

## BUILDING COMMUNITIES OF INQUIRY IN TEXT-BASED LEARNING ENVIRONMENTS

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### ***Abstract***

*Nowadays key practices in education such as establishing literacy, teaching/learning, and communication are influenced by the implementation of computer technologies into everyday life and academic environments. Today the dynamics of learning which requires an active engagement in text-based collaborative learning tasks draws researchers' attention to the specifics of text-based interaction and the role this interaction plays in the learning process. This article presents researcher's notes on an ongoing project guided by the theoretical framework of Community of Inquiry proposed by Garrison, Anderson, and Archer. The focus of the analysis is how learners demonstrate cognitive presence in their asynchronous communication and how the demonstrated indicators of cognitive presence are related to learning task types. The research outcomes are expected to contribute to the efforts of educators to achieve an in-depth understanding of communities of inquiry development in online learning environments.*

***Key words:*** *community of inquiry, cognitive presence, asynchronous computer-mediated communication, text-based communication, distance learning*

The development of computer technologies and the active use of local and global networks are constantly reshaping society and education. This implementation of computer technologies into everyday life and academic environments is transforming basic concepts such as literacy, learning, and communication [1-3]. Moreover, the explosive growth of distance and blended education which engage learners in extensive computer-mediated communication (CMC) is a phenomenon that greatly influences the way people learn and interact in the first decade of the 21st century. Today the dynamics of learning which requires an active engagement in text-based learning tasks draws researchers' attention to the specifics of this type of interaction and the role it plays in the learning process. In addition, distance education unites people across the globe in learning communities providing them with opportunities that they have never had before – to actively communicate with their instructors, collaborate with peers, and learn from distance. One of the major languages in which distance learning is delivered nowadays is English; thus, the number of students across the world whose native language is different from English (L2 students) and who engage in learning activities in computer-mediated environments grows each year.

*Study Background and Statement of the Problem*

Today we are well informed about the power of learning in collaboration. We learn through the formation of communities and collaborative construction of knowledge. Therefore, I believe, following researchers such as Swan and Shea [4], Garrison, Anderson and Archer [5], that along with content exploration the development of community of learners becomes a key element of learning. However, it is not always easy to engage students in active learning and encourage effective and meaningful collaboration in the learning process. When learning takes place online, things are getting even more complex – we need to consider multiple variables which influence interaction such as the mode of communication, the time and space difference between students, the text-based nature of the communication.

One of the important elements for understanding how online learning actually occurs is studying how communication happens in asynchronous computer-mediated communication (ACMC) settings. The asynchronous text-based communication usually is the major part of the course communication in which collaboration and meaning making is achieved. Interpreting learning as a social practice, Swan and Shea [4], based on their review of social theoretical constructs related to learning, outline the following:

1. Cognition is situated in particular physical and social contexts in which people learn. We can conclude that the environment in which people live is an integral part of the learning process. And the learning practices should be related to actual practices.
2. Knowing is distributed across groups, and – thus if knowing is shared – learning is shared as well.
3. Learning can be observed in every group of people that share values, beliefs, languages, and practices.

Thus, the community is recognized to have a central place in the learning process. However, the understanding of the community nature, the dynamics of the development and communication processes is necessary in order to capture and interpret the learning process in community settings. The Community of Practice model is well known since the end of the 90ies, it has been widely used for studying and interpretation of how people learn and collaborate in business and industrial settings [6]. In such environments communities grow, mature, and die over an extended period of time. Members join such communities voluntary, during their participation, they gain experience and move from the margins to the core of the community. These community development conditions are very different from the conditions of a learning community where the participation is usually required, all members mature at the same time, and the period in which the community is active is shorter (usually one term only) and pre-defined. Therefore, when studying organized educational settings, the need of developing more suitable model was recognized. Responding to this need, Garrison, Anderson, and Archer proposed the Community of Inquiry (CoI) model in 2000.

In their model they were guided at least partially by Lipman's work with children in face-to-face environments but conceptualized the model within the context of distance education. Their consideration was that in structured education the life of the community is with a fixed length

because the length of the learning period is usually predetermined; therefore, communities established in formal learning environments have a much shorter time for maturation. In addition, such maturation is interpreted differently for the CoI – it is viewed within the context of the course goals, the members do not necessarily have the freedom not to participate, they work with other learners and tutors to engage in common meaning making, establish mutual understanding, and construct personal meaning [5].

The authors of the model outline three key presences in such community:

**“Social presence** is “the ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities.” (Garrison, 2009)

**Teaching Presence** is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001).

**Cognitive Presence** is the extent to which learners are able to construct, share, and confirm meaning through sustained reflection and discourse (Garrison, Anderson, & Archer, 2001).” [7]

#### *Research Aims and Objectives*

The proposed research project aims to address the question of how distance and blended learning can be supported by the development of CMC tasks that promote effective, focused, individualized, and socially engaged learning experience. More specifically the following research question will guide the study:

*What are the specific indicators of cognitive presence demonstrated by the learners?*

*How the specific cognitive presence indicators are related to the task type?*

*Why such relations are established?*

#### *Theoretical Framework*

Using the CoI theoretical framework, I would like to approach specific communities of inquiry engaged in on-line learning in which the instruction is delivered in L2, in the case of this research project – in English. The goal will be to gain a better understanding of the dynamics of such communities, more specifically to reveal how the type of discussion tasks is related to cognitive presence, and how students interpret their learning experiences within the framework of CoI. Furthermore, following Morgan [8], I apply sociocultural theoretical framework; I foresee this framework to support the diagnostic strength of CoI model and provide the opportunity to research the reasons for the observed relations between task type and instances of cognitive presence thus supporting the explanation of learning which happens in ACMC environments.

Lee and Smagorinsky [9] outline three important principles taking a Vygotskian approach to learning: a) learning often involves *scaffolding* which includes mentoring by a more knowledgeable person or a peer in the process of mutual meaning construction rather than in a one-way process of presenting new information; b) in this process of mutual meaning construction, mediational tools that are constructed historically and culturally are actively involved; and c) the potential of learning is not a constant value but is defined by cultural knowledge, the nature of problem, and the task, thus presenting a zone rather than a point, specified as zone of proximal

development [10]. Social interaction processes are frequently approached longitudinally in natural learning contexts. It is important to state that in the current study, they also will be investigated using microgenetic approach which provides means for illuminating the moments of rapid change in acquisition within short periods of time through ensuring high frequency of observations [11].

Within sociocultural theory framework, activity theory (AT) seems to provide opportunities to interpret the mediation in ACMC learning settings of community of learners by accounting for multiple aspects of learning: instruments, subjects, objects, rules, community, division of labor [12]. Morgan [8] proposes that within this framework, CoI can be viewed as “the object of an activity system, whose goal is student learning...instructors as subjects and students as subjects are directing their efforts towards student learning in a community of inquiry” [8, p. 4].

### *Participants and Setting*

The participants in the proposed study are 16 university level students. They are engaged as full-time students in an English Language and Literature program offered by a university which provides both face-to-face and distance education. The students participate in on-line learning activities in the context of an entirely distance learning course in Discourse Analysis which is one of the core courses in their studies. The first language of the students is Farsi but all the instruction is conducted in English, all tests and assignments are completed in English as well.

### *Research Design*

The design of the study is a split mixed-method design [13] with first qualitative stage followed by a quantitative stage. The outcomes of these stages will inform the third qualitative stage of the study. Figure 1 is a graphical representation of the study design sequence.

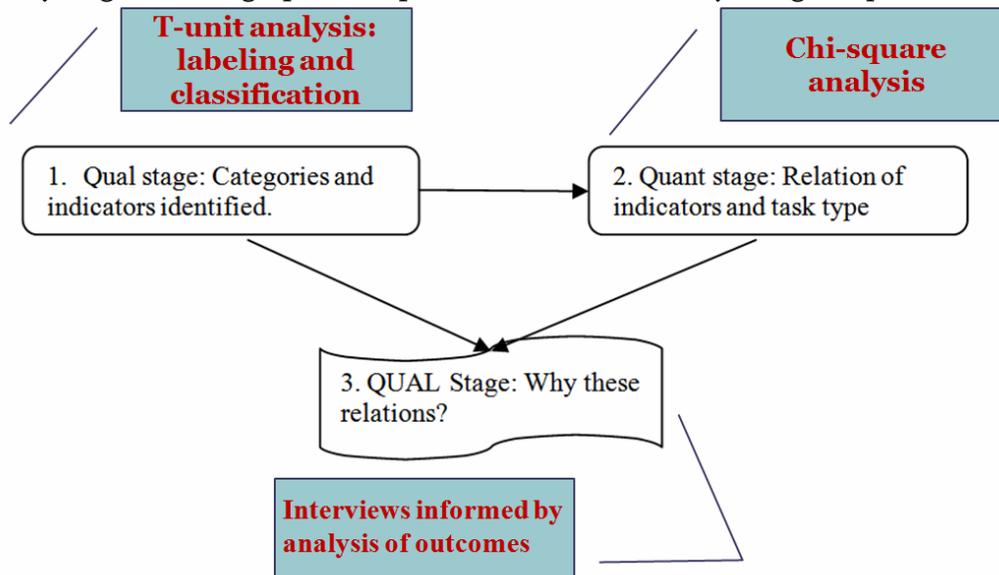


Figure 1: Study design sequence

In the first stage of the study, the specific categories and indicators will be identified in the computer-mediated discussions and their relation to the task type and the time within the course

sequence will be analyzed. The data analysis methodology planned to be used is content analysis. In the second, quantitative stage part of the study the qualitative data will be minimized and quantified. In other words, the categories and indicators will be organized in groups, counted and specific relations between task type and course period will be investigated. Finally, in the third qualitative stage students' views about their learning experiences and their perceptions of their participation in the specific CoI will be investigated through CMC interviews. The interview will be structured based on the observed relationships in stage 1 and 2 of the study. Table 1 presents the data to be considered and data analysis to be completed in each stage.

Stage	Data Type	Data Analysis Procedures	RQ to be Answered
qual	CMC discussions over one semester	Qualitative analysis, content analysis: categories and indicators of cognitive presence will be identified.	<i>What are the specific indicators of cognitive presence demonstrated by the learners?</i>
quant	Categories and indicators identified in QUAL and task types	Quantitative analysis: seeking relations between two categorical variables – types of indicators & types of tasks	<i>How the specific cognitive presence indicators are related to the task type?</i>
qual	CMC discussions over one semester and interviews with students	Qualitative analysis: How do students perceive their learning online, the role of CMC interactions, the task types? Is there a relation between the manifested indicators of cognitive presence and beliefs?	<i>Why such relations are established?</i>

Table 1: Data and data analysis procedures for each stage of the study

#### *Task Design*

The task types in this study are guided by the consideration to assure a student-centered learning environment which supports the interaction and communication in collaborative meaning making. The tasks will be completed either in small groups (4 participants) or in a large group – with all students communicating together. For the discussion tasks the students are required to post one main post and to respond to at least three of their peers. In their main post they fulfil the task requirements, in the response they are required to ask questions, provide constructive comments, and/or develop further their peers' ideas. The wiki tasks are completed in small groups, the students are asked to participate in the wiki text construction providing a substantial part of the text. Following is the working version of the task types to be used in the study.

1. *Task Type 1: Building on Previous Knowledge* - Discussion aims to connect personal experience with new course topics: all participants in the discussion equal.

2. *Task Type 2: Expert Guided Discussion* - Discussion aims to analyze a particular phenomenon using new course concepts – in each discussion one student will be the expert who will guide the discussion and provide feedback.
3. *Task Type 3: Collaboration* – Students working in small groups (3 or 4) will work on a wiki project related to the studied concepts.

### *Data Analysis*

The learning tasks will be completed in a discussion forum or a wiki environment. The threaded discussions will be approached separately. For the purposes of data analysis, each post (either main or a response) will be divided into t-units and each t-unit will be assessed and classified based on its type of cognitive engagement (triggering, exploration, interpretation, resolution stages) [14]. I adopted the definition of t-unit proposed by Hunt: one main clause with any subordinate clauses [15]. After the t-units are labeled based on type of cognitive engagement/stage, within each stage descriptors will be assigned – these descriptors will serve as labels to distinguish between different types of sociocognitive manifestation within each stage – for example, “evocative” might be one of the descriptors in the triggering stage.

Further in the analysis process, I will identify the indicators (i.e. concrete example of the manifestation of the descriptor). Using t-units will allow to account precisely for the complexity of each stage, descriptor, indicator as well as to identify clearly the boundaries of each type of contribution. Further, this unit of analysis will provide greater flexibility to discover the presence of different stages, descriptors, indicators in each post and to judge their weight in the post as well as in the overall discussion. This on the other hand will allow the analysis of the relation between task type, student role (sharing own view vs. responding) and type of contribution to the ACMC discussion (stage, descriptor, indicator). Within each discussion the analysis on macro-level will be completed as well. This analysis will represent the summary and overall representation of the post direction (the macro-level approach has been undertaken by Garrison and his colleagues). However, I feel that zooming in and using t-units will provide more insights into the communication process.

The interviews which will take place in the third stage of the study will be informed by the outcomes of stages 1 and 2. In addition in these interviews the students will share their opinion about their learning experience, task types, and collaboration.

### *Conclusion*

Learning in online environments became more popular in the past several years, learners of different ages, first languages, and cultures form communities in which they engage in communication and collective meaning making. The proposed study will aim to investigate how inquiry happens in such communities. This study is a beginning of a larger research project that aims to reveal the specifics of online interaction of multicultural students. Further steps of revealing the specifics of learning in distance multicultural settings could include: (1) Developing and refining the ACMC task typology based on the outcomes of this study, (2) Accounting for

specific cultural dimensions as defined by Hofstede [16] and their influence on social and cognitive presence.

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Tables – 1

Figures - 1

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