner trying to refocus the group.

Greek 4 at line 12:07: “I’m totally lost did we decide for the first question I cannot continue like this we should use headphones and microphones”

...

Greek 4 at line 12:08: “Ok I agree with Greek 1 in anything he says”.

With this statement Greek 4 breaks all communication and simply agrees.

Case Study Question 4 – Addressing Uncertainty Avoidance

For the Uncertainty Avoidance theme (dimension) the following categories of conflict description have emerged as they are presented in table 18.

Misinterpretation	Misperception	Misevaluation
Shift Focus Out Of	Impose Single View	Joyful Mood
	Disagreement	Mixing 2 Questions

Table 18: Categories of Conflicts – Uncertainty Avoidance

Shift Focus Out Of

This category describes situations of students, like in the Power Distance and Masculinity/Femininity theme discussing the shift focus out of behaviour, where they try to shift the focus of the topic discussed to a more general one so as for all members to indirectly agree and continue the discussion. This behaviour is triggered when a group member opens the discussion so as to embrace all the possible viewpoints. The

consequences of this behaviour are for the group members to reach short agreement or provide a general answer including the different opinions discusses. This behaviour is observed in control groups. This category can be characterised as misinterpretation as the group member's misinterpreted the solution to the previous conflict being a general answer embracing all the possible answers. Moreover, because the questions are formed to trigger cultural conflict, it can be characterised as cross-cultural misinterpretation.

An example demonstrating this type of behaviour is:

Greek 9 at line 13:48 in an effort to embrace all the views states: "the forth question my point is: every company has to make research and find an appropriate cost effective solution for the security infrastructure".

Greek 11 at line 13:49: "It depends on the business"

Greek 9 at line 13: 50: "so let's find a cost-effective solution"

Greek 11 at 13:50: "It is almost impossible to have a precise cost analysis".

Discussion ends by **Greek 12** at line 13:51 providing a general answer.

Impose Single View

This category refers to behaviours of students that continue a general discussion by trying to impose a single view for an answer by misperceiving the difference in opinions presented in the discussion disregarding those opinions, which oppose to his/her beliefs. This behaviour is triggered by general opening answers trying to include all the different viewpoints. The consequence of this behaviour is for the discussion to be widened and for an agreement to be reached by a general answer embracing all the viewpoints discussed like the one used for opening the discussion. This behaviour is observed in the multicultural groups. This category can be characterised as misperception.

An example exhibiting this type of behaviour is presented in the following quotations:

Bulgarian 3 at line 13:05 opens the discussion with an opinion embracing all the different views of the question. **Serbian 4** at line 13:05 states: "analysis but definitely investing" .Then, influenced by the general position of Bulgarian 3, and the specific position of Serbian 4, **Albanian 4** states that risk is high and continues the conflict for 28 turns. Solution is provided in line 13:11 by **Bulgarian 3** stating: "who agree with this: there should be policy, however we should be careful how much we invest".

Disagreement

This category describes situations where students show disagreement on the opinions currently presented on the discussion standing firm on their belief disregarding the different opinions. This behaviour is caused by a general answer embracing all the views currently presented on the discussion. The consequence of this behaviour for the group members is to provide a general answer satisfying all group members. This behaviour is observed in the multicultural groups.

Joyful Mood

This category describes situations where the students continue a general discussion often not related to the topic by making jokes leading to an interruption of the group discussion. This behaviour is triggered by the general answers provided by the group members. An abrupt end is the consequence of this type of behaviour. This behaviour is observed in multicultural groups. This category falls into the misevaluation because students when tackling a conflicting issue tend to characterise the other members' (cultures) answers based on their cultural perception as antithetic or not. Thus, the discussion becomes informal and is being lead to an abrupt end.

FYROM 14 at line 19:07: "there is no good reason that manager should take risks just to cut costs".

The previous statement from FYROM 14 is general enough as to be accepted. This triggers the immediate reaction of FYROM 10.

FYROM 10 at line 19:07: "so should they invest or no".

FYROM 10 at line 19:08: "the think is when they invest in unsecure areas it could cost them a much higher loss"

Despite, the efforts from FYROM 10 to make the first general statement of FYROM 14 more concrete. The group is interrupted for 34 turns. FYROM 14 breaks the communication by giving an out of subject answer.

FYROM 14 at line 19:16: “I will invest in creating viruses it makes most sense to me” finalizing the discussion with no answer.

Mixing 2 Questions

This category refers to behaviours of students that mix two questions. This situation is caused by a previously short agreement of the members – i.e. the group members did not had enough time to express and finish properly the discussion –. The consequence of this type of behaviour is for the conversation to reach an abrupt end. This type of behaviour is observed in multicultural groups. This category can be characterised as misevaluation since the source of triggering this behaviour was based on the cultural differences as the scores for this dimension indicate them.

Albanian 1 at line 14:05: “so let’s finish guys and leave” forcing the group to end the discussion quickly.

Group ignores the statement of Albanian 1 continuing the discussion.

Albanian 1 at line 14:06 states: “I do ... come on”

In this post Albanian 1 is probably trying to force the group to terminate the discussion. The cause of Albanian’s 1 behaviour can be based on the fact the group has ignored Q3 and went immediately to Q4. Thus, a whole question remained unanswered.

6.3.2.2.3 Concept Map

All the previous discussion on the categories and their causes and consequences for each of them can be summarised in the following figures. These figures represent the concept maps.

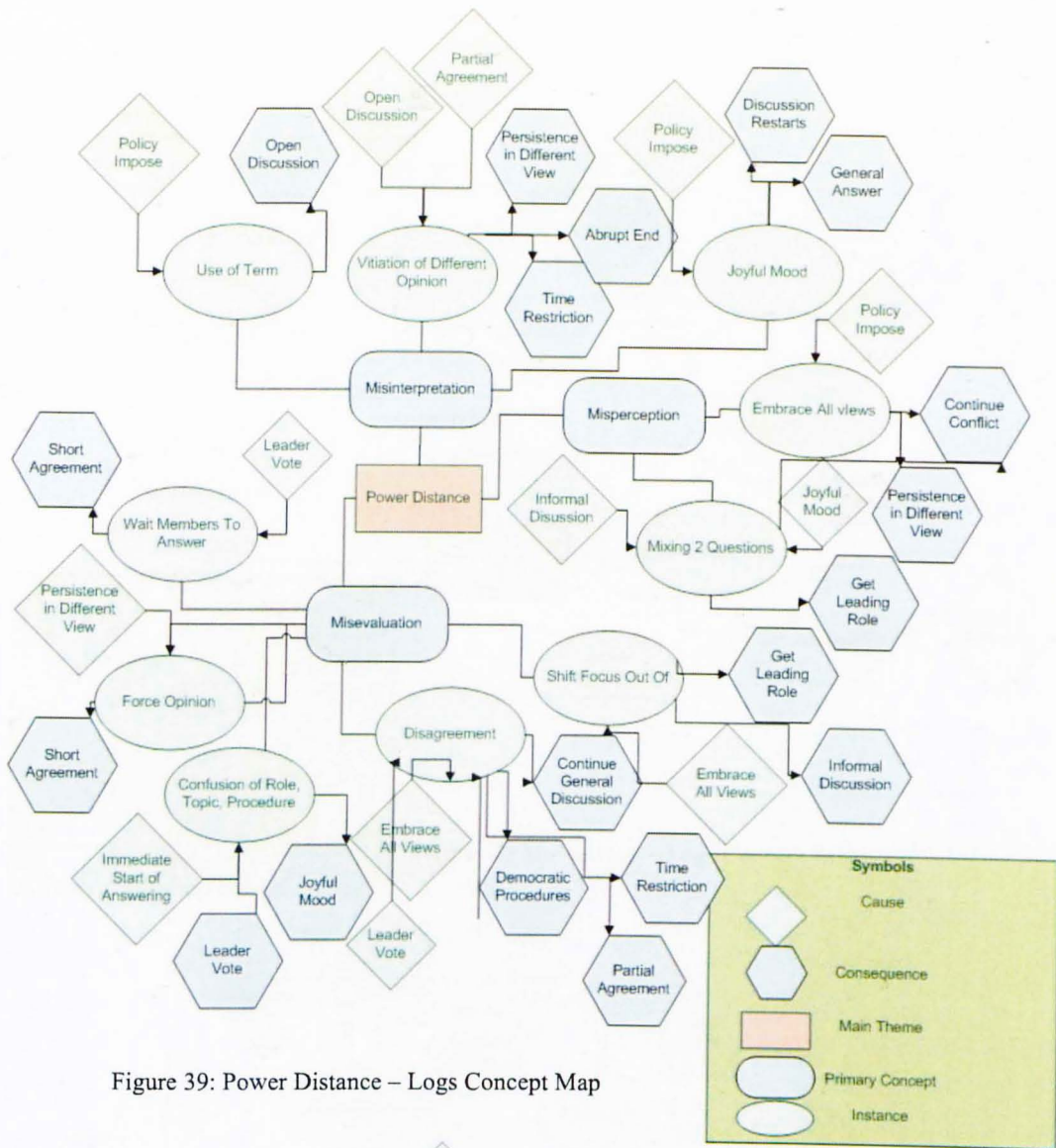


Figure 39: Power Distance – Logs Concept Map

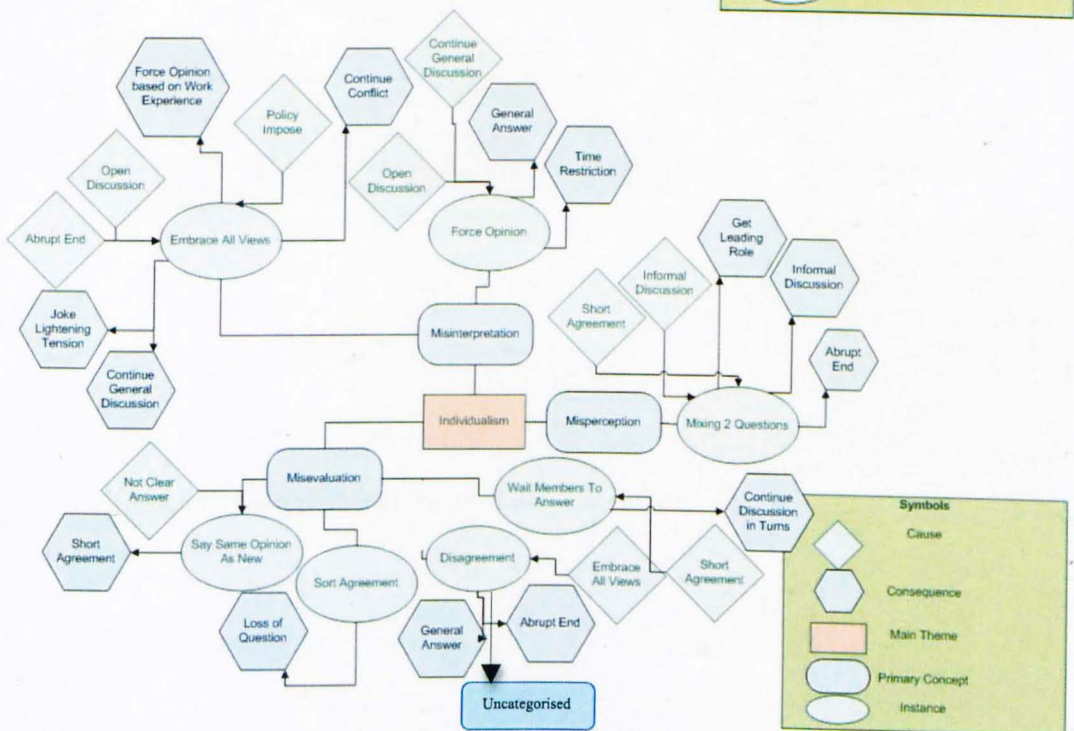


Figure 40: Individualism – Logs Concept Map

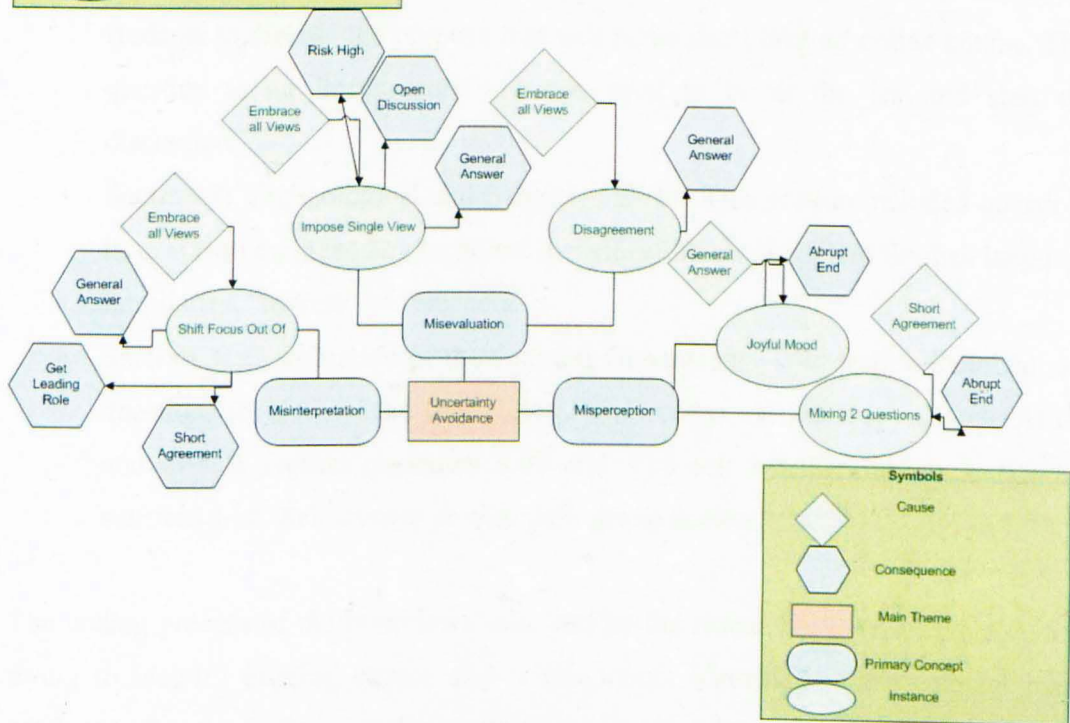
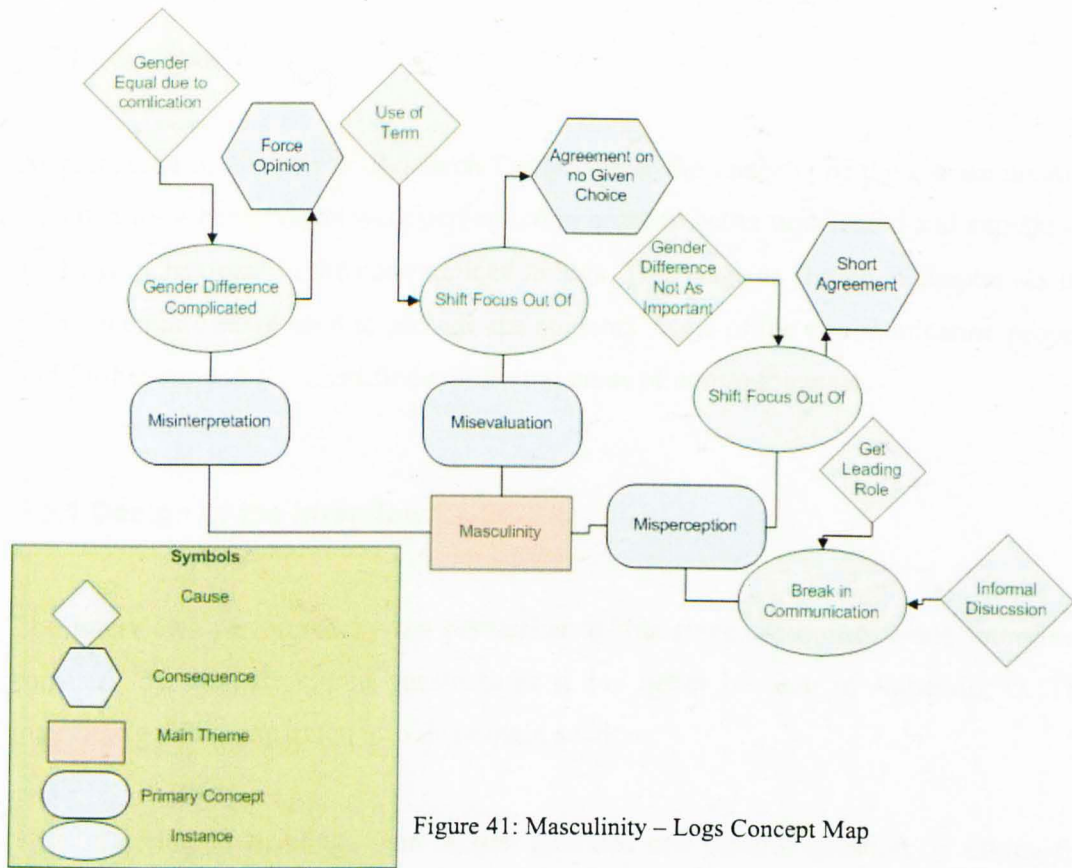


Figure 42: Uncertainty Avoidance – Logs Concept Map

6.5 Interviews

As discussed in Chapter 5: Research Design, after the analysis of the communication logs one-to-one interviews were performed in order to better understand and explain the students' behaviours in the communication logs. This stage as argued in chapter six is a complementary stage used to provide the students' view of the communication process and further support the identified conflicting areas of communication.

6.5.1 Design of the Interviews

The interviews performed by the researcher at this stage were one-to-one interviews consisted by semi-structured questions as it can better be seen in Appendix D. The interview guide is separated into three main sections:

- **Section 1:** Briefing. This section included one general question by asking the students to discuss the purpose that will make them take an online course. This question is an introductory question used to break the ice and start the discussion.
- **Section 2:** Technological and Language Skills. This section included questions like: Have you faced any technical difficulty? Technology and English language familiarity, "lurkers" or "sleepers."
- **Section 3:** Clarification of the Cultural Dimensions. This section included two questions for each of the four cultural dimensions used in this research. At the end of this section questions 3.09 and 3.10 ask whether the students were satisfied with their answer or with their group answer.

The coding process of the interviews followed by the researcher was selective coding trying to identify missing causes and consequences identified in the concept maps produced after the analysis of the communication logs. Therefore, the researcher after the analysis of the first group's communication logs and the production of the respective concept maps immediately started coding the interviews in order to identify the perspective of the students concerning the groups' interaction. In this way, the researcher minimised the risks of misinterpreting a specific students' behaviour that

could have been attributed to culture.

6.5.2 Interview Analysis

The structure of this section follows the general separation of the interview script into three sections: Briefing, Technological and Language Skills, Clarification of the Cultural Dimensions.

6.5.2.1 Briefing

In this section the students were asked a general question regarding the purposes that they think that will make them take an e-Learning activity. This section was decided by the researcher to be the initial point of the discussion in order to “break the ice” of the communication and start the interview.

Most of the students have indicate that the two major purposes would be time and space, meaning that they will save time by studying from their place and even from their country.

S1: First of all, I think that this kind of courses is helping you to save time; because you don't have to go anywhere. You can learn things from your home. Aahh. Another point is that I think they are cost less than going to university, using their facilities and stuff like this. Hhmm. You don't have to leave your country. You can do it from ...

As stated by another student e-Learning courses could save time from transportation and increase the hours of studying.

S2: It would be easier if it will from long distances to actually take a course. For example I live 2 hours from here. Every day I lose 4 hours in, let's say, in travel to travel here. And if I had these 4 hours from every day, I could study more; I'd made more experiments from my home. It would be easier a lot. Eeehhh. But you would lose a little bit of the interaction of the teacher. But that would be not that important. I don't think that this is more important, if you have a problem you will go to the teacher but if you don't have a problem and don't, just following the course, it would be easier from online, from, over the Internet as you will see.

Moreover, it was also argued that quality should have a priority over convenience when choosing e-Learning courses. The students that expressed this belief also expressed that they would have taken an e-Learning course to complement traditional lectures.

S7: Because of the convenience maybe; because I can do it from my home. The speed, I can do it faster. It depends, it depends on the course.

I: Hmm.

S7: The quality of the course. I will first look for the quality and then look for the convenience. Anything else?

I: Would you take an online course if it was not set as obligatory by the course requirements?

S7: It depends on the subject. If it's... it's related to the technology, I would have been doing in addition to whatever.

In conclusion, it could be argued that although in the private institution, where this study was performed, they were not offered any e-Learning courses, students felt familiar with the term e-Learning. Moreover, they expressed the opinions that an e-Learning would have saved them time resulting in increase of their studying time, and it could offer to them the convenience of learning at home. More specifically, some of the students commented that they would take e-Learning courses if it would complement traditional lectures.

6.5.2.2 Technological and Language Skills

It is important to mention at this point that different languages can differentiate the way the world is viewed (Wang, 2007). Thus, the communication could be hindered by the language barrier, which is inherited in every e-Learning course. As it is further argued by Wang (2007), asynchronous communication can provide the needed time to the students to reflect and shape their answer. The participants at this research were all non-English native speakers and on the 2nd or 3rd year of their study. Thus, it was decided that being at their 2nd and 3rd year of their study students would have been familiar with writing and reading English for their exams.

In order to eliminate that language can prove an influential variable in this research; students were asked a series of questions about their technological and linguistic skills. This section was decided by the researcher to be included in the interview script in

order to clarify that these problems were not originated from lack of language and familiarity with technologies or any other problem that the participants would have encountered.

Experience with this Activity – Technological Problems

At this point of the interview students were asked if they have faced any technical difficulty regarding the experiment. Some students have reported that they had problems of time waiting for a response. They often contrasted f2f communication with the synchronous text-based communication used in this experiment.

S12: Only technical in terms of the time, of the response, it was five seconds so that one. And it's ... what it needs solving this kind of problems maybe, it's more appropriate through the f2f communication. Because, it's easier, it's easier, it's much, and it's faster. But ... when you look from the other side whether you think what you are going to say, you think, you think twice whether what you are going to say. You think twice in terms of Exactly that what you are going to say. When you go to the f2f communication, you say things more quickly you don't think of them more.

Moreover, students indicated that they had problems about the control of the turn-based discussions. They stated that there is text-based chat was not easy and they have suggested the involvement of audio in the process of communication.

S1: Eeehhh. There are some difficulties, because when we have to write things on the chat, eehhh, there is no order who talks first, who talks second. It is not very easy to communicate with the others. When we have a team for example eehhh about eehh that consists of 5 persons like we were yesterday. Eehh and I think that it's easier when you have, online course to have voice and sound, to use headphones, microphones, it's easier. Not video, it's not necessary to have a video, unless the lecturer for example has to show you something in a slide. Eehh that's the only thing that I think that is constructed.

Other students indicated that the technical difficulties faced during the communication, as stated in the previous paragraph, are based in their unfamiliarity they have in taking part in a synchronous text-based communication for an e-Learning activity.

S25: Technical difficulties... Well it was probably because it was done the first time, I've never done it again. That's pretty much it. Nothing else.

Moreover, students have pointed out that the whole problem of synchronous text-based communication can lead in mixing up of the posts if everyone is typing at the same time.

S20: Yeah, the pressing and the scroll. And it could be useful if it shows when someone is typing because a lot of time when one way started and the other at same time and the two messages mixed up.

I: Hhmm.

S20: They all press enter at the same time and the messages are mixed up so you will have to assemble it or something. So if it shows that someone is typing everybody won't cause they will wait for him to chat.

In summary, it could be argued that any technical problem faced to the students was attributed due to lack of turn-based control or due to their unfamiliarity they have in taking part in a synchronous text-based communication for an e-Learning activity.

Use of Technologies

At this point of the interview the researcher asked the students' familiarity with technologies and especially communication technologies. Students expressed their familiarity with using communication technologies for personal use.

S2: I am familiar with this kind of chatting. But I am not in full knowledge of how it works in details. I know a little bit how it works but not in details.

I: We are not talking as computer scientists but as a student participating

S2: OOhh. Yes, I ...

I: in classes. So you can imagine. Have you used this technology for you to communicate with your friends?

S2: Of course I have a lot friends that live in Athens and we communicate from here to there with video chat, video conferencing or chatting just.

In addition, some students indicated that although they feel familiar with communication technologies in general, it was the first time that they used them "for a lecture".

S7: With communication, with information, studying as well, different kind of things, for fun, for. But I have never used communication technologies for a lecture.

In conclusion, the students' level of familiarity with communication technologies was in general above average. It should be noted that for some of them was the first use of

communication technologies for educational and not for private purposes.

Use of English

The students were then asked to state their level of English. Most of them stated that their English level was ok and that they continue improving.

S7: With English? Yeah I am getting better I should say so.

S12: Ehhh. I have to improve my skills in English language; because sometimes it's very difficult to me to communicate with the other.

I: Did you have any difficulties?

S22: In English I didn't have any difficulties because most of the people here in Greece take English from the year of 7 or 8. So, when they reach the age of 18 or 20, they are extremely familiar with the language of the English. So ...

I: You didn't have any difficulties in communicating

S22: No, no.

Therefore, it could be stated that the level of familiarity with the English language was for all students the same.

Feeling of Lost in Conversation

Finally, the students were asked if at some point of the discussion they felt lost during the discussion. With this question the researcher tried to identify students that although they follow the communication they participate in the discussion only when they have a question to address. These students are as Wang (2007) names them "lurkers" or "sleepers".

The answers identified in this question covered cases of students missing the conversation due to fast typing leading the student to miss some of the argumentation discussed. For example, in the quotation below the student although he/she mentions that focus of the discussion was lost, he/she did not lose the meaning.

S30: I missed some lines because they were all typing together. And I was trying to catch up with one and there would pop up 4 other lines from down. Maybe a little bit lot but nothing that was important. The important stuff of the conversation I was reading it of course.

Other there was a case of three students that indicated that they were completely lost.

S35: ... And when I sent my message, I show that: OOhh they have already answered the question so why I was sending this message and I was completely lost sometimes.

There were also noted cases that the students could not “write any sentence” due to insufficient control of the conversation. This led the members that stayed behind the conversation to simply agree to what was concluded by the other members.

S22: Well, I don’t know. (Small laugh) I was reading the text that you have given but I didn’t find any suitable answer. And then I started to think my person... expressing personal opinions and it was easier that way.

S19: The start was good ... But when the time was come to the end everybody was typing fast because they wanted to finish work faster they go. And I didn’t have idea to answer the questions just I agreed with the other people.

In conclusion, it could be argued that although there were not encountered phenomena of “lurkers” or “sleepers” during the conversation, students have pointed out that they felt lost mainly due to the uncontrolled and non-moderated discussion.

6.5.2.3 Clarification of the Cultural Dimensions

In this section, students were asked a set of 8 questions in order to identify and further explore their view of the experiment and the interaction with other group members. The researcher included in the interview script two questions for each of the four cultural dimensions. The analysis of the interviews is separated in 8 subsections. It was at this point of the interview that the researcher has asked additional questions in order to clarify if conflicting areas as identified in the communication logs have caused some disturbance in the group members. The additional questions that were asked had the following general form:

- Did you believe that there was some conflicting communication regarding a specific question that has led to the disturbance of the discussion?

IDV – Q1

The researcher at this point asked if they were feeling left out from the conversation. If the answer was yes, the researcher then asked a complementary question regarding if each member contributed equal and which student in particular was contributing more.

More specifically, the answers for this question indicated that there was some unequal contribution in the conversation that led to the less active members to feel lost.

S13: Yeah, I think. I was left out because they are typing very fast. And yes you go down there [in the conversation log] they write like 2-3 guys and just I was started to type, to answer something and you go see again down there to read it again they were typing again something and I cannot follow. There are too fast in type.

S13: Eeehhh. Of the group? I think Ivo was, I don't know, FYROM 5 I think he was writing a lot of.

Moreover, students expressed that even if they have not felt lost in the conversation, they felt that there was an effort of other students to influence each other.

S7: No, but I think there was because we were in constraint for the time, I think some of the people were trying to influence each other but to take so long. But if we had done it through personal communication, f2f, I think that the problems will be more analyzed, more appropriately analyzed.

A sub question asked by the researcher at this point was if they felt that they needed more time to articulate their ideas.

It was expressed during the interviews that in order for the group to better articulate their ideas, students needed more time. Thus, as students argued the problem of better communication could have been solved if there were less than five students in the discussion and more time for interaction.

S17: Yes. Maybe, to first think individually and not to... because in this way we were directly influencing each other. ... The problem you gave, maybe ten minutes more to just think what you are going to say. And I think also the number of members were, ... was five of us, so it's a bit confusing who says what and you have to follow all the time. That was the problem I think.

It was also expressed that time was not needed as the conversation went flawlessly.

S2: enough to complete the activity. We said everyone; everyone said his opinion, what is better and what is worse. And we had managed to this in time I think, we not passed the time that it's been.

Thus, it could be argued that some students expressed the feeling of being lost in the discussion. This was mainly attributed to the "large" number of students who comprised the groups making the discussion more difficult. In the communication experiment the group members, when they observed that another member had problems participating in the conversation, were specifically addressing the silent members like it is observed in the quotation on page 174 "Wait Members to Answer". In this case, the group elected a leader of the discussion to organise the communication sequence by referring to specific members when it was needed.

It was also expressed that some students, although they did not experienced the feeling of being lost, they stated that there were some group members that tried to influence other members.

IDV – Q2

At this stage the researcher asked whether the interviewees believed that the group operated as a team.

Students generally replied that the group operated as a team despite the behaviour of taking the control of the discussion exhibited by some participants.

S17: Yes. Maybe some of the participants took more control, some others less. But I think we looked each opinion of the opinion of each other members.

S5: Well... in our decisions, yeah. We all... you know I mean we had pretty similar interest to it, we chat a little bit about our differences and we got a group decision ...

MAS - Q1

At this stage of the interview, students were asked if they felt that a member of the group monopolised the conversation.

There were some students that have expressed the opinion that the group members have elected a group leader and thus giving to this student the freedom of controlling and intervening on the discussion.

S5: No, no. We agreed on a team leader, which was FYROM 3. Hhmm. He wrote most of the stuff. But we were all contributing I think the same.

In addition, it was expressed that there were more than one student that were monopolising the conversation. They stated also that in this situation the other members were mostly agreeing with the opinions of the members that monopolised the conversations.

S13: Well FYROM 7 and Greek 5.

I: They gave most

S13: Yes, they gave most of the answers.

I: As you said. And all the other members simply expressed their agreement

S13: Yes.

I: Or disagreement

S13: or disagreement.

I: about the ...

S13: mostly agreement

Thus, it could be argued that students were either electing a leader through voting procedures or indirectly by agreeing with students that tend to monopolise the conversation.

Then the researcher wanted to clarify if there were some students that imposed their opinion and controlled the discussion.

Students generally replied no to this question. But there were some students that although answered no to the question they have stated that there was a person monopolising the discussion.

S14: Probably in a good way, because Bulgarian3, one of the members did have some experience with this kind of job, particularly when they were talking about the procedures. And he influenced us in a more positive way because he was more involved and he had ... on one or two questions he had opinion which we thought that it was the best solution; because we knew that he had experience

and in this type. But I don't think it's negative influence, it's rather positive because he is more into, into this.

From the previous quotation, and from the log investigation, it could be confirmed and further argued that the influence of Bulgarian 3 has caused the group to develop behaviour of providing generalised answers to the questions. This behaviour it was argued in the log analysis has caused even the disagreement of some group members which exhibited behaviours like force agreement.

Thus, it could be argued that students although they have answered that there was no students that imposed their opinion, they were some students that exhibited an advantage over the other like the case described in this section. An example showing the way students gain an advantage over the others in the discussion can be observed in the quotation of the Log analysis on page 167 when discussing the Embrace All Views behaviour. In the last line of the quotation Bulgarian 3 poses his/her work experience in order to strongly support his/her view.

It was also noted that there were some groups that have elected a group leader generally responsible for controlling the flow of the discussion. This type of behaviour can be observed in the log analysis on page 168 when discussing the Confusion of Role, Procedure, Topic behaviour.

MAS – Q2

Next, the researcher asked if the students believed they have contributed to the conversation as much as they wanted.

Students at this point seemed all to agree that their contribution in the conversation was fine.

S14: I think so, yeah. I said what I thought and they accepted it.

S5: I think so, yes.

UAI – Q1

At this stage the researcher asked the students about the way that the group has operated: holistically or individually. If the answer was yes, then the researcher asked the students to state if they could remember which questions they were referring to.

Students at this point, expressed opinions that the group generally was operating holistically unless someone expressed first his/her opinion. As shown in the quotation below, the students were addressing questions to students that first expressed their opinion to the question. Thus, group members viewed them as tem (or more specifically question) leaders

I: Did you respond or address the questions individually and in sequence? Or did you address them holistically?

S11: Holistically, not individually. Unless somebody specified their opinion and then you had to answer to it but most of the time we were expressing our opinion on general basis.

I: Could you remember which questions were they? All of them or some of them were addressed holistically and some of them individually.

S11: In the first one, Bulgarian1 said his opinion and we were addressing to him most of the time. But the others, the second one, and no I don't think which one. The female thing we agreed all immediately and it was like holistic sharing each other's opinion. And the 4th one, I remember it was a holistic. I wasn't addressed but I just expressed my opinion, most of the people then agreed with me in that, in the 4th issue.

Moreover, there were group members that responded that they answered the questions one by one and each member expressed their opinion by keeping specific turns. These groups were often the ones that have elected a group leader in order to control the discussion. It was noted in the communication logs that with this election members even the most silent member could express his/her view.

S15: Holistically. We addressed the questions one after the other by starting from question 1. Then each group member speaks about his personal view. At the end, some of us had summarized what we discussed until then.

In conclusion, we could argue that, students have demonstrated and described that the group viewed the student that expressed first his/her opinion as the team/question leader and thus, all questions and control of the discussion went to that student. Moreover, students that had previously elected a group leader could speak and express their views in turns by making even the silent user active in the discussion.

UAI – Q2

At this stage the researcher asked the student if they were happy with the discussion being non-moderated.

Students expressed that the discussion could have been moderated basically because of interference that synchronous discussion could cause by missing some of the posts from previous members.

S6: It could be moderated. Maybe it was better.

I: Would you have preferred, that's my question.

S6: Yes, maybe. Sometimes it can help.

S6: But I don't think people wanted to interfere intentionally, because it was the problem of synchronous discussion so it might, sometimes it happen that you text goes, you don't see what somebody wrote and you write it.

I: But this is something minimal?

S6: Yeah, but people wouldn't intentionally to deal with it.

Moreover, some students expressed that a moderator is considered to be a necessity. The moderator could keep the focus of the discussion by suggesting in which direction the discussion should go. In addition, the moderator can just "watch out" the students.

I: So, Did anybody in the group assumed the role of the moderator? Was someone playing this role?

S3: I tried a little bit but I didn't manage to do this. I send 1 or 2 messages but they didn't manage to do this. It could help someone else beside the group would do this.

I: So, who do you prefer? Moderator from the student side or from a teacher if

S3: I would prefer from a teacher. So if we start saying something ...

...

S3: ... A moderator could warn us, tell us if this is right, this is right but you are going too far. After this you'll go to another topic, you'll go to change something. And just watch us out if we make something wrong or write.

In conclusion, it could be argued that students showed a preference in a moderator.

Next the researcher asked the students if anybody in the group assumed the role of the moderator.

Students expressed that they would like the discussion to be moderated by a teacher. On the other hand there were other students that indicated the discussion was fine and that a moderator from the student should be ok.

S7: Teacher, because it's more I don't know how to say, more credible maybe in that terms or and if it is student you, it's not that it's not credible but you are more, you pay more attention to the teacher, you feel that he is above you. And that thing gives him the mean to control, to have more control to us or on what is going on.

S10: I think moderator be a student.

More specifically some students showed preference in a teacher as a moderator, others on a student moderator. Thus, as it was shown from the log analysis, the groups that had lost focus of the discussion and had encountered more conflicts showed a preference in moderated discussion with close control of the communication.

6.5.2.4 Summary of the Interviews Analysis

Concerning the answers for section 1, students showed a basic understanding of what an online course and what it can offer although it was stated that it was their first time that have used synchronous communication for educational purposes. More specifically the students provided answers like "I would take an online course in order to further my career through a second degree or by gaining new skills through training". In addition, students argued that they could take e-Learning course in the future, in order to complement traditional lectures.

In section 2 most of the students answered that they had minor or major problems following the discussion. It should be noted that at the first two group experiments the researcher corrected a "bug" of the synchronous communication tool provided by the learning manager system by intervening directly to the source code of the chat tool. In the later groups the phenomenon of not being able to keep up with the conversation was attributed to lack of turn-based control of the discussion and due to the unfamiliarity they had in taking part in synchronous text-based discussions concerning an e-Learning activity. In contrast to their unfamiliarity, in using communication technologies for their learning, students stated that they were familiar with these technologies for their private use. Finally, it was noted that English language despite not being their primary

language did not pose any problems that could hinder the communication.

In section 3, the answers provided a better understanding of the interaction of the students. The answers indicated that although the activity provided the students with the steps on how to proceed, the Albanians and Serbians preferred a moderated discussion by either a moderator coming from students or by the teacher. As it was initially observed in the communication log analysis there were instances of behaviors like Embrace All Views that led to consequence of Forcing Opinions. Furthermore, there were instances where students gained an advantage in the discussion by putting forward their work experience. These students were considered as question/team leaders for the group influencing the groups' decision towards their opinion. This practice followed by some of the students led to a monopoly of the discussion and triggered consequences like generalized answers or short agreements.

Moreover, they argued that moderated discussion either directly by electing a leader through voting or indirectly by exhibiting a specific advantage as compared to the others, could have solved some of the disagreement taking place as identified by the analysis of the communication. The students also pinpointed that a moderated discussion could have solved some of the problems encountered in the discussion by suggesting in which direction the discussion should go, which is right and which is wrong. As the students expressed, the moderator can just “watch out” the students. Examples of how the moderator/leader was implemented by groups are shown on page 174 “Wait Members to Answer”, and page 168 “Confusion of Role, Procedure, Topic”. In these examples it is evident that the moderator/leader controls the flow of the communication and helps the most silent members to take part in the discussion by directly asking for their opinion.

6.5.3 Final Concept Maps

After the end of the analysis of the interviews, the only change in the concept map involved the use of term instance in the power distance main theme that was argued by the group members was not based on a cultural presupposition. The final concept maps of this research are shown in the following figures”

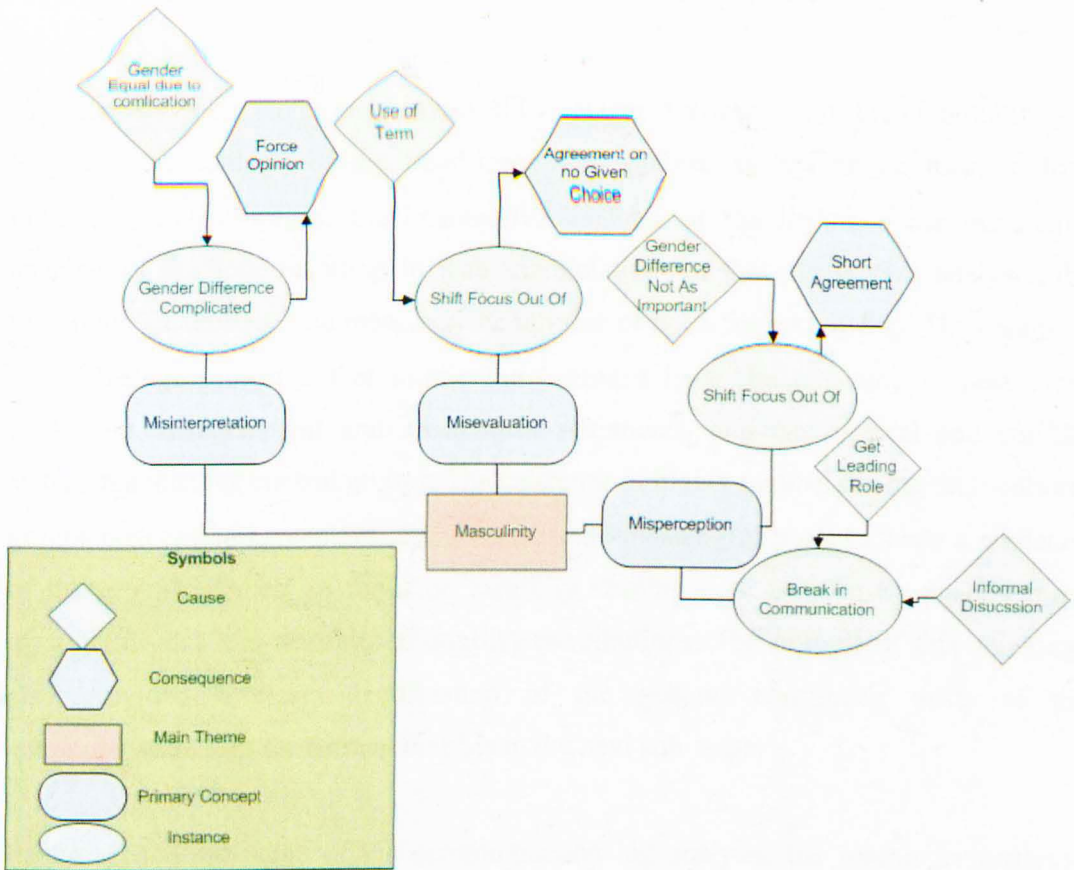


Figure 46: Masculinity – Logs+Interviews Concept Map

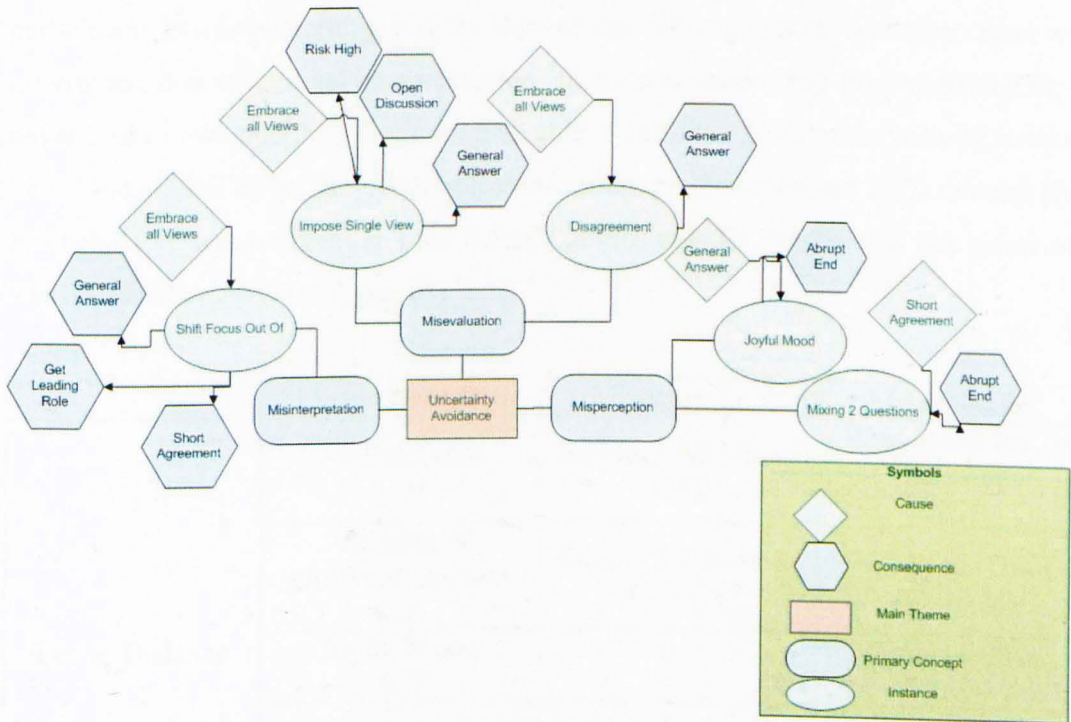


Figure 47: Uncertainty Avoidance – Logs+Interviews Concept Map

6.6 Discussion of Results of Log and Interview Analysis

The analysis of the experiment involved two stages: the analysis of the communication logs and the analysis of the interviews. The analysis of the communication logs involved two sub-stages: the quantitative analysis of the logs and the qualitative analysis of the logs resulting in data triangulation. In the quantitative analysis, the researcher categorised and measured the number of posts for each group. The results of this sub-stage indicated that multicultural groups have the tendency to post more agreement, disagreement and meaningful statements, and less neutral and conflict statements than the control groups. The existence of higher numbers in the multicultural groups concerning agreement, disagreement and meaningful posts indicate a tendency of the group members to focus on carefully shaping their opinion by posting more meaningful and less neutral and conflict contributions. The outputs of this sub stage also provided a clear identification of the general conflicting posts of the communication logs for further analysis in the next sub-stage.

In the second sub-stage of the communication log analysis, the researcher analysed qualitatively the logs. The communication problems identified in the interaction of the participants in this e-Learning activity showed that although group communication was interrupted due to cultural misperception, misinterpretation and misunderstanding it never broke down and the groups were all able to fulfil the goals of the activity more or less. More specifically, the communication problems identified are ((M) denotes that this behaviour was observed in multicultural groups and (C) denotes that this behaviour was observed in the control groups):

	Misinterpretation	Misperception	Misevaluation
Power Distance	Use of Term (M)	Embrace All Views (M)	Wait Members To Answer (C)
	Vitiation of Different Opinion (M)	Mixing 2 Questions (C) + (M)	Shift Focus Out Of (C) + (M)
	Joyful Mood (C)		Force Opinion (M)
			Disagreement (C) + (M)
			Confusion of Role, Topic, Procedure (C)

Individualism / Collectivism	Embrace All Views (M)	Mixing 2 Questions (C) + (M)	Say Same Opinion As New (M)
	Force Opinion (M)		Wait Members To Answer (C)
			Short Agreement (M)
			Disagreement (C)
Masculinity / Femininity	Gender Difference Complicated (M)	Shift Focus Out Of (C) + (M)	
			Break in Communication (C)
Uncertainty Avoidance	Shift Focus Out Of (C)	Impose Single View (M)	Joyful Mood (M)
		Disagreement (M)	Mixing 2 Questions (M)

Table 18: Summary of Communication Problems

The results of the analysis indicated that control groups face less communication problems and develop mechanisms, in order to trigger the involvement of silent members and control the structure of the conversation. For example, although some group members of the control groups developed a confusion regarding their role, the procedure that should be followed, and the topic discussed, they immediately elected a leader that had the role of controlling the conversation. In this sense, the group members have developed the wait members to answer behaviour keeping all group members equally involved in the conversation even if they were all typing at the same time. This type of behaviour was not developed in the multicultural groups probably due to incompatibilities in culture, leading to the development of behaviours like embrace all views, say same opinion as new creating confusion, force opinion and short agreement.

On the other hand, it was noted that the control groups were more prone in developing the joyful mood behaviour that led the discussion to become informal causing the disturbance of the group and the failure of reaching the goal on the given time. On the contrary, multicultural groups were more careful in making jokes and entering into a joyful mood. This behaviour demonstrated by the control groups and not by the

multicultural groups can be attributed to the familiarity that is caused by shared cultural background and experiences.

Moreover, the multicultural groups developed behaviours like embracing all views causing the discussion to open so as to include all the different opinions presented in the discussion reaching a general answer. The decision of generalising an answer is caused by the misperception of a group member that previously encountered disagreement could be solved by generalisation. This behaviour sometimes led to conflicts by students that were not satisfied by the generalised answers leading to behaviours like vitiation of different opinion causing the group to get disturbed for a varying amount of terms often leading to either an abrupt end and the coercive agreement of the involved group members, or a persistence on the different opinion and the continuation of the vitiation process.

Furthermore, whenever an agreement was not reached due to the expression of different opinions, multicultural groups developing behaviours like shift focus out of, and changed the focus of the discussion in another concept that was not open to disagreement. The adaptation of such a behaviour led to either a generalised answer or a short agreement.

Finally, the short agreement consequence reached by the adaptation of previously discussed behaviours by the multicultural groups led to the behaviour of mixing 2 questions and thus causing disturbance in the communication process for x amount of terms. This disturbance created in the group often caused a member to give an abrupt end to the discussion.

In the second stage of this analysis, interviews were analysed in an effort to provide a better understanding of the students' interaction either adding or subtracting instances misunderstood by the researcher in the analysis of the communication logs. This led to the elimination of the instance use of term that was attributed falsely to cultural misinterpretation.

More specifically, the participants of this experiment were all familiar with the concept of e-Learning and demonstrated familiarity with CMC tools, although they haven't used them for educational purposes. As stated by the students during their interviews English

language, despite not being their primary language, did not pose any problems that could hinder the communication.

The answers of the interviewed students indicated that although the activity provided the students with the steps on how to proceed, the Albanians and Serbians preferred a moderated discussion by either a moderator coming from students or by the teacher. Moreover, they argued that this could have solved some of the disagreement taking place in group communication logs as identified by the analysis of the experiment. All in all, the students were satisfied by their answer and how the group has handled the task. They only suggested that if there were more time for this activity, the answers would have been “more sophisticated” and “more appropriate”. It should be noted that although the activity requested for one to two paragraphs as an answer for each question most of the groups failed to reach this goal.

Finally, the interviews clarified what the researcher has analysed in the communication logs. The only instance that the participants have characterised as not creating conflict was misuse of term. In this respect, the students altered the misuse of term, which was identified by the researcher to be potentially generating conflict. Thus, misuse of term was removed from the final concept maps.

6.7 Discussion of Experiment's and Questionnaire's Results

The results of the questionnaire analysis defined potential behaviours that students might exhibit inside when they communicate, cooperate and collaborate in an e-Learning activity by using synchronous text-based communication. Although, the low numbers of students participated in the experiment do not allow the researcher to attribute specific behaviours to cultures, an attempt of comparing the questionnaires results with the analysis results is made.

The results of the initial analysis showed that concerning the PDI, potential problems of communication might be faced between FYROM and Bulgaria. The analysis of the experiment showed that some students from FYROM and Bulgaria had problems reaching an agreement which in some cases resulted in the abrupt end of the discussion

with the agreement of the conflicting member.

Although no communication conflicts were expected to be found in the IDV Index, there were some conflicting behaviours identified. The conflicting behaviours were primarily originated from the generalised answer of the previous question provided by the group members.

Concerning the MAS Index, it was initially expected that communication conflicts would involve Greece and FYROM with Albania, Bulgaria and Serbia. In the results of the actual experiment no such difference was identified. This was explained because group members tend to lift the focus out of the gender difference, by leading the discussion to opinions like: “although we have difference we should be equal”.

Finally, concerning the UAI Index, it was expected that potential problems of communication might probably arise in the discussion between Albanians and Greeks. In the experiment results, it was observed that communication conflicts could not be identified as it was initially expected. But, behaviours like: imposing single view and shift focus out of the current discussion were observed between Greeks and Albanians causing a general disturbance in the discussion.

6.8 Evolution of Research’s Theory

As it was discussed in this chapter after the analysis of the questionnaires, Hofstede’s cultural dimensions indicated that potential communication conflicts could be identified in the interaction between:

- FYROM and Bulgaria concerning the PDI;
- FYROM and Albania with Bulgaria concerning the IDV;
- Albania and Bulgaria concerning the MAS;
- Greece and Albania concerning the UAI.

After, the analysis of the logs and the interviews the researcher identified that communication conflicts occurred between:

- FYROM and Bulgaria leading to an abrupt end of the discussion with a quick agreement from the conflicting members;
- Concerning IDV no conflicting behaviors were identified except from some cases were actually conflicts originated from previous differences of group members concerning the previous question (i.e. originated from PDI conflicts) involving mainly students from FYROM and Albania with students from Bulgaria;
- Concerning MAS no conflicts were identified mainly because group members tend to lift the focus out of the gender difference, by leading the discussion to opinions like: “although we have difference we should be equal”;
- Greece and Albania leading not directly to communication conflicts but to a general disturbance of the discussion from some turns.

6.9 Summary of the Discussion

The key findings as discussed in chapter 7 during the analysis and the data presentation and further discussed in this chapter are:

- In general, despite the fact that several multicultural communication conflicts have been identified in this study, none have led to the failure of the activity. As have been discussed previously, it was noted that although control groups tend to develop mechanisms to overcome possible communication conflicts and thus exhibiting less conflicting behaviors (behaviors like the ones presented in table 22 in chapter 7), they tend to be more prone in losing the focus of the discussion by leading it to become informal;
- Multicultural groups tend to be more careful in losing the focus of the topic and thus keeping the discussion formal. But multicultural groups develop behaviors like: embrace all views, vitiation of different opinion, shift focus out of and mixing 2 questions, that lead either to an abrupt end or a short agreement or a generalized answer that could then lead to the continuation of the discussion and

the disagreement;

- In order to overcome the continuing and non-ending discussion multicultural groups adopted behaviors like: force opinion, impose single view and gender difference complicated that enforce an immediate end of the discussion by either an agreement or a partial agreement.

Chapter 7 Conclusions

7.1. Introduction

This concluding chapter links the research findings back to the research questions established at the beginning of this thesis. It also highlights the contribution of this PhD project. This chapter, as well as the entire thesis, concludes by recommending a number of future researches emerging from this project.

7.2. Response to Research Question

This PhD thesis aimed at investigating the existence of communication conflicts when students collaborate, cooperate and communicate by using synchronous chat tools in an eLearning activity. The research question formulated and answered in this PhD is:

Are there communication conflicts when students from SEE countries and study in Greece, communicate, collaborate and/or cooperate in an eLearning activity by using synchronous text-based communication?

In order to generate more specific directions to guide the research project, the central research question was divided into a set of sub-questions:

- What are the culturally induced problems that group members can face when they collaborate or cooperate?
- What are the culturally induced problems of students when they communicate?
- Do these problems persist when the group members are from the same culture?

In the following paragraphs the results of the analysis with specific reference to the sub-questions of our research.

What are the culturally induced problems that group members can face when they collaborate or cooperate?

In order to answer this sub-question Hofstede's questionnaire was analysed providing a better understanding on the behaviours that would have been demonstrated in the quasi-experiment.

More specifically, as identified in the initial stage of the analysis, i.e. the questionnaire analysis major differences do not exist between the participating cultures, but potential conflicts may arise in the following areas:

- **PDI:** Potential communication problems may probably take place between FYROM and Bulgaria. On the one hand, FYROM students may follow a more student-centred approach to teaching and learning assuming more responsibilities and leading roles. On the other hand, Bulgaria students may prefer a more teacher-centred approach to teaching and learning by requiring the presence of teacher leading and guiding the discussion. Thus, as related to the collaboration or cooperation question of our research, it is expected that Bulgaria students are more likely to cooperate, since they may expect the presence of the teacher in the discussion defining clear roles and tasks for each group member, whereas FYROM students are more likely to collaborate, i.e. resolve problems arising by themselves and assign roles and tasks internally;
- **IDV:** No communication problems are expected to arise since the countries' scores are close and high;
- **MAS:** Potential communication problems may arise between Greece, FYROM and Albania with Serbia and Bulgaria. On the one hand, Greeks, FYROMs and Albanians will probably follow general simple answers but not sacrifice quality for quantity. On the other hand, Serbians and Bulgarians are more likely to display an ego-centric behaviour in their posts, get the leading role of the conversation and prefer a teacher as a leader in our case a moderator of the discussion. Thus, as related to the collaboration or cooperation question of our research, it is expected that Serbians and Bulgarians are more likely to cooperate. Greeks, FYROMs and Albanians are more likely to exhibit collaborative behaviours;

- **UAI:** Potential problems of communication may probably arise in the discussion between Albanians and Greeks. On the one hand, Albanians may probably prefer open-ended learning situations and discussions; they don't expect to know everything and results are attributed to own abilities. On the other hand, Greeks are more likely to prefer structured learning situations, may be concerned if an answer is right or wrong, and expect the teacher to have all the answers.

Therefore, it could be expected that Greeks, FYROMs and Albanians are more likely to exhibit collaborative behaviours. On the other hand, Serbians and Bulgarians are more likely to decide to work cooperatively.

What are the culturally induced problems of students when they communicate?

The analysis of the quasi-experiments, i.e. communication logs and interviews, indicated that communication conflicts were exhibited in the logs. These identified conflicts were in accordance with the expected behaviours that were resulted from the questionnaire analysis.

More specifically, The findings of the log and interview analysis showed that control groups tend to develop mechanisms to overcome possible communication conflicts and thus, exhibiting less conflicting behaviours (behaviours like the ones presented in table 18, they tend to be more prone in losing the focus of the discussion by leading it to become informal. On the other hand, the multicultural groups tend to be more careful in losing the focus of the topic and thus keeping the discussion formal. But multicultural groups develop behaviours like: embrace all views, vitiation of different opinion, shift focus out of and mixing 2 questions, that lead either to an abrupt end or a short agreement or a generalised answer that could then lead to the continuation of the discussion and the disagreement. In order to overcome the continuing and non-ending discussion multicultural groups adopt behaviours like: force opinion, impose single view and gender difference complicated that enforce an immediate end of the discussion by either an agreement or a partial agreement.

Do these problems persist when the group members are from the same culture?

The findings derived from this study indicate the existence of multicultural communication conflicts that have not lead to the failure of the activity. More specifically, some causal relationships have been identified between multicultural communication conflicts and the disturbance of the general communication sequence. It was noted that in some cases specific nationalities exhibited behaviours of guiding the group discussion into generalised answer in an effort to embrace the disparity of opinions in the communication.

The results of this study showed that control groups tend to develop mechanisms like: “Wait Members to Answer” and “Confusion of Role, Procedure, Topic” to overcome possible communication conflicts. On the other hand, the multicultural groups tend to be more careful in losing the focus of the topic and thus keeping the discussion formal. Therefore, multicultural group members did not created any mechanisms to overcome conflicts. But conflicting behaviours have been identified in multicultural groups that could lead either to an abrupt end of the discussion from the side of a group, or to the continuation of the conflicting discussion leading to a production of a generalised answer.

7.3 Research Design

7.3.1 Quasi-Experiments

In order to answer the previous research question, this PhD research was based on quasi-experiments by employing both quantitative and qualitative data collection and analysis methods. More specifically, this research used Hofstede’s questionnaires in order to re-calculate cultural dimensions that can provide an initial identification of cultural behaviours, that students from specific cultures may exhibit while interacting with other cultures. The researcher then separated the students into equal numbers of multicultural and control (monoculture) groups. The groups have been given a case study that was modified by the researcher and a set of four questions to answers. The given questions were created by the researcher, based on the initial identification of Hofstede’s questionnaires’ analysis, in a way that they could trigger communication conflict in the discussion.

Then, the group members participated in the e-Learning activity by using synchronous communication tools. The resulting logs of the communication between the members of these groups were analysed by using content analysis based on the thematic content analysis in order to define problematic areas; their relation to each other and their relation to the cause and consequence by using concept maps. The concepts that did not have a relation, as it is shown in the resulted concept maps were exploited in the interviews.

Finally, interviews were used as an additional method that tried to define missing causes of a problem, missing consequence of a problem, and any new problems that were not identified in the log investigation. The interviews were one-to-one interviews based on the semi-structured type allowing the researcher enough control of the flow of the interview in order to lead the discussion to the problematic areas as identified previously and allowing enough freedom to the interviewer in order to identify new problem areas that were not identified in the previous steps. The researcher used constant comparison as the method for comparing the results of the interviews with the communication logs. The process of constant comparison led to the expansion and improvement of the concept maps produced during log analysis.

7.3.2 Limitations

The researcher due to the limited number of resources and time could not afford a testing of possible solutions to the previously discussed communication issues. The general solution that could be offered, as it was further argued in the literature chapter 5, is the use of a moderator on the discussion taking place (possibly during the first stages of the discussion) controlling the structure of the conversation, the sequence, and as argued by Hofstede (2005) impose his/her authority to the students. But the involvement of the moderator in the discussion could lead the online discussion to resemble the traditional discussion-taking place in lecture theatres.

Due to this project being an individual 3-year PhD research the results produced cannot be used outside the context since the researcher did not have the resources and the time to produce more reruns of the experiments. Another issue posing problems in the generalisation of the results is that the participants were bachelor students of a private

university located in Greece providing bachelor degrees coming from countries of SEE region. This statement leads us to the assumption that the level of participants' English language would be at an intermediate level. Thus, in order to generalise and use the results for countries other than the participating ones this research should be replicated. That means that new measures of the cultural dimensions should be taken, the case study questions need to be revised so as to try and trigger conflicts for the participating cultures, and the whole activity needs to be rerun.

Moreover, the results cannot be generalised outside of the context of this study because of the small number of students representing each nationality. The environment of CITY Liberal Studies did not provide to the researcher adequate numbers to make possible the generalisation of the results at national context. In other words, the results of this research refer to the national context of the student population of CITY Liberal Study and not of their representative countries. In order to overcome this problem, further research needs to be performed on each specific country of the nationalities present in this study in similar types of institutions like CITY Liberal Studies.

Furthermore, the researcher used controlled experiments in order to eliminate problems caused by the difference in time, location and external interference. The results could have been different if each participant was at his/her home country at his/her room. Finally, another limitation of this study is that the groups were created only for the 30-40 minute experiment. This did not allow the group members to pass all of the stages of the group development as it is argued in the literature chapter 5.

7.3.3 Contribution to current research

As it will further be explained in this section, the contribution of this PhD thesis can be summarised as follows:

- Students' cultural backgrounds should be taken into consideration when designing and/or implementing the communication elements offered in e-Learning environments. This PhD provided a first attempt into highlighting the importance of this consideration even from close/similar cultures;
- Multicultural communication conflicts are identified and can be used to prevent and manage miscommunication in multicultural group discussion;

- This PhD study identified conflicting areas of communication that can be adapted by educational vendors in order to minimise the occurrence of cross-cultural conflicts and enhance the learning experience.

This PhD study used Hofstede's cultural dimensions as a tool to define and "measure" culture. The usage of this tool in e-Learning environments has raised a number of issues and/or challenges/difficulties like:

- Number of participants (large numbers of students is important for better categorisation of cultures);
- Separation of equal or higher numbers of monocultural groups to match and even exceed the number of participating cultures in multicultural groups (e.g. a multicultural group is comprised of students from five different nationalities thus, it is important the creation of five or more monoculture groups. This will maximise the understanding of the participating cultures and prove helpful in the comparison of Hofstede's original results);

This study showed that, although the identified multicultural communication did not led to the end of the group communication, they have led to the disturbance of the group communication process resulting either to a change in the nature of the communication, i.e. become informal, or to a provision of a generalised answer that did not satisfy some of the group members. More specifically, in the control groups it was exhibited the behaviour of losing the focus of the communication leading the discussion to become informal. On the other hand, although multicultural groups did not lost the focus of the discussion, they had exhibited behaviours like embrace all views, vitiation of different opinion, shift focus out of and mixing 2 questions resulting either to an abrupt end or a short agreement force opinion, impose single view and gender difference complicated that enforce an immediate end of the discussion.

Thus, the following aspects should be stressed regarding the contribution of this research to the research field of cross-cultural communication conflicts:

- As more and more eLearning courses and degrees will be offered in the near future, the consideration of the students' culture should be considered not only in the design of the eLearning environment but also in the communication elements offered in these environments. For instance, there exist many design

paradigms that try to incorporate the element of culture in the design process of e-Learning environments. Like it is stated by Young (2008), although many design models have been created that accommodate culture in the design of eLearning environments “there is room for improvement in creating culture based designs”. But they do not exist models that investigate, interpret and propose recommendations for better cultural interaction in e-Learning environments even when close cultures are interacting like the ones studied in this research (i.e. SEE cultures). Therefore, this PhD project studied the interaction of close countries in a synchronous text-based e-Learning activity. This study represented a first attempt in producing a comprehensive research into this area.

- This PhD project identified and explored some conflicting areas of interaction of multicultural and monoculture control groups. The final multicultural conflicts as they were established in chapter 6 can be an important contribution to practitioners and researchers. More specifically, practitioners may use the multicultural communication conflicts as a way of identifying, preventing and managing miscommunication in multicultural group discussion. It, however, should be acknowledged that, since this project focused on investigating a specific set of cultures in a specific context (i.e. the Greek HE) the findings derived from this study may only be generalizable for similar cultures on similar contexts like the ones studied. Nevertheless, it is certainly possible that these findings may be transferable to other contexts although it would be desirable to conduct further research to investigate and explore the transferability of these findings into other cultures and contexts. Therefore, it is hoped and believed that the multicultural conflicting areas as identified in this research may be used as a starting point for researchers to carry out further research in this research area. Moreover, the concept maps resulted from this PhD research could be used as an analytical tool for assessing and analysing cross-cultural communication conflicts in eLearning environments.
- As argued in this PhD the focus on accommodating culture cannot be solely on designing appropriate tools or media. Instead, effort should be put on the composition of the tools used in eLearning environments for social purposes. Researchers like Walstadt et al. (2008) agree that effort should be put on the

social processes of the tools used in eLearning environments. The multicultural conflicting behaviours as identified in this study can provide a better understanding on the interactions of multicultural students. Thus, the identified conflicts provide an important contribution to educational vendors and consultants that target the Greek and SEE region. More specifically, this study could be replicated in order to analyse and identify the cultural conflicting areas of communication inside an educational system. Thus, it could lead in enhancing the communication experience and increasing the collaboration/cooperation of their users by tackling the identified conflicting areas. Furthermore, the conflicting areas can be proven a useful guide to any educational system consultant, by providing them a tool for analysing and identifying the needs for enhancing the communication experience.

In conclusion, the results of this study could be used both in the academic and business areas. On the first hand, the results of this study could be used as a tool to avoid cultural miscommunication when designing courses for eLearning putting emphasis on how the interaction could be hindered by the various collaborative tools. Thus, the results could provide a set of guidelines of what shouldn't be done when even close cultures collaborate and communication. For example, jokes should be carefully done or potentially be avoided, or certain expressions which are sensitive to other cultures need to be avoided etc.

On the other hand, the results of this research can provide a set of guidelines for the designers of eLearning systems in order to include or not interaction elements, like smiley faces or refresh limits for turn based chats, in their systems.

7.4 Recommendations for Future Research

Finally, this PhD project has pinpointed a number of important areas for further research work:

- This PhD study focused on identifying, multicultural communication conflicts of students coming from SEE region and study in Greece when they communicate cooperate and/or collaborate for an eLearning activity by using synchronous

text-based chat. However, due to time limitation of the project, i.e. this project being a 3-year PhD, the study did not utilize permanent study group. By allowing group members to interact with themselves in order to pass naturally the group development stages as discussed in this research. Thus, further research work should be carried away and measure the behaviors of group members over time and in different eLearning activities.

- As discussed in chapter 5, the participated students were five from Albania, Bulgaria, Serbia and ten from FYROM and Greece. This choice, as previously argued was a clear reflection of the general student population of CITY Liberal Studies. This restriction of the small numbers of each participating nationalities, have caused the findings of this research to not be generalizable outside the specific institution. It will thus be meaningful to further explore the questionnaire findings by repeating the study with other more students from similar institutions located in Greece. In this way, the results could be cross-checked so as to provide a holistic view of the collaboration and/or cooperation and communication process of foreign students studying in Greece.
- As discussed before, since this PhD project selected a very specific sample population, i.e. undergraduate students from specific SEE countries who study in Greece, the findings may only be generalizable for other students coming from the same countries and studying in Greece. Therefore, future research work should be conducted investigating students coming from different countries. The results that will be derived from further studies can then be compared with the findings of this research. In this way a more holistic view will be provide about specific cultural behaviors from students from SEE.
- Additionally, the findings of this research can only be generalized for the Greek HE context. Thus, further research should be conducted in order to include a replication of this research in the HE contexts of all of the participated countries. In this way a more holistic view can provide general culture-specific communicational behaviors that can affect the interaction.

- Finally, further research needs to be done with larger numbers of participants and with more divergent cultures. In this way, direct comparison with Hofstede's work could be made leading to potential enhancements of his study.

In conclusion, further research is needed for the results of this study to be applicable in the contexts. Further research should be done in real e-Learning courses in which the group members pass all the stages of group development and have more time to interact with group members. Moreover, the number of participants needs to be larger and come from more divergent cultures in order to cross-check and compare the results with Hofstede's work. Finally, replication is needed in all the participating countries in order to be on the safe side when generalizing the results.

REFERENCES

- Ackerman, S. (2002). Mapping user interface design to culture dimensions. Proceedings of the International Workshop on Internationalisation of Products and Systems, Austin, Texas, July 2002 Available at: http://www.usj.edu.lb/moodle/stephane.bazan/obs_interculturelle/culture%20dimension%20in%20WS.pdf [18 February 2012].
- Adler, N., J. (1991). International Dimension of Organizational Behavior. Boston, MA, PWS-Kent Publishing Company.
- Alonso F., L. G., Manrique D., Vines M. J. (2005). "An instructional model for web-based e-learning education with a blended learning approach." British Journal of Educational Technology **36**(2): 217-235.
- Anderson, L., R. (1983). "Management of the mixed-cultural work group." Organizational Behavior and Human Performance **31**: 303-350.
- Antonna, M. (2005). eLearning Country Report for GREECE. eUser: Public Online Services and User Orientation <http://www.euser-eu.org/ShowCase.asp?CaseTitleID=595&CaseID=1232> [Last Visited: 20/12/2005].
- Apostolopoulos, V. (2006). National Report - Greece. Eurochambers:1-6, available at: http://www.eurochambres.be/PDF/pdf_ees2006/country%20reports/Greece.pdf.
- Appelbaum, S., H., Shapiro, B., Elbaz, D. (1998). "The management of multicultural group conflict." Team Performance Management **4**(5): 211-234.
- Baldwin-Edwards, M., Ed. (2004). Immigration into Greece, 1990-2003: A Southern European Paradigm? In National Bank of Belgium: How to Promote Economic Growth in the Euro Area, . Brussels, May 11-12, 2000, pages 29, Geneva, Switzerland Available at: http://aei.pitt.edu/1078/1/UNECE_paperV3%2D1.pdf [18 February 2012].
- Barron, A., E., Rickerman, C. (2003). Going Global, Designing e-Learning for an International Audience. Proceedings of the ASTD TechKnowledge 2003 conference, available at: http://www1.astd.org/tk03/pdf/session_handouts/TH204.pdf [Last Visited: 15/11/2008].
- Bates, A. (1991). "Third generation distance education: the challenge of new technology." Research in Distance Education **3**(2): 10-15.
- Bednar, A., Cunnigham, D., Duffy, T., Perry, J. (1991). Theory into practice: How do we link? Constructivism and the Technology of Instruction: A Conversation. T. Duffy, Jonassen, D. New Jersey, Lawrence Erlbaum Associates: 17-34.
- Bednar, A., Cunnigham, D., Duffy, T., Perry, J. (1995). Theory into practice: How do we link? Instructional Technology: Past Present and Future. (2nd ed.). Anglin G., Englewood, CO: Libraries Unlimited.:100-112
- Bereiter, C. (1994). "Implications of postmodernism for science, or, science as progressive discourse." Educational Psychologist **29**(1): 3-12.

- Berge, Z. L. (1997). "Computer conferencing and the on-line classroom." International Journal of Educational Telecommunications 3(1): 3-21.
- Berge, Z. L., Collins, M. P. (Eds.) (1995). Computer-Mediated Communication and the Online Classroom: Volumes 1-3. Cresskill, NJ: Hampton Press.
- Boucas, D. (2005) "Encountering the national variations of the information society: the peculiarities of the 'Greek model'" from The 2nd Hellenic Observatory PhD Symposium on Modern Greece: "Current Social Science Research on Greece" LSE, June 10, 2005 Available at: http://www.lse.ac.uk/collections/hellenicObservatory/pdf/2nd_Symposium/Dimitris_Boucas_paper.pdf
- Brophy, J., Alleman, J. (1991). "Activities as instructional tools: A framework for analysis and evaluation." Educational Researcher 20(4): 9-23.
- Brown, J., S., Collins, A., Duguid, P. (1989). "Situated cognition and the culture of learning." Educational Researcher 18(1): 32-42.
- Bryman, A., Bell, E. (2003). Business Research Methods. Oxford, New York, Oxford University Press.
- Burgstahler, S., Swift, C. (1996). Enhanced learning through electronic communities: A research review. Seattle, WA: Washington State Office of the State Superintendent of Public Instruction. E. D. R. S. N. E. 734). available at: http://eric.ed.gov/ERICWebPortal/Home.portal?nfpb=true&pageLabel=RecordDetails&ERICExtSearch_SearchValue_0=ED410734&ERICExtSearch_SearchType_0=eric_acno&objectId=0900000b8011e95e [Last Accessed 24 July 2006].
- Charlier, J., E., Croche, S. (2004). "The Bologna Process and its Actors." CENTRO UNIVERSITARIO PER LA VALUTAZIONE E IL CONTROLLO (CRESCO): Working Paper n. 8 Available at: http://glotta.ntua.gr/posdep/BOLOGNA/2004-Charlier-Croche_wp8.pdf [18 February 2012].
- Chen, A., Mashhadi, A., Ang, D., Harkrider, N. (1999). "Cultural issues in the design of technology-enhanced learning systems." British Journal of Educational Technology 30(3): 217-230.
- Coffey, A., Atkinson, P. (1996). Making Sense of Qualitative Data. London, Sage Publication.
- Cognition and Technology Group at Vanderbilt University (1996). Looking at Technoogy in Context: A framework for understanding technology and education research. Handbook of Educational Technology. D. Berliner, Calfee, R. New York, Simon & Schuster Macmillan: : 15- 46.
- Cognition and Technology Group at Vanderbilt University (1993). Anchored Instruction and Situated Cognition Revisited. Educational Technology, 33 (3). P. 52-70.
- Cognition andTechnology Group at Vanderbilt University (1991). Technology and the design of generative learning environments. Constructivism and the Technology of Instruction: A Conversation. T. Duffy, Jonassen, D. New Jersey, Lawrence Erlbaum Associates: 77-89.

Colardyn, D., Bjornavold, J. (2004). "Validation of Formal, Non-Formal, Informal Learning: policy and practices in EU Member States." European Journal of Education 39(1): 69-89.

Collins, A. (1997). Design issues for learning environments. International Perspectives on the Psychological Foundations of Technology-based Learning Environments. E. Vosniadou, De Corte, E., Glasser, R., Mandl, H. Hillsdale, NJ, Lawrence Erlbaum Associates: 347-361.

Collis, B. (1999). "Designing for differences: Cultural issues in the design of WWW-based course support sites." British Journal of Educational Technology 30(3): 201-215.

COM (2001). The eLearning Action Plan – Designing tomorrow's education, Commission of the European Communities: available at: http://www.aic.lv/bologna/Bologna/contrib/EU/e-learn_ACPL.pdf [Last Visited:15/11/2008].

COM (2002). eEurope2005: An Information Society for All. Brussels, Commission of the European Communities available at: http://ec.europa.eu/information_society/europe/2002/news_library/documents/europe_2005/europe2005_en.pdf [Last Visited: 15/11/2008].

Cox, T., Lobel, S., A., McLeod, P.,L. (1991). "Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task." Academy of Management Journal 4: 827-848.

Cresswell, W., J. (1994). Research Design: Qualitative & Quantitative Approaches. London, Sage Publication.

Curtis, D., Lawson, M. (2001). "Exploring Collaborative Online Learning." Journal of Asynchronous Learning Networks 5(1): 21-34.

Cuseo, J. (1992). "Cooperative learning vs small group discussions and group projects: the critical differences." Cooperative Learning and College Teaching 2(3): 5-10.

Del Castillo, D. (2001). "Greece Shuns Private Colleges." The Chronicle of Higher Education 48(4) Available at: <http://chronicle.com/article/Greece-Shuns-Private-Colleges/13371/> [18 February 2012].

Denzin, N., K. (1978). The research act: A theoretical introduction to sociological methods, , : . 2nd ed., New York, McGraw-Hill.

Dillenbourg, P. (1999). What do you mean by collaborative learning? Collaborative-learning: Cognitive and Computational Approaches. P.Dillenbourg, Oxford: Elsevier: 1-19.

Dillenbourg, P., Schneider, D. (1995). "Collaborative Learning and the Internet." ICCAI 95(TECFA (Unit of educational Technology) available at http://tecfa.unige.ch/tecfa/research/CMC/colla/iccai95_1.html [27 July 2006]).

Doolittle, E., P., Camp G. W. (1999). "Constructivism: The Career and Technical Education Perspective." Journal of Vocational and Technical Education 16(1) Available at: <http://scholar.lib.vt.edu/ejournals/JVTE/v16n1/doolittle.html> [18 February 2012].

Doolittle, E., P. (1998). Complex Constructivism: A Theoretical Model of Complexity and Cognition. Eight Annual International Conference of The Society For Chaos Theory in Psychology & Life Sciences. Boston University, Boston, MA Available at: <http://www.tandl.vt.edu/doolittle/research/complex1.html> [20 March 2007] [Archived at <http://www.webcitation.org/518FmswXi>].

Duffy, T., Cunningham, D. (1996). Constructivism: Implications for the design and delivery of instruction. Handbook of Research for Educational Communications and Technology. D. Jonassen. New York, Simon & Schuster Macmillan: 170-198. Available at: <http://www.aect.org/intranet/publications/edtech/07/index.html> [18 February 2012]

Duffy, T., M., Jonassen, D. (1991). "Constructivism: New implications for instructional technology? ." Educational Technology 31(5): 3-12.

Duke, C. (2002). Managing the Learning University. Buckingham, UK, SRHE and Open University.

Dutta, S., Lanvin, B., Puaa, F. (2004). The Global Information Technology Report 2003-2004 – Towards an Equitable Information Society, New York: Oxford University Press.

Easterby-Smith, M., Thorpe, R., Lowe, A. (2002). Management Research An Introduction. London, Sage Publications.

EDET (2004). 2004 National Survey for New Technologies and the Information Society, Available at: <http://www.ebusinessforum.gr/> [15 October 2005].

Edmundson, A. (2007). The cultural adaptation process (CAP) Model: Designing e-learning for another culture. Globalized e-learning cultural challenges. E. A. Hershey, PA, Idea Group, Inc.: 267–290.

Ertmer, P. and Newby, T. (1993). "Behaviourism, Cognitivism, Constructivism: Comparing Critical Features for an Instructional Design Perspective." Performance Improvement Quarterly 6(4) pp. 50-72 Available at: <http://uow.ico5.janison.com/ed/subjects/edgi911w/readings/ertmerp1.pdf> [18 February 2012].

ESIB (1999). The Bologna Declaration. T. N. U. o. S. i. E. (ESIB). available at: http://www.esib.org/BPC/docs/Archives/CoP007_bologna_declaration.pdf [Last Accessed: 15/11/2008].

European Commission (2005). Key Data on Education in Europe 2005, Eurydice: 1-395.

Eurostat (2003). Statistics of the Information Society in Europe, Luxembourg: Office for Official Publications of the European Communities.

Eurostat (2005). *Internet Usage by Individuals and Enterprises*, Luxembourg: Office for Official Publications of the European Communities.

Eurydice (2002). *Sheets on Education Systems in Europe: Greece*.

Eurydice (2005). *National Report - Greece*, Eurydice: 181.

Farmer, T., Robinson, K., Elliot, J. S., Eyles, J. (2006). "Developing and Implementing a Triangulation Protocol for Qualitative Health Research." Qualitative Health Research 16(3): 377-394.

Fredrikson, U. (2003). "Changes of Education Policies within the European Union in the Light of Globalisation." European Educational Research Journal 2(4): 522-46.

Galliers, R. (1992). Information Systems Research: Issues, Methods and Practical Guidelines, Blackwell Scientific Publications.

Golafshani, N. (1993). "Understanding Reliability and Validity in Qualitative Research." The Qualitative Report 8(4): 597-607.

Grabinger, S., Dunlap, J. (1995). "Rich Environments for active learning." Association for Learning Technology Journal 3(2): 5-34.

Grant M. A., W., D., T. (2008). "The Neglected Science and Art of Quasi-Experimentation Why-to, When-to, and How-to Advice for Organizational Researchers." Organizational Research Methods Online First: 1-28.

Greeno, J., Collins, A, Resnick, L. (1996). *Cognition and Learning*. Handbook of Educational Technology. C. D. Berliner, R. New York, Simon & Schuster Macmillan: 15-46.

Gregory, J., (2000) "First Year Students' Expectations of Working in Culturally Diverse Small Groups at University", Fourth Pacific Rim First Year in Higher Education Conference, QUT Brisbane, July: 1-10.

Hall, E., T. (1977). Beyond Culture. New York, Anchor Books.

Henderson, L. (1996). "Instructional design of interactive multimedia." Educational Technology Research and Development 44(4): 85-104.

Henderson, L. (2007). Theorizing a multiple cultures instructional design model for e-learning and e-teaching. Globalized e-learning cultural challenges. A. Edmundson. Hershey, PA, Idea Group, Inc.: 130–153.

Herrington, J., Oliver, R. (1995). Critical characteristics of situated learning: Implications for the instructional design of multimedia. Learning with Technology. J. Pearce, Ellis, A. . Melbourne: ASCILITE, ASCILITE95 Conference Proceedings: 253-262. Available at: <http://www.ascilite.org.au/conferences/melbourne95/smtu/papers/herrington.pdf> [18 February 2012].

Herrington, J., Reeves, T. C., Oliver, R., & Woo, Y. (2001). "Designing authentic activities in web-based courses." Journal of Computing in Higher Education 16(1): 3-29.

Herrington, J., & Kervin, L. (2007). Authentic learning supported by technology: 10 suggestions and cases of integration in classrooms. Educational Media International, 44(3), 219-236

Available at:
<http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1027&context=edupapers&sei-redir=1&referer=http%3A%2F%2Fwww.google.com%2Furl%3Fsa%3Dt%26rct%3Dj%26q%3D%2522authentic%2Bcontext%2Bthat%2Breflect%2Bthe%2Bway%2Bof%2Bthe%2Bknowledge%2Bwill%2Bbe%2Bused%2Bin%2Breal-life%2522%26source%3Dweb%26cd%3D1%26ved%3D0CCUQFjAA%26url%3Dhttp%253A%252F%252Fro.uow.edu.au%252Fcgi%252Fviewcontent.cgi%253Farticle%253D1027%2526context%253Dedupapers%26ei%3DKOdVT6C0I4mK4gSlv5z7CQ%26usg%3DAFQjCNEgkhs8fgugv3mhfF9BEWd4a2T7Bg#search=%22authentic%20context%20reflect%20way%20knowledge%20will%20used%20real-life%22> [18 February 2012]

Hofstede, G. (1991). Cultures and Organisations: Software of the mind. London, McGraw Hill.

Hofstede, G. (2001). Culture's Consequences, Sage Publications.

Hofstede, G., Hofstede, J., G. (2005). Cultures and Organisations: Software of the Mind. London, McGraw Hill.

Honebein C., D. T. a. F. J. (1993). Constructivism and the design of learning environments: Context and authentic activities for learning. Designing Environments for Constrcutive Learning. T. Duffy, Lowyck, J., Jonassen, D. Heidelberg, Springer-Verlag: 87-109.

Jarvis, P., Holford, J., Griffin, C. (2003). The theory and practice of LEARNING Kogan Page Limited.

Jenlink, P., Carr, A. (1996). "Conversation as a medium of change in education." Educational Technology 36(1): 31-38.

Johnson, D., W., Johnson, F., P. (2002). Joining Together: Group Theory and Group Skills, Pearson Allyn & Bacon.

Johnson, D., W., Johnson, R., T., Smith, K., A. (1991). Active Learning: Cooperation in the College Classroom. Edina, MN, Interaction Book Co.

Johnson, D., W., Johnson, R., T., Smith, K., A. (1998). "Cooperative Learning Returns to College - What Evidence is There That it Works?" Change 98(4): 27-35.

Jonassen, D., H. (1991). "Objectivism versus constructivism: Do we need a new philosophical paradigm?" Educational Technology Research and Development 39(3): 5-14.

Jonassen, D. H., Mayes, T., McAleese, R. (1993). A Manifesto for a Constructivistic Approach to Uses of Technology in Higher Education. Designing Environments for Constructive Learning. T. Duffy, Lowyck, J., Jonassen, D. Heidelberg, Springer-Verlag: 231-247.

Jones, A.J. (2003). ICT and Future Teachers: Are we preparing for e-Learning? Paper presented at the IFIP Working Groups 3.1 and 3.3 Conference: ICT and the Teacher of the Future, January 27-31, 2003, Melbourne, Australia

Jones, S., G. (1995). Understanding community in the information age. Cybersociety: Computer Mediated Communication and Community. S. G., Jones. London, Sage: 10-35.

Joo, J.-E. (1999). "Cultural issues of the Internet in classrooms." British Journal of Educational Technology **30**(3): 242-250.

Kampenes, V., B., Dyba, T., Hannay, E., J., Sjoberg, K, I, D. (2008). "A systematic review of quasi-experiments in software engineering." Information and Software Technology: 1-12.

Karaiskakis, D. (2006). The acceptance of a new method of communication in education & the demands which are needed for the architecture of eServices. The example of Greek Open University. in Two day conference on Distance Education and the use of ICT. 26-28 May 2006, Lamia, Greece.

Karakatsani, D. (2000). Civic Education and socio-political changes: The case of the Greek educational system. Education for Social Democracies: changing forms and sites London, Uk., paper available at <http://www.ioe.ac.uk/ccs/conference2000/papers/epsd/papers/karakatsani.html> [Last Accessed: 15/11/2008].

Kim, H. (1999). Transcultural customization of international training programs. New York, NY, Garland Publishing Inc.

Koschmann, T. (1996). Paradigm shifts and instrutional technology: An introduction. in T. Koschmann(Ed.) CSCL: Theory and Practice of and Emerging Paradigm., Erlbaum. pp. 268-305

Kubilius, K. (2007). Countries of the Former Yugoslavia, Suite101.com, http://balkan-history.suite101.com/article.cfm/countries_of_the_former_yugoslavia, [Last Accessed: 25/11/2008].

Kyriazis, A. (2005). National Reports 2004 – 2005. EU Directorate, Greek Ministry of Education: 13.

Lal V. (2003). "Cultural Difference and its influence on learning" Australian Flexible Learning Community. Available at: http://community.flexiblelearning.net.au/TeachingTrainingLearners/content/article_4502.htm [18 February 2012]

Laurillard, D. (2002). Rethinking University Teaching a framework for the effective use of learning technologies, Routledge Falmer.

Lave, J., Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge, Cambridge University Press.

Lebie, L., Rhoades, J., McGrath, J. (1996). "Interaction Process in Computer-Mediated and Face-to-Face Groups." Computer Supported Cooperative Work (CSCW) **4**: 127-152.

Liagouras, G., Protopogerou, A., Caloghirou, Y. (2003). "Exploring Mismatches Between Higher Education and the Labour Market in Greece." European Journal of Education **38**(4): 413-26.

Maor, D., Zariski, A. (2003). Is there a fit between pedagogy and technology in online learning? In Partners in Learning. Proceedings of the 12th Annual Teaching and Learning Forum, 11-12 February 2003, Perth, Edith Cowan University.

Marcus, A. (2002). "Dare We Define User Interface Design?" Interactions **9**(5): 19-24.

Mason, R., Kaye, A. (1989). Mindweave: Communication, Computers and Distance Education. Oxford, Pergamon Press.

Matthews, R., S., Cooper, J., L., Davidson, N., Hawkes, P. (1995). "Building bridges between cooperative and collaborative learning." Change **27**(4): 35-40.

Mayes, T., De Freitas, S. (2004). Review of e-learning theories, frameworks and models. JISC e-Learning Models Desk Study Available at: [http://www.jisc.ac.uk/uploaded_documents/Stage%20%20Learning%20Models%20\(Version%201\).pdf](http://www.jisc.ac.uk/uploaded_documents/Stage%20%20Learning%20Models%20(Version%201).pdf) [18 February 2012].

McConnell, D. (1994). Implementing computer supported cooperative learning. London. Kogan Page.

McLoughlin, C. (1999a). "Culturally responsive technology use: developing an on-line community of learners." British Journal of Educational Technology **30**(3): 231-243.

McLoughlin, C. (1999b). Culturally inclusive learning on the web. Teaching in the Disciplines/ Learning in Context, 8th Annual Teaching Learning Forum, Perth, , The University of Western Australia Available at: <http://lsn.curtin.edu.au/tlf/tlf1999/mcloughlin.html> [18 February 2012].

McLoughlin, C., Oliver, R. (2000). "Designing learning environments for cultural inclusivity: A case study of indigenous online learning at tertiary level." Australian Journal of Educational Technology **16**(1): 58-72.

McLoughlin, C., Oliver, R. (1999). Instructional design for cultural difference: A case study of indigenous online learning in a tertiary context. ASCILITE'99: Responding to Diversity. Proceedings of the 16th annual conference of the Australian Society for Computers in Learning in Tertiary Education, Brisbane, Queensland University of Technology pp. 229-238 Available at: <http://www.ascilite.org.au/conferences/brisbane99/papers/mcloughlinoliver.pdf> [18 February 2012].

Mcperson, M., Nunes, J., M. (2004). Developing Innovation in Online Learning: An Action Research Framework, RoutledgeFalmer.

Miles, M., B., Huberman, A., M. (1994). Qualitative Data Analysis. Newbury Park, CA, Sage.

Ministry of Economy and Finance (2005). National Reform Programme for Growth and Jobs 2005-2008: 1-63.

National Statistical Service of Greece (2004). Foreign Population by citizenship and sex - 2004. available at: http://www.statistics.gr/table_menu_eng.asp?dt=0&sb=SPO_2&SSnid=Migration%20Movement [Last Accessed: 15/11/2008].

National Statistical Service of Greece (2004) "Table 7a Population by citizenship on 1 January-2004" available online at: http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A1605/Other/A1605_SPO15_TB_AN_00_2004_07_F_EN.pdf

Nunes, J., M., Fowell, S., P. (1996). "Hypermedia as an Experimental Learning Tool: a Theoretical Model." Information Research 2(1) Available at: <http://InformationR.net/ir/2-1/paper12.html> [18 February 2012]

OECD (1995) Greece. Educational Policy Review, Background Report to OECD on Education, Athens: Ministry of Education and Religious Affairs.

Ong, C.-S., Lai, J.-Y., & Wang, Y.-S. (2004). Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies. Information & Management, 41 (6), 795-804

OPIS (2001). Operational Programme Information Society 2000 Athens, Ministry of Economy and Finance. available at <http://www.infosociety.gr> [Last Visited: 20/12/2005].

Panitz, T. (1997). "Collaborative versus cooperative learning - A comparison of the two concepts which will help us understand the underlying nature of interactive learning." Cooperative Learning and College Teaching 8(2) Available at: <http://home.capecod.net/~tpanitz/tedsarticles/coopdefinition.htm> [18 February 2012].

Partington, D. (2000). "Building grounded theories of management action." British Journal of Management 11(2): 91-102.

Paulsen, M., F. (1995). "The Online Report on Pedagogical Techniques for Computer-Mediated Communication." NKI Group: <http://www.nettskolen.com/forskning/19/cmcped.html> [Last Accessed 24/7/2006].

Pea, R., D. (1993). "Learning scientific concepts through material and social activities: Conversational analysis meets conceptual change." Educational Psychologist 28(3): 265-277.

Pea, R., D. (1994). "Seeing what we built together: Distributed multimedia learning environments for transformative communications." The Journal of the Learning Sciences 13(3): 285-299.

Pesmazoglu, S. (1994). "Government, Ideology and the University Curriculum." European Journal of Education **29**(3): 291-304.

Pfemmer, R. (2004). "Content Design Considerations for Localizing E-Learning Projects." Multilingual Computing & Technology **15**(4) Available at: <http://www.multilingual.com/articleDetail.php?id=1124> [18 February 2012].

Rafaeli, S., Sudweeks, F. (1997). "Networked interactivity." Journal of Computer Mediated Communication **2**(4) Available at: <http://jcmc.indiana.edu/vol2/issue4/rafaeli.sudweeks.html> [18 February 2012].

Reeves, C., T., Herrington, J., Oliver, R. (2002). Authentic activities and online learning. Quality conversations: Research and Development in Higher Education. J. A. Goody, Herrington, M., Northcote. Jamison: ACT: HERDSA. **25**: 562-567.

Remenyi, D., Williams, B., Money, A., Swartz, E. (1998). Doing Research in Business and Management. London, UK, Sage Publications.

Roschelle, J., Teasley, S. (1995). The construction of shared knowledge in collaboration problem solving. Computer supported collaborative learning. C. O'Malley. Berlin, Springer Verlag. pp. 69-97

Seufert, S. (2002). Cultural Perspectives. Handbook of Information Technologies for Education and Training. H. Adelsferger, H., Collis, B., Pawlowski, J., M. Berlin, Springer.

Sherry, L. (2000). "The Nature and Purpose of Online Discourse: A Brief Synthesis of Current Research as Related to the WEB Project." International Journal of Educational Telecommunications **6**(1): 19-51.

Silverman, D. (1998). "Qualitative research: meanings or practices?" Information Systems Journal **8**(3): 3-20.

Simons, J., R., P. (1993). Constructive Learning: The Role of the Learner. Designing Environments for Constructive Learning. T. Duffy, Lowyck, J., Jonassen, D. Heidelberg, Springer-Verlag: 231-247.

Spiro, R., Feltovich, P., Jacobson, M. and Coulson R. (1991). Cognitive flexibility, constructivism and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. Constructivism and the Technology of Instruction: A Conversation. T. Duffy, Jonassen, D. New Jersey, Lawrence Erlbaum Associates: 57-76.

Sproull, L. K., S. (1991). Connections: New Ways of Working in the Networked Organisation. Massachusetts, USA, MIT Press.

Taugh, C. (2004). "Almost Half-time in the Bologna Process - Where Do We Stand?" European Journal of Education **39**(3): 275-288.

Tella, S. and Mononen-Aaltonen, M. (1998) "Developing Dialogic Communication Culture in Media Education: Integrating Dialogism and Technology" Helsinki, available online at: <http://www.helsinki.fi/~tella/MEP7.pdf> [18 February 2012]

Thomas, M., Mitchell, M., Joseph, R. (2002). "The third dimension of ADDIE: A cultural experience." Tech Trends **46**(2): 40-45.

Trentin, G., Benigno, V. (1997). "Multimedia Conferencing in Education: Methodological and Organizational Considerations." Educational Technology: **37**(5) 32-39.

Triandafyllidou, A., Calloni, M., Mikrakis, A. (1997). "New Greek Nationalism." Sociological Research Online **2**(1) Available at: <http://www.socresonline.org.uk/2/1/7.html> [18 February 2012].

Trochim, W., M. (2002). "Research Methods Knowledge Base." available online at: <http://www.socialresearchmethods.net/kb/> [Last Accessed: 15/11/2008].

Tuckman, B., Jensen, M. (1977). "Stages of Small Group Development." Group and Organisational Studies **2**(4): 419-427.

UN - Ministry of Interior, Public Administration and Decentralisation (1999) "Greece National Report On The Implementation Of the Beijing Platform for Action" available online at: <http://www.un.org/womenwatch/daw/followup/responses/greece.pdf>

UNESCO (2004). National Report of Greece. Forty-seventh session of the International Conference on Education. Geneva.

Unknown (2006). Capture/Continuation of agony of 5.500 people finishing in Thessaloniki.: available at: <http://www.agelioforos.gr/agelioforos.gr/archive/article.asp?date=6/10/2006&page=3> [Last Accessed: 15/11/2006].

Vallaster, C. (2005). "Cultural Diversity and Its Impact on Social Interactive Processes - Implications from an Empirical Study." International Journal of Cross Cultural Management **5**(2): 139-163.

Vrasidas, C. (2000). "Constructivism versus objectivism: Implications for interaction, course design, and evaluation in distance education." International Journal of Educational Telecommunications **6**(4): 339-362.

Wachter, B. (2004). "The Bologna Process: Developments and Prospects." European Journal of Education **39**(3): 265-273.

Wagner, N., Hassanein, K., & Head, M. (2008). Who is responsible for E-Learning Success in Higher Education? A Stakeholders' Analysis. Educational Technology & Society, **11** (3), 26-36.

Wang, M. (2007). "Designing online courses that effectively engage learners from diverse cultural backgrounds " British Journal of Educational Technology **38**(2): 294-311.

Watson, R., T., Ho, T., H., Ramman, K., S. (1994). "Culture a fourth dimension of group support systems." Communications of the ACM **37**(10): 44-55.

Watson, W., Kumar, K., Michaelsen, L. (1993). "Cultural Diversity's Impact on Interaction and Performance: Comparing Homogeneous and Diverse Task Groups." The Academy of Management Journal **36**(3): 590-602.

Wild, M., Henderson, L. (1997). "Contextualising learning in the World Wide Web: accounting for the impact of culture." Education and Information Technologies **2**: 179-192.

Winn, W. (1993). A Constructivist Critique of the Assumptions of Instructional Design. Designing Environments for Constructive Learning. T. Duffy, Lowyck, J., Jonassen, D. Heidelberg, Springer-Verlag: 189-212.

Winter, D., Lemons, P., Bookman, J., Hoese, W. (2001). "Novice Instructors and Student-Centered Instruction: Identifying and Addressing Obstacles to Learning in the College Science Laboratory." The Journal of Scholarship of Teaching and Learning (JoSoTL) **2**(1): 14-42.

Woodfine, B. P., Nunes, M. B., and Wright, D. J. (2008). Text-based synchronous e-learning and dyslexia: Not necessarily the perfect match!. *Comput. Educ.* **50**, 3 (Apr. 2008), 703-717. DOI= <http://dx.doi.org/10.1016/j.compedu.2006.08.010>

Wolz, U., Palme, J., Anderrson, P., Chen, Z., Dunne, J., Karlsson, G., Laribi, A., Mannikko, S., Spielvogel, R., Walker, H. (ITiCSE'97 working group) (1997). "Computer-mediated communication in collaborative educational settings: Report of the ITiCSE'97 working group on CMC in collaborative educational settings." ACM SIGSUE Outlook **25**(4): 51-68.

Young, P. A. (2008). "The Culture Based Model: Constructing a Model of Culture." Educational Technology & Society **11**(2): 107-118.

Zinkiewicz, L., Hammond, N., Trapp, A. (2003). A review of selected psychological research and theory with implications for teaching practice, Applying Psychology Disciplinary Knowledge to Psychology Teaching and Learning, Higher Education Academy Psychology Network (former LTSN Psychology): 4-96.

Appendix A – VSM'94 Questionnaire

V S M 9 4

VALUES SURVEY MODULE 1994

QUESTIONNAIRE

English version

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INTERNATIONAL QUESTIONNAIRE (VSM 94)

Please think of an ideal job, disregarding your present job, if you have one. In choosing an ideal job, how important would it be to you to ... (please circle one answer in each line across):

- 1 = of utmost importance
- 2 = very important
- 3 = of moderate importance
- 4 = of little importance
- 5 = of very little or no importance

1. have sufficient time for your personal or family life

1 2 3 4 5

2. have good physical working conditions (good ventilation and lighting, adequate work space, etc.)

1 2 3 4 5

3. have a good working relationship with your direct superior

1 2 3 4 5

4. have security of employment

1 2 3 4 5

5. work with people who cooperate well with one another

1 2 3 4 5

6. be consulted by your direct superior in his/her decisions

1 2 3 4 5

7. have an opportunity for advancement to higher level jobs

1 2 3 4 5

8. have an element of variety and adventure in the job

1 2 3 4 5

In your private life, how important is each of the following to you? (please circle one answer in each line across):

9. Personal steadiness and stability 1 2 3 4 5

10. Thrift 1 2 3 4 5

11. Persistence (perseverance) 1 2 3 4 5

12. Respect for tradition 1 2 3 4 5

INTERNATIONAL QUESTIONNAIRE (VSM 94)

13. How often do you feel nervous or tense at work?

1. never
2. seldom
3. sometimes
4. usually
5. always

14. How frequently, in your experience, are subordinates afraid to express

22. How old are you?

1. Under 20
2. 20-24
3. 25-29
4. 30-34
5. 35-39
6. 40-49
7. 50-59
8. 60 or over

INTERNATIONAL QUESTIONNAIRE (VSM 94)

23. How many years of formal school education (or their equivalent) did you complete (starting with primary school)?

1. 10 years or less
2. 11 years
3. 12 years
4. 13 years
5. 14 years
6. 15 years
7. 16 years
8. 17 years
9. 18 years or over

24. If you have or have had a paid job, what kind of job is it / was it?

1. No paid job (includes full-time students)
2. Unskilled or semi-skilled manual worker
3. Generally trained office worker or secretary
4. Vocationally trained craftsperson, technician, informatician, nurse, artist or equivalent
5. Academically trained professional or equivalent (but not a manager of people)
6. Manager of one or more subordinates (non-managers)
7. Manager of one or more managers

25. What is your nationality?

26. What was your nationality at birth (if different)?

Thank you very much for your cooperation!

Appendix B – Case Study

URL: <http://www.cioinsight.com/article2/0.1397.1212661.00.asp>

Last Accessed: 15/01/2008

August 8, 2003

Security 2003: Is Your Security Comfort Level Too High?
2003

Is Your Security Comfort Level Too High?

90.2% of CIOs say their domestic security measures are adequate
82.2 % of IT executives say their companies have an information security policy
28.4% of companies do not have a security officer
43.7% of IT executives expect their companies' security spending to increase
40.2% have cancelled plans to increase security due to user complaints

The vast majority of the more than 600 IT executives polled for this month's CIO Insight survey on security management say their domestic security preparations in the face of threats to their information systems are adequate. And yet more than 40 percent expect their spending on IT security to rise.

Meanwhile, the results of the survey suggest that the level of concern with security generally has dropped since Sept. 11—the percentage of companies with information security and business continuity plans has not increased since a year ago, for instance—it's still hovering at about 80 percent and 75 percent, respectively.

Yet IT executives still complain about the difficulty of educating employees about security and enforcing security policy. What's wrong with this picture? It may simply be that most companies have adequately prepared for the security threats that matter to them most, and that the additional spending will bring little added value. Or it may be that they are living in a dream world, and that the threat is real, and really increasing. Sadly, only time will tell.

Why Is It So Difficult to Educate or Enforce Compliance?

Does this sound familiar? Ian Fleming is his company's top IT executive and a passionate believer in strict security procedures. But convincing other executives at his company, an electric utility that he requested not be named, has been a struggle. On several occasions, Fleming says, he's been chastised by other executives for insisting they follow simple security procedures such as changing their passwords. And in December, Fleming found himself arguing with the CEO, who insisted on choosing a permanent password for himself. While the CEO now supports the security policy, says Fleming, "most managers in the utility industry see security as an obstacle to performing everyday business."

Judging by the results of our latest survey, Fleming has plenty of company both inside and outside his industry. Less than 10 percent of IT executives feel their companies' security is less than adequate. But ask them about enforcing security policy and educating employees about security, and the level of confidence drops considerably. Thirty-four percent feel they are doing a less than excellent job of enforcing their security policies, while 45 percent miss the mark when it comes to education.

Given the attention directed to computer viruses, hackers and terrorism, why is managing security so tough? No surprise here; according to the IT executives we spoke with, user resistance and denial are at the root of the problem. No one has a sure-fire solution. Instead, they count on practices that seem to, or they hope will, work somewhat better than others.

Users regard security policies as an inconvenience, even a nuisance. "Security makes it harder for people to use the infrastructure we have built," says Vijay Sharma, a vice president of relationship management at Sodexo USA, a food and facilities-management company. Until people begin to doubt the integrity of the data or the systems, users think security "is more or less an annoyance," he says. That leads employees, and even managers, to ignore policies and known risks.

IT executives also say they often run into a "can't happen here" or "can't happen to me" attitude. Employees and managers may feel their industry isn't likely to be a target for hackers. Others think they know enough about computers to safely disregard company policies, so they download software off the Web, install their own programs or even change the configuration of their computers in order to speed them up—leaving themselves and their networks open to viruses, intruders and system crashes. Randy Kjell, VP of IT of Knowles Electronics Inc., a manufacturer in Itasca, Ill., sees this attitude among his company's engineers. "They think other people are the problem, not them. They think their stuff won't hurt the company, so even after educating them, the user community does not agree that these are truly high security issues."

How do CIOs overcome these attitudes? One way is to make the system—not users—do the work of maintaining security, so that education and enforcement become moot. Executives like Kjell are putting intrusion detection, spam managers and virus filters on the network or firewall, out of sight and reach. And while Fleming is willing to isolate the engineering department if employees there engage in risky behavior, other CIOs simply show users safe ways to do what they want to do without endangering the company's network. "I've said no, but here's a way to get the results you want that minimizes our risk," says George Brenckle, CIO of the University of Pennsylvania Health System in Philadelphia.

The CIOs we spoke to use newsletters, intranets, e-mails and meetings to educate employees, but none works, they admit, as well as talking with employees after they've damaged their computers. "They tend to learn their lesson when their machines don't work for a period of time," says Kjell. Otherwise, it isn't the technique that matters as much as how often they contact employees about security, and finding a way that means something to users. Sharma, an ex-college food service director, stresses the importance of meeting with employees and explaining the need for security on their terms. For example, at a meeting with a team working on an e-business project, Sharma discussed recent articles about security problems. "If companies like Microsoft can be compromised, what makes you think we can't be?" he asked. The team then discussed how Sodexo's business would be hurt if security problems caused customers to lose trust in the company.

The only potential breakthrough anyone cited is in the healthcare industry, where new HIPAA regulations require companies to train and test staff on privacy and security policies. In January, Penn Health's Brenckle began to use Web-based training to teach, test, record results and provide yearly refresher courses on HIPAA privacy. His staff is now putting together a similar program for security.

Still, the only way to solve the security problem is to make it a non-issue by designing systems so that they place no demands on users. Until that goal is reached, the problem of user resistance, deeply rooted in human nature, will remain a tough nut to crack.

<http://www.cioinsight.com/article2/0,1397,1212661,00.asp>

ALTERED VERSION



Case Study adapter from CIO-Insight: Strategies for Business Leaders¹



Is Your Security Comfort Level Too High? ²

The vast majority of the more than 600 IT executives surveyed in August 2003, by a CIO Insight survey on security management say their domestic security preparations in the face of threats to their information systems are adequate. And yet more than 40 percent expect their spending on IT security to rise. This survey revealed the following statistics:

- 90.2% of CIOs say their domestic security measures are adequate;
- 82.2 % of IT executives say their companies have an information security policy;
- 28.4% of companies do not have a security officer;
- 43.7% of IT executives expect their companies' security spending to increase;
- 40.2% have cancelled plans to increase security due to user complaints.

Furthermore, the results of the survey suggest that the level of concern with security generally has dropped since Sept. 11, that is, the percentage of companies with information security and business continuity plans has not increased since a year ago, for instance—it's still hovering at about 80 percent and 75 percent, respectively.

Yet IT executives still complain about the difficulty of educating employees about security and enforcing security policy. What's wrong with this picture? It may simply be that most companies have adequately prepared for the security threats that matter to them most, and that the additional spending will bring little added value. Or it may be that they are living in a dream world, and that the threat is real, and really increasing. Sadly, only time will tell.

Why Is It So Difficult to Educate or Enforce Compliance?

Ian Fleming is his company's top IT executive and a passionate believer in strict security procedures. But convincing other executives at his company, an electric utility that he requested not be named, has been a struggle. On several occasions, Fleming says, he's been chastised by other executives for insisting they follow simple security procedures such as changing their passwords. And in December, Fleming found himself arguing with the CEO, who insisted on choosing a permanent password for himself. While the CEO now supports the security policy,

² CIO-Insight is a business web resource available at <http://www.cioinsight.com>

says Fleming, most middle “managers in the utility industry see security as an obstacle to performing everyday business.”

Judging by the results of CIO’s latest survey, Fleming is not alone both inside and outside his industry. Less than 10 percent of IT executives feel their companies' security is less than adequate. But ask them about enforcing security policy and educating employees about security and the level of confidence drops considerably. Thirty-four percent feel they are doing a less than excellent job of enforcing their security policies, while 45 percent miss the mark when it comes to education.

The question that emerges from these statistics and Ian Fleming’s experience is surprising. Given the attention directed to computer viruses, hackers and terrorism, why is so difficult to convince employees that managing security is necessary. It seems that user resistance and denial are the root of the problem. Users regard security policies as an inconvenience, even as nuisance. "Security makes it harder for people to use the infrastructure we have built," says Vijay Sharma, a vice president of relationship management at Sodexo USA, a food and facilities-management company. Until people begin to doubt the integrity of the data or the systems, users think security "is more or less an annoyance," he says. That leads employees, and even managers, to ignore policies and known risks.

IT executives also say they often run into a "can't happen here" or "can't happen to me" attitude. Employees and managers may feel their industry isn't likely to be a target for hackers. Others think they know enough about computers to safely disregard company policies, so they download software off the Web, install their own programs or even change the configuration of their computers in order to speed them up—leaving themselves and their networks open to viruses, intruders and system crashes. Randy Kjell, VP of IT of Knowles Electronics Inc., a manufacturer in Itasca, Ill., sees this attitude among his company's engineers. "They think other people are the problem, not them. They think their stuff won't hurt the company, so even after educating them, the user community does not agree that these are truly high security issues."

How can managers overcome these attitudes? One way is to make the system— not users—do the work of maintaining security, so that education and enforcement become moot. Executives like Kjell are putting intrusion detection, spam managers and virus filters on the network or firewall, out of sight and reach. And while Fleming is willing to isolate the engineering department if employees there engage in risky behaviour, other managers simply show users safe ways to do what they want to do without endangering the company's network. "I've said no, but here's a way to get the results you want that minimizes our risk," says George Brenckle, CIO of the University of Pennsylvania Health System in Philadelphia.



Activity Briefing

Purpose

You are a group of multinational consultants that was gathered to try and respond to a number of questions raised by managers on organisational security comfort levels. Since you are a diverse group of multi-cultural and multi-national consultants you are asked to interact from your own country via synchronous text based CMC embedded in LMS Claroline.

Task

The following questions were raised by managers and require an agreed response from your group of consultants:

1. Should security be insured top-down or bottom-up?

That is, should security policies be decided and dictatorially imposed on organisations and employees?

or

Should employees be allowed to adopt these policies at their convenience?

2. Who should be responsible for security?

The company – by embedding security policies in their infrastructure and imposing it on users (e.g. automatic detection of spam email, automatic barring access to user groups such as yahoo or skype).

or

The individual – by allowing freedom of access and reception of email and relying on responsible use of technologies and infrastructures.

3. It has been often verified in surveys that man are more adventures and take more risks when using web-based technology. Women are less technically oriented, but more cautious.

Should there be different policies for male and female employees?

or

Should there be the same policies for both genders?

4. Should companies invest highly in a very uncertain security policies, of very uncertain results due to the continuous evolution of viruses, spywares and general malwares? or Should managers run risks and save costs by not implementing security policies?

Process and Deliverable

You are asked to meet as a group in the chatroom provided by Claroline and discuss the above questions. You are asked to actively get involved with your group, express your opinions and listen to others.

The discussion should take no more than one hour. At the end of the discussion, please agree on a response to each of the 4 questions. Agree a text of no more than 100 words per response. Nominate a group representative and email it immediately to the researcher at gkatalos@seerc.org



<http://www.cioinsight.com/article2/0,1397,1212661,00.asp>

THANK YOU FOR YOUR PARTICIPATION

Appendix C – Interview Guide

Interview Guide

Directed to 2nd & 3rd year students of CITY Liberal Studies

1. Interview Introduction

This PhD project tries to identify if culture affects collaboration, cooperation, and communication of students inside multicultural groups in an eLearning activity. In order to achieve that I would be keen to have a discussion with you about your experiences and views concerning the eLearning activity. This interview will be in the form of informal discussion and will last between thirty minutes and an hour.

With your permission, I would like to audio-record the discussion so that I may transcribe it later for analysis. I would like to assure you that your anonymity throughout of this PhD project and anything you say at the discussion will not be attributed to you in name in anything I may publish. No one other than me and my supervisors will have access to the recording or to the transcript of the recording. No information about you will be revealed to anyone not involved in this research.

In the discussion I will ask you to discuss about your experiences of the use of the specific eLearning activity and how you view the flow of the communication between the other members of the team. Therefore, I would like to spend this time with you discussing your experiences and/or problems you may have encountered.

I would like this interview to be an open discussion with you about your view of the problems that you may have encountered. There are no set answers to any of the questions that I may ask you. All I am seeking is an opportunity to discuss with you about your personal views and opinion. In doing this I have some general questions I would like to talk with you, but I hope these will lead to a more open discussion which can be guided by your interests and by what you say about your experience with the eLearning activity.

1.0 Discussion on preferences

1.1 Could we start by discussing the purpose that will make you take an online course?

Possible prompts:

- Intrinsically motivated (gain knowledge & skills);
- Externally motivated (finish a degree or further career);
- Would you take an online course if it was not set as obligatory by the course requirements.

2.0 In our experiment how did you find your experience with this activity?

2.1 Have you faced any technical difficulties

2.2 How you would characterise yourself: a) as proficient user with Technologies (video-conferencing, chat-based tools) b) as proficient user with English?

2.3 Did you feel lost while interacting with other online members? (Feelings when cannot keep up with conversation)

2.4 Rules of activities? (Students may feel lost when they are speaking online and may wonder if there are any rules and rituals for them to follow)

2.5 'Lurkers' or 'sleepers'

Possible prompts:

- Do you feel you had inhibition about expressing yourself because:
 - Discussion was public
 - Not able to take back the posts
 - Not able to react immediately to the what others have said (need for rescanning of the conversation log)
- Do you feel that you needed more time to think and articulate your ideas?

3.0 Link with Cultural Dimensions

3.1 Do you feel that you were left out from the conversation? (**individualism**/collectivism)

Prompts:

- If yes could you tell me why this happened?
 - Could not type so fast;
 - Need more time to reflect on the answer;
 - Group did not give so much time in discussing an answer.
- Do you believe that each member contributes equal?

3.2 Do you feel that the group operated as a team? (individualism/**collectivism**)

Prompts:

- If yes,

3.3 Do you feel that a member of the group monopolised the conversation? (**Masculinity**/Femininity)

Prompts:

- If yes
 - Could you tell me who?
 - Group of members?
- If no,
 - To which member of the group you feel you were agreeing mostly?

- Do you think that the conversation allowed to other group members to impose their opinion?
 - Yes, can you identify an individual member or a group of members?
 - No

3.4 Do you think that you contributed to the conversation as much as you wanted?
(Masculinity/**Femininity**)

Prompts:

- Yes
 - Do you think your contributions were useful?
- No
 - Monopolise of conversation by others?
 - Uncertain about what is discussed?
 - Time?

3.5 Did you respond or address the questions individually and in sequence? Or did you address them holistically? (UAI)

- If yes could you specify which questions do you refer to?
- If no do you believe that the questions
 - Structure?
 - Rules?
 - Objectives?

- What do you think with the way the group worked?

3.6 Would you have preferred that I impose a sequence to address the problem? (UAI)

- Structure?
- Rules?
- Objectives?

3.7 The discussion was not moderated. Were you happy with this? Would you have preferred a moderated discussion?

- If yes, could you specify if you preferred a moderator to
 - Keep clear rules of the conversation by organising turns?
 - Keep asking questions to lead the discussion?
- No

3.8 Did anybody in the group assumed the role of the moderator?

- If yes, were you happy with this?
- If no, would you have preferred a moderator me or a student?

3.9 Were you satisfied with the answers in each question?

- If no
 - Time to reflect?
 - Time to write?
 - Interrupted by others?
 - Time to negotiate?
- If yes, what was the thing that you liked?

3.10 In general terms, were you happy with the way the group has handled the task?

- If yes, what are the issues you like?
- If no, what would you preferred.

Appendix D – Critical Evaluation of HE in Greece

1. Introduction

This appendix focuses in discussing and describing the context of this PhD project, i.e. HE in Greece. More specifically, this appendix:

- Describes and discusses HE;
- Describes and discusses ICT usage and ICT infrastructure;
- Discusses the increasing numbers in multicultural students that will raise the need for accommodating them in the HE setting.

In order to describe and discuss the context of this research, PEST was used as a tool in order to analyse the educational setting in Greece from a Political, Economical, Social and Technological dimension.

Education as well as other institutions has passed through a number of changes over the past years and is still under a continue change due to globalisation, the emergence of the social economy and lifelong learning. Changes in education systems do not take place in a social vacuum. Education has always reflected the forces that shape society and will continue to reflect them (Jarvis et al. 2003). After all, teaching, learning, and good practice itself are all social processes. Nowadays the process of globalisation is a worldwide force that drives educational change. According to Jarvis et al. (2003) societal changes include globalisation, demography, work and the economy, privatisation, individualism, and commoditisation. These changes could not have left unaffected the Higher Education systems of the EU countries and especially the one of Greece. (Taugh 2004; Wachter 2004).

Greece being a country member of the European Union (EU) follows the general policies and guidelines that the EU sets. EU's main focus is the creation of a globally competitive European Higher Education and Research Area (ERA). The Maastricht Treaty on the European Union established provides an initial framework for the development and exchange of information and experiences between Higher Education institutions across the Union (Fredrikson 2003). However, there then was no provision

for a common educational policy or the harmonization of the different educational systems (Fredrikson 2003). In 2001, the Lisbon European Council established that there was a need to review and improve the quality and effectiveness of education in the EU, facilitate the access to all to the education system and open up European education to the wider world. This acknowledgement brought back to life an earlier initiative that had been losing impetus until then. In fact, earlier in 1998, Higher Education (HE) ministers from a subset of the European Union had started what today is known by the Bologna process in response to the Sorbonne Declaration. In sum, this process aimed facilitating a progressive convergence of the overall framework for degree provision across the Union through a common degree-level system. Most importantly, the process aimed at facilitating and enhancing student and teacher mobility and transparent recognition of courses and modules across the different educational systems. The noble aim was to develop a European area of HE supported by an underlying European cultural dimension, namely through the creation of integrated programmes of study.

In order to achieve this ERA the European Countries should focus on the internal EU student mobility between European countries and international student mobility and attraction. In order for the new era to be reached many countries are facing changes both in the pedagogical approaches and learning theories that govern their Higher Education Systems, and in the need for cultural inclusive HE to meet the students' mobility demands. To facilitate and foster such changes, the rapid adoption of learning technologies and appropriate pedagogies (constructivist paradigm, network learning, etc.) associated with these technologies is crucial. In order to define the problems that HE faces and provide possible solutions, it is of great importance to define and analyse the context in which we are operating, i.e. the Greek HE System.

In the following sections the general HE structure is presented and discussed.

2. General HE Structure

The environment and the general characteristics of the Higher Education (HE) system in Greece are mainly described by the article 16 of the Hellenic Constitution, which is legally effective since 1975. According to this article, HE is free for everyone and Higher Education Institutions (HEIs) are legal entities under public law, with full self-

administration under the supervision of the Ministry of Education (MoE). (Eurydice 2002, Eurydice 2005)

HE in Greece consists of two sectors, as specified by the law 2916, the University (panepistimia) and the Technological (TEI). (Eurydice 2002; Eurydice 2005) The University sector is comprised by twenty two (22) public universities (including the public School of Fine Arts and the Hellenic Open University (EAP) like the Technical Universities, the Agricultural University, the University of Economics and Business. The technological sector includes fourteen (14) Technological Educational Institutions and the School of Pedagogical and Technical Education. (Eurydice 2002; Eurydice 2005) The Higher Education System is controlled by the State through the Ministry of Education.

According to the law 1268/82 the administration of each university consists of three collective bodies that act according to the special legislation: The Senate, The Rector's Council, and The Rector. The organisation of each university is determined by a Presidential Decree or Ministerial Act. Moreover the Universities are divided in internal structures, as stated by the existing frame-law for the Greek Universities. These internal structures are: Institution/University, School, Faculty, Sector (department). The responsibility for setting up new academic structures or reorganising the existing ones belongs to the Ministry of Education. (Eurydice 2002; Eurydice 2005; Unesco 2004: p24).

Apart from Universities offering more theoretical and less practical knowledge, there exists the Technological sector offering more technical and less theoretical knowledge. The Technological sector of the higher education (TEI) follows the same division of bodies and internal structures, but being stronger influenced by the Ministry of Education and local bodies than universities. The administration of TEIs is done via the Technological Education Council (STE) comprised by the Minister of Education, TEI Presidents, and representatives from: involved Ministries, organisation, scientific bodies, productive classes, trade unions, local governments and the political parties of the parliament, and the Regional Technological Education Council (PSTE) chaired by the perfect or his/her representative and comprised of TEI Council and representatives from the local government, local social and productive classes and students (Eurydice

2002). These Councils are controlled by a special department of the MoE dealing solely with the Technological Educational Institutions.

Alternatively to Universities and Technological Education Institutions (TEI) as opportunities for education, there are offered other ways for education in the broader frame of the educational system. These alternative ways are either public, which are supervised by ministries other than the Ministry of Education (like Higher Ecclesiastic Schools, under the supervision of the Ministry of National Education and Religious Affairs, Merchant Marine Academies, under the supervision of the Ministry of Mercantile Marine, etc.), or private whose legal status and mode of operation belongs to an unclassified zone some of them are called “Liberal Studies Workshops” (EES), or Colleges or “Centres” preparing students for studies abroad. In 2000 they were 137 Liberal Studies Workshops, 32 Colleges and 56 Private Centres preparing students for studies abroad. (Unesco 2004: p24)

Therefore, the HE situation in Greece is complex, as incoherent policies towards private and public education exists as well as rigid structure and state’s control leading to bureaucracy inside the HE setting. These incoherent policies combined with the fact that HEIs are relying mainly in the State, have caused barriers and problems in creating eLearning policies and strategies that have in turn hindered the growth and implementation of eLearning solutions. Thus, as related to our PhD this obstruction of the growth and implementation of eLearning solutions may further delay the potential to see eLearning as a solution to the cultural accommodation problem.

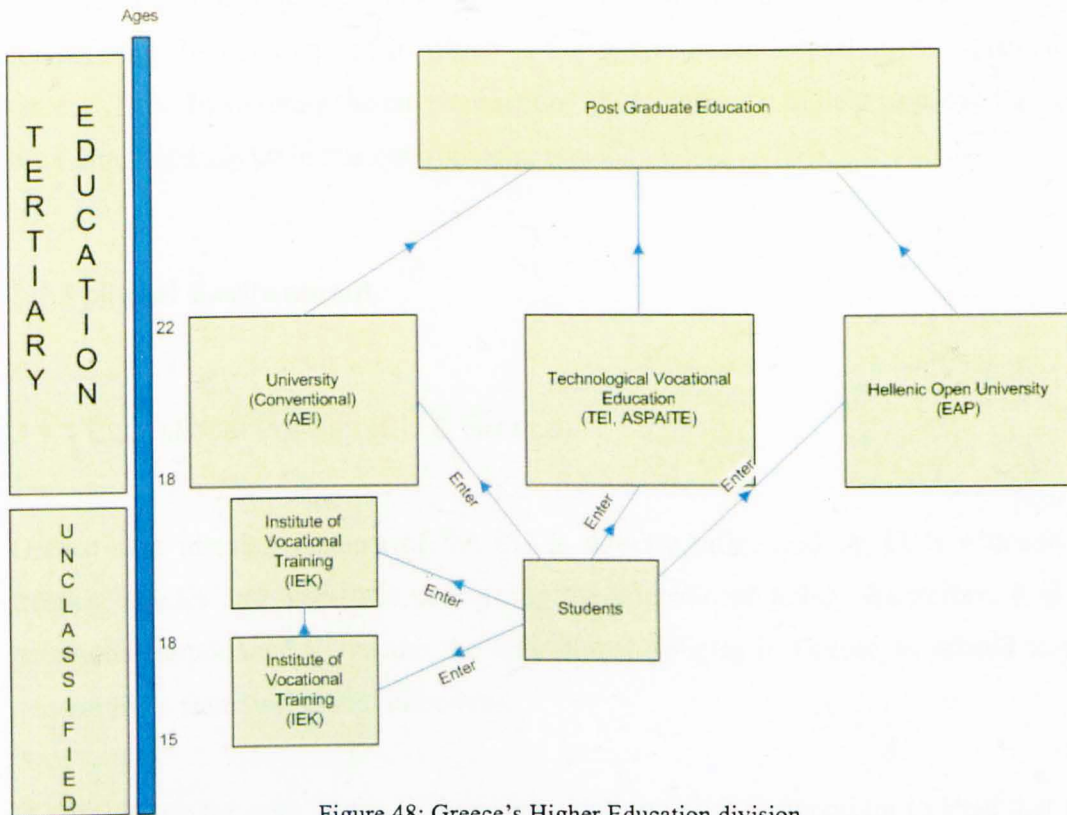


Figure 48: Greece's Higher Education division.

3. HE Analysis

In order to define the complex educational setting in Greece, it is of paramount importance to examine the general Political, Economical, Social and Technological situation in Greece. Thus, the model for analysing the HE situation that is used is PEST. PEST, or sometimes called PESTLE, PESTEL, PESTLIED, STEEPLE & SLEPT, is a tool which helps us understand the broad social context on which a particular macro-system is situated (MindTools unknown). PEST stands for:

- Political like Government type and stability, regulation and deregulation trends, social and employment legislation and others.
- Economic like unemployment and labour supply, impact of globalisation, likely impact of technological or other change in the economy.
- Socio-cultural like population growth rate, education and social mobility
- Technological like the impact of emerging technologies, Internet usage, reduction in communication costs and increased remote working.

Although PEST is a business model of analysis, it can be used in our case as a model for defining the environment in which the higher education setting is situated in Greece. Thus, by defining the environment of HE in Greece will help us prove the need for cultural inclusivity in this environment.

3.1 Political Environment

3.1.1 Educational Policies (EU & Greece)

Greece as a member country of the EU is directly influenced by EU's educational treaties, articles and directives concerning the educational policy. Therefore, it is of paramount importance to discuss the educational policies in Greece as related to the general EU's frameworks and directives.

In considering the core of the EU's educational policy, it is important to state that the EU's goal is to develop into a more profound economic and political union. In achieving this goal Member Countries have to adapt their educational policies in order to be harmonised with the EU's respective directives to reach a common Higher Education Area (ERA). In order to reach this ERA Member Countries have to consider issues like: student mobility between Member Countries and countries outside Europe, European Credit Transfer System (ECT) for the recognition of credits and degrees, common curricula and criteria for quality assessment.

The significance of educational policy in the EU has risen in recent strategies. Particularly, in the decision of the Lisbon Strategy that followed the Sorbonne-Bologna Process, education was made a significant factor in building a competitive and dynamic Europe (Wachter 2004, Taugh 2004). The Sorbonne-Bologna process is neither a treaty nor a directive. It constitutes a principle of 'soft law'. The objectives set by this process were aiming to make the European education more competitive with other education systems across the world. The deadline set in this process is 2010. The objectives set in the meeting as mentioned by Charlier and Croche. (2004:2) were:

- “Structuring of the studies in two cycles, the first of which is a 3years cycle that must allow “employability”;
- Reinforcement of the mobility of the students, graduates and teachers;
- Installation of a system of transferable credits (European Credit Transfer System – ECTS);
- Legibility and comparability of the diplomas;
- Evaluation of quality and promotion of the European dimension of the education”.

Considering the importance of the signatory countries, if a European country decided not to follow the agreements of Bologna, it would be left out. Everyone "is more or less morally forced to join the game" (Charlier and Croche 2004:11).

This importance of the educational policy was clearly visible in Information Society projects (Antonna 2005), e-Europe (Commission of the European Communities 2001) and related eLearning strategy for life-long learning (Commission of the European Communities 2002). Educational issues have also been linked more closely and openly to the EU’s economic and employment policies. For example the eLearning strategy is implemented in the Operational Programme ‘Information Society’ (OPIS 2001, OPIS 2004) and in the National Reform Programme for Growth and Jobs 2005-2008 (Ministry of Economy and Finance 2005).

Educational policies in Greece reinforced namely political socialisation and the formation of a strong national and religious identity rejecting cultural, religious and ethnic minorities until recently (Dimitrakopoulos 2004). This diversity that characterises the educational system and the Greek society in general can further be supported from the following quotation by Karakatsani (2000):

“National homogeneity is treated by the education system as a value. In such a context difference is negatively valued. The diversity that actually characterizes Greek society, as any other, including differences by social class, gender, ethnicity, religion and language and the discriminations that are often related to them, are, to a great extent, absent from the official curricula.”

This reinforcement of the national and religious identity in the educational policies can be caused by the need for survival efforts of the Greek nation to overcome a number of different political formations such as the great Empires (Roman, Byzantine and Ottoman) which succeeded each other in the region (Triandafyllidou et al. 1997).

3.1.2 State's role

The educational system is highly centralized. The Ministry of Education (MoE) formulates and implements education policy. The school curriculum is national and compulsory, while textbooks for all subjects are centrally printed and distributed gratis for all levels of education (Eurydice 2002, Eurydice 2005).

The MoE is the main centre for decision making and the formulation of educational policies and it controls most of the educational establishments in Greece. According to OECD (1995) the Ministry formulates education policies based on each administration's political will. The generated laws from these policies are then submitted to Parliament for debate, after which they become laws. The implementation of these Laws is the responsibility of the MoE. Through decrees, directives and circulars addressed to regional and local educational authorities, to the legal entities of public law (HEIs, TEIs, EAP) or the civil entities that the Ministry supervises (Unclassified Education), the MoE follow ups and intervenes if necessary to adjust or correct their implementation (OECD 1995, Eurydice 2002, Eurydice 2005) . Furthermore, the MoE decides on almost all the issues that concern teaching, personnel administration, and expenditure and general operation issues (Eurydice 2002, Eurydice 2005).

Therefore the State exercises major control of the Universities and the Technological sector because, as resulted from the previous description and further supported by the general HE structure, all decisions need ministerial approval. According to Saitis (1988) this major control is the effect of 'free' higher education and result in slow reaction to the problems that current HE in Greece faces.

3.1.3 Curriculum

As identified previously the State exercises major control on the curriculum at all levels of education. Apart from the State's direct influence on curriculum, the indirect involvement of the students in the internal bodies of the universities through their representatives is of particular importance.

The history of the student involvement in the university's bodies started from 1974 after the fall of the military regime having the aim of democratisation and 'catharsis' within universities (Pesmazoglu 1994). However the student movement is clearly influenced by party-dominated syndicalism. This argument is exemplified into the following quote by Pesmazoglu (1994)

Student representatives were pursuing favourable provisions such as securing the minimum possible number of pages to be examined and securing numerous exam periods each year, therefore including adaptation of the curriculum and teaching methods to these ends and forcing vulnerable teaching staff to grant a pass grade to those who failed exams.

Thus, the quality of the curriculum is degrading mainly by the influence of the student forces securing minimum number of pages and numerous exam periods and by the single text-book as described in the following quotation. According to the literature pedagogy is examined through the investigation of curriculum, subject matter, teaching strategies, learning outcomes, learning tasks/activities (Biggs 1999, Prosser & Trigwell 1999). Furthermore, curriculum development plays an integral part of pedagogy (Jarvis et al. 2003). In Greece the curriculum is based on the main pillar of the Greek educational system: the single textbook (usually the teacher's). This argument can further be supported by an extract from Pesmazoglu (1994):

Frequently according to testimonies, [actually from a questionnaire distributed by him] around 100 pages of badly written typed notes, with no bibliography and no citations does the job.

This bad habit has negative effect in the academic curriculum and the nature of the learning process. The result of this phenomenon is basic university libraries and minimal motivation to the student. Although some efforts have been done to overcome the single-text book problem, these efforts are rather new and time is needed for their

effects to be visible. One of the major efforts towards the lack of resources (textbooks) is the creation and joint cooperation of an online library HEAL that includes modern and up to date content from 22 Universities and 15 TEIs, the Cyprus University, 21 Research Centres, the Athens Academy, and the National Library of Greece (NTUA 1997). These actions can help the improvement of the curriculum by removing any obstacle or excuse that the teaching staff may find in applying closed curricula. Thus, education will move from its traditional role of having a closed curriculum – dividing learning rigidly into subjects, disciplines, knowledge and skills (Jarvis et al. 2003).

3.1.4 Policies for private education

Apart from the public higher education in Greece there exist although unofficially private higher educational institutions, cooperating with universities from Europe and United States through the franchising method (Del Castillo 2001). This is a paradox as in all the other European Countries belonging to EU the degrees generated by such universities are recognised in some cases as academic equal to the country's degrees and in other as working equivalent.

Recently there was an effort of the Hellenic Colleges Association that have succeeded in recognising the bachelors provided from the Hellenic Colleges as being working equivalent from the degrees provided by the public universities. This success was the effect of time-consuming processes and appeals to the EU. Currently the Greek government is forced to change its legislation to accommodate degree recognition procedures and appropriate evaluation bodies of the whole system.

This partial recognition of the private sector of the educational system combined with the development of a framework for establishing a national system for quality assurance in higher education (under consultation before the Greek parliament) will help resolve the main problem of education quality and curriculum degradation (Unesco 2005 p.3). Especially the recognition of the private education will help the healthy competition between private and public universities as until now there is no such competition (Del Castillo 2001). Moreover competition does not exist even in internal public university level, as universities do not need to compete with each other because of the high demand for education and the low places of entrance (Gouvias 1998). Therefore, the

need for internal improvement does not exist due to their educational monopoly. The concept of the educational monopoly raises some issues concerning the context of learning. In traditional educational institutions learning could be acquired only in these institutions excluding other forms of learning as not 'real' and universally accepting (Jarvis et al. 2003). But in the goals of EU for a development of a European Higher Education Area globally competitive such traditional education view is changing.

Therefore Greece's focus for improving quality standards is on educational reform. In other words the state needs to create competitive advantage for further investing in other forms of teaching and learning that will likely improve the educational quality of Greece. However amongst Greek public universities there is no competition because all the procedures are being driven from the state. As a result current formation of the system does not allow any investments in education because the state does not create the advancements or the needs for such change. A permutation to this kind of approach where public universities do not create the 'need' for direct investment in education is fundamental for the attainment of the current educational system. This improvement has to do primarily with the creation of competition, which will lead to meaningful investment. One possible solution for creating competition in Greek tertiary education could be the recognition of non-state universities bachelor degrees. Since non state universities have their own policies for educational development, state universities will be forced to follow the rigorous changes that non state universities apply otherwise will be deemed as inappropriate and uncompetitive institutions for teaching and learning. Subsequently competition will rise, and new mediums for enhancing education will be introduced. This increase will further aid Greece in capitalising and attracting students from the surrounding countries (SEE regions).

In summarising the Political environment in Greece, it is clear that State has a paternalistic role and influence in the HE setting, which increased the national and religious identities of the citizens. In relation to this PhD, we could argue that HE system with solutions like eLearning could reduce the problem of cultural exclusivity originated from the paternalistic role and influence of the State.

3.2 Economic Environment

3.2.1 Economic condition in Greece

Greece's economy traditionally was based on agriculture, Greece has had limited success in diversifying its economic base. However, by following the global social changes, industry has replaced agriculture as the leading source of income; agriculture accounts for slightly over 15% of the gross national product, while manufacturing accounts for some 20%.

Greece has a mixed capitalist economy with the public sector accounting for half of GDP and with per capita GDP 70% of the leading euro-zone economies. Tourism provides 15% of GDP. Immigrants make up nearly one-fifth of the work force, mainly in menial jobs. Greece is a major beneficiary of EU aid, equal to about 3.3% of GDP. The Greek economy grew by 4.7% in 2003 and by 4.2% in 2004 (Apostolopoulos 2006). This economic growth can further be supported by the Reform Programme for Growth and Jobs 2005-2008 that plans an increase in public spending on education to 5% in 2008 (Ministry of Economy and Finance 2005). It should be stated that the previous public spending on education was 2,93 for 1998 and 3,4 for 2002 (European Commission 2005). According to Ministry of Economy and Finance (2005) important initiatives have already been taken aiming at making the educational system flexible and coherent, improving quality and effectiveness through decentralisation, reduced bureaucracy and introduction of assessment schemes at all levels of education.

Therefore, the economic status of Greece suggest that although the state's educational spending is low, adequate measures have been taken that will lead to an increase in numbers as a result of general growing economy.

3.2.2 State's funding

HE in Greece is public, free for anyone, and provided by the State (Article 16 of the Greek Constitution). Therefore the main source of funding comes from the State. The State's financing of HE can take place in three parallel ways:

1. "Covering the needs of the universities for personnel salaries.

2. Covering the needs for functional expenses and is provided on a lump-sum basis.
3. Covering their capital needs and is provided on an earmarked basis (each university sets up its budget). The budget submitted by the universities has to be approved by the Ministry of Education and the Ministry of Economics in order for the third way of financing to happen.”

(Eurydice, 2002, Eurydice 2005, Unesco 2004: p24).

Apart from these direct ways of funding, State also funds indirectly HE through Research and Development (R&D) spending. According to the European Commission (2005) the R&D spending was 0,65 for 2004. The target that the Ministry of Economy and Finance (2005) sets for the period until 2010 is 1,5% of the GDP. This target will be accomplished through the currently running operational programme of the “Competitiveness” and “Information Society”, through the programme “PRAXE” and “PAVE” (Ministry of Education and Finance 2005).

Therefore universities and HEIs in Greece are financially dependent on the government’s financing as someone can expect as this is the result of a ‘free’ HE provided by the State. But universities and HEIs can fund themselves usually by citizens’ endowments and research cooperation with the public and private sector.

3.2.3 Self funding

Apart from the strict way of the state financing HEIs can use research funding from external providers or funding from industrial activities or for the supply of scientific or technological services to the public or private sector to accomplish their goals. There exist three types of external funding:

1. “External research activities provided to the public and private sectors. The university body responsible for this type of funding is the research committee organised in each university.
2. Management of the holdings of the University. The senate is responsible for controlling this business-type institution, which is external to the university.

3. External research institutes related with one or more of the universities' faculties. In this way the research can be systematised in the relevant fields of the labour market.”

(Eurydice, 2002, Eurydice 2005, Unesco 2004: p24)

It is evident therefore that Greece's current efforts to readjust the educational system for developing the educational potentials of higher education are based mainly on financial reinforcements. However, investments of the current technological infrastructure that could assist on enhancing education are still restricted and fragmented. In particular public universities still seems that there is no investment capital on educational technologies that could be viewed as a solution for supporting the immigrants that are entering Greece for their ongoing educational development. Therefore the argument is made that the exploitation of an innovative medium such as eLearning could support the various cultural differences within communities of learners.

In summary, we could argue that Greek economy is expanding and therefore an increase in the public expenditure on education is and will be made. These efforts can constitute the basis for the introduction of the eLearning, eGovernment and other such e-words that will help solve the country's cultural problems and especially those of the education (Dutta et al. 2004). As related to this PhD, the increased investment in education expenditure can make reality solutions like eLearning, which can in turn provide solution to the cultural accommodation problem.

3.3 Social environment

3.3.1 Demographics

Greece as many countries in Europe face the problem of low birth rates. According to data from the National Statistical Service of Greece (NSSG) as it is further argued in the follow up report of the UN (1999), the proportion of the elderly in the population rose from 15.2% in 1994 to 16.4% in 1997 while that of children dropped from 17.3% in 1994 to 16.0 in 1997. As it is further argued by UN (1999) there is a decline in the birth rate, since the average number of children per woman fell from 2.23 in 1980 to 1.39 in

1992 and 1.30 in 1996, accompanied by a corresponding rise in the age of the population. In 1996, for the first time, deaths (100,740) outnumbered births (100,718).

This problem does not affect HE entries because of the large numbers of immigrants coming especially from South-East European (SEE) countries as indicated in Table 20 (Baldwin-Edwards 2004). Greece accepts many immigrants coming mainly from Albania (434810), Bulgaria (33638), Romania (17791) and other SEE countries.

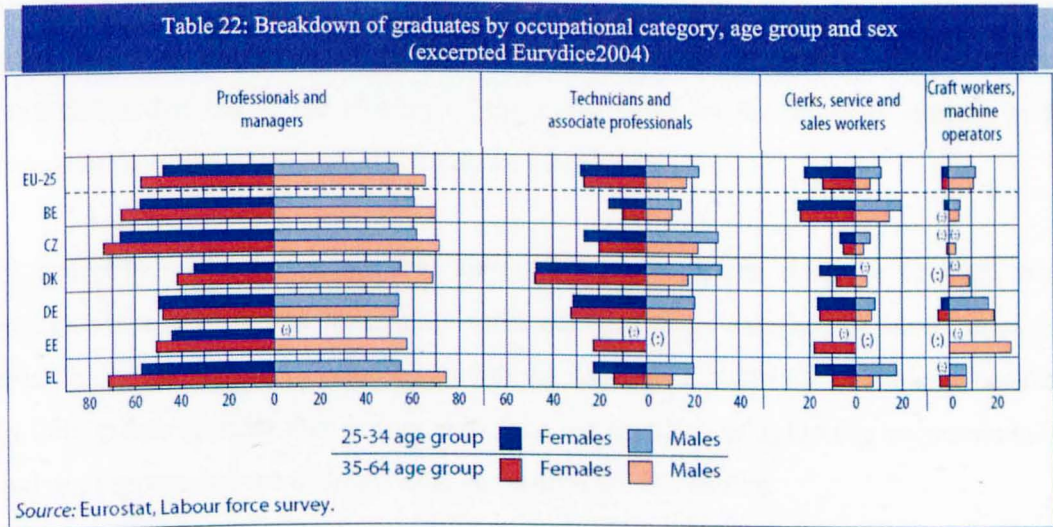
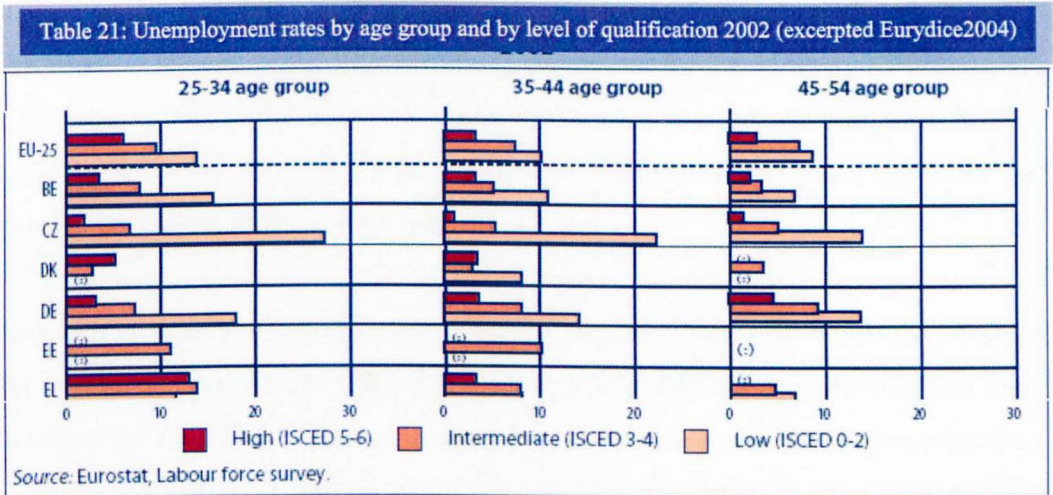
Therefore there is no drop in entrance numbers in higher education as it was initially expected from the numbers of low birth rates. This wave of immigrants entering Greece causes the need for culturally accommodating them in a society that reinforces strong national identities as analysed in section 3.1. This cultural accommodation raises the need for an inclusive Higher Education System without affecting the immigrants' cultural and social backgrounds (Bologna Process Newsletter 2005). A drawback that Greece will face is the uncontrolled immigration (Baldwin-Edwards 2004), which in case of Greece is a major problem that will affect the number of culturally diverse students seeking Higher Education.

Country Citizenship	of Alpha-2 Code	Total	Males	Females	Undeclared Sex
Europe	Total	586044	364478	165217	56349
European Union	EU25	524779	323127	148725	53377
25					
Old EU (Pre 2004)	EU15	953	458	495	0
Czech Republic	CZ	214	51	160	3
Estonia	EE	15	6	9	0
Lithuania	LT	86	9	74	3
Hungary	HU	134	28	101	5
Poland	PL	4302	1957	2092	253
Slovenia	SI	18	8	10	0
Slovak Republic	SI	162	32	126	4
Albania	AL	434810	290595	95696	48519
Bulgaria	BG	33638	11769	19872	1997
Romania	RO	17791	10296	6439	1056
Ukraine	UA	13665	2560	10655	450
China	CN	1517	922	529	66
India	IN	6832	6143	386	303
...

Table 20: Population by citizenship (excerpted from National Statistical Service of Greece) (NSSG, 2004).

3.3.2 Work/career attitudes

As shown in Table 21, in the 25-34-yearold age group, Greece has the highest unemployment rates of graduates within EU. Most importantly, the comparison between the unemployment rates of different educational levels for the same age group shows that Greece occupies one of the highest positions in the relative unemployment indicator of higher education graduates among EU countries as seen in Table 22. Both supply and demand sides are responsible for this exception (Liagouras et al.). That means that the graduates 25-34 years old are forced to work in jobs not related to their degree and only after 34 they work on a job related to their degree.



This mismatch between work and degree of study can further be supported by the over education phenomenon as described by Patrinos (1997). The State used universities in order to provide civil servants. Now, the dream for greek students and their families is

to acquire a job position in the public sector (Liagouras et al. 2003). This view still prevails nowadays where many parts of the civil sector is being privatised causing an increase in numbers about work and degree of study mismatch.

3.3.1 Plans of growth in HE (EU & Greece)

In Greece the plan for HE growth is mainly based on the application of the main goals identified by the EU in its meetings toward the European Higher Education ERA. This EU policies concern mainly programmes like Information Society projects (Antonna 2005), e-Europe (Commission of the European Communities 2001) and related eLearning strategy for life-long learning (Commission of the European Communities 2002) which are implemented through programmes like Operational Programme Information Society (OPIS) (2001, 2004) supervised by the Ministry of Education and Religious Affairs and National Reform Programme for Growth and Jobs 2005-2008 supervised by the Ministry of Economy and Finance. These plans of growth often involve the cooperation between ministries.

Greece tries to follow this HE growth plan by meeting in the last minute the “deadlines” set by these EU meetings (National Report 2005). For example Greece just met the deadline for the Quality Assurance and Evaluation of the Greek Higher Education in 2005 by introducing a framework which is under discussion in the Greek parliament (National Report 2005). This framework has not yet passed due to the social unrest that was caused by the conflict of the academics and the student of the educational institutions that led to the closing of the universities by the students leading to the cancellation of the exam period (Unknown 10/06/2006).

In summary, we could argue that although Greece reports decrease in birth rates, entrance numbers in HE have not decreased. The large entrance of immigrants can explain this stability in HE entrance numbers. As related to this PhD, this large numbers in immigrants indicate that Greece will face the problem of culturally accommodating and not suppressing the different cultures within the HE setting.

3.4 Technological environment

3.4.1 Technological profile of Greece

Greece is one of the most prominent of the EU25 countries concerning their technological infrastructures. The basic programs for implementing changes in Greece's technological infrastructure is the Operational Programme Information Society 2000 (OPIS 2000) supervised by the Ministry of Economy and Finance. As stated by Boucas (2005:12) quoting Constantelou (2001), the OPIS aims to achieve two main objectives over the period 2000-2006:

- “a) to provide better services to the citizen and improve the quality of life through the deployment of ICTs in public administration, health and welfare, transport and the environment;
- b) to promote development and build human potential through actions to increase competitiveness and employment and to put into place a suitable educational system”

In order to accomplish the previous aims the following four lines of action have been set (Constantelou 2001:20):

- “Education and Culture (17%)
- Citizens and Quality of Life (37%)
- The Digital Economy and Employment (24%)
- Communications (19%)”

In the beginning of the OPIS Program in 2000, Greece was significantly behind the EU average in the indicators of ICT infrastructure and use, with the exception of fixed and mobile telephones as shown in the following table.

Indicator	Greece	EU-15
#telephone lines per 100 inhabitants	54	54
#cellular mobile subscriptions per 100 inhabitants	56	63
#personal computers per 100 inhabitants	7.1	28
#Internet users per 100 inhabitants	9.5	24.6

#personal computers per 100 teachers*	61	73.4
#personal computers per 100 students*	8	11

Table 23: Measures of ICT diffusion, Greece and EU-15 (excerpted from Eurostat 2003).

By examining the indicators for the period 2001- 2004 as shown in Table 24 it can be observed that Greece shows an increase in computer, mobile and Internet usage indicating the successful influence of the actions as they were set by OPIS. On the other hand, the indicators show a decrease for the period 2003-2004 concerning the household intentions to buy a PC and connect to the Internet. This decrease in the intentionality of the household have led the indicator of the households having Internet access to increase slowly and be far behind the EU-15 indicator (50%)

Indicator	2001	2002	2003	2004
<i>% population over 15 using PC</i>	20.8	32.5	27.1	25.9
<i>% population over 15 using Internet</i>	10.6	17.2	19.9	19.7
<i>% population over 15 having email address</i>	6.5	11.1	12.4	12.5
<i>% population over 15 having personal Internet account</i>	5.7	7.8	9.1	9.5
<i>% households having PC</i>	23.3	27.2	30.5	29.9
<i>% households having Internet access</i>	-	12.4	15.2	17.1
<i>% households intending to buy PC in next 6 months</i>	6	7.5	7.5	4.9
<i>% households intending to connect to Internet in next 6 months</i>	1.1	7.6	8.6	4.3
<i>% population having mobile phone</i>	49.5	58.5	64.7	69.4

Table 24: Evolution of Basic Information Society indicator in Greece (excerpted from EDET 2004)

Therefore, there is a clear indication that Greece has the general ICT infrastructure to accommodate solutions like eLearning for the multiculturalism problem. This can be further supported by an increase in the percentages of the households having Internet access and households having a PC.

3.4.2 ICT and Internet usage in Greece

By further examining the indicators from the National Survey for New Technologies and the Information Society (EDET 2004), it could be deducted that clear differences exist in the Greek population concerning their age, gender, and geographical location.

More specifically, from the total participants in the survey men had higher percentages than women. Concerning the computer usage the percentage of men was (for 2001: 23.8%, for 2002: 30%, for 2003: 30,4% and for 2004: 30.8%) on average 28.75. The

respective percentage for the women was (for 2001: 18.1%, for 2002: 21.1%, for 2003: 21.9% and for 2004: 24.1%) on average 21.3. The same pattern follows up in the Internet usage indicator.

Moreover, the computer and Internet usage indicators exhibit the highest increase in the age group of 15-17 demonstrating an increase from 44.2% to 53.5% for the period 2002-2003. On the other hand the age group of 55-65 demonstrated a small decrease (for 2001: 6.7%, for 2002: 4.9%, for 2003: 5.2% and for 2004: 5.9%).

Concerning the education backgrounds of the Internet users, the survey showed that depending on the individual's education the Internet usage increased more rapidly. More specifically, for the participants with the lowest education the Internet usage indicator was 0.5% for 2001 reaching 0.9% in 2004. On the other hand for the participants with a higher degree, the indicator for 2001 was 32.1% reaching 50.9% in 2004.

Although in general the indicators show an increase, the level of penetration of computer Internet usage between the rural and urban areas differ significantly: from 4.5%(2001) to 10.9(2004) for the rural areas and 14.6%(2001) to 25.7%(2004) for the urban areas.

From the above data it can be concluded that:

- Computer and Internet illiteracy will not be a problem for the next generation;
- Penetration of Internet and Computers increases in both rural and urban areas;
- Individuals with higher degree use ICT and Internet compared to those with lower qualifications.

Therefore, Greece shows a great advancement in ICT and Internet usage both in. This indicates that Greece can accommodate solutions that are based on ICT and Internet in order to provide solutions to the problem of the HE's cultural exclusivity. This statement can further be supported with the implementation of an eLearning platform from the Open University in Greece that will be discussed in the following section.

3.4.3 Technology in Education the example of EAP

In Greece there are two providers of distance education: the Hellenic Open University (EAP), and the Greek University Network (GUNet). The major provider for distance learning and adult education in Greece is the Hellenic Open University (EAP). Today 123 courses in 18 curricula are offered to 10.368 undergraduate students and 6430 postgraduate students. EAP employs a hybrid knowledge transmission system using mainly conventional educational processes like printed books, labs, etc. and the Internet for tutoring and pedagogical support through email (Antonna, 2005).

Moreover EAP is implementing a new platform for enhancing distance education based on the enterprise portal idea for the communication inside an educational institution (Karaiskakis, 2006). Such an implementation of ICT in educational is further supported by movements such as the Greek University Network that tries to employ an eLearning platform that will enhance the traditional teaching practices in order to meet the demanding changes happening at a European level. Such systems the eClass of the Aristoteleio university of Thessaloniki (AUPh), eClass at Athens University of Economics and Business, eClass at Kapodistriako University of Athens and others.

Therefore in this case there is a clear movement of the HE system in implementing eLearning platforms for providing better support to the students. These implementations can be used to provide solutions to the cultural exclusivity phenomenon that current HE faces.

In relation to this PhD, the Technological section of the PEST analysis indicated that Greek HE moves towards eLearning implementation that could potentially provide solutions to the cultural accommodation problem.

4. Summary of PEST Analysis

Higher education in Greece is free for everyone and Higher Education Institutions are legal entities under public law, with full self-administration under the supervision of the Ministry of Education. Apart from the 'free' public education, there exists private HE

whose legal status and mode of operation belongs to an unclassified zone causing problems with the recognition processes for the provided degrees.

Greece's educational policies are highly influenced by EU and especially by the Sorbonne-Bologna Process that raises issues like student mobility between Member Countries and countries outside Europe, European Credit Transfer System (ECTS) for the recognition of credits and degrees, common curricula and criteria for quality assessment. Moreover the educational policies help to the reinforcement of strong national and religious identities rejecting cultural, religious and ethnic minorities. Therefore a reform is needed in order to provide cultural inclusion for the ethnic minorities inside a HE system of strong national identities, but this is an extreme solution. A more moderate solution would be the utilisation of eLearning in order to provide the means for accommodating phenomena as multiculturalism and thus attracting students from the other SEE countries. Therefore, eLearning can help Greece to play a dominant role concerning HE in the SEE region.

The educational system is highly centralised and controlled by the Ministry of Education affecting decisions on subjects and curricula. Moreover the involvement of the students' representatives in internal university bodies and the main pillar of the Greek HE system: the single textbook have led to degradation of the quality of the curriculum making it anachronistic and closed to needs of the society today – cultural accommodation of migrants backgrounds. Thus, solutions like eLearning can offer, through a variety of electronic content, a way out of the phenomenon of curriculum degradation.

Greece has a mixed capitalist economy with the public sector accounting for half of GDP and with per capita GDP 70% of the leading euro-zone economies. Greece has experienced a slight economic growth and thus an increase in public spending on education was noted from 2,93 for 1998 to 3,4 for 2002 and further investment on Greece's ICT infrastructure have been taken to increase the public spending to 5 in 2010. Thus, Greek economy is expanding and therefore an increase in the public expenditure on education is and will be made. These efforts can constitute the basis for the introduction of the eLearning, eGovernment and other such e-words that will help solve the country's cultural problems and especially those of the education (Dutta et al.

2004). But one fifth of the working force in Greece are immigrants indicating an immigration explosion.

Moreover, Greece faces the problem of low birth rates. This problem seems not to affect the entry numbers in HE. This is caused mainly by the large numbers of immigrants coming to Greece originated mainly from South East European countries like Albania, Bulgaria and others. This recent immigration explosion combined with the strong national and religious identity of Greeks has led to the social exclusion of the immigrant cultures in primary and secondary schools, and tertiary education. Therefore, there is the need to include this cultural diversity in the curriculum in all level of education. Such initiatives have started in cultural inclusion in school curriculum but higher education still requires a lot of changes and mainly in altering the single textbook for each course that is badly written and outdated.

Last but not least, Greece has made large steps towards the development of the country's ICT infrastructure. This development has also affected the PC and Internet usage of both the individuals and the households in general. Although this increase is substantial, still progress is needed so as to reach the average numbers of EU-25 for these areas. This development and increase of ICT infrastructure and usage has made the implementation of the eLearning platforms more realisable than in the past. A current example is the new eLearning platform, which is in the last stages of the development, provided by the EAP to enhance distance education. Therefore, eLearning can provide better support to the students and help in the accommodating the different cultural and learning styles of the various immigrants entering HEIs.

5. Conclusions

In this Appendix it was discussed Greece's environment from the political, economic, social and technological dimension. More specifically, from the PEST analysis it is proved that:

- Greece faces the problem of accommodating the diversity of cultures in the education setting. The problems that cause this cultural exclusivity seem to stem primarily from the paternalistic role and influence of the State which increased

the national and religious identities of the citizens, central but incoherent educational policies leading to the degradation of the curriculum quality and the not recognition of the private education, and poor educational funding and spending;

- Greece's reports indicated a general increase on the ICT usage. Moreover, the previous investments have led to an increase concerning the ICT infrastructure making possible the implementation and support of solutions like eLearning;
- Greece has encountered an immigration explosion, which combined with the strong national and religious identity of Greeks has led to the social exclusion of the immigrant cultures in primary and secondary schools, and tertiary education. In addition, the attraction of students coming from SEE to study in Greece can further add and augment the problem of cultural exclusion that Greece faces.

In sum it is argued that, Greece, by being until recently the only EU member in SEE, attracts students from SEE. Moreover, with the developments of ICT infrastructure solutions like eLearning can help Greece to increase its role of attracting more and more students from SEE. On the other hand, Greece faces the problem of culturally accommodated students from SEE primarily originated from the paternalistic role and influence of the State in HEIs.

Therefore, this thesis proposes that a moderate solution that will help the problem of the cultural exclusivity is the solution of eLearning. The major question that needed to be answered after the identification of HE in Greece, is in which ways eLearning can be seen as a solution in the cultural exclusivity problem that Greek HE and generally Greek society faces.

Appendix E – Claroline Description and Screenshots

The claroline system (<http://www.claroline.net>), as its developers state, it uses technology as a support for pedagogy. On this premise, information is transformed into knowledge as it is shown in the following diagram.

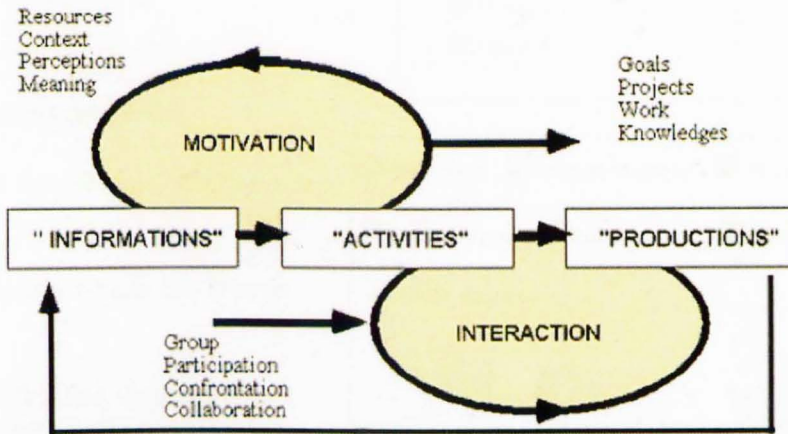


Figure 49. Claroline Process
(excerpted from <http://www.claroline.net>)

According to this diagram the set of tools provided by claroline can be separated accordingly:

- Information: In this section all the material that is going to be used for the course is included. The respective tool is "Documents and Tools". With the usage of this tool the teacher or students can upload documents, create directories and subdirectories, and build their own html pages creating hyperlinks between materials.
- Activities: The activities in claroline can be separated into two subcategories according to the scope of their usage:
 - Motivation: The tools that are included in this subcategory are: announcements, agenda, course description, exercises, and assignments.
 - Interaction: including chat (synchronous communication), forums (asynchronous communication), and wikis (collaborative document creation).
- Production: The tools that are available in this category are: learning path and groups.

Manage documents and links

- Publishing documents and files accessible to the users
- Creating directories and sub-directories to gather files
- Creating hyperlinks and building your own HTML pages

Manage documents and links


Name
images
Newspapers_articles
Atmospheric_layers.htm
Climate_changes_wikipedia.doc
Example_document.pdf
Greenpeace.url
Kyoto_Protocol.url
nicolas_hulot_1.jpg

Create Online Exercises

- Creating exercises with a list of questions
- Elaborating different types of questions
- Tracking the results of the users

Question 1

Effects



Some effects on both
What are these effects

More glacier

Hurricanes

More anima

Less anima

Multiple choice (Unique answer)

Develop Learning Path

- Creating complete sequences of learning activities
- Putting together modules that consist of documents, exercises or imported SCORM contents
- Stimulating the students to read documents
- Filling exercises and following a learning activity

Greenhouse gases

View : Fullscreen | In frames

- Climate_changes_wikipedia... ✓
- Kyoto_Protocol.url ✓
- Greenpeace.url ✓
- Greenhouse gases**
- nicolas_hulot_1.jpg

Previous | Next

[Back to list](#)

Coordinating Group Work

Manage documents and links

- Publishing documents and files accessible to the users
- Creating directories and sub-directories to gather files
- Creating hyperlinks and building your own HTML pages

Manage documents and links

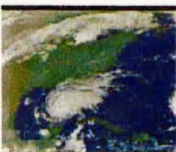
Name
images
Newspapers_articles
Atmospheric_layers.htm
Climate_changes_wikipedia.doc
Example_document.pdf
Greenpeace.url
Kyoto_Protocol.url
nicolas_hulot_1.jpg

Create Online Exercises

- Creating exercises with a list of questions
- Elaborating different types of questions
- Tracking the results of the users

Question 1

Effects



Some effects on both t...
What are these effects?

More glaciers

Hurricanes

More animals

Less animals

Multiple choice (Unique answer)

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- Creating complete sequences of learning activities
- Putting together modules that consist of documents, exercises or imported SCORM contents
- Stimulating the students to read documents
- Filling exercises and following a learning activity

Greenhouse gases

View : Fullscreen | In frames

- Climate_changes_wikipedia... ✓
- Kyoto_Protocol.url ✓
- Greenpeace.url ✓
- Greenhouse gases** Question
- nicolas_hulot_1.jpg Athm...

Previous | Next

Back to list

Coordinating Group Work

Groups

Create new group(s) | Delete all groups | ▼

Main Group Settings


Organise: Agenda and Announcements

courses

- Attaching to an event a link to other tools of the course or to an existing resource
- Writing an announcement which will be displayed on the course homepage
- Sending an announcement by e-mail to a user or a group of users

Supervise: Users and Statistics

- Following the access to the platform
- Tracking the tools use
- Supervising the progression of the users

Today |  Add an event |  Clear up event list

Newest first




January 2007


Wednesday January 24, 2007 02:55 PM -- No

March 2007

 Monday March 05, 2007 08:30 AM

Breakfast with N. Hulot

 Saturday March 10, 2007 09:30 AM Lasti

► **Statistics**

Statistics of course : GW

[Show all] [Show none]

+ Users

- **Course access** [Close]

Total number of connection to this course : 15

Last 31 days : 15

Last 7 days : 15

This day : 2

- Florence Ortman (Last access : 2007-01-24 15:00)

Traffic Details

+ Access to tools

Appendix F – Experiment’s Information Sheet

Dear Participant,

You are invited to take part in a research project as part of my Ph.D. thesis titled “Problems of communication, collaboration and cooperation in multicultural groups engaged in eLearning through synchronous text-based communication”. I would like to thank you for volunteering to participate to this experiment. In order to understand better your involvement in the experiment, please take time to read the following information. Do not hesitate to contact me if there is anything that is not clear or you would like more information on a specific area.

Aims and Objectives of research project:

This PhD project tries to identify if culture affects collaboration, cooperation, and communication of students inside multicultural groups in an eLearning activity. The influences of culture have been studied and acknowledged in the design of the courses. But it seems that no research can be found on the role of the culture in relation to the eLearning environments. This research intends to investigate this gap.

Data Collection – What is required from your part

This research involves the following stages of data collection:

- Questionnaires
- Actual Experiment: Case study and synchronous communication
- One-to-one Interview

At the first stage you will have to fill a questionnaire. This process should take you the minimum time is the questions used are multiple choice ones. Approximately it would take you 20 minutes from your time to complete it.

At the second, stage you will participate in a group discussion with other group members by using an electronic synchronous facility as the only mean of

communication. At this stage all group members will be given a case study general enough titled: Is Your Security Comfort Level Too High?, and a set of question for you to discuss with the other group members. The whole activity should not take more than one hour.

Finally, there will be an one-to-one interview with the researcher. The interview may only last 30 to 40 minutes. The whole interview will be taped. After each interview the tape recording will be transcribed into word document and anonymised.

It is of paramount importance to inform you at this stage that any information identifying the participant will remain confidential at any stage of the research. Instead of your real name each participant taking part in the research is given a foo name like Greek 1, Bulgarian 1 or Student 1. Moreover, if you do not feel comfortable in any stage you could leave at any point.

Confidentiality of your participation

All the information collected from you will be kept strictly confidential. You will not be able to be identified in any reports or publications. Collected data will be properly and legally used in this research only.

The ethic review administration of this project:

The ethic insurance in this project has been evaluated and approved by the University of Sheffield via a strict ethic review procedure. Moreover, the Department of Information Studies at the University of Sheffield and the University's Ethics Committee are monitoring the ethical practices through out the entire research process.

If something goes wrong:

If there is something that you are not entirely comfortable with or you perceive as difficult during the interview, you can either contact me (Email: gkatakalos@seerc.org) or you can also complaint to the principal investigator Dr. Panayiotis Ketikidis (Email: ketikidis@city.academic.gr)

Last but not least, I would like to forward my kindest regard and immense appreciation to you for taking part in the project.

Yours sincerely

George Katakalos

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