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Students' attitude towards two different virtual methods of course delivery

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Abstract

Video teleconferencing and web conferencing are two alternative methods of distance course delivery. This study addressed students' attitude towards these methods of course delivery. A course of sterilization and disinfection was delivered to operation room technology students using different methods, including face-to-face learning, video teleconferencing and Web conferencing. At the end of the semester, students' attitude towards each of these methods was obtained using a questionnaire. 88.5% of students preferred face to face learning. Comparing the two methods of virtual learning, 71.5% of students believed to more effective learning through web conferencing. In terms of being more attractive, 65.2% of student preferred web conferencing. Regarding ease of communication with the teacher, the satisfaction rate was 69.5% for web conferencing. 55.5% expressed that the teacher would have more control over the class through the Web conferencing. So, among the two methods of virtual course delivery, students significantly preferred Web conferencing.

Keywords: Video teleconferencing, Web conferencing, distance learning, e-learning

1. Introduction

Distance learning is an excellent method of targeting learners who are not able to participate the formal class sessions in an educational institution due to the priorities of work, home, or some regulation limitations. However, distance education has also another aspect which is emerging in new colleges or universities where education authorities encounter shortage of faculty members for offering specialized courses. The lack of permanent faculty members to provide coverage for delivery all professional courses can be a critical problem especially when students are registered for an on campus program. The invited academic staff may not physically participate in all class sessions over the semester as the expense or time of travel is normally a consideration for the academic institution or for the academic staff themselves. Currently, some universities of medical sciences in Iran newly won approval to accept students in some fields while they still do not have enough expert faculty members to support them. To compensate this deficiency, the university authorities normally invite faculty members from other universities or colleges to deliver the courses as visiting academic staff. In some universities, invited academic staff is dispatched from other cities as there is no other university or academic institution with the same instruction field in the city.

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Recently, two schools of nursing and paramedical sciences were established in Ghaen and Ferdows, two cities which are 100 km and 200 km far away accordingly from Birjand where the main campus of Birjand University of Medical Sciences (BUMS) is located. About 80% of educators delivering taught courses in these schools are dispatched from Birjand. BUMS is very appealing for finding strategies to improve learning systems in these branches and to drop the expenses and problems of dispatching educators for them. One of the possible solutions to decrease the load of dispatched lecturers in these isolated schools is synchronous distance teaching for some sessions of each course as a complementary approach. These complementary methods can include the use of remote teaching systems, such as video teleconferencing, Web conferencing by messengers, virtual classrooms and so on. Through using each of these video live methods, it is expected to both students and the educators to participate in a live presentation and discussion. Video live course delivery has been considered as an acceptable model of distance education, as visual and interactive information is an important component of a good presentation and an effective distance course requires a high level of interaction (Oviatt, 2000) (Miller, 1997). Indeed, deep and strong learning is supported, provided at least one of the three forms of interaction (student-teacher, student-student, student-content is at a significant level (Kwok, 2007). However, loss of student motivation due to the lack of face-to-face contact with teachers and peers, prohibitive startup expenses, and rather lack of school support are stated as some of barriers to successful distance learning. Visual live distant course delivery can work based on constructivist hypothesis. Constructivist models of learning propose that learners generate their knowledge and meaning from an interaction between their experiences and their ideas. In agreement with this, Burnett (Loch Birgit, 2011) comments that online educators should be aware of the strength of online synchronous media, such as chat programs.

There are a number of different distance course delivery methods which is usually supplemented by various forms of technology to deliver courses in remote classrooms. Myers et al. (Myers, 2004) comment that the need of distance students will not be met without resorting to appropriate technology. Recent and rapid developments in ICT and improvement the accessibility to the high speed Internet have made the use of synchronous solutions for distance instruction more popular. Video teleconferencing is one of these techniques. Video teleconferencing is a form of videotelephony but is mainly different from videophone calls in that it was designed to serve a conference rather than individuals. Video teleconferencing is the conduct of a set of telecommunication technologies offering a possibility for two or more local point to interact with each other via synchronized connections (two-way video and audio transmissions simultaneously). It is a visual distant collaboration and can be considered a type of groupware. With the advancement of Web 2.0 technologies and more widely availability of the high speed Internet connectivity, personal video teleconferencing known as Web conferencing hase become more affordable to the general public. Web conferencing technology only requires a computer with a web camera (either built in or external), free software usually known as a Web messenger, and an Internet connection. The availability of freeware used as chat programs has made software based video teleconferencing accessible to many. Consequently, a Web conferencing can be one of the alternative visual live methods in distance teaching when a broadband Internet connection and a personal computer or a laptop equipped with a webcam and speakers are available. Some educators have used some tools, such as chat programs to engage distance students in discussions (Guimaraes, 2002, Burnett, 2003, Cox, 2004). However, many others show a wary attitude toward using Web messenger as an effective learning tool for their particular discipline (Loch Birgit, 2011). Although each of the above systems can provide enriched learning opportunities, their outcomes are not the same and learners may have different attitudes towards using each of these delivery systems.

2. Purposes of the study

This study tries to answer the following questions related to student attitudes toward two different methods of distance course delivery:

- Which of the two distance course delivery methods, video teleconferencing or Web conferencing shows a more learning performance based on student's view
- What are the students' preferences for a distance course delivery

3. Implementation and Methodology

In this study, we delivered a course of sterilization and disinfection for first year students of operation room discipline in two schools in Ghaen (24 students) and Ferdows (21 student) in the second semester of academic year 2010-11. The course was split in three parts and each part was delivered with a different method including face to face, video teleconferencing and Web conferencing (using ooVoo messenger). To run Web conferencing, ooVoo software was chosen as our favourit Web messenger for this trial, because it is a free chat client for Wndows XP, or Wndows 7 operating system. This client offers web video and audio function. The messenger is already available, and easy to install. The usability, functionality and simplicity of this popular chat client made it as specially interesting candidate for instructional application.

During teaching by either of the latter two methods, the educator delivered the course either in his office room or in medical microbiology lab in Birjand (the capital of south Khorasan province) and the students were watching, hearing and discussing with him in their classroom in paramedical faculties in Ferdows or Ghaen. To hold a video teleconferencing course session, the whole students of the class were invited into an equipped room where all the appliances of video teleconferencing had been set previously by engineers. These included a codec, an integrated camera, two 50 inches LCD with the speakers on the wall and also a number of sensitive microphones fixed on a U form table. Students asked to sit around this U form table while the two LCD was in front of them. During video teleconferencing sessions, communication was through LCD screens and the speakers. In contrast, when working with ooVoo messenger, a video projector projected the content on a screen in front of students in their ordinary classroom while the classroom audio and video data was being transmitted to educator laptop in a distance through a high speed Web connectivity using a HD web camera a sensitive microphone with a long enough extended cable moving around when students wanted to ask their questions or take part in discussions.

In all three modes of course delivery, the educator conducted his course delivery with a combination of instruction styles including lecture presentation, answer and questions and also discussion in a very friendly and supportive way. Learners could ask their question where other students were encouraged to answer them and at the end, the educator intervened and responded the comprehensive answer if needed. At the end of the semester, students' attitudes towards each of these methods were obtained by focusing on distance learning. This was done by using an online questionnaire in an open source and customized learning management system known as Moodle, and finally the results were analyzed.

4. Observation and Finding

In case of video teleconferencing, our engineers generally had to set up the video teleconference system for each session of presentation, as the location of course delivery where the educator presented his instruction stuff was different. For some sessions, the location was in medical microbiology lab and for some other sessions it was in the educator's office room. All the technical set up was done by two expert computer engineers and one of them was in the site while a session was running. During teleconferencing PowerPoint slides were run by the educators from his laptop in distance. During the sessions the course delivery was encountered some minor technical problems which was solved by the engineers. In case of Web conferencing, the educator installed the oovoo messenger on a laptop himself just before starting the first Web conferencing and no engineer was needed for technical support, neither before nor through the sessions. In one session of Web teleconferencing, a minor technical problem occurred which was solved by the educator himself after few minutes interruption. Before starting Web conferencing, all PowerPoint slides was emailed to the class management in faculty and asked him to participate in the class when

Web conferencing is running and play the the slides one by one when the educator asked. All the students were asked to compare their learning experience in two different modes of distance learning and face-to-face learning and indicate their preferred mode by answering a number of survey questions before the final examination. Their responses were as follows:

Not surprisingly 88.5% of students preferred face to face learning and clearly stated that face-to-face education provided more interaction and easier communication. Three quarter of students expressed that they feel comfortable with taking part in online course delivery sessions and find it interesting and somehow amusing. This is very similar to the findings of Chi (Kwok, 2007) indicating the convenience of online learning outweighs the higher interaction in face-to-face learning. 68% of students suggested a blended method of course delivery over the semester as a combination of face-to-face learning sessions and some sessions of Web conferencing using a Web Messenger. Comparing the two methods of distance learning, 71.5% of respondents believed to the higher performance and more effective learning through Web conferencing while 28.5% attributed this to video teleconferencing. In terms of being more attractive and amusement, 65.2% of student preferred Web conferencing by ooVoo messenger rather than video teleconferencing system. Regarding ease of communication and level of interact with their teacher, the satisfaction rate was 69.5% for Web conferencing compared to 31.5% for video teleconferencing.

55.5% of students expressed that the teacher would have more managing and controlling over the class through Web conferencing while 44.5% considered this for video teleconference. Of communication and interaction with their teacher, a satisfaction of 68.8% for Web conferencing against 31.2% for video teleconferencing was received. All students excluding one suggested their visiting educators use Web conferencing as a complementary to face-to-face teaching for all courses they present.

5. Discussion and Conclusion

The finding of this study showed that while face-to-face teaching/learning provides reasonable opportunities for interaction, students were concerned about low level of interaction provided by technology-mediated distance education. Seemingly novel audio and video technologies for distance learning are effective to a certain point, but none of them can address the needs of distance learners comprehensively. Chi (Kwok, 2007) compared online and face to face learning methods and concluded that instant responses are critical for communication and the responses are more spontaneous in face-to-face taught course sessions. Anderson and Garrison (Anderson, 1998) claimed that interacting only with learning materials is not enough. Quality interactions between educators and students and among the students themselves are the main elements of a successful learning process (Anderson, 1998) and this is what is mainly seen in face-to-face learning.

Many researchers believe that using online chats should be integrated into course design to can provide a reasonable level of interaction (Cox, 2004) as interaction has long been a critical element of any well-established instruction process and it is usually valued in distance education (Kwok, 2007, Sims, 2003). Our observation of learners' attitudes does support this belief, as our learners were satisfied with visual live course delivery through a Web messenger as a complementary method. The distance learners were grateful for ease of working with Web conferencing tool in comparison with video teleconferencing tools. It has been shown previously that for using video teleconferencing, technical competence is absolutely required while this is not the case for Web conferencing with a web messenger. Web messengers are normally used as chat tools by students and this cause them a sense of good feeling while dealing with these tool in formal education. Moreover, the ease of customization and being free of charge for a web messenger may encourage both faculty party (educators and faculty authorities) and the learners to propose it as a preferable communication tool in distant teaching/learning.

Anderson (Anderson, 2003) clams that some kind of synchronous technologies including video teleconferencing offer relatively less interaction between learners and educators because of the intrinsic technological distance between these two parties which is imposed by the technology. This problem seems to be very faint in Web conferencing as web messengers do not the technological complexities of video teleconference systems at all.

As suggested by previous studies (Kwok, 2007), establishing a supportive atmosphere, socialization and informal exchanges between learners and also between learners and educators is highly important for motivation of all

participants to play a positive role in improving learning process in synchronous online learning environments. The learners in this study experienced this could happen more easily during communication through Web conferencing. Peter Rich, Instructional Psychology and Technology (http://ctl.byu.edu/tech-tips/web-video-conferencing) statements: "I will often use Skype's messaging and video conferencing features when I need to quickly connect with a scholar one-on-one. This has allowed me to make connections with folks that I otherwise have never met or seen".

Chi Ng (Kwok, 2007) notes that although high level of student-student interactions are likely in video teleconferencing, educators usually use it to only deliver their lectures. In agreement with Chi Ng study, we noticed that course delivery by video teleconferencing does no support a high level of interaction between students and the educators due to the inherent technological issues. In contrast, during course delivery by Web conferencing using a messenger (ooVoo), we notice a high level of interactions including possibility of discussion and also questions and answers between students and the educator. This can be attributed to the easy access of the web messenger system. It is probable that due to technological barriers, the level of communication through video teleconferencing is not as high level as Web conferencing and instructors cannot dominate the discussion while keeping the focus oriented to the topic and delivering by presentation.

The current study helped us to improve our understanding of pedagogical implications of course delivery by different methods: face-to-face, video teleconferencing and Web conferencing. Among the three methods of course delivery, the first priority for students is learning in face to face mode but comparing their attitudes towards two methods of distance delivery, students propose Web conferencing. The practical advantages includes being free, simply installed and many students are familiar with its function through chatting with friends and family.

References

ANDERSON, T. 2003. Getting the Mix Right Again: An updated and theoretical rationale for interaction. International Reviews of Research in Open and Distance Learning, 4.

ANDERSON, T. D., AND D. R. GARRISON 1998. Learning in a networked wold: New roles and responsibilities, Madison, WI, Atwood Publishers.

BURNETT, C. 2003. Learning to chat participation in synchronous online chat. Teaching in Higher Education, 8, 247-261.

COX, G., T. CARR, M. HALL. 2004. Evaluating the use of synchronous communication in two blended courses. Computer Assisted Learning, 20, 183-193.

GUIMARAES, L. C., R. BARBASTEFANO, E. BELFORT 2002. Tools for synchronous distance teaching in geometry. 2nd International Conference on the Teaching of Mathematics. Hersonissos, Crete.

KWOK, C. N. 2007. Replacing Face-to-Face Tutorials by Synchronous Online Technologies: Challenges and pedagogical implications. The international Review of Research in Open and Distance Learning, 8.

LOCH BIRGIT, M. C. 2011. Synchronous Chat and Electronic Ink for Distance Support in Mathematics. Available: http://www.innovateonline.info/index.php?view=article&id=374.

MILLER, W. W., AND J. K. WEBSTER. 1997. A comparison of interaction needs and performance of distance learners in synchronous and asynchronous classes. American Vocational Association Convention. Las Vegas, NV.

MYERS, S. C., D. BISHOP, S. S. RAJAMAN, AND J. KELLY 2004. Virtual office hours: Tutoring distance students in statistics and economics. OCDE Convergence of Libraries, Learning and Technology Conference. Columbus, OH.

OVIATT, S., P. COHEN, L. WU, J. VERGO, L. DUNCAN, B. SUHM, J. BERS, T. HOLZMAN, T. WINOGRAD, J. LANDAY, J. LARSON, AND D. FERRO 2000. Human-computer interaction.

RICHARDS, J., JOHN PLATT, AND HEIDI WEBER 1985. Longman dictionary of applied linguistics. Essex: Longman.

SIMS, R. 2003. Premises of Interactivity: Aligning learner perceptions and expectations with strategies for flexible and online learning. *Distance Education,* 24**,** 87-104.