

Editor's Note: Computer technologies have the ability to emulate almost any environment. It is not surprising that for distance learning we simulate the familiar aspects of the classroom for presentations and discussions. Of course, the computer can enhance what we do in regular classrooms by adding additional communication channels (chat and video) and the ability to download files, share screens and keyboard controls, and access other internet resources. What used to require an expensive studio and team of technicians can now be accomplished from your home or office computer.

Challenges in Synchronous Virtual Classrooms Adoption by Faculty

**Chandra Roughton, Florence Martin, Jennifer Warren, Courtney Gritmon
USA**

Introduction

There has been a major transformation in education especially with technological advancement. The breakthrough of the internet and other new technologies has forced traditional colleges and universities to employ alternative methods of instructional delivery. Conventional ways that instructors teach and students learn continue to be impacted by innovative strategies. One delivery method that is becoming popular is synchronous virtual classrooms. This study investigates why so few faculty members at a southeastern university in the United States use the synchronous virtual classroom, specifically Horizon Wimba, to teach their online classes.

Online Education

Online education can be defined as an approach to teaching and learning that utilizes Internet technologies to communicate and collaborate in an educational context (Blackboard Inc, 2000). Online education has become increasingly more popular due to its flexible access to content from any place at any time. Different technology applications are used to support different models of online learning. Asynchronous communication tools (e.g. e-mail, threaded discussion boards, newsgroups) allow users to participate in an online course at their convenience. They can participate at any time and from any place. Synchronous technologies (e.g. webcasting, chat rooms, desktop audio/video technology) allow the instructors to maintain the synchronous interaction in their online courses. Students are expected to login at the same time but can participate from any place (Means, Toyama, Murphy, Bakia and Jones, 2010).

Students seeking to take online classes or earn a degree online may do so for several reasons. For students with jobs and families, time is a factor. Online courses offer adult learners the opportunity to further their education and to acquire relevant job skills without having to spend time traveling to a campus or to a workshop site. The flexibility of many online courses also allows students to take control of their learning by working it into their busy schedules when it is convenient. Online courses are often less expensive than face to face courses, so the financial aspect of distance learning is attractive to students, because they not only save on fees and tuition but they also save on expenses like transportation and housing.

Blackboard Inc. (2000) listed the following as some of the educational advantages of supplementing a course with web-based tools.

- Enhancing student-to-student and faculty-to-student communication.
- Enabling student-centered teaching approaches.
- Providing 24/7 accessibility to course materials.
- Providing just-in-time methods to assess and evaluate student progress.
- Reducing administration around course management.

Online education opens a lot of doors for students who reside in rural regions or whose local universities and colleges do not offer courses that they are interested in. For some, fully online programs are the only way that they can take the classes that are required for a certain degree or enter a program that they desire.

What are Virtual Classrooms?

Virtual classrooms allow instructors and students to interact online synchronously. Most virtual classrooms support audio, video, application sharing, and content display. They enable instructors to add vitally important interactive elements such as text chat, audio chat, and instant polling that simply cannot be provided in an asynchronous course. The best elements of synchronous online instruction is that faculty and students can talk to each other, express emotion, participate in group activities in the break out rooms, and feel that they can still interact as if they were face to face. Some of the common virtual classrooms available in the market today are Elluminate, Adobe Connec, Webex, and Horizon Wimba.

Horizon Wimba, commonly known as Wimba, is the synchronous tool that the university where this study is conducted would like utilized more efficiently and effectively. Wimba online classroom utilizes instant messaging, file sharing, streamline video, breakout classrooms where students can work within groups even though they are not physically sitting in the same classroom, etc. (Wimba, 2009b). According to the website, Wimba Classroom is the “cornerstone of the Wimba Collaboration Suite, [it] is a live, virtual classroom environment with robust features that includes audio, video, application sharing and content display, polling, whiteboarding, presenter on-the-fly, resizable chat areas and participant lists, usage analytics tools, and now both MP3 and MP4” (Wimba, 2009a). Between the two Wimba products, a professor can do just about anything in the virtual classroom that can be done in a regular classroom.

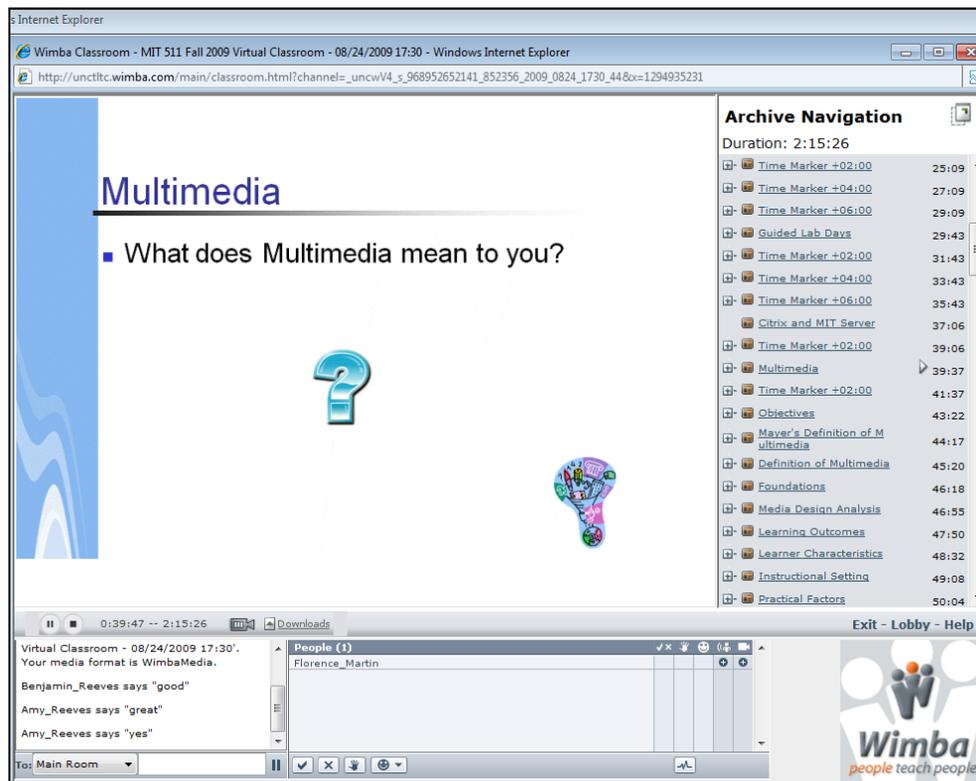


Figure 1. Screenshot of the archive of the Horizon Wimba Virtual Classroom

Importance of Synchronous Communication

Researchers have explored on the importance of synchronous communication. Kock's (2005) media naturalness hypothesis predicts that synchronous communication increases psychological arousal with the ability to convey and observe facial expressions and body language. Robert and Dennis's (2005) cognitive model of media choice predicts that synchronous communication increases motivation. Hrastinski's (2008) interviews revealed that many e-learners felt that synchronous communication was "more like talking" when compared to asynchronous communication. It appeared more acceptable to exchange social support and discuss less "complex" issues.

Motteram (2001) argues that synchronous tools are more effective for the 'social' side of education and that asynchronous tools are better at dealing with the 'academic' aspects of the course. Cao, Griffin and Bai (2009) suggest that improving student satisfaction with synchronous interactions will effectively raise overall student satisfaction with course Web sites. Computer-aided instruction that is exclusively asynchronous cannot possibly convey any kind of immediacy. Many students will lose the intellectual thread and the urge to follow the information exchange if it takes days or even hours for students to get a response to a question (Haefner, 2000).

Collis (1996) identified four significant advantages of synchronous over asynchronous systems:

- Motivation - synchronous systems focus the energy of the group
- Telepresence - real time interaction builds a sense of social presence and involvement and helps to develop group cohesion
- Feedback - synchronous systems provide quick feedback on ideas and support consensus and decision making
- Pacing - synchronous events encourage people to keep up-to-date and provide a discipline to learning which helps people to prioritize their studies

Corbeill (2006) added two additional advantages to the list.

- Spontaneity - synchronous events make it easy to add new ideas to the conversation, brainstorming or decision making is well supported.
- Familiarity - synchronous systems can simulate a more traditional environment.

Thus synchronous technologies are important for online education.

Online Courses at the Southeastern University

This southeastern university began offering online courses in 1998. Currently, the professors who opt to teach these courses have a variety of resources to choose from including asynchronous tools such as Blackboard Learning System, faculty websites, and Taskstream; in addition, the synchronous systems of Horizon Wimba and Second Life are also available to instructors. The most commonly used asynchronous system is the Blackboard Learning System. An online course shell is created for every class, whether it is face-to-face, online, or a hybrid class. It is up to the professor's discretion whether s/he uses that resource. The faculty websites are used mostly for information regarding the classes including class descriptions, syllabi, and schedules.

Table 1 below shows the total number of classes as well as the number of online classes offered by the university during the Spring/Summer of 2010. Approximately 6.8% of all spring classes and 10.9% of all summer classes were offered as online courses. These numbers limit the number of faculty members who would require the use of synchronous tools to teach their students in an online classroom environment.

Table 1
Classes offered in Spring/Summer 2010

Undergraduate and Graduate courses	Spring 2010	Summer I and II 2010
All courses	3,624	1,533
Online courses	245	167

Purpose

The purpose of this research is to determine why so few faculty members at the university use synchronous tools, specifically Horizon Wimba (Wimba) to teach their online classes. Specifically, this study answers the following questions.

1. What are the main reasons why faculty do not use synchronous tools?
2. Would the faculty be willing to adopt synchronous tools in the future?

Method

Instrument

A survey was distributed to all instructors who taught online in the Spring 2010 or Summer I and II 2010 semesters at this university. Using Survey Monkey, a web-based survey application, participants were asked questions regarding their attitude towards and experience with synchronous tools. The survey was sent through the universities' email system as a link. Survey Monkey's simple template and immediate reporting allowed for immediate feedback and prompt analysis of the survey results.

Participants

The participants who responded to the survey were from various disciplines at this southeastern university, including but not limited to chemistry, physics, sociology, criminology, anthropology, communications, environmental studies, and foreign languages. The respondents were all instructors who taught an online class in either the Spring 2010 or Summer I and II 2010 semesters. The participants were selected based on a list generated by the registrar's office. The participants had varying degrees of online teaching experience; while some instructors only taught one online course, there were 10 respondents who indicated they taught three or more online courses in their disciplines. Of the 149 professors surveyed a total of 53 responded (35% response rate) to the questionnaire.

Results

Reasons for not using Wimba

A total of 39 responses were received to the question on the survey which focused on why faculty do not use synchronous tools.

Upon completion of the analysis it is evident that there are several reasons as to why faculty are reluctant to use synchronous tools in their online courses. However, survey results demonstrate overwhelmingly that professors do not use it mainly because of its lack of flexibility. When asked why they did not use synchronous tools in their online instruction, out of the 39 individuals who responded to the question, 19 indicated that they did not use Wimba, because they believe students prefer asynchronous online classes. The professors stated that the reason students sign up for an online course is because they have jobs and family obligations and they like choosing when and where they complete their work. In addition, some students live in different time zones and

some students are service members who are on deployment overseas, so participating in a synchronous class would be impossible for many students.

Table 2
Reasons for instructors not using synchronous tools.

Reason	# of respondents
Lack of flexibility for the student. The instructor believes that students prefer asynchronous courses to synchronous courses, because they want to learn when and where they choose.	17
Instructors' lack of knowledge in how to use the tool and frustration with the complexity and time commitment in learning how to use it.	16
Believes that synchronous classes are not necessary to teach the required content.	5
The instructor has a personal preference for teaching online courses asynchronously.	4
Technology issues for both students and instructors.	4

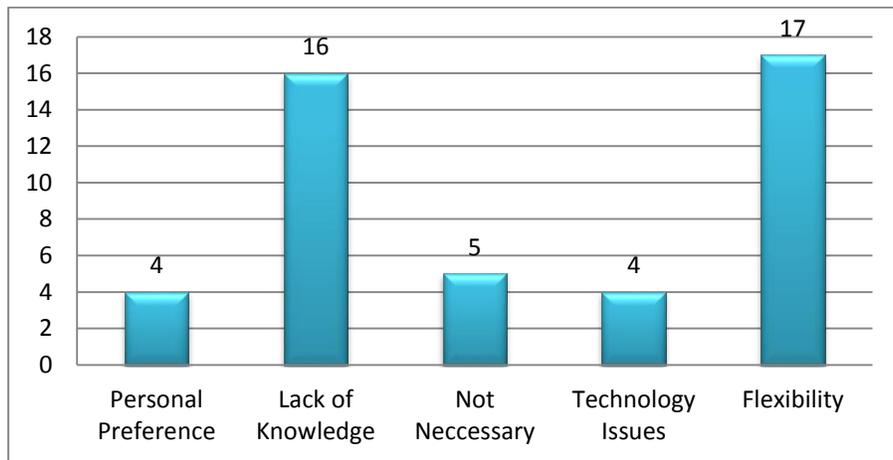


Figure 2: Reasons for not using Synchronous tools.

The second reason professors identified that they are not using synchronous tools is because they are not comfortable with the technology and feel that they lack the necessary training to conduct synchronous classes. Wimba is integrated into the Blackboard system and requires all participants to have at least a microphone/headset, but preferably a webcam, as well. Instructors expressed frustration in not only learning how to use the tools, but also in managing a class discussion synchronously. They also question whether or not their students are comfortable using the technology themselves. Some feel that synchronous interaction hinders communication and makes discussions less compelling. Furthermore, they feel that students are more comfortable with asynchronous methods, because they are used to communicating in social networking environments such as Face Book.

The third reason instructors indicated that they did not use synchronous tools is because they felt that synchronous meetings were not necessary to teach the required content of their courses.

The survey results also revealed that there is no motivation or incentive for professors to use synchronous tools or to take the time to learn to use them. However, instructors feel most encouraged by their colleagues, their department leaders, and the Office of e-Learning, to use synchronous tools. Some professors feel that there are more important professional matters that need immediate attention. For example, one professor said: “If it doesn't count for RPT, it doesn't exist. I'm hearing in my RPT committee work that only research publications matter now.”

Willingness to use Synchronous Tools

There was another question on the survey that focused on the respondents’ willingness to use Wimba for synchronous classes in the future if they were not currently doing so. A total of 20 respondents answered the question. The main reason instructors are reluctant to adopt synchronous tools, such as Wimba, in the future is due to their own lack of knowledge in how to use the tool and in how to use the tool effectively in their classroom.

Table 3
Willingness to use synchronous tools.

Willingness	# of respondents
If you are not using Wimba for synchronous meetings now, would you be willing to adopt it in the future?	20
Instructor's lack of knowledge about how to use the tool and how the tool would be useful in the classroom.	7
No time to learn a new tool.	5
Believe that asynchronous is better, because students want to attend class on their own time.	3
Not necessary to teach required content.	2
Other	2
Lack of students’ skills and knowledge to use the tool.	1

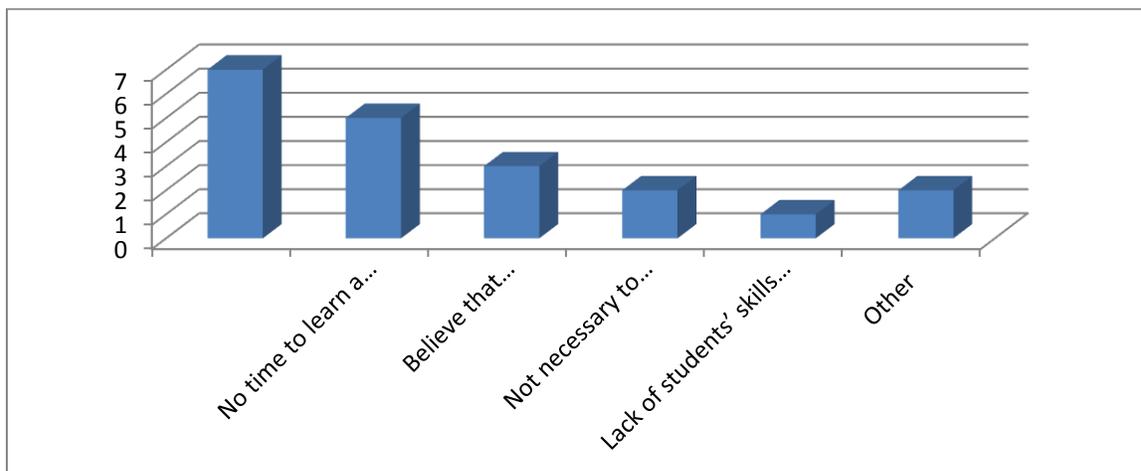


Figure 3. Willingness to adopt Wimba in the future but reluctant now

Upon completion of the analysis, instructors indicated that they are not willing to adopt Wimba as a synchronous tool, because they feel that they lack the overall knowledge not only to use the tool, but also to use the tool effectively in an online course. The tool is viewed as being difficult to learn and difficult to use on a regular basis, presenting technology issues for both students and instructors. The second reason instructors indicated that they were not willing to adopt the tool was because they felt that with other responsibilities there was simply not enough time to learn how to use a new technology tool. Lesson planning, publications, service, and committee work were cited as higher priorities.

Discussion

Reasons for not using Wimba

There were three main reasons why instructors at this southeastern university do not use synchronous tools, such as Wimba, in their online courses: synchronous meetings lack the flexibility that attracts students who want to attend class on their own time; instructors lack the skills and knowledge to use synchronous tools; and synchronous meetings are not necessary in order to teach the content required in the course.

Flexibility

The lack of flexibility is the most difficult of the three causes to address with interventions. Online instructors who choose to teach synchronously will experience a decrease of flexibility in their schedules. However, assuming that there are instructors who have schedules that would accommodate this situation, there are interventions that could increase the number of instructors who use synchronous tools to deliver their online classes.

Instructors' attitude and aptitude towards technology and synchronous teaching have an impact on whether they chose to teach synchronously and therefore should be considered in the application process and included in the job description and specification. The Office of e-Learning should have an integral hand in staffing the right instructors for the job, keeping in mind the lack of flexibility that they will face.

To increase their ability to address the performance gap, the Office of e-Learning will need to document and preserve data in regards to online instructors, their use of synchronous tools, and the impact that synchronous teaching has on learning. This information will be valuable when trying to inform and persuade instructors that synchronous tools, such as Wimba, are worth the extra time constraints.

Knowledge

Some instructors are not using synchronous tools because they do not know how or because they are intimidated by the cumbersome technical issues that may arise. The Office of e-Learning can empower instructors to use synchronous tools through activities such as: interactive training, collaboration, scheduled practice, job-aids, and suggestions.

A significant amount of online instructors have reported attending training on Wimba but still feel uncomfortable using the tool. It is essential that instructors attend training for Wimba that is interactive, just-in-time, and supplemented by electronic or print job-aids. The Office of e-Learning should continue to encourage continuous growth and development for instructors and should require that instructors follow up training with feedback and suggestions.

To maximize the impact that the Office of e-Learning has on novice users, they should encourage the sharing of knowledge amongst instructors and across departments. The Office of e-Learning can look to the School of Nursing and the School of Education for expert Wimba users and utilize their expertise. Creating a network of experts and learners will increase the amount of instructors that use synchronous tools.

Content

The third reason instructors indicated that they did not use synchronous tools is because they felt that synchronous meetings were not necessary to teach the required content of their courses. Depending on the various subjects that the instructors taught, some instructors thought that synchronous meetings were not needed for their particular subject area.

Instructors willingness to adopt Wimba as a synchronous tool

There are three main reasons why instructor's indicated that they are not willing to adopt Wimba as a synchronous tool.

Using the tool

The first reason is because they feel that they lack the overall knowledge not only to use the tool, but also how to use the tool effectively in an online course. The tool is viewed as being difficult to learn and difficult to use on a regular basis, presenting technology issues for both students and instructors.

Most of these synchronous tools have a number of features which can be beneficial if mastered well. It is challenging at times for instructors to learn all the different features of the tool so that it can be used successfully in their courses.

Lack of time

The second reason instructors indicated that they were not willing to adopt the tool was because they felt that with other responsibilities there was simply not enough time to learn how to use a new technology tool, especially one that is already perceived as being difficult and complex. Lesson planning, publications, service, and committee work were cited as higher priorities.

Faculty are on a busy schedule all through the year, and taking time from teaching, research or service is not possible. They need to somehow make time in order to learn to use the tool successfully. If the department or the university offers incentives for them to learn the tool, that might be a motivation for them to make the required time.

Prefer Asynchronous Technologies

The third reason instructors indicated that they were reluctant to adopt Wimba in the future is because they believe that asynchronous online learning is more preferable to students because of its flexibility.

In the case of synchronous tools, online instructors may need additional encouragement and motivation in order to adopt synchronous tools such as Wimba. Instructors can be energized and guided by mentoring, coaching, and incentives. Getting department leaders and expert Wimba users involved in the performance improvement will increase the impact and scope of the desired performance improvement. Through mentoring programs or coaching sessions, instructors will have the advice, knowledge, and support needed to confidently conquer synchronous tools. Leaders outside of the Office of e-Learning department will be a useful resource and an undeniable asset during implementation. Creating a social network of Wimba users on campus will foster an environment of collaborative learning and information sharing.

Implications and Recommendations

In order to enable professors to effectively teach synchronous online courses, it is important to have open communication between the professors and the Office of e-Learning to show there is support within the university that can be utilized to develop synchronous online classes. By including the professors in the implementation process, they will have a voice in the who, what, when, where, why, and how questions regarding synchronous learning. It will also form an inter-

university network of professionals who all understand the shared goals of the Office of e-Learning and the university related to synchronous learning.

In addition to communication, there should be adequate employee development available to the professors who teach synchronous classes. Some examples of these would include training (possibly in addition to the training already available), job aids, tutorials on the Office of e-Learning webpage, mentoring and coaching. By communicating that there are several resources to help with synchronous classes, more professors may follow in the footsteps of 21st Century learners and utilize the phenomenal resources that are available to them.

Lastly, it is important for Office of e-Learning to establish clearly defined and understandable policies, procedures, and guidelines for online instruction with regards to synchronous tools. This will prevent any need for interpretation as to who should be conducting synchronous online classes and how these classes should be developed. The Office of e-Learning needs to complete their website with all of the necessary forms and instructions needed in order to have the developed synchronous online course reviewed and approved by the appropriate committee. By making this process easier and more understandable, more professors may see the appeal to teaching their courses synchronously.

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About the Author

Florence Martin is at the Watson school of Education, University of North Carolina, NC-Wilmington, NC.

Email: florencemartin@gmail.com; martinf@uncw.edu