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Abstract
The use of the Google newsgroup and mailing list program "Google Groups" to facilitate e-learning in a distance course is discussed. Despite the large size of the online course group (60 students), the study's findings show that students felt positive about the use of the program and its contribution to their learning of the course. The paper explores the reason for this and other interesting findings in the context of such a large online group that, experts may argue, is too large a size for an electronic group.

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The use of the Google newsgroup and mailing list program "Google Groups" to facilitate e-learning in a distance course is discussed. Despite the large size of the online course group (60 students), the study's findings show that students felt positive about the use of the program and its contribution to their learning of the course. The paper explores the reason for this and other interesting findings in the context of such a large online group that, experts may argue, is too large a size for an electronic group.

Keywords: Distance Education; E-Learning; Online Learning

INTRODUCTION

Many universities acquire, install and operate their own software solutions to facilitate e-learning. A university that acquires and hosts its own software solution can tailor the features, interface and other aspects of the software to meet its own objectives. At the same time, however, such an institution has to meet the cost of acquisition, modification and operation of the software. Particularly for cash-starved universities and those operating in the developing world, there may be a need to cut back on expenditure to meet budgetary limitations.

Several free software solutions hosted by Internet companies like Google, Yahoo! and Microsoft can be used by a university in e-learning. These include instant messaging programs like Yahoo Messenger and MSN Messenger. In this paper we analyze and discuss an actual use of the Google free on-line and discussion group service "Google Groups", in a distance course at a university in the Caribbean island of Jamaica. We highlight some of the major challenges and concerns in the use of this tool for the course. Also, we present and discuss the findings from a survey of course participants as to their perceived effectiveness of Google Groups for use in on-line learning.

The remainder of the paper progresses as follows. In the next section, we do a review of the literature. This is followed by an outline of the research methodology. A discussion of the case scenario in which the study was done is presented, followed by a discussion of the major challenges encountered in the use of the Google Groups tool. We present the main findings of the survey of course participants on the use of the tool in e-learning. The paper concludes with discussion of the main implications from the findings of this study, along with suggested avenues for further work.

REVIEW OF THE LITERATURE

The term e-learning is used in several contexts. It has been defined as the appropriate use of information and communication technology (ICT) in teaching and learning (Mutula, 2002). Sridhar (2005) states that e-learning "is about use of networked technology to manage, design, deliver and support learning." This networked technology includes the Internet, intranets, and generally any local- or wide-area network. In this paper the definition of Sridhar is used as it is a comprehensive definition that importantly includes the management as part of e-learning. It should be pointed out that the term on-line learning is widely used in place of e-learning (Piskurich, 2006).

E-learning can be offered synchronously or asynchronously, the mode partly depending on the technology employed. Technologies employed vary widely and include chat rooms, e-mail, real-time voice, face-to-face Internet conferencing and electronic discussion boards. Synchronous e-learning is felt to be easier to design and implement than asynchronous (Piskurich, 2006)

In the synchronous mode the instructor is on-line with the students and can answer questions immediately. In the asynchronous mode the students should be encouraged to be both "teachers", to offer information and insights from their own experiences; and learners, which allow them to gain information and insights from other members of the group as well as the tutor/facilitator.

An issue that has attracted a fair amount of research is whether e-learning programmes suffer from inadequate interaction. Martins and Kellermanns (2004) suggest that the level of interaction depends on several factors, including the instructor, peer encouragement, program design, and the choice of

2

technology. Wagner (1994) posits that learning technologies characteristics affect the type and nature of interaction that occur in distance learning. E-mail for example does not normally facilitate synchronous learning.

On-line discussion forums can support increased interactivity and collaboration among participants (Thomas, 2002). The extent to which online technologies, however, can fully replace face-to-face learning may be questionable. According to Skehill (2003) the technology has limitations for deeper and more reflective learning.

Research shows that increased interaction in distance courses leads to higher achievements (Zhang and Fulford, 1994). Moore (1989) identified three types of interaction in distance learning. These are learner-content, learner-instructor and learner-learner.

Within the face-to-face classroom, students sometimes form smaller study groups where they work cooperatively to promote learning. The evidence as to whether cooperative learning leads to higher outcome is mixed. Whereas Johnson, Maruyama, Johnson, Nelson and Skon (1981) conclude that cooperative structure is better, Newmann and Thompson (1987) state that for cooperative or group learning to improve performance, both group rewards and individual accountability are necessary.

Hill (1982, p. 522) suggests that interactive group learning is "usually superior to individual performance because of the group's ability to pool their resources, to correct errors and to use qualitatively different learning strategies". Communication therefore changes from the one-way tutor-to-student relationship to an all-round relationship, where students communicate with one another and are also helped and supported by the facilitator.

According to Nunamaker, Dennis, Valacich, Vogel, and George (1991), evaluation apprehension is a common group process loss. Participants are afraid to communicate ideas, opinions or information for fear of ridicule. In a virtual learning group, fear of ridicule can have a number of implications. For example, if a group participant feels that he has been wrongly criticized he may retaliate by flaming (the sending of highly negative, aggressive or malicious messages) (Sheehan and Hoy, 1999; Kayany, 1998).

Similar to that which occurs in the traditional face-to-face setting, distance education students suffer from the 'perceptions' of their colleague students in the course. These perceptions are said to affect the nature of the messages and the learning processes that occur (Zhang and Fulford, 1994). It is suggested that a learning environment which enables friendly and open exchanges among participants and the instructor is likely to be more productive than an environment in which the exchanges are formal and regulated.

Brown (2001) found that that unless some specific kinds of interaction are required, some students will not participate in on-line discussion. It should also be noted that instructors can change the level of interactivity in a course by adjusting how consistently, quickly and helpfully they respond (Kearsley, 2000).

Interactivity in teaching and learning relates to the constructivist epistemology. Fisher and Baird (2005) state that "The constructivist epistemology is an effective way to present content, encourage interactions, and provide assessment and feedback. The constructivist approach allows students to be the teachers as they share their diverse expertise and experiences with other students."

3

Should the instructor be always willing to intervene in on-line discussions? Berge and Muilenburg (2000, p. 55) offered the following advice to on-line instructors: "If things are going well, do not interfere."

RESEARCH METHODOLOGY

A distance learning course in Systems Analysis, taught over a seven-week period at the Mona Campus of the University of The West Indies (UWI), Summer 2005, was used as the case scenario for this research. "Google Group" discussion and community software, hosted by Google, was chosen by the researcher as the tool used to enhance the e-learning component of the course. This software supported an asynchronous e-learning mode. At the time of the research this software was in beta testing. The UWI was at that time already using a number of tools, including its own adopted version of the open source Moodle software. The distance learning arm of the university in which this course was administered, was at the time also testing some e-learning tools. Program administrators were however unwilling to allow use of these tools for this course as the tools were still considered to be in beta testing. Google groups was used because it provided threaded discussion forums and was felt by the course instructor to be easy to use and therefore could be used by the students with little or no training. A major consideration also was that it was free.

It should be noted that only a very basic introduction was given to students on how to use Google groups. This was described over the audio teleconference system. No images of the software screen were used to introduce the software. However, a very brief guide as to how to enroll in the online group was emailed to the class members.

With the instructor having set up the Google Groups site, a student had to go to this site and register. An email was automatically generated and sent to the site administrator (who of course was the instructor) requesting his approval of the student. A verification message was sent to the student requiring his confirmation to join the group. Only then was the student deemed as a full member of the group and so able to read and post messages. If the student failed to confirm request to join the group, he or she would still receive a copy of all messages posted to the site, as a "broadcast" methodology was used to send a copy of all postings to the group members.

While posting of material or comments to the course group site was optional, students had some incentive to post questions, comments or answer questions as they were told that an extra credit of 2 percent could be earned by doing so.

A questionnaire was constructed and posted on-line (on the http://questionpro.com site) during the sixth week of the course. This questionnaire was used to gather the opinions of course participants on their perceived effectiveness of using Google group in the course. An email was sent to all members of the on-line group with a link to this questionnaire.

CASE SCENARIO

The UWI operates three semi-independently operated campuses across the English-speaking Caribbean. Campuses are located in Jamaica, Barbados and Trinidad. Within each of these countries, as well as in what are referred to as non-campus territories, the UWI operates several smaller distance learning centers. These sites are equipped with an audio teleconference system (with limited video streaming capabilities). UWI students may register either as face-to-face students or distance learning students (but not both). The distance learning programmes are administered and managed by the UWI

4

Distance Education Center (UWIDEC).

Traditionally course material are printed and sent to each distance site, from where they are distributed to students. This is done at the start of each semester. Material that may be developed during the semester while a course is in progress is normally emailed to sites, and then printed for delivery to students. At the time when this study was conducted, UWIDEC had identified the need to adopt a "blended learning" approach to distance learning. Course material was being developed to be put on CD. Also, material was being developed for posting in the Moodle learning management and electronic tutoring system. The UWI does not consider its audio teleconference system as e-learning. Blended learning is in part intended to bring on board the e-learning component of courses.

Within the Caribbean region, very few students own a computer. This problem is always considered whenever instructors express the desire to have more electronic material in their course. All distance learning centers are equipped with a computer laboratory with the computers networked and connected to the Internet. A majority of distance learning students use the computer lab at their distance center.

Distance courses are allocated a set number of pre-scheduled audio teleconferences for the semester. As students already have printed material for the course content, an instructor is not required to "teach" as such in the teleconferences. Instead, the teleconference may be used as a question and answer session and to highlight certain aspects of the course. In fact, there are courses that are given only two two-hour teleconferences—one at the start of the semester and the other at the end. One of the objectives of blended learning is to reduce the number of teleconferences required for a course. It should also be noted that a maximum of ten hours of face-to-face tutorials with a Local Tutor (resident in the territory) are provided also for each course.

GOOGLE GROUP

A Google group may be set up with any of three access levels—public, announcement-only or restricted. The course group for this research project was set as restricted. Only students who had registered on the site, and approved, were able to post or read messages. The group was also set up with the default of having each message that had been posted, automatically emailed to all members of the group.

The first issue that surfaced was that many students either replied to the emailed group message, or posted a totally unrelated comment in the same thread as the one they were reading. This may have made it difficult for group members to easily browse the group site to see the issues that had been discussed. The ideal thing for students to have done of course is to start new threads for new topics or issues. On reflection some training and detailed instructions about posting material may have helped to reduce incorrect posts to threads.

Another problem that arose is that several students seemed to have had problems signing up to the Google group. Some written instructions were provided to students, in addition to a description of the sign-up process provided at the first teleconference for the course. To minimize scarce instructor time, if Google Group was to be used again in a distance course, the access level would be set at public, as there really was no confidential material posted to the group that would create any problem.

In spite of the fact that extra credit was being given for quality posts to the group discussion site, at the start of the semester it was clear that there was reluctance on the part of students to post comments or

5

ask questions. To further encourage participation the instructor periodically created new threads, where each thread contained a question on material covered in the course.

As the semester progressed and the number of posts started to grow much faster, the instructor had real problems in keeping up with the posts on the site. In using a group discussion tool like Google groups, there either needs to be several group facilitators or tutors helping to monitor the discussion, and respond to questions as required. Some people have suggested a ratio of one tutor or facilitator to 10 students.

A very useful feature provided by the Google group tool is the 'star' topic which allows you to better track a thread for new message postings. A visual inspection of the group site therefore makes it easy to identify updated threads.

SURVEY RESULTS AND DISCUSSION

There was a total of 60 students who signed on to the on-line group. The questionnaire (through a link in an email) was sent to these 60 students, of whom 24 or 40% responded by completing the questionnaire. No analysis was done to check for response bias.

Demographic data collected on the survey show that a majority of students seem comfortable with using on-line technologies. 54% of the students regularly use instant messaging, and 83% are regular users of search engines. Outside of the course, 88% of the respondents said that they were regular email users. Given these findings, it is perhaps not surprising that 87% of those responding to the survey agreed that the group site was easy to use. Students had little or no problems in learning how to read and post messages to the group. We also note that 79% of the respondents agreed that "the on-line discussions were appropriately structured to make it easy for me to follow what was being said."

Despite the fact that some students had problems in signing up to the group, 83% of those responding to the questionnaire disagreed that "signing up for and starting to use the group was too difficult."

88% of the students who completed the survey said that communication with their fellow classmates is important in helping them to learn the course. The same percentage agreed that "the on-line group led to greater communication among the members of the class." Consistent with these findings is that 92% of the respondents agreed that the group site facilitated their learning of the course. Although no objective measure (for example test scores) of learning was collected in this study, the results are consistent with some earlier studies showing that collaboration amongst adult learners leads to higher levels of learning (Sharon, 1990, Zhang and Fulford, 1994).

Communication (or interaction) between learner and learner is of course only one type of interaction that may take place in any learning environment. Other types of interaction that have been identified are learner-teacher and learner-content (Moore 1989). Interactivity has been said to be important to learning (Hill, 1982; Zhang and Fulford, 1994). In this study, 92% of the respondents agreed that the on-line group increased interactivity in the course.

In spite of the fact that there was only one group facilitator (the instructor), 87% of the students who responded to the questionnaire did not feel that "the on-line group size was too large to facilitate manageable and meaningful interaction amongst members." This is an interesting finding, given that the group size was large (60 students). Based on the frequencies and nature of their postings, five students took on, informally, the role of facilitator. These five students regularly answered questions

posted by their peers. It would be interesting to study the extent to which these five students perceived their roles as such, and equally interesting, the extent to which the other students saw these five students as co-facilitators or team leaders.

Studies on electronic groups have found that some people are more comfortable in electronic meetings than in face-to-face meetings. 45% of the students who responded to the survey gave a neutral response when asked if they felt more comfortable asking questions in the on-line group than in the audio teleconference. 25% disagreed that they felt more comfortable in the electronic situation. To further bolster these findings we note that 75% of the respondents disagreed that they "felt intimidated in using the group site to ask questions."

As discussed earlier, UWIDEC courses such as the course in which this study was conducted, all have smaller groups that are face-to-face groups in which tutorials are held. 46% of the respondents disagreed that they felt more comfortable asking questions in the on-line group than in the face-to-face small group tutorials. 29% of the respondents felt more comfortable asking questions in the on-line group as opposed to the face-to-face tutorials. For 25% of the respondents it did not matter either way, whether using the face-to-face medium or the on-line group.

When given a number of reasons as to why they posted or answered questions on the group site, only 21% of respondents gave "prospect of earning extra marks" as the main reason for posting. In contrast, 50% said they did so because answering questions helped them develop their knowledge of the subject. This is probably not surprising given the finding that 79% agreed that their knowledge of the course was enhanced by their participation in the on-line group.

As a deliberate strategy, the group facilitator (the course instructor) did not respond to most questions at the same time as they were raised on-line by the students. This was done so as to encourage students to respond to each others' questions. If it was clear after some responses that several students were going in the wrong direction, then the instructor would step in at an earlier point to clarify the issue. Berge and Muilenburg (2000) suggest that the instructor should not intervene if things are going well. Once each week the instructor would however ensure that appropriate comments or responses were made to the issues raised. To assess how students viewed this sort of "in the background" stance adopted by their instructor, they were asked "was there timely and appropriate comment/input/intervention from the course coordinator to discussions on the group site?" All 24 students who completed the survey said "yes."

Given that no analysis was done of the non-respondents, the findings of this study have to be interpreted with care. It may be that the students who responded to the on-line questionnaire are the ones who are comfortable with using electronic tools such as instant messaging and e-mail. In spite of this caveat, there are several interesting findings.

First, the results demonstrate that readily available and free tools like Google Groups, can play a significant role in contributing to perceived improved learning in e-learning and distance courses. The Google Group facilitated communication and collaboration among students, outside of the classroom. Google Group enabled three types of interaction: student-student; student-facilitator; student-course (through questions and answers posted on-line).

Second, the study results suggest, that over time in electronic groups, other members of the group may emerge as a sort of facilitator, due to the nature and frequency of their postings. Several possible

7

research questions arise. Would the persons who emerge as 'other facilitators' in electronic groups, also emerge similarly in face-to-face groups? Can we identify the demographics of these 'other facilitators', and so know with some sense before hand who these people are? What behaviour is expected of the main facilitator to lead to the emergence of these 'other facilitators'? The research suggests that one behaviour the main facilitator should play is to 'lurk in the background', and not always be willing to answer questions at the first opportunity.

Third, the researcher was surprised to learn that the prospect of earning extra credit was not the main motivator for posting material to the Google Group site. Students saw the tool first, it seems, as a tool to facilitate and enhance learning in the course. Why is this so? Is it because students wanted some method of being able to interact with their colleagues and the facilitator outside of tutorials and teleconferences? Is it that in a distance learning course there is a feeling of not quite belonging, and that this tool helped to engender a sense of belonging, that is, to feel more part of the class? Is it that students felt that the teleconferences were not sufficient in facilitating communication with one another and with the course facilitator?

Overall, the results of suggest that, at least among the population responding to the survey, a freely-available tool like Google Groups, can be an effective tool in a large group in promoting interactivity and learning. The technology allowed for the 'off-loading' of some responsibilities of the course instructor/facilitator. Some students implicitly became de-facto co-facilitators. Given that the instructor was not quick to answer posted questions, the high level of satisfaction as to the effectiveness of the tool, suggests that by merely enabling a forum to promote out of class discussion, students felt that this was important in itself. Perhaps also the fact that students could log into the group at their own convenience and see the questions and answers posted by their classmates, also helped a student to assess his own learning. This latter benefit may in fact be the best thing about technologies like the one used in this study.

REFERENCES

Berge, Z.L., and Muilenburg, L. (2000) Designing discussion questions for online, adult learning. *Educational Technology,* 40(5), 53-56.

Brown, R. (2001) The process of community-building in distance learning classes. *Journal of Asynchronous Learning Networks*, 5, 2, http://www.aln.org.

Fisher, M. & Baird, D. (2005) Online learning design that fosters student support, self-regulation, and retention. *Campus-Wide Information Systems*, 22, 2, 88-109.

Hill, G.W. (1982) Group versus individual performance: are N+1 heads better than one? *Psychological Bulletin*, Vol. 91 No. 2, 517-39.

Johnson, D.W., Maruyama, G., Johnson, R., Nelson, D., and Skon, L. (1981) Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. *Psychological Bulletin,* January, 47-62.

Kayany, J. M. (1998) Contexts of uninhibited online behavior: Flaming in social newsgroups on Usenet. *Journal of the American Society for Information Science*, Vol. 49, Iss. 12, 1135-1141.

Kearsley, G. (2000). *Learning and teaching in cyberspace*. Toronto: Wadsworth Thomson Learning.

Martins. Luis L. & Kellermanns, F.W. (2004) A model of business school students' acceptance of a web-based module management system. *Academy of Management Learning and Education*, 3(1), 7-26.

Moore, M. (1989) Three types of interaction. *The American Journal of Distance Education*, 3, 2, 1-6.

Mutula, S. (2002) E-learning initiative at the University of Botswana: Challenges and Opportunities. *Campus-Wide Information Systems*, 19, 3, 99-109.

Newmann, F.M., & Thompson, J.A. (1987) *Effects of cooperative learning on achievement in secondary schools: A summary of Research*. Madison, WI: National Center on Effective Secondary Schools.

Nunamaker, J.F., Dennis, A.R., Valacich, J.S., Vogel, D.R., and George, J.F. (1991) Electronic meeting systems to support group work. *Communications of the ACM*, 34 (7), 40-61.

Piskurich, G. (2006) E-Learning Fast, Cheap, and Good. *Performance Improvement*, 45, 1, 18-25.

Sharon, S. (1990) *Co-operative Learning Theory and Research*. Praeger, New York, NY.

Sheehan, K.B., and Hoy, M.G. (1999) Using E-mail To Survey Internet Users In The United States: Methodology And Assessment. *Journal of Computer Mediated Communication*, Vol. 4, No. 3, http://jcmc.indiana.edu/vol4/issue3/sheehan.html.

Skehill, C. (2003) Using a peer action learning approach in the implementation of communication and information technology in social work education. *Social Work Education*, Vol. 22, No. 2, 177-190.

Sridhar, S. (2005) E-Government - A proactive participant for e-learning in higher education. *Journal of American Academy of Business*, 7, 1, 258-268.

Thomas, M. J. (2002) Learning within incoherent structures: the space of on-line discussion forums. *Journal of Computer-Assisted Learning*, Vol. 18, 351-366.

Wagner, E.D. (1994) In support of a functional definition of interaction. *The American Journal of Distance Education*, 8, 2, 6-29.

Zhang, S., & Fulford, C.P. (1994) Are interaction time and psychological interactivity the same thing in the distance learning television classroom? *Educational Technology*, 34, 6, 58-64.

9