

EFFECTIVE TEACHING FOR TODAY'S SOCIETY

HYBRID TEACHING

An Interactive Qualifying Project Report

submitted to the Faculty

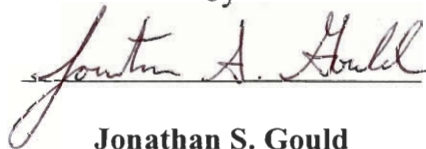
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Abstract

The objective of this project is to explore the effectiveness of learning by using synchronous and asynchronous lectures. Specifically, the objective is to bring out the advantages of using hybrid teaching for today's society. The ultimate goal of this project is to recognize the importance of this medium to students, faculty, and institutions. This teaching method has the potential to advance learning and teaching capabilities to a higher level. It may also provide greater flexibility to professors in class scheduling.

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Objective

The objective of this project is to explore and discuss the effectiveness of learning by using synchronous and asynchronous lectures. Specifically, the objective is to bring out the advantages of using hybrid teaching for today's society.

Introduction

Students and teachers make up the fabric of this society. People are continuously learning the latest ideas and techniques, and they in turn teach these to others. The art of learning and teaching in today's classrooms is anything but new, or state of the art. However, as time changes, so does society. In today's fast paced world, people have far less time to learn, and at the same time considerably more information than their ancestors. Students today are taught a broader range of subjects than in the past, with the hope of developing into a well-rounded person. Today's career fields also require students to learn a depth of knowledge which is ever-growing. This means that students have less time to learn more. Therefore, there is a significant need to use more efficient ways of teaching for today's society.

The ultimate goal of this project is to recognize the importance of this medium to students, faculty, and the institution. This teaching method has the potential to advance learning and teaching capabilities to a much higher level, as well as to provide greater flexibility in scheduling. It also provides time for instructors to enhance their teaching with results of scholarly work.

Methods of Learning

The current method of learning, lecture based, has remained very popular throughout the decades due in large part to the personable and effective interaction between student and instructor. This method also seems the most convenient method of presenting material to a large number of students simultaneously. However, there are two obvious drawbacks to the conventional lecture based method of education:

1. Supplemental instruction, due to the increasingly growing body of knowledge often required to fully understand modern engineering disciplines, is difficult to present in the short term periods allowed for lectures.
2. A more personable one-on-one communication between student and teacher is not possible under the current method. In other words, students often feel restricted in a classroom setting and will not ask questions nor ask the professor to repeat part of a presentation.

Consequently, a student may be unable to fully grasp the concept being delivered in the standard lecture based style resulting in inadequate experience to understand the idea. Due to the advancement of fields, this is a more common problem than many may think. There is an enormous knowledge base which is growing by the day that instructors must deliver to students. This is especially the case in specialized engineering fields where a new technique or approach to a theory is constantly being developed. If students are not aware of these new techniques they may find themselves inadequately prepared for the field when they emerge with their degree. Therefore, instructors need to continuously update their teaching materials and techniques through reading and direct involvement in the professional world.

A typical 50 minute face-to-face lecture style course does not allow students the opportunity of learning enough material to have a strong grasp on the concepts. Furthermore, students do not have the luxury of learning at a time and pace convenient to them. Often times, students may be physically present for an 8 AM lecture. However, they may not be at the necessary mental level to understand the concepts being delivered. Freedom of teaching is also important for instructors. The condensed lecture method may not be adequate for faculty to fully convey what is necessary in the course. As mentioned earlier, without sufficient time for research to improve the content being delivered, a students' learning is ultimately being degraded.

Instructors who are unable to devote sufficient time for research and incorporate updated multimedia materials into their teaching style may ultimately end up as 'ineffective' instructors. This could possible lead to a drop in the quality of teaching, followed by a drop in student interest, and finally a drop in enrollment for the university. This is a serious disadvantage for society, which exists as the foundation of effective teaching and proper application of knowledge. While teaching style alone can be improved and alleviate some of the problems, it cannot be substituted for enriched content materials that are necessary in today's fast growing fields.

With modern internet technologies, these problems can easily and adequately be addressed. Many institutions have already begun to adopt e-learning systems. Their concepts vary from using the web as a means for course organization to fully developed online learning courses where students never meet with the instructor. The following are four definitions of online learning methods:

Internet Courses

An internet course is commonly referred to as an on-line course or a web based class. These courses are delivered exclusively over the internet, allowing the student to learn at a time and place convenient for them. Many instructors continue to use traditional hard-copy textbook and materials, with the internet primarily providing basic course goals, instructions, and communication. Internet learning or distance learning, as its name implies, is done at a distance. A major drawback is it's lack of personal interaction with faculty and peers.

Integrated Internet Courses (ADLN)

An integrated internet course, referred to at WPI as the Advanced Distance Learning Network (ADLN), uses traditional lecture based learning for on campus students. Students who choose to learn from a distance have the ability to watch an online video of the lecture, specially edited to show the professor, slides, and student questions. This type of course has many advantages, and has been recognized by many institutions as a tool to increase enrollment in highly specialized fields such as Fire Protection Engineering or Environmental Engineering.

Web-Enhanced Courses (myWPI)

A Web-Enhanced course is essentially a traditional course with significant use of the internet to facilitate interaction and learning. Web-Enhanced classes provide students access to course materials, syllabi, discussion boards, lecture notes, calendars, and email 24 hours a day, 7 days a week. This type of learning is not meant to take the place of students attending lectures, but is intended as an extension of the classroom where

students can find additional information or review lecture notes to help understand difficult concepts.

Hybrid Courses

“Hybrid” is the name used to describe a course that combines conventional in-the-classroom instruction with computer-based, online learning. This concept utilizes courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated. The goal of Hybrid courses is to join the best features on in-class teaching with those of online learning to promote active and independent learning, reduce class seat-time, and allow for flexibility in student and faculty schedules. Using computer based technologies instructors can use the Hybrid model to redesign some lecture or lab content into new online learning modules. These could be case-studies, tutorials, self-testing exercises, simulations, or online group collaboration. It is the ultimate resource being offered 24 hours a day, 7 days a week.

Consider a situation where an event or demonstration from a previous lecture is to be referred. It is difficult for an instructor to redevelop the event and incorporate it into the current problem. Instead imagine that a student can click on a link and be instantaneously brought to a video clip which can viewed at a convenient moment, pausing it to think about how it applies to the current problem and then continuing the lecture. In this way the student will be able to recall the explanation exactly as it happened and will be able to comprehend it much better and more quickly. The quality of the presentation also improves since the students only get the final product of the

lecture, which is prepared before hand. Therefore, students are not subjected to distractions or problems that may take place during a live lecture.

“Hybrid instruction is the single greatest unrecognized trend in higher education today.”

— Graham Spanier, President of Penn State University

This statement, released by the president Graham Spanier of Penn State University, illustrates a growing recognition and validation of the trend of integrating the Hybrid teaching method into higher education across the country. Many institutions have adopted e-learning systems, such as WebCT or blackboard, into their curriculums in a way to help their student’s access course information at a time and place convenient to them. Many institutions, due to intense competition of student recruitment, have taken it a step further offering courses online where students are never faced with the traditional classroom environment. Is this taking it too far? Perhaps the Hybrid learning method is an intermediate step which will maximize the use of e-learning as well as proven personable one-on-one teaching techniques.

Maximizing Learning

Institutional Resources

The incorporation of e-learning will allow institutions to maximize their available resources to meet the educational and institutional needs of their students. On a resource level, Hybridization reduces overcrowded classrooms, specifically two classes can operate in one physical space or a large class can be split into two smaller classes for

improved student-instructor interaction. Hybrid learning also means that more courses can be offered at convenient times without the need for additional space. Additionally, the use of Hybrid courses could mean that the institution is able to offer twice as many courses to its students without the need for additional space. On a pure cost level, online courses can reduce paper and photocopying costs, which also is beneficial to the environment. In Hybrid courses, all course documents, including syllabi, lecture notes, assignment sheets, and other course handout are easily accessible anytime on the course website. These are important advantages for institutions of all levels, in these times of budget cuts and severe restructuring, where the availability of funds is inadequate.

Student Learning

In addition to institutional benefits, Hybrid instructional delivery of classes will enhance student learning in a variety of ways. The technology driven environments of today's academic and professional worlds demand that students be computer literate. Hybrid instruction offers students the opportunity to gain that essential experience in the completion of internet assignments and activities.

Online instruction, like traditional classroom instruction, has its strengths and weaknesses. In the Hybrid model of learning, student participation is increased. Students who may have been reluctant to participate in lecture style discussion or direct questions to the instructor do very well in the Hybrid approach. "Some students who rarely take part in classroom discussions are more likely to participate online, where they get time to think before they type and aren't put on the spot"[1]. By using discussion board students can freely interact with their classmates and instructor, asking questions and posting

responses. These discussions, if developed adequately often achieve the back and forth conversational quality seen in traditional classroom discussions.

At universities where there is a large population of students where English is their second language, for example WPI and many other engineering institutions, have time to fully absorb the discussions and contents presented in the Hybrid format. Students are also more likely to post a question on a discussion board or e-mail the instructor with a question than they are to raise their hand in class. Additionally, research shows that students are “more motivated if they are in frequent contact with the instructor” [2]. The Hybrid learning method utilizes both of these ideas in its approach.

Another benefit is flexibility. Many colleges schedule classes starting at 8 AM in order to physically fit all of the courses into the schedule. The problem many institutions see is a lack of physical classroom space, especially computer labs. James Clack, Duke University’s director of counseling and psychological services, said the latest research shows that college-age people should be getting nine hours of sleep a night. [3] Unfortunately, "They begin to get into a pattern of sleeping four to five hours," he said. "They really think it doesn't bother them, but that really isn't the case." Hybrid learning would allow those students who stay up late to focus on course work later in the afternoon, when they have a higher mental capacity. Students at Duke University have shunned 8 AM classes to the point that many departments stopped offering them. Just recently, Duke Administrators completely did away with 8 AM classes opting instead for 8:30 AM as the earliest class of the day. When campus planners looked over the schedule, they realized that over the years, most classes had been squeezed into the hours between 10 AM and 2 PM. This appears to be the ideal time for students to be learning.

In fact, there have been several studies that illustrate this. Courses with large laboratory components can be a particular nightmare to schedule. This is especially so at engineering schools with an abundance of laboratory courses, making it nearly impossible for students to take the necessary courses. Hybrid courses give students and administrators more options to develop manageable schedules.

Hybrid courses have yet another side effect which many instructors find very beneficial; they are writing intensive. Discussion board postings and responses, as well as e-mail communication with classmates and the instructor provide students with an ample opportunity to develop their written communication skills. This reinforces the importance of writing skills which will carry over to the work place. A constant complaint of today's employers, regardless of the field, is the inability for employees to construct effective written communication. The students in Hybrid classes discover that they are not learning in isolation. Instead, they are members of a learning community. The learning method more closely resembles the work place than the traditional classroom.

Additionally, students have greater access to course materials and are therefore more fully engaged. They can view pre-recorded lectures, access lecture notes, additional examples, as well as up-to-date syllabi, assignment schedules, task sheets, and grades. These pre-recorded lectures, additional examples, and laboratory procedures can be done over and over until they are done perfectly. When students watch how to do a particular problem they can be sure that the instructor isn't making any mistakes which leads to confusion. There is also the added benefit that if a certain step is confusing, students can go back over it several times until they have fully understood it. This easy

accessibility and abundance of course resources serves to promote a positive learning environment for all learners. In today's society, formal learning is not restricted to students of any specific age group. Working students or parents are becoming more common. For these students, flexibility of learning is a major issue – not only for learning properly, but for deciding whether to go to school at all. When it comes to making a decision between improving your career through furthering your education or spending your evenings with your family, many simply cannot afford the time to commute to an institution. The added convenience and flexibility will make the decision much easier for working parents. With the availability of digital multimedia technological resources, it is crucial for those with the ability to use the technology to provide such flexibility to perspective students.

Table 1 - Advantages of the Hybrid learning method

| ADVANTAGES OF THE HYBRID LEARNING METHOD | | |
|---|--|--------------------|
| <i>STUDENTS</i> | <i>INSTRUCTORS</i> | <i>INSTITUTION</i> |
| Student interaction and engagement can be increased and hence the performance and learning are improved. | New teaching opportunities open due to flexibility of Hybrid teaching. | |
| Teaching a Hybrid course leads a faculty member to make enhancements in other traditional courses and look at others courses from different perspectives. | UCF - University of Central Florida shows that student retention in Hybrid courses is better than online teaching and equivalent to that in face-to-face courses. | |
| Hybrid courses increase convenience by decreasing time commitment and commuting for the course, and increase student to student and student to faculty interaction through emails, phone calls, virtual classrooms, discussion boards, and face to face meeting sessions. | | |
| Shy students who are quite in class really participate online. | | |
| Student enthusiasm increases as they can come up with new ideas due to the flexibility. Also, faculty member's enthusiasm increases because they realize that what they want to convey through lecture gets through to a higher number of students. | | |
| | Because of flexibility in Hybrid courses, faculty members can achieve learning objectives more easily. For example, independent learning can be stimulated more by asynchronous and synchronous teaching in a Hybrid course. | |

Mallick, Rajib B. - Advantages of Hybrid Learning. January, 2004

Research to Date

Two universities have set the standard on the Hybrid learning method: the University of Central Florida (UCF) and The University of Wisconsin-Milwaukee (UWM). These institutions have conducted comprehensive examinations of Hybrid course effectiveness. Faculty at the University of Wisconsin-Milwaukee “almost universally report their students learned more in the Hybrid format than they did in the traditional class sections” [4]. In Hybrid classes, instructors stated that “Students wrote better papers, performed better on exams, produced higher quality projects, and were capable of more meaningful discussions on course material” [5]. Data from the University of Central Florida shows, “students in Hybrid courses achieve better grades than students in traditional face-to-face courses or totally online courses” [5]. Furthermore, Hybrid courses have lower withdrawal rates than fully online courses, and student retention in Hybrid courses is equivalent to that of traditional courses [5].

In a study performed at Winona State University (WSU), Lee Gray delivered four graduate level web-based (Hybrid) courses and analyzed the struggles of both students and instructors in integrating the traditional lecture course into a web-delivered approach. Students in each class were asked to review an online evaluation and be prepared to carefully reflect at the end of the semester. A total of 84 students in four educational leadership courses were involved. Student perceptions were gathered on the amount that they believed to have learned in the Hybrid class versus a typical traditional course. Their results are seen in Table 2 - Lee Gray, WSU – Perceived amount learned.

Table 2 - Lee Gray, WSU – Perceived amount learned

| | Category | | |
|-------|-------------|-------------|-------------|
| | <i>More</i> | <i>Same</i> | <i>Less</i> |
| N (%) | 17 (40%) | 23 (53%) | 3 (7%) |

This indicates that the Lee Gray was able to develop his Hybrid class in such a way as to develop student interest to the point where they were able to self learn. It is important to note that only 7% felt as if they had learned less in the web-delivered class. The course structure provided 5 traditional lecture style classes in which the students were able to interact with each other and the instructor, developing discussion and asking questions, which had been developed over the course of several weeks. Table 3 below shows a representation of how much time was actually spent by students' online, keep in mind that none of these students had ever engaged in an online course.

Table 3 - Lee Gary, WSU - Amount of time spent online

| | Category | | |
|-------|------------------|------------------|------------------|
| | <i>4-6 hr/wk</i> | <i>2-4 hr/wk</i> | <i>1-2 hr/wk</i> |
| N (%) | 12 (28%) | 22 (51%) | 9 (21%) |

It clearly shows that many students spent more than 2 hours online which was the recommended amount. It would be interesting to know whether or not the students who felt they had learned less were the ones that fell into the 1-2 hours of online study per week. The results suggest that it is critical for a well integrated class and online system that students be reminded that spending the recommended time online is critical in their understanding of the course material.

Furthermore students were asked to explain what they liked most about the online class and what they liked least (a full list can be found in Appendix B). The overwhelming least liked part of the Hybrid course was the lack of face-to-face

interaction among other students and the instructor. One student said “As nice as it was not to have to drive to Winona for class, I missed the regular interaction and discussion with my classmates and you.” Another said, “I felt that there was an overload of information with very little time to discuss all of it. More class time to process with peers would have been great.”

These arguments are countered by an overwhelming amount of students who enjoyed the flexibility and convenience of the internet. Many students also mentioned the significance of independent learning and self learning. One student put it very well by saying, “Thanks for the awesome learning experience. This was my first time doing an Internet course. I liked your balance of class time and Internet time. I strongly suggest that you keep the five class periods. Do not ever go to just Internet. The people contact is still necessary, even though on a limited basis.” Perhaps more simply put:

“The independence we had ... as far as being able to log on anytime, anyplace.”

There are many studies going on right now into Hybrid teaching as a means to use today’s technology to help students gain a broader understanding of course materials. The University of Wisconsin-Milwaukee has created a very insightful website created which has been designed in such a way to help other institutions gain an understanding of the Hybrid teaching methodology and how to implement it. Other institutions which are currently exploring Hybrid courses are University of Central Florida, Winona State University, Maricopa Community College, University of Colorado at Denver, Piedmont Community College, Arizona State University, Worcester Polytechnic Institute, and several others. Links to these sites and other relevant Hybrid learning material can be found in Appendix A.

Integrating Hybrid Teaching

Graduated Integration

Hybrid course development allows interested faculty to ease into online learning formats without the burden of developing an entire course at once. Many universities have already begun to use educational software packages such as blackboard to allow courses to have some online aspects. In most cases, the structure for Hybrid teaching is in place and current web supplemented classes that already have online syllabi and lecture notes can easily add to the content, developing a very comprehensive Hybrid course. This graduated approach produced additional benefits: “Over two semesters, materials were added, tested, and refined, resulting in higher quality materials than might have been created in one semester without student feedback” [6]. The importance of this gradual incorporation of the Hybrid learning method is twofold; first the faculty has the necessary time to develop and refine the course content and secondly the students have time to fully utilize the content.

Obstacles in Hybrid Courses

There seems to be great promise in using Hybrid teaching as an improved format; taking the best practices from the traditional classroom style and the best practices from fully online classes and integrating the two. However, instructors must be very careful to structure the materials in a manner that will allow the students to quickly understand the new course format and use the material proactively to gain a broad understanding of the material being presented. Students must also recast their conventional learning style to fully benefit from the new Hybrid learning model. The learning model requires students

to become more independent and self-reliant. Providing personal help and help documents is essential for students that feel overwhelmed by the new format. This can be done by extending office hours, letting students know that you are always available, having a school help page devoted to answering questions about the Hybrid learning style, access to a 24/7 institutional Help Desk, and most importantly a course specific syllabus which clearly indicates what is expected of each student.

Challenges for the Institution:

According to Kaleta and Garnham, Faculty at UWM is “universally positive about the format” [7]. The difficulty has been getting additional professors to adopt, develop, and teach Hybrid courses. There are two main obstacles when getting faculty to consider teaching a Hybrid course, *change* and *time*. Instructors are asked to change their style of teaching and spend a significant amount of time in doing so. The recommended lead time for a course is six months; this can be greatly reduced with a properly trained course development team at the institution. Many institutions already have centers for educational development; for instance, WPI has a Center for Education Development, Technology, & Assessment (CEDTA) as well as an Academic Technology Center (ATC). Even so, once a course’s content is finalized, the instructor must make a conscious effort to continually redesign their course for the first couple of terms, taking into account student obstacles and comments on the flow of learning.

It is clear that “a well-designed, formal Hybrid Course Faculty Development Program is the most effective and time efficient solution for introducing faculty to Hybrid teaching” [7]. The program should provide a series of formal workshops, focusing on pedagogy, to initiate the design process. It should also have consultation sessions

available upon request for instructors to discuss design format and instructional technologies. The most important part of the program is assessment sessions with students and colleagues to ensure that the course meets the needs of all participants. The Learning Technology Center at the UWM makes their Faculty Development Program available on their website to be used as a model by institutions which choose to adopt the Hybrid learning method [Appendix A].

It is also highly recommended by Kaleta and Garnham [7] that instructors are compensated with course release time or summer stipends for time spent working on redesigning their courses for integration with the Hybrid philosophy. It is also very important to have the active support of department heads and fellow faculty to keep the instructors focused on the course redesign program.

Challenges for Instructors:

The University of Wisconsin-Milwaukee has over one hundred instructors teaching hybrid classes to date and have come up with some very common mistakes when redesigning a course. The most important aspect of designing a Hybrid course is to '*keep it simple*'. These include:

- Use simpler technologies to reduce the risk of complications. (i.e. low bandwidth or inadequate programs)
- Do not try to structure a class too tightly. Some space is always needed for online 'slippage' or difficulties.
- Things will always go wrong, so build in some flexibility to make necessary adjustments when needed.

There are 10 reflective questions that UWM has developed with that instructors should ask themselves while developing their course that will ensure that they do not overload the Hybrid course.

1. What do you want students to know when they have finished taking your hybrid course?
2. As you think about learning outcomes, which would be better achieved online and which would be best achieved face-to-face?
3. Hybrid teaching is not just a matter of transferring a portion of your traditional course to the Web. Instead it involves developing challenging and engaging online learning activities that complement your face-to-face activities. What types of learning activities do you think you will be using for the online portion of your course?
4. How will the face-to-face and time out of class components be integrated into a single course? In other words, how will the work done in each component feed back into and support the other?
5. Online asynchronous discussion is often an important part of hybrid courses. What new learning opportunities will arise as a result of using asynchronous discussion? What challenges do you anticipate in using online discussions? How would you address these?
6. Students sometimes have difficulty acclimating to the course Website and to other instructional technologies you may be using for face-to-face and online activities. What specific technologies will you use for the online and face-to-face portions of your course? What proactive steps can you take to assist students to become familiar with your Website and those instructional technologies? If students need help with technology later in the course, how will you provide support?
7. When working online, students frequently have problems scheduling their work and managing their time, and understanding the implications of the hybrid course module as related to learning. What do you plan to do to help your students address these issues?
8. How will you divide the percent of time between the face-to-face portion and the online portion of your course? How will you schedule the percent of time between the face-to-face and online portion of your course?
9. How will you divide the course-grading scheme between face-to-face and online activities? What means will you use to assess student work in each of these two components?
10. There is a tendency for faculty to require students to do more work in a hybrid course than they normally would complete in a purely traditional course. What are you going to do to ensure that you have not created a course and one-half? How will you evaluate the student workload as compared to a traditional class?

The most notable is a problem that they call the '*course and one-half syndrome*'. When redesigning a course, instructors have a tendency to add new material to the online portion of the course overloading students and in turn receiving poor comments of the newly designed style. It is critical for instructors to take the time to logically determine their goals for the class and learn to achieve those goals in a new way.

Students are very critical of courses whose online content does not integrate well with the in class content and discussion. Therefore, it is imperative that instructors clearly think about the connections between what occurs in the classroom and what is studied online. The most common regret expressed by faculty at UWM was that they did not sufficiently focus on how the two mediums integrated. If these two mediums work off of each other and not independently, it enables students to develop more in-depth and thoughtful discussions.

A simple course with modest but specific goals is what an instructor should be focusing on for their first Hybrid. Teachers have a tendency to over estimate what they can deliver and thus overwhelm themselves and their students. It is also important to note that schools with developing internet structures and lower levels of technological support should be cautious when implementing tools such as streaming video. These high risk technologies have a tendency to be difficult to load or too large to download or watch from convenient locations. Institutions with superior infrastructure, notably WPI with its vast wired and wireless networks, will be able to implement more of these high bandwidth technologies. If high bandwidth options are chosen, it is a good idea to add low bandwidth alternatives which students can resort to if and when needed.

When teaching a Hybrid for the first time, instructors should be prepared to spend more time than a traditional lecture style class. After two or three courses, this is no longer true and the instructor will actually be able to spend less time on preparation. This allows for more time for research and continued education. The initial increase in preparation and planning is due to learning how to effectively manage the online contents, e-mails, facilitating online discussion and assessing student's online work. There are a few key steps in running a successful Hybrid course. The first step is to break down and phase in longer assignments. Students can then start early and reduce the likelihood of procrastination, which may increase due to lack of contact with the instructor. Next, it is critical to gather student feedback and take their responses seriously. This will ensure that the students are able to navigate and understand the online aspects without any difficulties. Instructors should continuously update their course through the first couple of terms. Falling behind or sloppy record-keeping can be detrimental to the success of the course. Instructors should stay current and keep copies of everything. It is also good practice that copies of materials be made available for students through a library reserve system or at a department office.

The most critical obstacle to overcome is managing student's expectations. As the Hybrid model is somewhat new to the instructor, students are often completely unfamiliar with the style. Many students will have the expectation that fewer lectures or class meetings means less course work. Instructors need to provide a clear rationale of why a course is structured the way it is and the expectations of the course. Many undergraduates, especially underclassmen, have a difficult time handling the greater responsibility and adapting to the active role required in the online studies. There are

many ways to approach this problem and an instructor will only get better at it with time. The first is to repeatedly explain and justify the format and structure of the course. The second approach is to make sure students understand that they will be held accountable for the same amount of work as in a traditional course. As is the case in a traditional class, students require a very clear assignment list and grading policy. This is even more important in the case of a Hybrid class where student-teacher interaction is limited.

Challenges for Students:

As discussed earlier, students expectations about Hybrid classes are somewhat skewed. The most common misconception is the amount of work, as well as the time that is expected of them. The University of Wisconsin-Milwaukee, having offered Hybrid classes for many years now has developed a website which prepares students for the Hybrid experience. The website is titled “Hybrid Courses: Information for Students” (<http://www.uwm.edu/Dept/LTC/hybridcourses.html>) and introduces students to the course concept, provides example homework assignments, and links students to multiple sources of support. There are three common problems that arise as students take a Hybrid course: taking responsibility for their own learning, developing time management skills, and using the new technologies.

With the newly structured course, students must re-learn how to approach learning, integrating what they learn in class with what they learn online. The instructor should have spent a significant amount of time early in the class illustrating how students should navigate through the online content and clearly defining the course layout and assignments. Even with doing this, students may find it difficult at first to interact with others and take a proactive role in learning while in the online medium. It is essential

that there be intermediate steps for the student to follow, phased-in assignments which will allow them to begin to accept the new style and not quickly shun it. It is also important to repeatedly emphasize that an active role will improve the students' ability to learn the course content and is much more effective than listening to a lecture.

Instructors of previous courses have listed inadequate time management skills as a major problem with Hybrid courses. This major obstacle is critical in a students' success with the course and is especially critical in the professional world. Therefore, taking time to discuss time management with students is suggested. A good means for this is providing tips and materials which can further explain time management techniques and prepare students for their future professions.

Learning to use new technologies is not the barrier that one would expect it to be. Most students are very computer literate and most likely understand the programs in more depth than the professor. Some students may however find loading and running programs difficult and adequate instruction must be made available. Instructors report that if students are able to get through the first couple of weeks, they generally did well in the rest of the course. Students like to use new technology because they feel that it is preparing them for the professional world. They believe that integrating computer learning into a traditional classroom provides them with useful skills. "Generally students report that the university's course management systems (WebCT or blackboard) is easy to use, and they appreciate the opportunity to learn how to [further] use the web" [7].

Conclusion

The research done at the University of Wisconsin-Milwaukee has shown that the effectiveness of teaching and learning can be significantly improved by adopting new technologies. The Hybrid course structure allows student and faculty to utilize their time most effectively. A model Hybrid course would not meet at a fixed time or at a fixed place as is required in face-to-face instruction. The curriculum would center on receiving instruction in part following the on-line teaching technology and be able to access videos of pre-recorded lectures interlaced with photos and videos of experiments, methods and equipment through the internet. Students would utilize a wired and wireless network to communicate with the instructor via e-mail and join online discussion boards. They would then meet the teacher face-to-face on a limited but regular basis to discuss any questions, assignments, or concerns with their progress.

Based upon a review of literature and material available on the World Wide Web, the following conclusions can be made about Hybrid teaching.

- Institutions will be able to maximize their available resources to meet the institutional and educational needs of their student.
- Interested faculty can ease into distance learning formats without the burden of developing an entire course online.
- Student participation in all aspects of the learning experience is increased.
- The inclusiveness of all students' leads to a richer and more diverse learning experience than a traditional lecture based course.
- With jobs, families, and other classes, today's student often have immense restraints on their available time. Hybrid teaching provides flexibility.

- Hybrids give students more options to develop manageable schedules. This is critical in institutions where lab courses take up enormous amounts of time.
- Students will develop and enhance their time management skills crucial to academic and professional success.
- Hybrids require students to produce coherent and effective writing, highly important in our text-driven work environment.
- Successful courses incorporate collaborative learning. Students improve their skills and display improved judgment, tactfulness, empathy, patience, and negotiating skills.
- Hybrid classes address a variety of learning styles and minimizing language barriers.
- Students have greater access to course materials and therefore are more fully engaged in hybrid than a conventional lecture style course.
- Hybrids encourage integration of out-of-class activities with in-class activities to allow for more effective use of traditional class time.

Finally, hybrid teaching would allow instructors more time to develop and prepare enriched teaching materials and focus on delivering help to students on a one to one basis. Many scholars hypothesize that such a strategy will produce more enlightened students and teachers, hence an increase in satisfaction. This will indirectly benefit everyone involved: the student, the instructor, and the institution.

Recommendations

Based on the conclusions, it is recommended that a pilot scale adoption of Hybrid teaching be implemented at Worcester Polytechnic Institute. This pilot project should look at the practicality and effectiveness of Hybrid courses at different levels; for example, sophomore, junior, and graduate level courses for a wide range of subjects such as construction materials (a laboratory course) and structures. Such a project should also

be introduced campus wide. The results from this pilot project would provide the correct recommendations for future implementation of Hybrid courses in a formal scale.

References

- 1 Young, Jeffery. "Hybrid Teaching Seeks to End Divide between Traditional and online Instruction." The Chronicle of Higher Education. March 22, 2002. <http://chronicle.com/free/v48/I28/28a03301.html> October 28, 2002
- 2 "Guide #9: Distance Education: Research." Distance Education at at Glance. Engineering Outreach. University of Idaho. June 10, 2001. <http://www.uidaho.edu/eo/dist2.html> February 3, 2003
- 3 "University cancels 8am classes since no one went anyway." ABC13 Web Site, http://abclocal.go.com/ktrk/news/bizarre/041904_APsn_classes.html April 19, 2004
- 4 "Hybrid Course Advantages." Hybrid Course Web Site. University of Wisconsin-Milwaukee. <http://www.uwm.edu/Dept/LTC/Hybrid-courses-advantages.html> October 28, 2002
- 5 Garnham, Carla, and Robert Kaleta. "Introduction to Hybrid Courses," Teaching with Technology Today. University of Wisconsin-Milwaukee. 8.6 March 20, 2002. <http://www.uwsa.edu/ttt/articles/garnham.htm> October 28, 2002
- 6 Cerniglia, Connie. "Hybrid Instruction Soars at Guilford Technical Community College." Creating a Virtual Learning Community. 4.2 (Winter 2002-2003): 3
- 7 Garnham, Kaleta, and Aycock. "Hybrid Courses," Obstacles and Solutions for Faculty and Students. University of Wisconsin-Milwaukee. 19th Conference on Distance Teaching and Learning. July 7, 2003

Appendix A

University References:

1. University of Wisconsin – Milwaukee
<http://www.uwm.edu/Dept/LTC/hybrid.html>
<http://www.uwm.edu/Dept/LTC/hybridcourses.html>
2. University of Central Florida
<http://distrib.ucf.edu/dlucf/home.html>
3. Arizona State University
<http://asuonline.asu.edu/FacultySupport/Hybrid.cfm>
4. Maricopa Community College
<http://www.mcli.dist.maricopa.edu/ocotillo/hybrids/what.php>
5. Riverside Community College District
<http://www.academic.rccd.cc.ca.us/~polsci/kauffman/Hybrid/01hybrid.html>
6. University of Wisconsin System
<http://www.uwsa.edu/ttt/articles/garnham2.htm>
7. Wake Technical Community College
http://www.waketech.edu/dist_ed/hybrid/
8. Sinclair Community College, Bill Struhar
<http://www.billstruhar.com/hybridcourses/>
9. Piedmont Community College
<http://www2.piedmont.cc.nc.us/DL/hybrid%20FAQ's.htm>
10. Northern Virginia Community College
http://tac.nvcc.edu/ppt_presentations/HybcourseMIC03MERLOT_files/frame.htm
11. DiploFoundation
http://diplomacy.edu/Edu/Proposals_2000/Online%20Training/evolution_for_funding_proposals-131.htm

Hybrid Course Development References:

Since the initial Hybrid Course Project at UWM in 1999-2001, the staff of UW-Milwaukee's Learning Technology Center has repeated, revised and refined their formal training program for assisting faculty who are designing and teaching Hybrid courses for the first time. The following documents are available on the University of Wisconsin – Milwaukee's Hybrid Web Site and is very helpful for understanding and implementing a Hybrid course.

- *UWM - Hybrid Teaching and Learning Model*
- *UWM – Questions for Reflection on Creating Hybrid Courses*
- *UWM – Example Handout of an On-line Assignment*
- *UWM – Hybrid Teaching and Learning, Breakout Session – “Crisis Point”*

Hybrid Teaching and Learning
A School of Nursing Faculty Development Program
Designed for Hybrid Course Development & Teaching
Developed by
Learning Technology Center

General overview

The purpose of this faculty development program is to support faculty who are designing and teaching a hybrid course for the first time. Our programs are available to all new and experienced instructors and provide continuous support. This support is available to all participating instructors, new or experienced, prior to the first and subsequent offerings of the course, during the semester(s) in which the course is offered, and following the completion of the course offering for purposes of review and redesign.

This hybrid program includes:

- A series of formal workshops, focusing on pedagogy, to initiate the design process for hybrid courses;
- One-on-one consultation sessions available upon request to new hybrid instructors, focusing on specific design issues and/or instructional technologies;
- Occasional debriefings and assessments as needed to ensure that the faculty development program meets the needs of all participants.

Program for new instructors

Much of the design activity will focus on practical pedagogy -- what works and what doesn't work in hybrid design, instruction and learning, and how to accomplish course goals and objectives in a straightforward, effective manner. Theoretical references are made available for those who wish to become more familiar with the literature of online pedagogy. Technical instruction and support (including emergency trouble-shooting) will be offered on an as-needed basis, specifically tailored to individual requests and scheduled at participants' convenience, either at the LTC or in individual faculty offices. Yes, we do make house calls!

The formal training schedule for instructors who are teaching a hybrid course for the first time comprises five modules, including three face-to-face modules and two online modules. Attendance at all face-to-face sessions is necessary to complete the program. To support course design activities, participants will work individually at assigned course design tasks, then post their work online and comment on one another's postings. Experienced hybrid instructors and LTC staff will facilitate both face-to-face and online activities.

Prelude to Session 1

Participating faculty review our self-survey, "Ten Hybrid Course Planning Questions" and attend the first session prepared to discuss them. The self-survey provides a basis for a hybrid course redesign plan, and subsequently for constructing a hybrid course syllabus.

Session 1 Getting Started Face-to-Face Work (4 hour session)

Introduction: explanation and advantages of using the hybrid approach; examples of hybrid courses.

Plenary discussion of the ten self-survey questions.

Breakout session: in small groups, participants construct an online assignment that can be integrated with face-to-face work, applying the self-survey concepts. LTC staff will facilitate.

Plenary discussion: small groups report out for general discussion assignments created during breakout session.

Explanation of Session 2 online assignment; distribution of reading.

Evaluation of the day's session.

Session 2 Constructing a Module Online Online work (duration of two weeks)

Following the face-to-face session, using criteria already provided and discussed, participants will post in Blackboard their responses to the ten self-survey questions as well as a draft course module. Participants and LTC staff will respond to the postings in Blackboard.

Session 3
Managing Online Discussions & Student Assessment of Learning
Face-to-face work (4 hour session)

Debriefing: discussion of issues and experiences arising when completing the online Session 2 assignment.

Demonstration by LTC staff: managing an online discussion, including examples of typical online discussions.

Breakout: in small groups, participants identify key student learning activities that are well suited to online discussion, and develop a rubric to guide that discussion.

Plenary discussion: small groups report out for general discussion assignments created during breakout session.

Panel discussion: experienced hybrid instructors will identify how they assess online student learning and how they perform progressive assessment. Assess to readings/web links that provide structured guidance will be included.

Online Assignment: explanation of Session 4 online assignment.

Evaluation of the day's session.

Session 4
Developing A Student Assessment Plan
Online work (duration of two weeks)

Participants design an overall plan for assessment of student learning and post plan to Blackboard. As part of the plan:

- Explain how online assessment activities will be integrated with face-to-face course work.
- Review overall assessment of student learning by comparing it to a similar course taught in the traditional face-to-face manner.

Participants and LTC staff will respond to the postings in Blackboard.

Session 5
Summing Up
Face-to-face work (3 hour session)

Debriefing: discussion of issues and experiences arising from previous module's work.

Presentation: final face-to-face session introduces experienced hybrid instructors who discuss what it's like to teach online. The focus is on managing and facilitating student work, integrating online work with classroom work, and supporting students and troubleshooting their problems. More specifically, presenters review the need for assessing and extending student technical skills, orienting them to course technologies, and managing student expectations regarding online work.

Breakout session: participants in small groups use their redesign plan to identify "crisis points" where special attention or support of students may be required. LTC staff facilitate the groups.

Evaluation of the day's session and overall evaluation of the hybrid program.

Discussion of rubric for Session 6 online assignment.

Session 6
Putting Design Principles into Practice
Online work (duration of two weeks)

Post syllabus and redesign plan according to criteria identified in the rubric, including (1) the "vision" for the online course; and (2) the overall fit between learning activities identified and goals and objectives of the course. Emphasis here is on a "reality check." By looking back, decide whether you have in fact produced a course design that is doable, worthwhile, and engaging. Participants and LTC staff will respond to the postings in Blackboard.

Continuing Support

We would like to emphasize our availability to you for on-going support in instructional design and technology. Although we view our Faculty Development Program as a good beginning in helping you prepare to teach hybrid courses, we also recognize the need for on-going support as you continue to design, develop, revise, and teach your courses. We will continue to support you and your efforts and, based on your preference, we will schedule individual sessions or group sessions as needed. We look forward to working with you!

Questions for Reflection on Creating Hybrid Courses

Developed by UW-Milwaukee Learning Technology Center

1. What do you want students to know when they have finished taking your hybrid course?
2. As you think about learning outcomes, which would be better achieved online and which would be best achieved face-to-face?
3. Hybrid teaching is not just a matter of transferring a portion of your traditional course to the Web. Instead it involves developing challenging and engaging online learning activities that complement your face-to-face activities. What types of learning activities do you think you will be using for the online portion of your course?
4. How will the face-to-face and time out of class components be integrated into a single course? In other words, how will the work done in each component feed back into and support the other?
5. Online asynchronous discussion is often an important part of hybrid courses. What new learning opportunities will arise as a result of using asynchronous discussion? What challenges do you anticipate in using online discussions? How would you address these?
6. Students sometimes have difficulty acclimating to the course Web site and to other instructional technologies you may be using for face-to-face and online activities. What specific technologies will you use for the online and face-to-face portions of your course? What proactive steps can you take to assist students to become familiar with your Web site and those instructional technologies? If students need help with technology later in the course, how will you provide support?
7. When working online, students frequently have problems scheduling their work and managing their time, and understanding the implications of the hybrid course module as related to learning. What do you plan to do to help your students address these issues?
8. How will you divide the percent of time between the face-to-face portion and the online portion of your course? How will you schedule the percent of time between the face-to-face and online portion of your course?
9. How will you divide the course-grading scheme between face-to-face and online activities? What means will you use to assess student work in each of these two components?
10. There is a tendency for faculty to require students to do more work in a hybrid course than they normally would complete in a purely traditional course. What are you going to do to ensure that you have not created a course and one-half? How will you evaluate the student workload as compared to a traditional class?

**Hybrid Faculty Development
Session II
Handout for Online Work**

Developed by the University of Wisconsin-Milwaukee Learning Technology Center

This online assignment gives you an opportunity to reflect upon and apply concepts discussed and demonstrated in the face-to-face sessions. Target dates for completion follow assignment.

1. Based on our discussions during Session I, go to the Discussion Board in Blackboard and post your revised responses to the ten planning questions. (June 3) Yours and your colleagues' postings will serve as a repository for you to return to at any time during your hybrid course development.

Typically, distance education instructional design refers to “chunks” of course materials, i.e., course content, learning activities, assessments -- as modules. A hybrid course comprises a series of modules. Each of these modules contains activities completed in the classroom and activities completed online. The key in creating modules for a hybrid course is that they are (1) integrated into your overall course plan and (2) that online activities and classroom activities are integrated with each other.

2. For your online work, construct a module for your hybrid course and post it in Blackboard. The module should include: (June 10)
 - a. Specific reference to a chunk of material that has been presented;
 - b. An online activity that requires students to demonstrate their mastery of this material in some clear, concrete manner;
 - c. Any instructions or support information that students may need regarding technology used to complete the online activity;
 - d. A face-to-face activity, either before or after the online activity is completed, that integrates the online activity with work in the classroom;
 - e. A timetable for completing the module;
 - f. An explanation of how this module meets specific learning objectives of the course;
 - g. A brief description of how learning will be assessed when the module has been completed;
 - h. An estimate of what percentage of classroom time will be reduced as a result of this online activity.
3. Now read your group members' modules and comment on at least one of them. What ideas did your colleague have that you may want to incorporate into your course? (June 12)

University of Wisconsin-Milwaukee

Hybrid Teaching & Learning Faculty Development Program

Developed by the University of Wisconsin-Milwaukee Learning Technology Center

Hybrid Teaching and Learning
A School of Nursing Faculty Development Program
Session 5

First Breakout Session for Session Four ("Summing Up")

"Crisis points" are moments during your course when students are most likely to need support and assistance. A classic instance of a crisis point is the first time a student logs in to your course Web site: can s/he successfully locate the Web address and insert the username and password? If not, what then? If these crisis points can be identified in advance, you can make sure that you have a plan in place to mitigate student problems and avoid a lot of frustration in the process.

As you look at the sequence of learning activities and course modules you have planned, think about what student skills will be required. Consider both technological skills *and* learning skills such as time management, ability to retain and use your course content, etc.

Please list *three* potential problems that you can identify. How will you address these? Make some notes to yourself as part of a plan to support and troubleshoot your students' technological and pedagogical needs during your course.

Appendix B

A Hybrid Approach to Web – Delivered Courses: Preparing Principals and Superintendents, Winona State University, Lee Gary

Student Comments to Online Course Evaluation

<http://naweb.unb.ca/proceedings/1999/graylee/graylee.html>

Least Liked Aspects:

- As nice as it was not to have to drive to Winona for class, I missed the regular interaction and discussion with my classmates and you.
- Heavier workload than other courses. I considered the work load heavier because I was more responsible for my own learning and the traditional paradigm of teacher "teaching", student "listening" is a tough one to break after about 30 years of education.
- Honestly, not having to come to class 15 times, and also a new method of learning.
- It would have been nice to do more communicating between students via the Internet, but quite honestly, with all the work involved for this class and my job, I didn't have the time to use this forum other than to post my own articles. In a perfect world, it is a super tool. In my life right now, it was not attainable due to lack of time.
- Budgeting my time was difficult, although I knew that I needed to complete a certain amount of reading and responding so I didn't procrastinate too long!
- I am an auditory learner, so I find myself feeling a loss at not being able to share in the stimuli of discussions. I need the social community interaction to get my creative juices flowing.
- I missed discussing the topics with everyone present at the same time. I guess that is the biggest shortfall in my point of view.
- Not being in contact (face-to-face) with the instructor.
- The lack of structure, the lack of human contact to debate issues.
- The once a month classroom sessions could be more focused.

- I need to have more structure. I have found that I am the type of person that ends up saving a lot for the end.
- The solemnness of working on course requirements It might be good to have a study group within geographic areas after the class rosters are set. We could get together once between monthly sessions, and send on a quick report of our discussion.
- Only 5 meetings throughout the semester
- Not enough time to meet as a class. What about bi-monthly gatherings?
- 3 1/2 hour ride home after classes.
- I would have liked more time to discuss the case studies. I learn better by sharing and listening to my peers.
- I felt that there was an overload of information with very little time to discuss all of it. More class time to process with peers would have been great.
- My responsibility to get online and to take time from work at school to do so.
- Obviously, I liked not having to be in class. But, I would suggest a few less articles and case studies with a couple more class meetings to go over the ones assigned. Less material with more in depth thinking on the ones you choose.
- We didn't meet enough in person. I do not like the Web format very much. I wish I would have know before I enrolled.

Most Liked Aspects:

- The push to learn for myself, to struggle with some of the issues and the specific expectations, was aggravating but invigorating!
- I loved the course. I work full-time, and value my time after school. It was wonderful having the flexibility to do the work when it suited my schedule. Even when I was working, I was here at home with my children. I've never appreciated a class so much. Thank you! I feel I learned more than I usually learn in a traditional class. That is because the activities were designed to produce learning. Going to class each week does not equate to learning. However, doing something worthwhile does, whether it is a traditional class or not.
- Not having to drive to Rochester every week. Being able to set my own hours.....like 1:00 a.m. in the morning.
- It was great for someone who has to drive 150 miles round trip every week. I am very thankful. More so when the snow starts flying.

- Thanks for an awesome learning experience. This was my first time doing an Internet course. I liked your balance of class time and Internet time. I strongly suggest you keep the five class periods. Do not ever go to just Internet. The people contact is still necessary, even though on the limited basis.
- Autonomy for our own work (even though it was difficult to do so)
- Being on the Internet. I learned more in this class than in the other. Mainly because I was responsible for the learning, the instructor was not.
- The opportunity to complete work at my own pace and when time allowed.
- The chance to visit with other members of the class and hear what problems they are facing.
- Thanks for all your work putting this course together. It was very easy to follow and to use. The convenience of a class on the Internet is great especially for extremely busy people!!
- The convenience of the Internet! It forced me to use the Internet and not be afraid of it. The result was that I loved it!!
- Convenience was great!!!! It is very difficult and tiring to drive two hours a night for class, especially if it were to meet weekly. I think there would be a way to have the structure that I need, but still have a Web class. I wouldn't give up on this at all!!!
- The self paced online use of the Internet and the Web. The instructor and his style of teaching/encouragement of learning.
- Because I was responsible for my learning and I couldn't count on someone else to "hog" the class discussion, I feel my level of participation was up for this class, even though it was via the Internet. I don't really like to participate in class discussions. This is a much safer vehicle for me to express my opinions.
- Much more than just a discussion course.
- I disagree with those people that suggest we meet "physically" more often. Why do we look at something new and progressive and try to find a way to drag it back into our 20th Century vision of education? Break the mold! In the 21st Century more distance learning will take place and more emphasis will be placed on students being responsible for their own learning. Instead of looking to meet more often...I suggest meeting less often and finding a way to improve the technology so we can do a real time conference over the net.
- Time is the most valuable commodity we have in our lives. I waste a tremendous amount of time on the road traveling to classes. Why can't I sit down at my

computer at 7:00 at night on a Monday and meet with other students who are taking the same class over the Internet?

- The whole Web format was well produced and maintained. Class time was a bit rushed, but the personalized Web format made the class rewarding and insightful.
- I liked the flexibility of this course. This is an area that I want to go into, but I would be unable to do the course work had I been required to drive to Winona every week. It was also nice to be able to do it at my own pace. I have many things in the works and liked being able to work at this course when it suited my schedule.
- You have obviously put a lot of time and effort into this class in hopes of saving others time and travel while maintaining a high level of academic rigor. Your Web site was amazing and improved over the duration of the semester. This would be very difficult (a concern) for those who were not familiar with the Internet.
- The combination of face to face and online.
- The independence we had as students, as far as being able to log on any time, any place instead of a fixed time.