Sync or swin: A comparative analysis between asynchronous and synchronous technologies

Despite the 'cutsie' title of this paper, there is an implied metaphor regarding synchronous and asynchronous technologies in DE. The distinguishing characteristic of synchronous communication according to Bates and Poole is, "Synchronous technologies require all participants to participate at the same time. Asynchronous technologies allow participants to access the technology at any time of their choosing." (Bates & Poole, p. 54). But there are some qualities that are inherently different. In synchronous environments participants are limited by external events such as other meetings, interruptions, and attention spans or interest levels. Thus, continuing our analogy, synchronous participants must enter the 'pond' at the same time while asynchronous participants are free to swim around the surface as they wish. Additionally, synchronous meetings focus attention on a limited range of topics, so all participants travel into the subject (pond) to the same depth. It is important to our discussion to note that sink does not mean failing or dying, it simply means a deeper involvement in a limited space.

This paper will focus on HorizonWimba as a synchronous-based system and Angel as an asynchronous-based system. Both of these systems share similarities with their competitors but they also offer some interesting advantages.

General Aspects

A key feature of DE is that learning can take place without the constraints of time and place. Asynchronous-based systems take full advantage of the time/place issue by providing lectures, discussions, Powerpoints, audio and video, etc. at a web location that can be accessed

by the student at any time from any place with internet connectability. Synchronous-based systems take advantage of allowing students to access from any location but they must all be present at the same moment. In this case, synchronous systems act more like the classroom; discussions are dynamic, feedback is instantaneous, and all participants are focused on the topic at the same time. As Mckenzie points out "Synchronous Advantages:(Low-cost, quick Q&A); Disadvantages:(Lecture style-no discussion, Time constraint, No schedule flexibility, harder for working students to participate). A-Synchronous: Advantages(Flexible schedule, Discussion forum, Learn from peers); Disadvantages:(Higher-cost-due to planning, desining, and implementing)." (Mckenzie, 2007). As a synchronous system, HorizonWimba allows students to participate in real time, thereby experiencing the facial expressions of the instructor, hearing the voices of fellow students and participating in the general emotion of a live meeting.

Angel is designed as an asynchronous system and takes advantage of text formats. Students have the opportunity to read lectures, articles, write papers, take quizzes, participate in discussion boards, work in groups, etc. Additionally, video and audio can be posted for use by the participants at any time. Angel provides the instructor with grade book capabilities, attendance management, and a wide range of report functions. It can also provide student pictures, a feature that is handy when Angel is used in a mixed mode presentation.

Technological View

The technical requirements for HorizonWimba are reasonable for all participants. Participants need at least Windows 2000, Mac OSX 10.2, or Linux as an operating platform. The program works on IE 5.0, Netscape 7.0 Mozilla 1.0, or Safari 1.1. While broadband is

recommended, the company states that HorizonWimba works well on 56K dialup. (Retrieved March 4, 2007 from http://www.horizonwimba.com/products/liveclassroom/). Typical of a synchronous-based system, HorizonWimba requires more technology than an asynchronous system. For example, HorizonWimba can use voice technology to incorporate lectures to podcasting. Once learned it is relatively simple, but instructors and older students may need some technical tutoring to master the concept. Participants may also need to know how to use a microphone, a web cam, and may need faster computer capabilities. These are not insurmountable and an increasing number of people are becoming adept at handling these technicalities. Instructors may need to be aware of the limitations of the students level of computer skills and what limitations the student may face from technology, such as operating platform and bandwidth capabilities.

Angel requires fewer technical challenges. Still the instructor needs to provide detailed instructions to students for them to navigate smoothly through the system. Angel provides two different programs, one for K-12 and another for higher education. In addition the instructor can make use of several automated functions such as providing student feedback based on performance. Also instructors can see the pattern of student access allowing intervention if a student begins to fall behind.

Pedagogical View

As Moore & Kearsley point out, transactional distance is "... the physical distance that leads to a communication gap" (224). An synchronous-based system like HorizonWimba can go a long way in reducing that gap. HorizonWimba allows personality to be inserted in a course

much as Holmberg stresses in his fourth postulate of the Empathy Theory: “The atmosphere, language and conventions of friendly conversation favour feelings of personal relation . . ."

(Holmberg, 38). Functions such as whiteboard included in HorizonWimba allow for a classroom-like experience with interactive participation. When used with audio interaction, McGreal calls this audio-graphic-teleconferencing. (McGreal, 2004).

Just as dialogue is important in synchronous systems, so too is it in asynchronous systems like Angel. However, absent the immediate feedback of audio and/or video, the instructor must work harder at conveying the empathetic approach. Text can easily be misinterpreted and an incorrect tone can be disruptive much as Wiio’s warning “If a message can be interpreted in several ways, it will be interpreted in a manner that maximizes the damage.” (Korpela, 2006). Asynchronous systems like Angel offer an opportunity for all of the pedagogical elements of dialogue, structure and autonomy to exist. Dialogue is achieved through the posting of lessons and by incorporating personalized feedback from the instructor. Additionally, discussion boards provide the students with an opportunity to discuss topics not only with the instructor, but other students and guest speakers. Angel provides a structured environment for learners to access exercises, tests, projects and for students to work in groups. Finally, the instructor should be encouraging learner autonomy. As Fahy points out, “ . . . the best learning results when the learner processes and integrates new experiences into his or her existing constructs (Coleman, Perry, & Schwen, 1997).” (Fahy, 2004).

Conclusion

The strength of both synchronous and asynchronous-based systems is the ability to use new computer technology to reach a larger potential student population than at any other time in history. As Cohn suggested, courses established by an asynchronous-based system such as,

Angel could easily be saved, adapted and shared with other courses to become a multipurpose course website. (Cohn, 2004). The synchronous sessions of HorizonWimba can also be saved and played back, but then those sessions are no longer synchronous. Competition in the field of course delivery continues offering new features for both synchronous and asynchronous methods. Downs describes an exciting platform, Moodle, that is being offered at no charge! (Downs, 2005). How will the future of technology change these systems? Technology only gets better, students and instructors only become more adept at using the technology. Will we see 3-D holograms allowing the instructor to be virtually present and fully interactive in the student's location? Regardless, the pedagogical concepts of dialogue, structure, and autonomy will still be the underpinnings of DE, and students will still have the opportunity to immerse themselves in an academic discussion or choose to swim out on their own to cover a broader range of topics. Sync or swim, either way students of DE win.

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