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The role of electronic cross-cultural competence among students in an international university environment

The continuously increasing impact of electronic communication is creating a corresponding increase in the need for people to develop specific electronic communication skills and competence. This is especially true when it comes to the role of electronic interactions in institutions of higher education; the role of electronic communications in facilitating and accommodating an intensification of multifaceted systems of interactions in institutions of higher education, and the need to effectively manage the increased diversity challenge that has resulted from the internationalization of higher education. This article argues that although there has been much research on the role of intercultural communications and increased competence in preparing students of institutions of higher education to manage the diversity challenges of the 21st century there is little or no research on factors that play a role in electronic communications competence. This article fills that gap by undertaking a comprehensive analysis of the role that ICT plays in student adjustment in cross-cultural learning environments.

According to Edward Hall cultures can be classified as of low or high context. The current study aims to investigate how one's cultural background can influence his/her effectiveness and interest in electronic communication. A study of 107 students majoring in business administration and international relations was carried out in an international university at the beginning of 2016. The results of the study show that there exists a strong variation among students with different cultural backgrounds in respect of their cross-cultural communication competences. Representatives of high context culture are more likely to rely on electronic communication systems to help them with their adaptation and in facilitating interactions in their new cross-cultural environment when compared to low-context respondents.

Keywords: cross-cultural communication, cross-cultural competences, electronic cross-communication, low-context and high-context, higher education.

1. Introduction

The process of globalization has a strong impact on the educational environment which is especially evident in the extent of the ethnic diversity of the students. However, the internationalization of higher education also influences the “what and how” of the learning process and the effectiveness of educational services. From the standpoint of the social and political economy changes of our time even a small country like Estonia has become more and more attractive for foreign students. The variety of geographical locations where students to Estonia come from covers over 50 different countries around the world. Thereby it is obvious that cultural related issues that affect the process of the internationalization of higher educational institutions are essential aspects of academic discussion and research.

Cross-cultural competence and its components are important for aiding, accommodating and facilitating the cross-cultural communications between students from different cultures, beliefs, and religions. They also help students build new intercultural communication skills and create new types of social relations dynamics. Thomas (2003: 143) claims that inter-cultural competence is evident in the ability to recognize, respect, value and productively use cultural conditions in perceiving, judging, feeling, and acting with the aim of creating mutual adaptation, tolerance of incompatibilities and a development towards synergistic forms of cooperation, living together and effective orientation patterns with respect to interpreting and sharing the world. The terms ‘intercultural’ and ‘cross-cultural’ will be used in the current article interchangeably.

In the era of advanced technologies cross-cultural communication in an ethnically diverse educational environment is widely influenced by the usage of ICT (i.e. electronic devices, digitalization and computers). On the one hand ICT significantly contributes to expanding and intensifying communication while, on the other hand, the use of electronic devices is steadily replacing face-to-face communication and thereby creating new forms of ambiguity, misunderstanding, and dissatisfaction in interactions. The latter challenge to cross-cultural communication is an important issue that concerns the effectiveness of the institution in managing its diversity challenge.

Taking into consideration the fact that the number of enrolled students with culturally diverse backgrounds at Tallinn University of Technology is continuously increasing the authors of this article have endeavored to analyze factors that relate to, impact, or improve electronic communication competences and usage of the people from different cultural backgrounds. Thus, this research is intended to determine the extent to which cross-cultural competence can be regarded as an integral part of successful communication and if the development of electronic cross-cultural competence facilitates communication in general between different cultures.

In order to investigate how one’s cultural background can influence his/her effectiveness in electronic communication the first research question was formulated.

RQ1. Does cultural background influence effectiveness, reliance on, or extent of usage of electronic communication?

In order to discover if people from different cultural backgrounds consider electronic communication competence’ as a playing a part in successful communication the second research question was formulated.

RQ2. Is there a difference in the need that people from different cultural backgrounds have for electronic communication in order to facilitate and accommodate successful communication?

This article proceeds with section two, explaining the theoretical base and novelty of the research. Section three points out the methodological assumptions. Section four is devoted to the analysis of the research results and section five consists of discussion and conclusions.

2. Theoretical Framework

Intercultural communications – as a field of academic research and study – is generally considered to have been founded by Edward Hall (see: *The Silent Language*, 1959 and *The Hidden Dimension*, 1966 [1990]). This section of the article indicates why Hall's work continues to be a viable theoretical framework for analyzing the role of culture in communications. That is to say that this section of the article explains why Hall's foundational conceptualization of communication patterns between different cultures is effective when applied to contemporary modes of communication. However, since the time of Hall's initial works on intercultural communication information communication technology (ICT) and electronic communications have had an enormous impact that have revolutionized human communication patterns. Thus, this section of the article explains the theoretical connection between Hall and recent attempts to analyze the impact of electronic intercultural communication patterns, the role of electronic communications in accommodating intercultural relations, and its effectiveness as a means for enhancing intercultural communication competence. Special emphasis will be placed on the role of electronic communications in facilitating interactions between the various segments of an institution of higher education.

Hall recognized that communication was the primary factor that initially prompted humanity to shape culture, communication continued to play a role in initiating and advancing civilization, and now electronic communications play a significant role in advancing civilization to the global level. That is to say that Hall proposed that communication not only has ontological and social psychological significance but is also a primary means through which humanity attempts to increase beneficial interactions. In fact Hall pointed out that communication is the force by which members of a society have the ability to co-create their social reality – by means of what nowadays is called Constructivist processes – so that pursuits for individual self-interest are compliant with the necessity of establishing the common good. He subsequently summarized that advances in communication technology extends humanity's ability to shape reality on ever larger scales while at the same time increases the probability of conflict if this extension is not matched by adequate strategies for accommodating intercultural interactions (Hall, 1990: 1–15). In other words he implied that “Increasing involvements with people in all parts of the world, and the mixing of subcultures within our own country” increases the likelihood of clashes between cultural systems (Hall, 1990: x). Hall pointed out that difficulties in intercultural communication occur because “We are not only almost totally ignorant of what is expected in other countries, we are equally ignorant of what we are communicating to other people by our own normal behavior” (Hall, 1959: 12–14).

Hall proposed that there is a need for intercultural communications research to analyze the factors that lie beyond the surface of intercultural interactions (e. g. his famous iceberg theory of culture). In other words Hall argued that because of the influence of cultural factors in international communication transactions the form, structure, and medium – in addition to the content – are all important aspects of creating shared understanding, factors

that play a part in how information is effectively transmitted, and in terms of intercultural relations they play an important role in the effectiveness and appropriateness of the communication attempt (Hall, 1990: 182–184). He was most concerned about the difference in communication patterns between High Context (e.g. greater reliance on implicit cues and non-verbal language) and Low Context cultures (e.g. cultures that tend to rely on or expect explicit information in messages). He stressed that the difference includes matters related to time (polychronic and monochronic cultures), and proximity.

Hall's theory of intercultural communication developed along two paths. The first were those who built on and elaborated on his explanation of the role of cultural dynamics in successful international interactions as well as the role of cultural dynamics in intercultural conflict: Hofstede (1997) emphasized that there are five significant dimensions to intercultural communications; Lewis (1996) emphasized that the notion of time applies to how agents organize intercultural relations – in terms of whether or not a culture is linear, multi-linear, or reactionary, which plays a significant role in intercultural relations; Trompenaars (1997) who in 1997 was ranked as one of the top five influential thinkers living; and Ting-Toomey (1999) who emphasized the significance of values, whether or not a culture is higher context or low context, time, and competence of in intercultural communications, avoiding conflict, and in enhancing intercultural communications competence. This line of research and studies of intercultural communications is the one that has been most popularized thus the one that most people reference in studies of and when doing research on intercultural communications. However, in this line of the study and research on intercultural communications there is very little reference to the impact of ICT and the significance of electronic intercultural communication competence. In that regard this article will point to a second line of the study and research on intercultural communications (based on Hall's foundational framework) that has stressed the significance of the impact of electronic media; the relationship between electronic media and the intensification of electronic international interactions, a tremendous increase in recognizing the need to be more effective in managing the diversity challenge, and subsequently recognition of the need to analyze the impact of electronic communications on interactions within institutions of higher education.

Thus, this article argues that Hall's foundational theoretical and conceptual framework influenced a line of studies and research on the role of electronic communications in intercultural relations that can be traced through the works of The Chicago School of Mass Communications, Harold Adams Innis, Marshall McLuhan, recent studies on the impact of new media on intercultural communication patterns, and the impact of electronic media on accommodating intercultural communications (i.e. research on the role of electronic media in aiding individuals in their intercultural adaptations/adjustments). That is to say that this section of the article will stress that the foundational theoretical and conceptual views on communication provided insight into the potential that electronic communications play in progressive social development and improving social relations (with a special emphasis on the implications regarding global electronic communications, the role of communication technologies and mass media in nudging civilization on to the global level, global social formation, and on international relations) (Dewey, 1938 [1997]: 20–28; also see Innis, 1986: 7–8).

Hall's initial theory was that communication is a means by which humanity, cultures, and larger social, political, and economic systems extend themselves in an effort to better manage interactions and to replicate the aspects of their system that they believe will increase their effectiveness in managing various confrontations in and with the environment

(Hall, 25–40; also see: McLuhan, 1964, 5: 35–40 & 83–92). The potential for human cultural, social-economic, and political extensions to have progressive beneficial outcomes – as civilization progresses onto the global level – was first picked-up on by researchers of the Chicago School of Mass Communications. Howard Innis, as a result of his affiliation with the University of Chicago, as a PhD student and later during the early years of his teaching experience, advanced research into the impact that technological advancements in communication were having on human conceptions of space (e.g. electronic communications were compressing time and space plus increasingly transcending state borders (Innis, 1986: 7–8).

As a result of being influenced by Innis and having direct correspondence with Edward Hall Marshall McLuhan made significant contributions to a theoretical framework for the role of electronic communications in intercultural relations. McLuhan agreed with Innis and Hall that advances in communications technology continuously played a major role in shaping social existence however he emphasized the influence of mass media in shaping global social existence. In fact, he coined the term “global village” to describe the extent of interconnectedness and interdependence that characterizes contemporary intercultural relations (McLuhan, 1964, 5: 35–40 & 83–92). Contrary to Innis’ doubts that electronic communication would decentralize power in a way that has a liberating effect McLuhan proclaimed that due to the fact that communications technologies are shaping “The scale and form of human association and action [we are] rapidly approaching the final phase of the extensions of [civilization] – the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society” (McLuhan, 1994: 3 & 9).

McLuhan understood that the medium is the message – meaning that he picked-up on Innis’s concern that advances in electronic communications demand research on the impact of the medium on human relations and social reality. He stressed that unless the advances in communication technology were matched by increased understanding of the concepts and principles related to intercultural competence the intensification of intercultural interactions would inevitably create conflict. Indeed, as McLuhan recognized, advances in communication technology do seem to extend the material interest of powerful special interest groups to the global level. However, he believed that it also carries along with this power the potential to transform the notion of self-interest due to the realization that the contours of individual being are interconnected with the ultimate concerns of all of humanity (McLuhan, 1994: 5–6). But to put McLuhan’s viewpoint into a perspective that reflects Hall’s influence one must understand what McLuhan meant by his phrase “the medium is the message.” With this phrase McLuhan indicated that embedded messages are not only latent with content but also carry along with the content mediums, structures, and systems that are shaping the environmental and social reality in ways that is prescribed by forces committed to assuring that civilization continues to advance its material aims. In other words, as McLuhan pointed out, one might think that the message is the content but in fact the technologies and communication media themselves have a formative power that shapes global social reality and international political economy – which within itself should be a focus of research (McLuhan, 1964: 13 & 21). However, McLuhan also felt that comprehensive research on the relationship between advances in information communication technology and intercultural communications would contribute to understanding the principles and concepts involved in increasing electronic intercultural communications competence and that the consciousness raising power of the knowledge generated and disseminated by

electronic communications would spark the realization that “We have become irrevocably involved with, and responsible for, each other” (McLuhan, 1967: 24).

McLuhan’s notion that electronic communications is creating a global village represents the culmination of a line of study and research that can be traced back to Edward Hall. McLuhan’s claim coincides with assertions that globalization is increasing interdependence, the diversity challenge, intensifying intercultural interactions, and increasing the demand for intercultural competence. However, in addition, recently there have been indications that technological age advancements in information communication technology are creating globally connected networks and structures that show evidence of having special communication competence needs. This phenomenon is drawing the attention of intercultural communications scholars who recognize that it reflects an interface between the two lines of study and research on intercultural communications that proceed from Hall.

Thus, “In light of the profound transformations of today’s social reality global educators recognize that learning to think and act as world citizens is no longer a matter of choice; it is a necessity and a moral imperative. Understanding and manifesting the full spectrum of global citizenship characteristics will be a primary prerequisite for leading full and productive lives” (Galinova et al., 2015: 17). As a result global educators have realized that in order to better prepare youth for the inevitable intensification of the diversity challenge institutions of higher education must become places where intercultural competence is practiced and increased, where a better understanding of various cultural traditions and beliefs can be developed, and where future youth can learn fundamental skills for becoming responsible citizens of the world (Tuiskel et al., 2015: 92).

Research on how to adapt to the demands brought about by the intensification of diversity in global institutions of higher education (thus increasing the need for strategies for improving intercultural communications competence) suggests that these competences improve by increasing *structural diversity* (increasing the number of students from diverse backgrounds), increasing *interactional diversity* (facilitating the interaction of students from diverse backgrounds), and *content knowledge* (meaningful engagement that includes exchanges in views) (Gurin, 1999: 332–333). Communications is the key to facilitating the interaction of these diverse groups of students and helping them learn how to interact in a way that enhances personal growth and development, increases the appeal of the institution to other international students, and contributes to meeting the goal of preparing global citizens that are competent in intercultural communication (Tuiskel et al., 2015: 92). However, there is very little – if any – research on electronic intercultural communications competence and its role in preparing professionals for the technological age. This article/research fills that gap.

3. Methodology

In order to operationalize the theoretical claims this research will measure the correlation between cultural and electronic communication usage in order to address the following research questions:

RQ1. Does cultural background influence effectiveness, reliance on, or extent of usage of electronic communication?

RQ2. Is there a difference in the need that people from different cultural backgrounds have for electronic communication in order to facilitate and accommodate successful communication?

The following steps were carried out the measure the extent to which people from various cultural backgrounds rely on electronic communications to aid their adjustment to a new cultural setting.

3.1. Operationalization of research questions for research instrument

As mentioned above according to Thomas (2003: 143) inter-cultural competence is expressed as the ability to recognize, value, and use cultural conditions in perceiving, judging, feeling and acting with the aim of creating mutual adaptation with respect to interpreting and sharing the world. Also, at the same time cross-cultural competence refers to the knowledge, skills, and affect/motivation that enable individuals to adapt effectively in cross-cultural environments (Hammer, 1987). Based on these two definitions the authors transformed this set of available concepts (see Table 1) into certain measurement variables, presented in the form of 11 questions (Q1, Q5-Q14). In addition, in order to address the extent to which the cross-cultural environment (e.g. an international university) influences one's electronic cross-cultural usage and competences, another 3 variables were included (Q2-Q4) and operationalized using the respondent's self-assessment scales in a similar way. See Table 1.

Table 1

Operationalization of overall cross-cultural competences and electronic cross-cultural competences

Motivation/knowledge/skill	Author(s)	Measurement parameter in the study	Q. No.
Openness to novelty	Ting-Toomey & Kurogi, 1998	International university environment contributes to cc competence	Q1
Variable expressing respondent's vision related to ICT for personal CCC	Added by the authors of this article	ICT contributes to cc communication skills	Q2
Variable expressing respondent's vision related to CCC for ECC	Added by the authors of this article	CC competence influences electronic cc competence development	Q3
Variable estimating the role of ICT in respondent's study process	Added by the authors of this article	ICT contributes study results	Q4
Openness to others	Kealey, 1996	International environment increases interaction with other cultures	Q5
Ability to adapt communication	Gudykunst, 1993	ICT is not the only way of communication	Q6
Multiple vision	Ting-Toomey & Kurogi, 1998	Tolerance about other cultures	Q7
Works to eliminate biases, prejudice, and discrimination	Sue, 2001	Active in protecting others when offended	Q8

Deep understanding and knowledge of culture (including contexts, role, and impact of culture and others' worldviews)	Deardorff, 2006	Tolerance in respect of age, gender or family in other cultures	Q9
Ability to adapt communication	Gudykunst, 1993	Tolerance about others with different language skills	Q10
Language proficiency	Hammer, Wiseman, Rasmussen, & Brusckke, 1998	Confidence about personal language skills	Q11
Knowledge of more than one perspective	Gudykunst, 1993	Respect of other cultures having different origins	Q12
Cultural understanding	Griffith & Harvey, 2000	Avoidance of stereotypic approach in respect of others	Q13
Ability to understand others	Abe & Wiseman, 1983	Respect of others having different habits as groups	Q14

3.2. The study

To answer the research questions presented above and for operationalization purposes 14 sentences were given to the respondents for self-assessment in a form of web-based questionnaire (see Appendix 1). The responses to each question had to be given on a 5-point scales where '1' denoted minimal and '5' maximum agreement. Also the respondent's gender, age, level of study, nationality and 'culture the person identified him or herself with' were asked. The two latter questions were open-ended and were manually coded afterwards by the researchers as a variable that contained 2 values (1 – low context; 2 – high context).

The sample of the study consisted of students whose age varied from 18–36 years (mean 24.30 years and s.d. 3.93 years), 40% were females and 60% were males and 47% were studying at the bachelor level and 53% were master level. Among the students there were 57% of those who were evaluated as representing a low-context culture and 43% were classified as representing a high-context culture. The latter division was created by a case-by-case classification analysis of one's 'country' and 'culture'. Altogether 27 countries were named representing all the continents except Australia and 44 'cultures' were worded containing examples of nationality, tribe, ethnicity, religion, linguistic and other cultural features.

4. Analysis

4.1. Bayesian analysis

Bayesian dependency analysis (Myllymäki et al., 2002) was carried out to determine and verify the consistency and co-variation of the variables used. The dependency model placed the context (low vs. high) into the central position, i. e. the context has the explanatory role for the questioned students and their values in regard to cross-cultural competences which were presented in the questionnaire (see Fig. 1). Low vs high context group differences per each question are also given in Table 3 (see appendix).

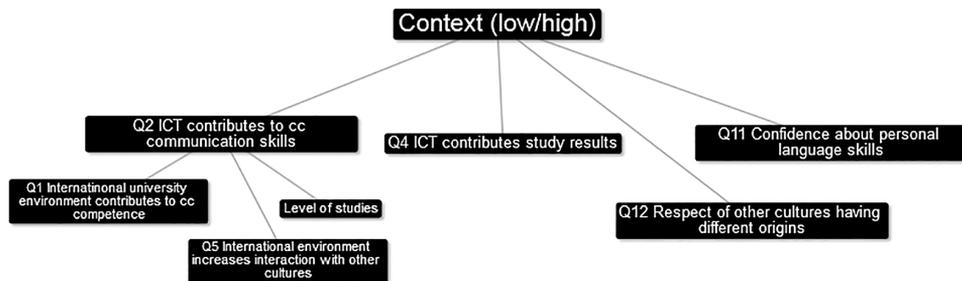


Figure 1

Within the presented model (that consists of 8 variables) the arcs show that the extent to which one considers that his/her cross-cultural competences have been improving (Q1) he/she also realizes that this supports his/her belief that use of ICT has supported his/her skill development in cross-cultural communication (Q2). The understanding that ICT supports cross-cultural communication is also based on the belief that this occurs due to particular intercultural contexts (Q5) and masters students are more likely to believe that ICT has an important role in one's cross-cultural development when compared to bachelor students (i. e. there is a clear differentiation between the BA and MA Levels). At the same time Figure 1 demonstrates that there is amongst the students of high context cultures positive perceptions about the role of ICT in cross-cultural communication: (Q2), the role of ICT in positively influencing their study results (Q4), and their overall confidence in their English skills (Q11), accompanied with the broader acknowledgment of the validity of believes other than one's own (Q12), exceeded expectations in respect to the anticipated skills and qualities of low-context students. One possible explanation can be that those who have travelled and moved to study in a low-context countries face several communication barriers that have been already struggled to overcome; while those who represent a low context culture (and thereby continuously interact in a culturally familiar environment) have not been pressed by a need to explore and look for new means of communication as the new circumstances have not been so challenging for them. Overall, the current part of our analysis shows that there are differences among low and high context cultures when assessing the role of ICT in improving their cross-cultural competencies.

In order to answer the second research question and more profoundly learn about the needs for improving cross-cultural competence the researchers ran a Bayesian classification analysis for variable Q3 which suggested that improvement in one's overall cross-cultural

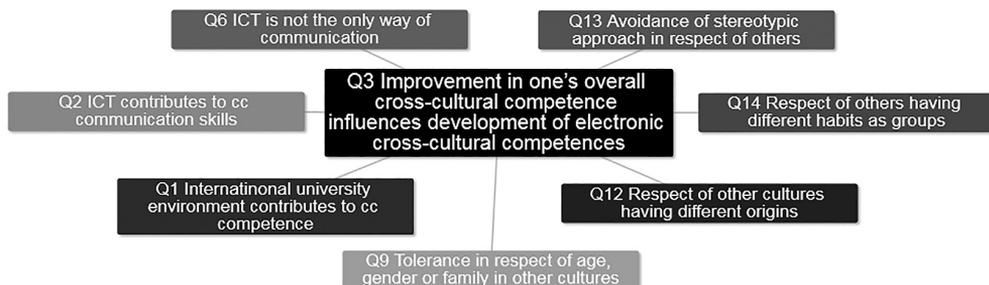


Figure 2

competence influences development of electronic cross-cultural competences as well. Figure 2 shows that this assumption is related to and supported by 7 other variables in spite of the fact that none of the independent variables – like ‘cultural context’ (low vs. high), ‘gender’, or ‘level of studies’ – were included by a Bayesian algorithm into this model.

The analysis shows that there is a list of variables that support the hypothesis that overall electronic cross-cultural competence complements the established notion of intercultural communications competence (Q3). These variables include ‘overall improvement of intercultural competence’ (Q1), ‘the use of ICT’ (Q2), ‘understanding that there is a need to use some alternative communication resources – on some occasions or in some context’ (Q6), ‘understanding the role of elders and traditional family’ (Q9), ‘there are other believes other than my own’ (Q12), ‘facts have to verified before deciding on person or group’ (Q13) and that ‘people of other cultures should support each other more as a group’ (Q14). This model thereby explains that those who expect that overall cross-cultural development influences electronic cross-cultural competence, they also see at the same time that there exist alternatives to electronic communication, but the analysis shows that these believes seem to be related to more traditional way of life (e.g. being attentive to family and group obligations while respecting other groups they interact with).

4.2. Cluster analysis

The next stage of analysis that was performed consisted of cluster analysis based on 14 variables. K means cluster method was applied in order to identify relatively homogeneous groups of cases based on selected variables. After a couple of attempts the best clustering result was achieved when the respondents were divided into two clusters. The members of cluster 1 always had higher cluster centers when compared to cluster 2. (See more in Appendix 2 Table 4.) Thereby to distinguish these clusters by their meaning these were by the authors conditionally labeled as ‘liberal’ and ‘traditional’ within the current study. After trying to find the most common members of each cluster by their gender, level of study and belongingness to high or low context culture, the authors recognized that ‘liberal’ cluster members consisted first of all of male master students of high context culture while the traditional cluster consisted of male bachelor students of low context culture. See the distribution of these variables in the two clusters in Table 2.

Table 2

Typical members of ‘liberal’ and ‘traditional’ clusters (%)

Variable	‘Liberal’		‘Traditional’	
	Male	Female	Male	Female
<i>Gender</i>	54	46	70	30
<i>Level of study</i>	Bachelor	Master	Bachelor	Master
	39	61	61	39
<i>Cultural context</i>	Low	High	Low	High
	37	63	80	20

4.3. Results

The resulting Bayesian classification model demonstrates that first of all the background of a student (how context vs low context) plays a significant role in the student's communication pattern.

Also, the results of the cluster analysis show that in international university environment that is located in a low context country, there seem to be males who tend largely to dominate in both clusters ('liberal' and 'traditional') when assessed by their self-assessed expressions related to cross-cultural competences. Still 'liberal' – 'traditional' division is much clearer when in respect students' level. 'Liberal' – cluster has more master level students showing that "academic maturity" leads to much more tolerant behavior in cross-cultural interactions while bachelor students remain largely in traditional circles. Interestingly there exists even stronger division when liberal-traditional axis is contrasted with the cultural context variable that was constructed by the authors according to country and culture categorizations which were proposed by Hall. Among 'liberals' there is almost 2/3 of high context culture representatives and among 'traditionals' 4/5 of those who have low-context culture as their closest.

5. Discussion and Conclusions

The increased internationalization in the 21st century global political economy business and the increased diversity in society in general creates a demand for professionals who are cross-culturally competent, who can be defined as those who have a broadened perspective that is reflected by (a) positive attitudes toward other cultures (i. e., lack of ethnocentrism); and (b) the ability to adapt to new cultural contexts – meaning having 'cultural intelligence' (Reichard et al, 2015, 462). Our study shows that the students from some very distant countries are often cross-culturally competent and also feel more strongly that ICT has an important role for one's cross-cultural development in general. At the same time low-context "locals" while moving and interacting in the familiar environment of their homeland do not have such a push that makes them perceive developments in electronic communication as an inevitable key for success. On the one hand, these results are somehow unexpected when high context culture students seem to express more liberal attitudes toward communication and low context one's are more traditional. On the other hand the explanation can be that this could be expected as people in a new cultural contexts (and situation) other than the one they are most familiar with can be expected to behave differently than in their original environment. The researcher's class associations with the HC students provides evidence that they, for example, find that the variety of teaching methods in their new study environment is motivating and makes them happier. Also, they have admitted to enjoying the variety in the background of the teachers/professors. They admit that the existence of variety makes them more relaxed and for sake of the current study this can be used as an argument to explain the openness HC students in communicating with their other international classmates, in expressing their readiness to use and apply their intercultural communication skills, and develop their competences. In return these students will probably convey positive messages about the university and in this way invite others from their countries to join international universi-

ties. These students of high context cultures have admitted that they feel as an international group though they differ in background. The authors' hypothesis concerning this point is that the perception of a common 'international group' works as a substitute for their original collectivistic cultural bindings and raises their knowledge and skills in both overall and electronic cultural competence.

In regards to the first research question the answer is positive as throughout the Bayesian and cluster analysis there is a strong evidence that cultural background as a factor influencing the way one expresses and prioritizes his/her electronic cross-cultural competences. In terms of the answer to the second research question we can say, based on the study data, that representatives of high context culture evaluate these electronic competences much more in comparison to students from low context cultures.

The limitations of these study is the facts that the study was carried out only in one low-context country and in one university. Also the study should be repeated in a context where low context students have moved to study in a culture other than one reflecting their low context cultural background. Most probably this kind of study would provide additional knowledge to the field by confirming the proposition that despite their original cultural background people will behave differently in new and different environments and this will demand from them developments of new (e.g. electronic cross-cultural) competences.

6. Summary and Contribution to Future Research

Edward Hall – and subsequent research inspired by him – signaled the prospects that there will be an increase in the significance of electronic communications thus the need to increase electronic intercultural communication competence. In this respect Hall stated that it is not enough to focus on studying the effectiveness of adequate and appropriate content when engaged in intercultural interactions. He stressed that in addition to content communication between cultures can be enhanced by paying more attention to the mediums used to communicate. In addition Hall claimed that increasing competence and decreasing conflict involves understanding how much the communication between people is influenced by the difference in their expectations, assumptions, perceptions, and cultural background. However, he stressed that this alone will not reduce conflict without increased understanding of the peculiarities of one's own cultural communication pattern and outlook.

The primary emphasis of Hall regarded the different communication styles of people from high context cultures as compared to people from low context cultures. In this study people from high context cultures seem to place higher value on electronic alternatives for interacting with various segments of the university community plus demonstrate greater readiness and openness to facilitate new interactions. Those from low context culture seem to have less need for adaptation thus less need for resources for aiding there interactions (this was most true of local students). This study confirms the validity of Hall's claims and, as well, indicates the need for comprehensive research on the role of electronic communications in accommodating intercultural interactions and plus in aiding institutions in their efforts to facilitate the adaptation of their international students.

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APPENDIX 1**Research instrument****Dear students**

We are pleased that you wish to participate in our research and we appreciate your co-operation.

All your answers will be analysed statistically at the group level and your anonymity will be granted. Please, fill in the following questionnaire.

Please circle/mark one position on the scale that follows the question.

Q1. Do you think that your cultural competence has been improving during this academic year (when you have been studying in international university environment)?

Not at all 1...2...3...4...5 Very much

Q2. Do you think that the use of ICT has contributed to your cross-cultural communication skills?

Not at all 1...2...3...4...5 Very much

Q3. Do you think that improvement in your overall cross-cultural competence influences the development of your electronic cross-cultural competence as well?

Not at all 1...2...3...4...5 Very much

Q4. Do you think that the using of ICT contributes effectively to your study results?

Not at all 1...2...3...4...5 Very much

Q5. Has this international educational context increased your interaction with people from other cultures?

Not at all 1...2...3...4...5 Very much

Q6. I understand that it may be necessary to use alternatives to electronic communications for some individuals or groups

Not at all 1...2...3...4...5 Frequently

Q7. I avoid imposing values that may conflict or be inconsistent with those of cultures or ethnic groups other than my own.

Not at all 1...2...3...4...5 Frequently

Q8. I intervene in an appropriate manner when I observe other students of my university engaging in behaviours that show cultural insensitivity, racial biases and prejudice.

Not at all 1...2...3...4...5 Frequently

Q9. I understand that age, gender and life-cycle factors must be considered in interactions with individuals and groups (e. g., high value placed on the decision of elders, the role of eldest male or female in families etc.)

Not at all 1...2...3...4...5 Frequently

Q10. When interacting with individuals or groups who have limited English proficiency, I keep in mind that their limited ability to speak the language has no bearing on their ability to communicate effectively in their native language.

Not at all 1...2...3...4...5 Frequently

Q11. How confident are you in your English skills?

Not confident at all 1...2...3...4...5 Very confident

Q12. I understand that I'm a product of my upbringing and believe there are valid beliefs other than my own.

Almost never 1...2...3...4...5 Always

Q13. I do not make assumptions about a person or individual group until I have verified the facts on my own

Almost never 1...2...3...4...5 Always

Q14. I realize that people of other cultures have a need to support one another and connect as a group.

Almost never 1...2...3...4...5 Always

Please answer also to the following questions about yourself.

Q15. Your country of origin:

Q16. Please name the culture that is the closest to you:.....

Q17. Your age (in years).....

Q18. Your gender:.....

Q19. Your level of studies: (1) Bachelor (2) Master

Thank you for your time and cooperation!

APPENDIX 2

Additional tables

Table 3. Differences of means across high and low context cultures.

Question	Context	N	Mean	Std.dev.
Q1	Low	60	3.62	.804
	High	45	4.11	.859
Q2	Low	60	3.48	.725
	High	44	3.91	.884
Q3	Low	58	3.31	.883
	High	44	3.50	.881
Q4	Low	60	3.27	.936
	High	45	4.04	.824
Q5	Low	60	3.95	.910
	High	45	4.27	.837
Q6	Low	60	3.83	.785
	High	45	3.93	.837
Q7	Low	60	3.68	1.049
	High	44	4.07	1.087
Q8	Low	58	3.59	.937
	High	45	3.96	.999
Q9	Low	60	3.83	.886
	High	45	4.24	.933
Q10	Low	60	4.13	.947
	High	44	4.30	.930
Q11	Low	59	3.59	1.002
	High	44	4.07	.900
Q12	Low	60	4.02	.792
	High	45	4.42	.753
Q13	Low	60	3.85	1.055
	High	45	4.36	.743
Q14	Low	60	3.97	.863
	High	45	4.36	.802

Statistically significant (at $p < 0.05$ level) differences between the groups in questions: Q1, Q2, Q4, Q5, Q7, Q8, Q9, Q11, Q12, Q13, Q14.

Table 4. Final cluster centers

Questions	Clusters	
	1	2
Q1	4	3
Q2	4	3
Q3	4	3
Q4	4	3
Q5	5	4
Q6	4	4
Q7	4	4
Q8	4	4
Q9	4	4
Q10	4	4
Q11	4	3
Q12	5	4
Q13	4	4
Q14	5	4