

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

Introduction

The terminology "Synchronous learning" and "Asynchronous learning" effectively describe how and when learning, training and collaborative teaching takes place. Asynchronous training involves the use of a learning system that does not require the student and instructor to participate at the same time (Bates and Poole, 2003, p. 54). Synchronous training is an educational program in which the student and instructor participate at the same time (Bates and Poole, 2003, p. 54).

This essay will compare synchronous and asynchronous technologies, referencing two systems in particular: An asynchronous based-system: Blackboard Academic Suite™; and a synchronous based-system: Elluminate *Live!* Academic Edition™.

General aspects

- **Purpose of the systems**

Elluminate *Live!* Academic Edition is a synchronous system which provides an interactive, live eLearning and web collaboration environment that adds live interaction to distance learning, and promotes real understanding and active learning (Elluminate, Inc., 2006, para. 2).

Blackboard Academic Suite provides a flexible, open, asynchronous platform, known as a Networked Learning Environment™ (NLE), where instructors can teach using advanced tools, and share educational content (Blackboard Inc., 2004, p.5).

Technological view

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

The synchronous and asynchronous structures examined here are both web-based. General computer requirements for both these systems consist of an operating system, such as the Windows operating system, or the Mac operating system, and include applications like Oracle, Apache or Java, and browsers such as Mozilla Firefox, Netscape, Internet Explorer, or Apple Safari.

The chief technological features of the synchronous system, Elluminate *Live!* Academic Edition, include:

- “Two-way voice over the Internet
- Shared, interactive whiteboard
- Application sharing feature
- AppSnap™, where participants are able to capture screens from shared applications and live or recorded video
- Live webcam video
- Forums
- Break out rooms, complete with private audio, whiteboard, and application sharing.
- Synchronized web tour, which allows participants to interact independently with content in fully functional window
- Hand-raising, yes and no communication and instant polling capabilities
- Ability to record a live session
- Interactive quiz and survey manager” (Elluminate, Inc. 2006, para. 22)

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

The primary technological features of the asynchronous system, Blackboard Academic Suite, include:

- “Chat tools
- Discussion boards or forums
- Virtual classrooms
- Group projects
- Group e-mail
- Access to all course content
- Assessments and surveys
- Grade books
- Personalization of web pages inside the LMS
- E-commerce and E-marketplace capabilities
- Allows for different user roles, depending on administration requirements
- Version tracking
- Application sharing
- File sharing
- e-Portfolios
- Learning Object Catalog” (Blackboard Inc., 2004, p. 7, 9 11)

Pedagogical view

- **Pedagogical concepts**

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

Andragogy, and pedagogy, are defined as “the art and science of helping adults, or children, learn” (e-learningguru.com, 2006, para. 3). Stacey (2003) references several suggestions for online pedagogies for distance learning (para. 14). The most significant five are discussed.

1. Collaborative peer-to-peer interactions

Online learning provides an educational platform where participants not only have access to learning content and an instructor, but also to their fellow students. Pedagogical methods which encourage students to learn online in an autonomous self-study fashion can create an isolating environment. It is far more engaging to create synchronicity by pedagogically bringing students together by creating collaborative peer-to-peer partners (Stacey, 2003, para.15).

2. Threaded text based discussion

According to Stacey (2003), “threaded text based discussion is one of the most successful and effective online pedagogies for active learning available” (para.15). Pedagogical use of discussion involves structuring learning activities that require students to discuss and collaboratively investigate course material. Asynchronous, structured, facilitated threaded discussion provides for ease of use and for a rich range of multiple perspectives.

3. Interactive polling and feedback

Questioning is an essential pedagogical practice. Online polling tools provide great opportunities to inquire, canvass, and survey student opinions and positions on a whole variety of issues.

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

Student polling done in the synchronous environment can be utilized to give an instructor real-time feedback on whether the pace of instruction is too fast or too slow.

4. Problem based learning

Problem based learning has long been an effective pedagogical practice. This kind of collaborative pedagogy requires students to work together in groups on a specific task and produces powerful learning.

5. Webcasts

Webcasts are typically synchronous, with students attending a session featuring one or more key speakers in real time.

“Typical features available in a webcast include:

- Video, one way or two way
- Audio Voice-Over-IP, one way or two way
- Shared whiteboards
- Synchronized web browsing
- Text messaging/chat
- Application viewing/sharing
- Content windows
- Discussion boards
- Polling

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

- Handraising, yes/no buttons” (Stacey, 2003, para. 48)

- **Possibilities for interaction**

The benefits of applying various synchronous and asynchronous technologies for “learner-instructor, learner-learner and learner-content interactions” are clearly highlighted within this essay (Moore and Kearsley, 2005, pp.128-132). One other useful type of interaction to note is the possibility of constructing an online community.

According to Stacey (2003), “online communities represent an opportunity to generate active learning in a truly constructivist fashion. They uniquely provide opportunity for the socio-cultural development of the collective knowledge of a community as contrasted with the individual's development of knowledge” (para. 48).

The online community suggests an approach where part of the responsibility for creating the content of a course is turned over, in part, to the students. Online communities provide a basic framework, but then allow community members to construct and interact.

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

- **Role of instructor**

Considerations for the facilitator of any distance learning program, whether it is synchronous or asynchronous, include:

1. Create an environment of interaction with learners

The instructor should use appropriate questioning skills to ensure interaction with learners and to determine learner understanding. With asynchronous learning, the instructor should allow sufficient time after posing a question for learners to process information before answering (Holmberg, 2003, p. 60).

2. Facilitate involvement and communication from learners and from instructor

Efforts should be made to involve all learners in class activities. Calling learners by name to participate in class discussions will personalize lessons as well as notify learners that they are each responsible to contribute as active participants.

Conversely, the instructor should be mindful of his role in providing immediate feedback for assignments and comments, as a lack of this will lead to learner frustration (Holmberg, 2003, pp. 57-60). Managing the interactions with strong leadership and direction is considered essential to a successful learning experience.

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

3. Use variety to engage learners

Learner involvement activities may include small-group work, dyad discussions, cooperative learning tasks, learner presentations, and polling of learners to seek their opinions or ideas (Bates and Poole, 2003, p. 37).

Using a variety of interactive technological tools to address differing learner needs is paramount.

Diverse learning exercises may be enhanced by using an assortment of delivery methods.

Additionally, if learners understand there are multiple means of contacting and interacting with the instructor they will experience reduced anxiety which can enhance learning.

It is also the responsibility of the instructor to understand the used technology's strengths and weaknesses, be prepared to offer technical assistance and plan for technical failures.

What are the key strengths and the key limits of the systems?

Synchronous learning systems, like Elluminate *Live!* Academic Edition, have many key benefits.

They provide immediate two-way communication, and are especially useful for reinforcing knowledge. Synchronous communication is particularly appropriate when learners and instructors in different locations need to work collaboratively or conduct discussions within a fixed timeframe (Bates and Poole, 2003, pp. 260-261).

Conversely, there are also opportunities for improvement associated with synchronous learning systems. In synchronous learning environments, the structure of the learning activities requires

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

that participants be able to take good notes and recall significant points from the discussions.

Synchronous learners must process and understand the presentations and discussions as they happen (Bates and Poole, 2003, pp. 260-261).

The key strengths of asynchronous learning systems, like Blackboard Academic Suite, include the ability to allow learners to access learning content on-demand, providing flexibility for both instructors and participants. Web-based courses are an efficient application of asynchronous distance education; they provide access to a broad range of learning resources and learner assistance since support can be built into the programs. They enable learners to reflect on and interact with new information before having to respond to it (Bates and Poole, 2003, pp. 260-261).

Asynchronous learning systems also have some key drawbacks. For example, there is a natural loss of immediacy between students and instructor. Asynchronous systems depend on students' self-discipline and learner autonomy in participating and maintaining an appropriate pace (Moore and Kearsley, 2005, p. 24-25).

Conclusion

According to Bates and Poole, "we are in a period of transition. It is therefore important to look for fundamental principles in the use of technology in education that will operate across different technologies and will still apply as technology changes" (2003, p. 56). Both synchronous and asynchronous systems, when used appropriately, provide useful venues for online learning. It is

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

imperative that a facilitator of distance education utilize both systems, as well as employ appropriate combinations of media, to create a learning arena where students and instructors alike can benefit.

Melissa A. Smith

A Comparative Analysis between Asynchronous and Synchronous Technologies

March 6, 2006

Word count: 1100, excluding direct quotes, references and headings

OMDE 603 Assignment #1

References

Bates, A.W., & Poole, G. (2003). *Effective teaching with technology in higher education: Foundations for success*. San Francisco, CA: Jossey-Bass.

Blackboard Inc. (2004). *Blackboard Academic Suite: Learning system, Community system, Content system*. Retrieved on February 21, 2006 http://www.blackboard.com/docs/as/bb_academic_suite_brochure_single.pdf

Bloom, B.S. (1956). *Taxonomy of educational objectives: The classification of educational goals: Handbook I, cognitive domain*. New York; Toronto: Longmans, Green.

e-LearningGuru.com (2005). *Glossary*. Retrieved March 2, 2006 from <http://www.e-learningguru.com/glossary/a.htm>

Elluminate, Inc. (2006). *Products – Academic Version*. Retrieved on February 22, 2006 http://www.elluminate.com/academic_edition.jsp

Friery, K. A., Notar, C. E., Restauri, S. L., & Wilson, J. D. (2002) *Going the distance: Active learning*. Retrieved February 14, 2006 from http://www.findarticles.com/p/articles/mi_qa3673/is_200207/ai_n9087391

Holmberg, B. (2003). *Distance education in essence - An overview of theory and practice in the early twentyfirst century*. 2nd Edition. Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg.

Moore, M. G., & Kearsley, G. (2005). *Distance education: A systems view*. 2nd Edition. Belmont, CA: Wadsworth.

Stacey, P. (2003). *Online pedagogies for active learning: October 17th, 2003*. Retrieved March 1, 2006 from <http://www.bctechnology.com/statics/pstacey-oct1703.html>