COLLABORATION AND MOTIVATION IN AN ONLINE LEARNING ENVIRONMENT: STUDENTS' PERCEPTIONS OF COLLABORATIVE ACTIVITIES AND ATTITUDES TOWARDS ONLINE LEARNING

Idalina Jorge,

Instituto de Educação, Universidade de Lisboa; Ifjorge@.ie.ul.pt

ABSTRACT

The report about distance learning in higher education in Portugal (2009) states that only a small percentage of HE enrolments are in DL courses, that the demand for the modality is growing, and that the Portuguese research in DL needs development, to support innovation in the modality. This study aimed to identify the collaborative activities that the 122 students enrolled in Masters' courses between 2009-2012, in two Portuguese Universities, considered more motivating, their preferred type of assignment, the tools' perceived ease of use, the social and cognitive aspects of teamwork, the tutor's influence on teamwork and preferred team organization. The results indicate that the students feel comfortable participating, interacting and debating and that some collaborative activities such as designing projects, simulations, problem-based activities, discussions and written reports are more motivating than others. The results also show that the students have positive attitudes towards online learning, that online trust takes time to develop, that both face-to-face meetings and videoconference increase trust, though time flexibility is a practical advantage of online collaboration and that the way that collaborative assignments are designed can facilitate or hinder adequate collaboration.

Key words: collaboration; higher education; motivation; online learning;

1. INTRODUCTION

Dialogue and collaboration are essential components of learning since the first educational theories, both in western and eastern cultures. The postindustrial studies in distance learning have recovered this essential principle, since Moore (1992) identified the two didactic clusters in distance education, structure and dialogue, and the essential dialogue modalities in distance learning courses. As Biasutti (2011) has suggested, collaboration among students improves teamwork, communication and social skills.

Positive experiences of collaboration in online courses, depending on the used technology (usability interface, access, Malik, 2009), the group size Ryan, 2008), the team activities (Dennen, & Wieland,2008), and the instructor's support properly planned for (Lafifi, Azzouz, Faci & Herkas, 2010), have been reported in the research.

The sense of community also varies widely from student to student, as noted by Conrad (2002), and some students in online courses do not even develop it.

This was also observed by Brown (2001), which gave some explanations, such as the lack of opportunities for collaboration, the students' concerns about the time consuming activities of participation and interaction, the characteristics of technological support, and the prominence of asynchrony, which tends to generate a feeling of isolation and non-membership.
Schaffer & Hannafin's research (1993) reaffirmed the interaction importance in cognitive processes, establishing that greater interaction results in increased motivation, greater information recall and a more positive attitude on the part of students.
Another study by Summers referred to by Schaffer and Hannafin (1993), highlighted the importance of interaction, arguing that without it, education "comes down to a passage of its contents as absolute truth," restricting and excluding the cycle of knowledge acquisition, critical processes and evaluation. Similarly, Romiszowski's research (1988) concluded that the interaction could be a critical component of computer- mediated education and Bransford et al. (1999) stated that collaboration between teachers and students helps students empower their personal learning processes.
Also Harasim (1989), Moore (1990) and Garrison and Anderson (2003) reported the importance of collaboration in distance learning, mentioning its various forms and its effects on the students' motivation and resilience.

2. THE RESEARH GOALS

This research on the designed collaborative and teamwork activities main goal was to enlighten both faculty and tutors' course design and implementation. The intended objectives were: 1) to identify the students' preferred collaboration tools; 2) their ease of use; 3) the students' preferred type of assignment; 4) the social and cognitive aspects of teamwork; 5) the tutor's influence on teamwork and 6) the students' preferred team organization.

3. METHODOLOGY

3.1 Participants

122 students enrolled in six online learning courses of two Portuguese universities between years 2009-2012 participated in this research. There were no demographical variables included in these surveys, to protect the students' anonymity.
Both Blackboard and Moodle were used as primary assisted leaning tools, but the students had to arrange, both for team organization and because of the assignment's nature, on meeting online, using both synchronous and asynchronous tools outside the LMS.

3.2. Instrument and measurement

3.2.1. The survey

After each team assignment, a survey was applied. The survey intended to 1) address the tools that the students used (1 question, nominal scale); 2) to assess the students' perceptions about the synchronous and asynchronous tools ease of use (3 questions, a nominal scale and a 5 points Likert-type agreement scale); 3) the team work social and cognitive aspects (10 questions;

a 5 points Likert-type agreement scale); 4) the tutors' influence on the team work, when applied (3 questions, a 5 points Likert-type agreement scale), and 5) to collect the students' opinions on working with the same or with different groups (a 5 points Likert-type agreement scale).
The students' identities were kept anonymous and protected. All the students answered the survey and there were no missing responses. The survey dimensions are described in table 2.

Table 2
Survey dimensions

Survey dimensions
1. *Preferred collaboration tools*
2. Preferred type of assignment
3. Tools and perceived ease of use
4. Team work social aspects
5. Team work cognitive aspects
6. Tutor's influence
7. Team organization

4. RESULTS

4.1. Preferred online collaboration tools

The students preferred synchronous meetings to other asynchronous tools, such as Google docs, forums and wikis, as shown in table 3.

Table 3.
Preferred online collaboration tools

Collaboration tools	Mean	SD
Synchronous meetings	4.86	1,060
Google docs	4.33	1,407
Forums	4.24	1,325
Wikis	4.09	1,688

4.2. Preferred type of assignment

The students were assigned to team tasks such as projects, simulations, problem-based activities, online forums and written reports. Their preferences are shown in table 4.

Table 4.
Preferred online collaborative assignments

Preferred online collaborative assignments	Mean	SD
Projects	4,46	0,535
Simulations	4,38	0,624
Problem-based activities	4,24	0,498

Discussions	3,57	0,504
Written reports	3,60	0,626

4.3. Tools and perceived ease of use

Synchronous and asynchronous tools used in the assignments and how the students perceived their ease of use were measured. Synchronous tools were considered easier to use (Mean= 4,34; SD= .773) than asynchronous tools (Mean= 3.80; SD= .884).

4.4. Social aspects of teamwork

The social aspects of teamwork were assessed with 6 items, adapted from the CoI instrument (Arbaugh et al, 2008) with a 5 item Likert-type agreement scale, from totally disagree to totally agree. The results are shown in table 5 and demonstrate that the students dealt well with the social aspects of teamwork.

Table 5
Social aspects of team work

Social aspects of team work	*Mean*	*SD*
I felt comfortable participating in this assignment	4,52	0,574
I felt comfortable communicating through the online media	4,48	0,628
I felt comfortable interacting with the other team members	4,46	0,576
My team properly acknowledged my point of view	4,28	0,882
I had no problem stating my views in front of others	4,28	0,751
This assignment developed my sense of trust with my team	3,41	1,181

4.5. Cognitive aspects of teamwork

The cognitive aspects of teamwork were assessed with 4 items, adapted from the CoI instrument (Arbaugh et al, 2008) with a 5 item Likert-type agreement scale, from totally disagree to totally agree. The results, shown in table 6, indicate that the students value teamwork, mainly for understanding fundamental concepts and the course syllabus.

Table 6
Cognitive aspects of teamwork

Cognitive aspects of teamwork	*Mean*	*SD*
Team work helped me understand fundamental concepts	4,38	.694
Working with others helped me to build a deeper understanding of the syllabus	4,32	.693
Team work helped me construct explanations/solutions	3,02	.722
The assignment increased my interest in course	2,98	.807

4.6. The tutor's influence on team work

The tutor's influence on teamwork for was assessed with a 5 item Likert-type agreement scale, from totally disagree to totally agree, derived from previous research (Jorge, 2011). The results are shown in table 7.

Table 7
The tutor's influence on teamwork

The tutor's influence on team work	*Mean*	*SD*
The tutor helped us develop a sense of trust	4,83	0,490
The tutor's feedback had a positive influence on the assignment's success	4,63	0,547
The tutor helped us keep focused on the assignment	4,30	0,651

4.7. Team organization

The survey's final question, intended to find out if the students preferred to work with different teams for each assignment or to maintain the same team throughout the courses. The item was measured with a 5 item Likert-type agreement scale, from totally disagree to totally agree. The general mean was 2,56, though it varied along the courses.

5. CONCLUSIONS

Most of the team activities were organized and developed outside the platform, except for on-line forums. Current LMS platforms lack structural flexibility and may hinder the students' sense of trust and motivation to collaborate, being Web 2.0 tools, such as google docs, wikis, skype, videoconference, among others, more user friendly and dynamic, both for synchronous and asynchronous team activities, particularly small teams. Multimedia and Web 2.0 technologies are particularly suited to education through dialogue, given the feedback and evaluation they allow for, and which are so important to learning. To sum up, the quality of education can significantly improve with the use of technologies that may include a strong interactive component, both synchronous and asynchronous.

6. REFERENCES

Arbaugh, J.B., Cleveland-Innes, M., Diaz, S.R., Garrison, D.R., Ice, P., Richardson, & Swan, K.P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and higher Education, 11*(3-4), 133-136.

Biasutti, M. (2011). The student experience of a collaborative e-learning university module. *Computers & Education, 57*(3), 1685-1875.

Bransford, J.D., Brown, A.L. & Cocking, R. (1999). In J.D. Bransford, A.L Brown e Rodney Cocking. *How people learn. Technology to support learning*. Retrieved from: http://books.nap.edu/books/0309065577/html/R1.html.

Brown, R. E. (2001). The process of community-building in distance learning classes. Journal of Asynchronous Learning Networks, 5(2) 18-35.

Conrad, D. (2002). Deep in the Hearts of Learners: insights into the nature of online community. *Journal of Distance Education*. Accessed 28 July 2004 at: http://cade.athabascau.ca/vol17.1/conrad.html

Dennen, V., & Wieland, K. (2008). Does Task Type Impact Participation? Interaction Levels and Learner Orientation in Online Discussion Activities. *Technology, Instruction, Cognition & Learning, 6*(2), 105-124.

Garrison, D. R., & Anderson, T. (2003). *E–Learning in the 21st century: A framework for research and practice.* London: Routledge/Falmer.

Harasim, L. (1989).On-line education: A new domain. In R. Mason and A. Kaye (Eds.), *Mindweave: Communication, computers and distance education,* (pp. 91-109). Oxford: Pergamon Press.

Jorge, I.; Miranda, G. (2006). As funções da tutoria nos fóruns de discussão assíncrona on-line: contributos para a definição de uma taxonomia. *Proceedings of the 1ª Conferência Ibérica de Sistemas e Tecnologias de Informação*, Volume II, 789-803. Portugal: Esposende. ISBN 978-989-20-0271-2.

Jorge, I. (2011). The influence of the e-tutor on the development of collaborative critical thinking in a students' e-forum: association levels with Cramer's V. *Proceedings of the International Joint Conference and Media Day.* Aveiro: Universidade de Aveiro.

Lafifi, Y., Azzouz, K., Faci, H., & Herkas, W. (2010). Dynamic management of tutors' roles in an online learning system. *International Journal of Learning Technology, 5*(2), 103-129.

Malik, M. (2009). Student satisfaction towards e-learning: Influential role of key factors. *Proceedings of the 2nd CBRC*. Lahore, Pakistan.

Moore, M. (1990). Recent Contribution to the Theory of Distance Education. *Open Learning*, 10-15.

Romiszowski, A. (1988). *The selection and use of instructional media.* London. Kogan Page.

Ryan, P. P. (2008). A Small Experiment in Online Learning. *South African Journal of Higher Education, 22*(4), 877-888.

Hughes, S., Wickersham, L. Ryan-Jones, D. & Smith, S. (2002). Overcoming social and psychological barriers to effective on-line collaboration. *Educational Technology & Society, 5*(1), 86-92.

Moore, M. (1992). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1-6.

Schaffer, L., Hannafin, D. (1993). The effects of progressive interactivity on learning from interactive video. *Educational Communication and Technology Journal, 34*(2) 89-96.

Veerman, A., & Veldhuis-Diermanse, E. (2001). Collaborative learning through computer-mediated communication in academic education. In P. Dillenbourg, A. Eurelings, & K. Hakkarainen (Eds.), European perspectives on computer-supported collaborative learning. *Proceedings of the 1st European conference on computer-supported collaborative learning* (pp. 625–632). Maastricht: Maastricht University.

Wathley, J. & Bell, F. (2003). Discussion across borders: benefits for collaborative learning. *Education Media International, 40*(1/2), 139-152.