

Communication Tools in an On Line Collaborative Assignment - Usage and Preferences -

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Abstract

In this article a research exploring the relationships between different communication tools and different tasks involved in collaborative on line assignment as viewed and used by students were explored.

Data about ideas of 14 students relating to the function of synchronous and asynchronous tools in the learning process and its usage in practice were analyzed. Data was classified into three domains from the instructional point of view: administrative, social and content domains.

Findings revealed an interaction between the tool and the domain. In practice the administrative domain was most important for the collaborative assignment, synchronous tools were found efficient for this function and the forum was most used from the content point of view. Changes were found between student's ideas relating to Email and Messenger (ICQ) functions and the way they used them.

Conclusions recommend online course developer to integrate synchronous and asynchronous tools in a way that each one of them may contribute to the collaborative assignment in an optimal way.

Introduction

Online academic instruction is no more a new phenomenon, and the time is over for questions of why should we do it? Instead we should consider questions of how should we use it for improving learning and instruction?

From the pedagogical point of view researchers are interested in the link between the online technology potential and educational ideas like interactivity, reach information availability, constructivist and collaborative

learning. All are considered to contribute to a significant instruction and learning process.

In this presentation a research exploring the communicative aspects of online learning will be discussed. An online collaborative assignment given through an academic course was explored. That, in order to find out about the relationships between different communication tools and different tasks involved in collaborative on line assignments

We asked ourselves how do online students, given the various communication tools, differentiate between the potential of each tool for accomplishing a collaborative assignment.

What do they think? How do they use the various tools? And what is the significance of their preferences for accomplishing a collaborative assignment.

Some theoretical remarks

Research was based on the following webagogy (web pedagogy) assumptions:

1. There are two types of on line collaborative activities: structured pre defined collaborative assignments and assignments in which collaboration emerge through learning, thus defined as emergent collaboration [1].
2. E-learning differs from WBL by integrating various communication options with the huge knowledge base at the Internet[2].
3. Inter relationships supported by Internet communication tools, are important for accomplishing a collaborative assignment [3, 4, 5].

In the educational technology literature it is common to differentiate between a-synchronous communication options like e-mail and forums and synchronous communication options like IRC and Messengers. Most of the research conducted dealt with a synchronous

technology [6, 7, 8, 9, 10,]. The main advantages pointed at are the ability to develop a continuous dialog between learners and independence of time and place. Less was done in the field of learning in synchronous environments [11, 12, 13]. Though the social function and importance of immediacy were acknowledged. Few researchers argue that each communication technology has its unique features. Therefore, both are important for the learning process [14, 15, 16, 17].

The notion that the in online learning process students should be exposed to various communication options is expressed also through the classification offered by Jackson (1999).

Jackson differentiates between three technology based learning environment: e-study, e-class, and e-team: each one is related to some technology and to some pedagogy models. The first one is linked with a-synchronous communication and with self-study model, the second one is linked with synchronous communication and with instructor led events the third one is linked with various modes of communication and with small group collaboration.

The issue of collaboration supported by online communication is also discussed in former research. The place of the dialog between students and moderators and between students themselves is mentioned as a main factor [3, 19, 20, 5]. Barker even found that that a low participation in the CHAT is likely to be accompanied by under average performance on the Group-work score [21].

Moreover, the fact that we have two different technologies and various tools in each technology cause us to look for the optimal place of each tool in the collaborative learning process.

While exploring the potential of each communication tool for instruction we could find the following features of the various tools as found in the literature:

E-mail and forums enables communication that is independent of time or place. They are thought to be good vehicles for medium length message and long attached files. E-mail is most important for immediate feedback from person to person, individual help, guidance, and the possibility to elaborate ideas with a mate. A forum is a many to many mode of communication, where anybody may send, read and comment to any body else messages. The length of the message, the continuous dialog of many participants enable to rich depth in the discussion and get closer to knowledge construction by participants.

IRC-Chat is a communication option that allows person to person and many to many communication possibilities. It is valued as a real time form of communication supplying immediate feedback, and supporting brainstorming, summing up ideas, role play etc.

But it is should be noted that though place independent discussion there are time dependent.

As for ICQ , it is a real time tool that are thought to be efficient when immediate transmission of person to person messages is important.

The following table sums up the features of each communication tool and its significance for instruction.

Table 1. Types of communication tools and usage

Comm. Tool	Comm. Type	Time and place of Comm.	Message Length	Function
E-mail	Person to person	Any time, Any place	Medium	Help and feedback
Forum	Many to many	Any time, Any place	Medium	In depth message continuous dialog
IRC-Chat	Many to many	Real time, Any place	Very short	Swift response
ICQ	Person To Person	Real time, Any place	Short	Swift response

Research description

In order to explore the significance of various communication options in the learning process we analyzed data relating to one complicated learning assignment that called for collaborative activity. 14 Students that were part of a course dealing with synchronous learning environments participated in the assignment. The course was based on a hybrid mode in a ratio of 1:3 when 1 refers to one week of face to face meeting and 3 refers to three weeks handled in distance learning strategies.

The assignment

The learning assignment dealt with pros and cons of IRC chats for learning. It was divided into three stages: The first stage - Team work: Students were divided into teams. Each team comprised of four members. Students

were asked to explore the learning materials offered at the course site. and decide about the prospects and/or the dangers of chats for a learning process. Than present the teams decisions according to the following instructions:

1. Use any communication tool you need in order to accomplish the assignment: Email, ICQ, Forum, IRC. Please, don't use phones.
2. Decide whether the prospects outgrow the dangers or vice versa
3. Present the most important reason on which you backed up your mind.

The second stage - individual work: students were asked to comment individually to decisions presented by other groups.

The third stage - whole class: an online conference took place to sum up the question explored.

Research Method

Students' ideas about preferences of communication options were gathered through a questionnaire. The questions included in the questionnaire were classified into three domains from the instructional point of view: administrative, social and content and were related to the four different communication tools: ICQ, Email, Forum and IRC.

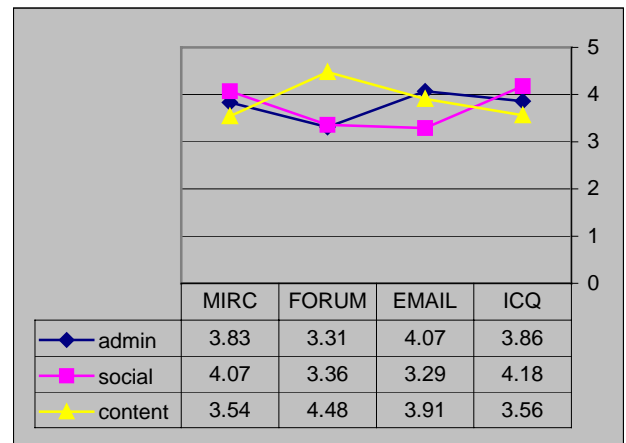
The usage of the different communication tools in the first stage of the assignment was gathered through the analysis of messages of each tool. Messages of each tool were classified into the three categories presenting the educational domain: administrative social and content.

Findings

What do students think about the different communication tools?

In an analysis of co variance a significant interaction domain-tool was found ($F=6.04$; $p<0.01$). No main effect was found. The following chart sums up the findings.

Figure 1. Students preferences of communication tools in different educational domains

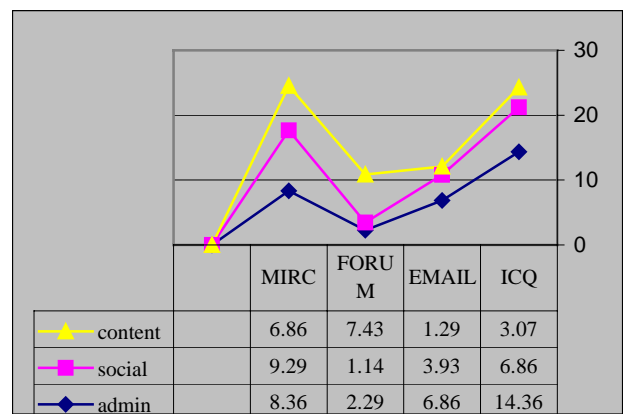


Students think that Email is important for organizational functions, Forums may contribute from the content point of view and IRC and ICQ are perceived as important tool for creating social interaction.

How do students use the different communication tools?

In an analysis of co variance there were found an interaction between the educational domain and usage of the tool. ($F=10.51$; $p<0.01$) and a main effect of the educational domain ($F=9.62$; $p<0.001$) The following chart sums up the findings.

Figure 2. Students usage of communication tools in different educational domains



Analysis of the educational domains reveals that the most important one for the first stage of the assignment was the administrative domain. Analysis of communication tools importance in the context of different domain reveals that students use for administrative needs mostly ICQ, as a social environment IRC, and forums for content purposes. Analysis of variance relating to the usage of communication tools indicates that the most used domain

was the Forum (M=5.57). Findings were significant (F=5.29; p<0.05). Findings are summed up in the following table:

Table 2. . Usage of communication tools

Variable	Mean	Std. Dev.	N
ICQ	2.5	2.41	14
EMAIL	5.0	5.79	14
FORUM	5.6	3.34	14
MIRC	1.5	1.34	14

Discussion

The way students think about and use the different collaborative communication tools in an online assignment was the main issue of this report. Analysis of findings enables us to sum up the following conclusions about the efficiency of communication tools for on line collaborative work.

1. The organizational aspect of a collaborative assignment needs synchronous tools.

Findings (Figure 2) show a main effect of the different domains tools were used at, and pointed to the importance of synchronous tools for administrative functions in the learning process. It seems that a collaborative assignment needs coordination in order to divide the responsibilities, to decide when and where to meet in real time and to exchange knowledge immediately.

2. ICQ in a learning process

No wonder that ICQ was preferred by students for administrative functions (Figure 2). This tool has a synchronous ability as well as an asynchronous one. So, students could be sure that informative messages will reach any participant, like wise they could utilize the real time talking for immediacy functions.

3.The importance of hands-on experience in learning

Analysis of ideas students have about communication tools shows a different picture from the described above. No main effect was found in the way students perceived the tools functions (Figure 1). We may assume that that this data reflects their knowledge prior to the assignment. Having little experience in on line learning they were not able to differentiate clearly between tools and between aspect. The significance of interaction found between tools and domains enables us to view the differences between thought and practice. While in practice synchronous tools were found to be appropriate for administrative use, they thought that E-mail was most important for managing the learning. There is no wonder that E-mail was chosen, as it was the most common tool students used, while their synchronous experience was dull. All they knew came from the literature that is focused on the contribution of the synchronous tools for social aspect. That is why they though ICQ is most suitable for social functions. But things have changed

when during the assignment they experienced synchronous tools. Once getting to know these tools they used them more than E-mail for management functions such as meetings organizations, when and when to deliver information and how to divide the work between group members. Changes were found also concerning to the social domain. In practice IRC channels outgrew ICQ. As they enabled an interaction between some participants thereby supporting a group social atmosphere.

4. Forum as a tool for content elaboration

The importance of the organizational aspect was revealed while looking at the different communication tools in the context of the different educational aspects. But when exploring the communication tools per se we may say something also about the content aspect. Taking into account that the forum was the most visited place and (table 2) second that it was found to be most important from the content point of view (figure 2), we may conclude that dealing with content had an important place in the learning process.

5. A synchronous versus asynchronous tools

In this issue it was revealed that the IRC channel was most important for social functions. Bearing in mind the importance of the social atmosphere for learning, it points to the importance of integrating a Chat facility in online courses. Moreover if we look at the various different tools only in the content aspect we may conclude that comparing to ICQ and E-mail the IRC facility was close to the Forum in usage from the content point of view.

It is interesting to view the importance of experience on the ideas students have about the communication tools. While E-mail was most popular in the beginning of the course ICQ became the most popular communication tool at the end of the course by 80% of the students (N=10).

In his research about peer-based collaborative interactions Jehng (1997) points at the importance of three factors: learning interaction with a group, knowledge construction and social interaction. He emphasizes the importance of contact organization in order to achieve these features. In the research described we have found some ground for this educational trend.

6. Some thoughts for on line course developers

- * It is important for managing a collaborative assignment to supply a messenger software like ICQ.
- * It is important, for the sake of the content aspect to integrate synchronous environments side by side with asynchronous communication tools. Students should be guided to use an IRC facility not only for social functions but also in a significant way for content elaboration.

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