

STUDENTS' ACCEPTANCE OF E-GROUP COLLABORATION LEARNING

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Abstract: Online students in higher education are increasingly using Electronic Group Collaboration learning tools such as Discussion Forums, Blogs, Wikis, and Journals within their course environment. This study discusses some of these new online group-collaborative tools, and the extent to which they are being used. This study also investigates the level of acceptance of learners of these tools. The findings of this study describe the number and type of Electronic Group Collaboration tools most preferred by online students, and the reasons behind their preference.

1 INTRODUCTION

The last decade witnessed a significant increase of network-based technologies that enable online students to work collaboratively (Jermann and Muhelnbrockl, 2005), (Boulos, et al, 2006). Electronic Learning (e-Learning) facilitates the sharing of costs, sharing of information and expertise among multiple sites and different constituencies, while providing additional educational opportunities (Hackley and Webster, 1997), (Meier and Simon, 2000), (Simon, et al, 2002). Web 2.0 applications, specifically wikis and blogs, have been adopted because of their ease of use, rapidity of deployment, and their ability to facilitate information sharing and collaboration.

As e-learning continues to grow in popularity with both traditional and non-traditional students, many educational institutions are utilizing collaborative group e-learning to improve the learning experience of their students. Working in groups significantly increases learning perceptions, problem solving skills, and helps students achieve a higher level of learning than individuals learning alone (Hilz, et al, 1999). Group learning improves group communication and problem solving skills, which can be easily transferable to the work environment (Becker and Dwyer, 1998), especially since virtual work groups are a common component of today's corporate structure (Black, 2002).

Collaborative group learning exercises are student centred, and enable students to share

authority and empower themselves with the responsibility of building on their foundational knowledge (Myers, 1991). However, these group activities are not always enthusiastically accepted by students and have a number of quality concerns (Cuban, 2003). The efficiency and effectiveness of group e-learning may be affected by factors such as: non-contributing group members, unequal workload, scheduling, personal/social conflicts between group members, computer self-efficacy, surrounding technological factors, or instructional design issues (Becker and Dwyer, 1998), (Al-Fadhli, 2010).

As research shows, technology is neutral until it delivers content (Clarck, 1994), and may lose its effectiveness if it is not applied in a planned and systematic manner (Laurillard, 2002). Empirical research is still needed to fully understand the different aspects of electronic group collaboration tools in the context of higher education, and to assist practitioners to effectively and successfully deploy them. Instructors and system administrators should keep the learning objectives of each course in mind and how they could be best served. Student acceptance of these collaborative tools directly influences their motivation and creativity in meeting associated learning objectives.

This study contributes to the body of knowledge by conducting an exploratory study in students' acceptance of the number and types of Electronic Group Collaborative Tools within the context of Higher Education learning systems. The primary objective of this study is to determine potential ways

to integrate E-Group Collaborative Tools into existing e-learning systems by identifying the most preferred E-Group Collaborative Tools, and the number of tools students expect/accept to see in one class.

2 RELATED WORK

According to (Jermann, et al, 2005), collaborative systems can be classified into three types; the first category includes systems that collect raw data and make it available for display to collaborators, such as systems that reflect the number of students in a chat room, or that display the login information for students in a class to all other users; the second category of collaborative systems includes those which monitor and model the state of interaction and provide collaborators with visualizations that can be used to analyze the interaction, an example of which is the number of posts by a specific user to a specific discussion board. The third category of systems guides the collaborators by recommending actions students might take to improve their interaction. This category may include systems that allow group discussion rooms, or group project assignments, where interaction/evaluation among students and between the group and the instructor is conducted within the system (Jermann, et al, 2005).

While most higher education learning systems contain functions from all three listed categories, this paper is mainly concerned with the third category of systems, where interaction/evaluation among students and between the group and the instructor is conducted within the learning system. More specifically this paper is concerned with the use of discussion forums, blogs, wikis, and journals to facilitate Electronic Group Learning in the higher education online environment.

Group Collaboration e-Systems provide students with a forum to meet and connect with their peers. They allow students to communicate and collaborate effectively. They also provide instructors with more insight into individual student participation within group activities. Instructors can easily create and enrol students into multiple groups and allow students to create their own groups. Instructors can provide default settings and descriptions for each group while managing them collectively or individually. Group material can be saved and authored collectively from this location. Group members can create their own discussion forums that allow them to conduct ongoing conversations, or use blogs to blog thoughts and ideas for the rest of the

course to comment on, or add journal entries for private reflection within the group. They can also create tasks to track the progress of their deliverables. These tasks can be conducted and completed by any of the members in the group (Blackboard, 2010).

Discussion Boards allow members of the class to communicate with one another asynchronously. Discussions on the Discussion Board are logged, organized, and viewable by all class members. Conversations are grouped into threads that contain a main posting heading and all related replies. A course may have one or more discussion board linked to one or more topics. Discussion boards may also be created and assigned to several groups within a class. This structure is usually used with group projects. Instructors can email, provide feedback, and grade the assignment of each group individually (Blackboard, 2010).

Blogs are online web journals that can offer a resource-rich multimedia environment. They contain dated entries in reverse chronological order (most recent first) about a particular topic. Blogs and journals provide students and instructors with a social learning tool for expressing their thoughts and reflecting on their learning, either privately (with the Instructor) or publicly (with others in the Course). Blogs are an effective means of sharing knowledge and materials created and collected by the group with the rest of the course members. These tools empower all Course users to create and share ideas, while instructors maintain the ability to edit or remove any inappropriate material. Multiple blog types, including course, group and individual blogs are available. Instructors can assign a journal to each user in a course or course group that is accessible by only the user and the instructor. Group Blogs allow groups of students to collaboratively post thoughts and comment on each others' work while all other users in the course can view and comment on their entries. Journal entries can also be made available to the rest of the users in a course. Individual journals allow students to record their course experiences and what they are learning. Group journals allow groups of Students to reflect collaboratively on their course work and comment on their fellow group members' findings (Blackboard, 2010), (Boulos, et al, 2006).

Wikis allow instructors to create places for courses, organizations, and groups to host collaborative content and group projects. Course and organization wikis allow the entire course or organization to participate. Group wikis allow a subset of the course or organization members to work on collaborative projects. Instructors specify

whether and when students are allowed to view or edit a particular wiki. Both Students and instructors can easily create content within the wiki such as study guides and shared notes. Wikis provide organizations with a powerful collaborative editing tool that can be used for any content that requires collaboration and change tracking, such as meeting minutes, by-laws, or simple pieces of content. Instructors can also use the wiki for collaborative group projects where the wiki's history and participation summary tools give the instructor greater insight when assessing individual contributions as well as throughout the collaborative process. Students can use the wiki to collaborate on content for the course as well as for group projects. The wiki's collaborative capabilities and history features help students see what others have contributed and help avoid redundancy of effort (Blackboard, 2010) and (Boulos, et al, 2006).

Although the advantages of Electronic Group Collaboration tools are many, their implementation does not ensure a high-quality education. Wikis and blogs are prone to possible serious quality issues, because of their free form nature and the (relative/potential) lack of control over their content. In an open and collaborative web environment, anyone can easily post copyrighted material without the permission of copyright holders, post unsuitable or misleading content, or edit existing content in a way that reduces its quality/accuracy. Students may encounter many problems commonly related to technological factors, including issues of access, connection, internet familiarity, etc. Students may also feel isolated and unmotivated (Saade and Bahli, 2005). Researchers argue there is a relationship between the instructional design of these tools and the perceived ease of use and perceived usefulness by students (Mullenburg, and Berge, 2005). During the online collaborative learning experience, strategies that promote students' feelings of connectedness and belonging appear to be critical to successful learning (So and Kim, 2005). Gunawardena and CIsaac (2005) argue that student retention and satisfaction rely heavily on the ability of the online system's medium, materials, and services to make students feel socially present and connected to the instructor and other students. Online learning environments intended to support collaborative learning should be designed in a way that considers the social nature of the learning process (Richardson and Swan, 2003). Thus, student acceptance of these technologies is one of the critical factors that should be evaluated in order to adequately assess whether the successful

implementation of these tools can support teaching-learning activities and the student experience (Martins and Kellermans, 2004).

3 METHODOLOGY

The proliferation of courses offered online, and the way in which technology is used in their delivery both have effects on the quality of learning (Rovai, and Barnum, 2003). Students' acceptance of Electronic Group Collaboration Technologies is one of the critical factors that should be evaluated in order to adequately assess whether the successful implementation of these tools can support teaching-learning activities and the student experience (Martins and Kellermans, 2004).

This research conducts an exploratory study in students' acceptance of Electronic Group Collaboration Tools within the context of higher education learning software systems. This study seeks to answer the following research questions:

1. How many Electronic Group Collaborative Tools do students prefer to use in one class?
2. What Electronic Group Collaborative Tools are most preferred by students?

This study used a descriptive quantitative research design. The population of the study consisted of Online learning students from 8 different programs in 4 different universities. Data were obtained through convenience sampling of the respondents. A questionnaire was designed to capture data on the following variables: discussion boards (DB), blogs (BL), journals (JR), and wikis (WK). The questionnaire was composed of three sections. The first section consisted of personal demographic questions (i.e., age, sex, GPA, and declared major). The second section consisted of questions that examined the students' familiarity with computer technology. The third section was comprised of questions that explored students' acceptance toward Electronic Group Collaboration Tools. A total of 30 questions were developed to capture information on all variables. Each statement on the questionnaire was based on the Likert scale, and each answer was assigned weights to establish normally distributed scores. The weights of the responses from the questionnaire were assigned as follows:

1. Refers to "Strongly Agree", 2. Refers to "Agree"
3. Refers to "Neutral", 4. Refers to "Disagree"
5. Refers to "Strongly Disagree"

In total, 410 questionnaires were randomly

distributed. All of the survey responses were successfully received, and only 11 were incomplete. The online surveys were conducted and collected between August 09, 2010 and August 16, 2010. In order to ensure the reliability of the test measurement, Cronbach's alpha was computed and reported for each scale that measured the concepts being examined. The overall alpha score for the pilot data was 0.975, which indicated high reliability of the instrument.

4 FINDINGS

Table (1) displays students' acceptance of the number of Electronic Collaboration Group in one class.

Table 1: Preferred Number of E-Group Collaboration Tools Used in One Course.

Priority	Number of Collaboration Tools in One Course	Percentage
1	1 E- Group Collaboration Tool	47%
2	2 E- Group Collaboration Tools	32%
3	3 E-Group Collaboration Tools	17%
4	More than 3E-Group Collaboration Tools	4%

The majority of students examined (47%) believed that a course should have only one E-Group Collaboration Tool. 32% of the respondents indicated that two E-Group Collaboration Tools are more appropriate per course. 17% of the respondents chose three E-Group Collaboration Tools per course, and 4% of the respondents chose more than three E-Group Collaboration Tools per course.

Table (2) displays students' acceptance of the importance of Electronic Group Collaboration Tools used in higher education software systems.

Table 2: Preferred E-Group Collaboration Tools.

Priority	Group Collaboration Tool	Percentage
1	Discussion Boards	72%
2	Blogs	13%
3	Wikis	9%
4	Journals	6%

The majority of students (72%) viewed Discussion Forums as the most preferred Electronic Group Collaboration Tools used in the courses they've taken. 13% of the respondents viewed Blogs were the most preferred choice. 9% of the respondents chose Wikis, and 6% of the respondents chose Journals as the most preferred E-Group

Collaboration Tools.

5 DISCUSSION

Understanding students' perceptions regarding the E-Group Collaboration Tools used in Higher Education Learning Systems is the first step in developing and implementing a successful online learning environment. It is necessary for institutions of higher education to focus on learners' satisfaction in order to continuously improve online learning programs. Such careful monitoring will ensure the success and viability of online learning programs. Group learning is a good way of encouraging learning interaction. A good e-learning system should do well in promoting the use of group learning styles (Newman, et al, 2008). If effectively deployed, discussion boards, blogs, wikis, and journals could offer a way to enhance students' learning experiences, and deepen levels of learners' engagement and collaboration within the higher education e-learning environments. The primary objective of this study was to determine the best ways to integrate E-Group Collaborative Tools into existing e-Learning systems by identifying the most preferred E-Group Collaborative Tools, and the number of tools students expect/accept to see in one class.

In reference to the first question of this study, the findings suggest that the majority of the examined students (47%) prefer to have only one E-Group Collaborative Tool per class. Almost 80% of the examined students indicated that two E-Group collaborative tools per class is the maximum number they prefer to see in one class. Many students indicated that the majority of class activities in e-learning environments are individual-related activities, and that the number of group-related activities that require the use of group collaboration is usually 1-2 per class. The majority of students also indicated that they prefer to use the same type of technology in one class, and that the use of more than one technology could add more work load if students are not familiar with the use of that technology. Twenty one (21%) of the examined students indicated that they prefer the use of 3 or more E-Group Collaboration Tools per class. Most of these students indicated that they were more technology-oriented and that the availability of 3 or more tools would diversify the technology used and expose them to a variety of learning methods. Juniors were more open to trying new technologies than seniors. Given how recently blogs, wikis, and

journals have been added to higher education E-Learning systems, the preference of most seniors is understandable, as they were exposed to only one tool (Discussion Boards) in the past few years. Many of the students that did not choose several E-Group Collaboration Tool expressed concern over their level of computer competency, and factors including issues of access, connection, internet familiarity, that could affect their use of more technologies, which is also supported by the findings of (Al-Fadhli, 2010).

The second question of this study is concerned with the most preferred E-Group Collaboration Tool by students. The overwhelming majority of examined students (72%) chose discussion boards. The remaining 28% were divided among blogs (13%), wikis (9%), and journals (6%). Students' answers clearly indicated that the majority of students did not understand the key features of these tools, or the main differences among these tools with the exception of discussion boards. Most examined students indicated that they did not see a need for an additional tool since discussion boards offered many of the functions required for their group assignment work. Discussion boards can be assigned at the class level or at the group level. They can be classified by topic or by time. Students are able to post entries viewable by all class members, or specific group. They are able to attach text and media files if needed, and most importantly most students are familiar with them. Most students also indicated that Discussion Boards are usually used either for discussion activities, or as a group area to discuss work related to class project. The remaining 28% of examined students indicated that discussion boards should not be used in place of blogs, wikis, and journals, and that the nature of the group assignment should be the catalyst in deciding the type of E-Group Collaborative Tool used.

6 CONCLUSIONS

The number and quality of Electronic Group Collaboration tools in higher education learning systems have been on the rise. Similar to email, discussion boards, blogs, wikis, and journals will increasingly be among the key modes of interaction that students can be expected to use in their university education learning processes (Al-Fadhli, 2010), (Blackboard, 2010), and (So and Kim, 2005). Understanding students' perceptions regarding these tools is the first step in developing and implementing a successful online learning environment.

The findings of this study suggest that the majority of online students in higher education prefer only one E-Group Collaboration Tool per class. Two types of E-Group Collaboration Tools is the maximum number expected by the great majority of students. Many students preferred consistency on the type of E-Group Collaboration tools being used, and did not want to spend additional time learning how to use the tool. Many of the examined students preferred the use of discussion boards over blogs, wikis, and journals, mainly because many of them have been using discussion boards for years, or because they did not see the additional benefits involved in using blogs, wikis, and journals over discussion boards. The findings also suggest that in order to enhance the learning experience of online students, higher education institutions need to address the issues of computer competency, and technological factors including issues of access, connection, and internet familiarity, as they have direct impact on students' acceptance of the utilized E-Group Collaboration Tools. Universities should dedicate areas within each online course, and within the orientation process of both students and instructors to educate them about the available E-Group Collaboration Tools, and how to use them. Universities should also make available training and help materials to explain the features and the associated benefits of using such tools. More importantly, instructors and course administrators should be educated, not only on the technical aspects of these tools, but also on the proper use of these tools. Instructors and course administrators should be able to judge what E-Group Collaboration tool would best serve a specific group exercise, and how to decide on the number and the type of E-Group Collaborative Tools to be used in class.

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