

FACTORS TO CONSIDER IN DESIGNING A
HIGH QUALITY HYBRID COURSE

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FACTORS TO CONSIDER IN DESIGNING A
HIGH QUALITY HYBRID COURSE

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ABSTRACT

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HIGH QUALITY HYBRID COURSE

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Distance education is becoming increasingly popular in post-secondary schools in the United States. A variation of that is hybrid education, in which part of the learning occurs online and part occurs in a face-to-face classroom. Students like the flexibility that hybrid learning offers, instructors enjoy its pedagogical advantages, and administrators appreciate the economical solutions to access it offers. Besides being popular, hybrid education has been shown to produce better learning outcomes than either online or face-to-face learning alone.

Instructors commonly convert a course from the face-to-face format to a hybrid format. A literature search revealed conditions that can produce a high quality hybrid course. These include starting with institutional support, building the course upon sound educational theory, allowing adequate time to thoughtfully design the course, and understanding the course workload for both faculty and students. The effective use of online technology to enhance the instructor's role as facilitator, promote active learning principles, and encourage the formation of a learning community is critical. Instructors should plan to support students in the acquisition of technical, time management, and self direction skills, which they will need to be successful in a hybrid course. Consideration is given as to how courses with lab and clinical elements, such as nursing assistant courses, can be adapted to the hybrid format. The advantages offered by hybrid education make it well worth the instructor's time and effort to develop a hybrid course.

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Chapter One: Introduction

Educators today are faced with an ever growing mountain of technology that may be used to enhance classroom instruction. Like a mountain climber, does an educator use new technology “just because it’s there,” or does one first look for justification and for a rationale for changes in teaching style or delivery methods? Ultimately, the only valid reason for making changes is to improve the quality of education. This paper is a report on the exploration of ways in which a hybrid course, which combines online learning with face-to-face class time, can provide a high quality learning experience.

In addition to traditional courses in higher education, there are increasing numbers of distance education or online course offerings. Recently, the hybrid or blended course has emerged as an alternative, in which face-to-face instructional time is decreased and supplemented with online instruction.

Blackhawk Technical College, in South Central Wisconsin, currently offers only a face-to-face nursing assistant course. The course is state mandated to be 120 hours of instruction, divided between lecture, lab, and clinical time. Classroom time, a combination of lecture and lab, is 88 hours. Clinical time, in which students provide resident care in a long term care facility, is 32 hours. Class size is limited to sixteen students, because the student-to-teacher ratio for lab and clinical is 8:1. An adjunct faculty member is present during lab and clinical, but is not needed during the lecture portion of the class.

A skill-based, hands-on course, such as the course for nursing assistants, would not be suitable as a completely online class, because the skills practice in lab and the clinical experience must take place in a face-to-face setting. The students’ personal interactions, especially with the patients receiving care, are a key element of the course. However, a hybrid model, utilizing

online learning for the lecture component of the course and retaining face-to-face time for lab and clinical, holds the promise of efficient use of instructor resources. One instructor may be able to oversee a large number of students completing the online portion of the course, while adjunct faculty would continue to instruct and supervise small groups of students to maintain the 8:1 ratio for lab and clinical.

Given the significant resources which must be invested to convert a course from face-to-face to hybrid, one must evaluate whether the anticipated results are worth the effort. What are the advantages and benefits of a hybrid course to the students, to the instructor, and to the school? What barriers must be considered? What are the strengths and weaknesses of online education and of face-to-face education? Can the strengths of both of these modes of delivery be tapped into, while minimizing their weaknesses? In other words, can the best of both worlds be obtained through a hybrid course?

After understanding the potential advantages of a hybrid course, the question is how to effectively convert a face-to-face course to a hybrid course. Can one simply place all the lecture content onto the web? How does one change and adapt the curriculum to maximize effective web-based learning? How does one choose what parts of the content to deliver in class and what parts to deliver online? How are the online and face-to-face elements merged into a seamless flow of content? The answers to these questions are important, as they will lead towards an end product which will provide good quality education to the students.

Statement of the Problem

The problem to be addressed is: what do authorities view as the desirable characteristics of quality hybrid courses? After defining those desirable characteristics, practical and specific ways in which to incorporate them into the course design can be considered.

Definition of Terms

In the literature, many of the following items were defined with several terms, used interchangeably. Alternate terms for the same definition are in parenthesis. To eliminate confusion, one term will be used consistently for each definition throughout the paper, unless an alternate term is used in a direct quote. Many of the following terms can be used to describe types of *courses* which are offered by educational institutions, and they may also be used to describe educational *programs* or *learning*.

- Asynchronous: Occurring at different times. Students complete assignments and participate in discussion on their own time. Students are not in class at the same time (“Towards success in,” 2011).
- Face-to-face (f-2-f, traditional): A course in which no online technology is used. The content is delivered in writing or orally and takes place in a classroom.
- Hybrid (blended [B.L.], mixed-mode): A course that blends online and face-to-face delivery. From 30-79% of the course is delivered online. Some seat time in the classroom is replaced with online based learning (Allen, Seaman, 2006). The University of WI-Milwaukee uses the term *hybrid* and that is the term used in this paper.
- Learning management system (LMS, course management system, learning platform): A computer-based application that provides internet space that contains the course and within which course materials are organized and course activities take place (“Towards success in,” 2011). Examples are Blackboard, D2L, and Moodle.
- Online (e-learning): A course where 80% or more of the content is delivered using internet-based computer technology. Typically, there are no face-to-face meetings. It may

or may not take place at a distance (Allen, 2006). Ishtaiwa (2012) asserts that the goals of online learning are to improve teaching, learning and instructor-student interaction.

- Synchronous: Occurring at the same time. All students are present at the same time, whether face-to-face or online (“Towards success in,” 2011).
- Web facilitated (web enhanced): From 1-29% of the course content is delivered online. For example, a learning management system such as Blackboard may be used for online posting of assignments or the syllabus in a face-to-face course (Allen, 2006).

Delimitations of Research

The research was conducted in and through the Central Campus Library at Blackhawk Technical College, Janesville, Wisconsin, over thirty (30) days. Primary searches were conducted via the Internet through EBSCO host with ERIC and Academic Search Elite as the primary sources. Key search topics included combinations of the following terms: “online, hybrid, and blended education, learning, and courses, best practices, electronic learning, computer-based technologies.”

Method of Approach

Brief reviews of the occupational outlook for nursing assistants, and of the trends in distance education and online learning in post secondary education was conducted. A review of research and anecdotal evidence focusing on course design, best practices, strengths and challenges, and student and faculty perceptions associated with hybrid education was conducted. A nursing assistant instructor with six years of experience in teaching hybrid courses was interviewed for anecdotal information pertaining to the topic. The findings have been summarized and recommendations made.

Chapter Two: Review of Related Literature

Distance Education in Post secondary Education

Brief overview of distance education.

Post secondary distance learning, which began with the first mail correspondence course from the University of Chicago in the late 19th century, has continued to expand in the United States ("Correspondence schools and," 2011). Although authors categorize distance learning in various ways, Chacon and Hawkins (2011) define five generations: correspondence education, educational radio and television, multimedia education, online learning, and mobile learning. Early studies showed that multimedia distance education was as effective as classroom education, encouraging its continued use as a means of making education more accessible. The fourth generation, online learning, features the use of multiple internet resources: multimedia, learning platforms, collaboration technology, and both synchronous and asynchronous communication tools (Means, Toyama, Murphy, Bakia & Jones, 2010). The fifth generation, mobile learning, utilizes small portable devices, such as smart phones or pad computers for delivery of content and class communication. This paper focuses on the fourth generation, online learning, as mobile learning is still in a developing stage.

The growth of online education is revealed in the Sloan Consortium annual reports of post secondary schools in the United States. Their findings show that online education is growing in popularity. The number of students taking online courses grew from 1.6 million in 2002 to 6.1 million in 2010. This is a 10 % annual growth rate of students enrolled in online courses, compared to a 1% growth rate for the overall student population. In 2010, 31% of all students in higher education took at least one online course (Allen & Seaman, 2011). The National Center for Education Statistics shows consistent growth in the number of post-

secondary institutions offering some type of distance learning, most commonly online or hybrid courses. The number grew from 56% in 2001 to 66 % in 2007 (Parsad & Lewis, 2008).

Hybrid, sometimes called blended learning, is a variation of online learning, in which some of the face-to-face class time is replaced with online learning. Seat time in class is reduced and replaced with online, interactive learning activities. The appeal of hybrid learning is its potential to combine the strengths of both online and face-to-face learning. For example, a hybrid course offers flexible scheduling, a key online attraction; combined with the structure and support that are characteristic of a face-to-face course (Sands, 2002). The Sloan Consortium report, “Blending In: The Extent and Promise of Blended Education in the United States,” compared online and hybrid trends over three years (Allen, Seaman, Garrett & Sloan, 2007). They found that slightly more online than hybrid courses were offered by post-secondary schools, and in fact there was a slight decrease in the number of hybrid courses being offered during the survey period. Larger schools offer significantly more hybrid courses than smaller schools. The majority of educators surveyed did not believe that hybrid courses were more promising than online courses, but rated them both as equal. Allen et al. (2007) conclude that hybrid courses are not a stepping stone for institutions on the way to creating fully online courses, but that they have their own place, and schools are in the process of discovering when and how hybrid courses are the best choice.

Outlook for hybrid nursing assistant courses.

As a nursing assistant instructor, this author is especially interested in the outlook for hybrid nursing assistant courses. Healthcare is currently one of the fastest growing industries in the United States and nursing assistants play a key role in providing healthcare services. According to the Bureau of Labor Statistics Occupational Outlook projections, the healthcare

industry, which includes hospitals, nursing homes, residential care facilities, and home care services, is projected to grow by 33% from 2010-2020. This means that 5.7 million new jobs, or 28% of all new jobs in this country, will be in healthcare services (Bureau of Labor Statistics, 2012b). For nursing assistants alone, a faster than average job growth rate of 20% is expected during this same time period. The aging population, increasing life expectancy, and new treatments and technologies all contribute to this growth (Bureau of Labor Statistics, 2012a).

Educational institutions must keep up with this continuously growing demand for nursing assistants. Nursing assistant courses are labor intensive, consisting of classroom lecture, lab time to practice skills and supervised clinical experience. Small instructor-to-student ratios are required for lab and clinical. (The typical ratio in Wisconsin schools is eight students supervised by one instructor in lab and clinical.)

While it is not feasible to offer nursing assistant courses in a purely online format, due to the lab and clinical components, a hybrid course design can be considered. Hybrid courses may allow more efficient use of limited resources in nursing assistant programs. By converting the classroom lecture to an online format, learning can be completed with a larger student-to-teacher ratio. Students can then be placed into smaller groups for lab and clinical experience, constituting the face-to-face portion of the course.

A review of literature revealed no studies focusing specifically on nursing assistant courses. McCown's (2010) case study of a health care management course which had been converted to a hybrid format, and included face-to-face lab and clinical components, provided the closest model to a nursing assistant course. Madison Area Technical College began offering hybrid nursing assistant courses in 2006 and has steadily increased the number of sections offered each semester. Vicki Bredeson, the instructor responsible for the course conversion,

offered insights on her experiences in several interviews (personal communication, May, 11, July 26, and July 30, 2012). While these two sources provided information specific to nursing assistant courses, other studies revealed general insights and valuable principles relating to best practice. The literature was reviewed in search of answers to questions such as, “What are the best practices in converting a face-to-face course to hybrid?” and “How can this be done without sacrificing, and preferably enhancing, the quality of the program?”

Reasons to consider teaching a hybrid course

Potential for high quality education.

One reason to consider hybrid education is its potential to improve learning outcomes. Hybrid learning produces better educational outcomes than either traditional or online courses, according to a U. S. Department of Education study released in 2009. The meta-analysis reviewed over 1,000 studies of online learning that were conducted between 1996-2000, most of which occurred in post secondary institutions. Of those, 46 studies met the criteria for analysis of learning outcomes. Findings revealed that students in fully online courses had slightly better learning outcomes than students in face-to-face courses, and students in hybrid courses had the best learning outcomes of all (Means et al. 2010). Martyn (2003) also found improved learning outcomes for students in a hybrid course. Three instructors taught eight hybrid courses over a two year period at a small Ohio college. The scores for projects in the hybrid classes averaged between 10 and 12% higher than projects completed by students in the face-to-face classes. The projects were assessed by outside assessors in a blind review. Bredeson (personal communication, July 30, 2012) reported a 6% higher pass rate on the Wisconsin State Registry Exam among students in the hybrid sections compared to students in the face-to-face nursing assistant sections in the spring 2012 semester. Both King and King (2010), in a study of nursing

students in a hybrid pharmacology course, and Aycock, Garnham and Kaleta (2002), in a report of the University of Wisconsin's Hybrid Course Project, reported better student outcomes for hybrid students, but offer no statistical data. A meta-analysis by Sitzmann, Krieger, Steward and Wisner and a study by Vaughn and Garrison demonstrated increased learning outcomes in hybrid courses (as cited in Zolfaghari, Hegarandeh, Ahmandi and Eyboosh, 2010).

Some studies, though, show comparable results between hybrid and face-to-face courses. Hsu and Hsieh (2011a) compared learning outcomes of 233 nursing students in five different sections of a nursing ethics course. Two sections were hybrid courses, the other three control group sections were face-to-face courses, all taught by different instructors. No significant differences were found among students using pre- and posttest scales that measured attitude, satisfaction, meta-cognition and self evaluation. Napier, Dekhane and Smith (2011) studied learning outcomes over two years at a small, private, Georgia college, comparing final exam scores and mid and end-of-semester surveys in hybrid and face-to-face introductory computing courses. Student outcomes were similar for both the face-to-face and hybrid sections of this required freshman class. Other benefits, however, were noted for the hybrid sections, such as flexibility, greater interaction between students and instructors, and development of self-regulatory skills.

Student satisfaction with hybrid courses.

Another reason to consider offering hybrid courses is because of the high degree of student satisfaction with such courses. The flexibility a hybrid course offers is a commonly cited reason students like this delivery method (Allen et al., 2007; Dziuban, Hartman & Moskal, 2007; Ishtaiwa & Abulibdeh, 2012; Martyn, 2003; McCown, 2010; Napier et al., 2011; Zolfaghari et al., 2010). Flexibility gives students options for when and where they will access the online

portion of the class. Cutting down on school commutes and choosing how to fit course work into existing work and family responsibilities are major benefits to some students. Aycock et al. (2002) reports that students specifically like being able to do course work from home. Students also value the convenience of saving money related to travel, parking, and childcare (Martyn, 2003). V. Bredeson (personal communication, July 26, 2012), a nursing assistant instructor at Madison Technical College, says students like options such as a hybrid class which holds lab and clinical sessions on weekends. This lets some students manage other jobs and family responsibilities. Other reasons for student satisfaction, related to the quality of learning, will be discussed later in the paper.

Teacher satisfaction with hybrid courses.

Faculty like teaching hybrid courses. Zolfaghari et al. (2010) developed a learning management system (LMS) and trained 17 nursing and midwife faculty in development of hybrid courses at Tehran University in Iran. After teaching the courses, all faculty were either satisfied or highly satisfied with hybrid education. There are a variety of reasons why instructors like hybrid courses, all of which indicate that instructors believe that the quality of education is improved by the hybrid format. Allen and Seaman (2011) found that an increasing majority of educators believe that learning outcomes for online (including hybrid) education are the same or better than for face-to-face learning, Manning and Emmons (2010) state that faculty consider the use of internet technology as a means of providing higher quality education, as defined by student success and retention. Being innovative in using technology is a benefit that Napier et al. (2011) found. Dziuban et al. (2007) pointed out that instructors like being able to offer multiple modes of communication. Flexibility in designing the course is an advantage pointed out by King and King (2010) and Napier et al. (2011).

A number of researchers (Aycock et al., 2002; Dziuban et al., 2007; Martyn, 2003; Napier et al., 2011) found that hybrid courses give faculty more interaction and communication with students. This interaction takes place both online and in person. Instructors participating in Martyn's (2003) study believed that the higher quality of work demonstrated by hybrid students in the study was a result of increased student/instructor interaction. Napier et al. (2011) reported that students started assignments earlier in a hybrid course and asked more specific questions during the face-to-face class time. Other advantages observed by faculty are that hybrid students take a more active, engaged role in learning, and that they develop critical and reflective thinking skills (Woods, Badzinski & Baker, 2007). McCown (2010) found that hybrid courses improved the interaction and communication between campus faculty, clinical instructors, and students in the courses that contained lab, clinical, and face-to-face sessions.

Many instructors find that in a hybrid course, the online component enhances the face-to-face classroom time, offering the best of both online and traditional learning. In a hybrid course, instructors reported that they assumed a facilitator or coaching role, as opposed to information giver (Dziuban et al., 2007). Instructors found they were able to achieve course goals that were not possible in the face-to-face course (Aycock et al., 2002). Napier et al. (2011) reported that instructors were able to use face-to-face time for more active learning in a hybrid course.

Institutional satisfaction with hybrid courses.

There are several practical reasons why institutional leaders like hybrid courses. Because hybrid courses are popular with students, there is a market demand for schools to offer them. According to the National Center for Education Statistics 2008 report, the top reasons schools offer distance education, either online or hybrid, is to meet student needs for flexible scheduling, increase access to college courses, increase the number of courses offered, and increase

enrollment (Parsad & Lewis, 2008). Less face-to-face time puts less demand on the campus for classroom space, offering a solution to overcrowding. More students can be reached with fewer resources, with resulting cost savings (King & King, 2010; Woods et al., 2007). A classroom can be shared by several sections that may only meet in person once a week or as little as twice a semester (Napier et al., 2011). V. Bredeson (personal communication, July 26, 2012) points out that with the same number of faculty, a larger number of students are able to complete the nursing assistant course each semester at Madison Technical College, since it began offering hybrid sections. In addition, the hybrid format allows students to be placed in distant clinical locations (McCown, 2010).

Characteristics of high quality hybrid courses

Hybrid courses occupy a significant place in post-secondary education and produce learning outcomes as good as, or better than, face-to-face courses. The hybrid format is appealing to students, faculty, and institutional leaders for a variety of reasons. These facts form a solid foundation upon which an instructor can choose to build a hybrid course. From existing research, it is possible to identify some characteristics that will produce high quality hybrid courses. Eight qualities will be discussed in this section.

Quality 1: Institutional leaders support hybrid course development.

Not all post secondary educational institutions support hybrid education. The number of academic leaders who believe that learning outcomes in online (including hybrid) education are the same or better than for face-to-face education has increased from 57% in 2003 to 67% in 2010. Still, one-third of all academic leaders continue to believe than online education produces inferior learning outcomes compared to face-to-face (Allen & Seaman, 2011).

Dziuban et al. (2007) advise that it is important to consider where one's institution is in

the process of adopting a system wide model for hybrid education and how much institutional support one might expect. Early innovators often function as “lone rangers” in their school and improvise without expecting much institutional support. As the place of hybrid education becomes established at the school, one may expect to be able to seek out one-on-one support. Eventually, as a system-wide model for hybrid education is adopted, instructors will have access to “campus support resources, instructional designers, programmers and digital media specialists” (Dziuban et al., 2007, p. 207).

Hybrid education needs to fit the philosophy of the school. Martyn provides a case study of a small, private, liberal arts college in Ohio and their initial experience over a two-year period of converting classes from traditional to hybrid format. The college leadership’s opinion was that purely online education did not fit into its mission to provide “a quality education with a personal touch” (Martyn, 2003, p.18). Hybrid education, however, gave the opportunity to maintain the personal student-to- instructor connection that was central to its mission. The results of the case study were very positive, leading the the college to offer more hybrid courses.

Napier et al. (2011) states that a recommendation of research is to provide instructors with additional resources, consisting of time, technology support, and instructional design support when an instructor is teaching a hybrid course for the first time. Most authors stated the need to allow at least six months to design a hybrid course. Technology support begins with an adequate technology infrastructure. Computer hardware and software including a learning management system, networking capabilities, and an information technology department that supports both faculty and students is critical to success. The technology system must be current and function well.

At a small, liberal arts college in Georgia, a result of a two-year study was the creation of the Hybrid Fellows Project in 2009, a division of the school's Centers for Teaching Excellence. The purpose of this project is to support faculty who are developing hybrid courses through promotion of best practices (Napier et al., 2011). At the University of Wisconsin, a group of 17 instructors converted their face-to-face courses to hybrid courses in 2000-2001, as part of a grant funded Hybrid Course Project. This successful project also created a faculty development program to assist faculty in designing and teaching hybrid courses and maintains an online hybrid education resources site for educators ("Faculty resources," 2012).

Course design should be considered a team effort. One should identify the support services within one's institution and use the expertise they offer. Instructional designers, who combine a broad range of expertise in information technology and instructional technology, can assist faculty in designing and implementing courses and provide ongoing staff development (Dzuiban et al., 2007; McCown, 2010). A number of researchers emphasize the importance of staff development to assist instructors in creating hybrid courses (Aycock et al., 2002; King & King, 2010; Martyn, 2003; Napier et al., 2011; Zolfaghari et al., 2010).

Quality 2 The hybrid course is built upon sound theory.

While it may be tempting to focus primarily on the possibilities offered by technology when designing a hybrid course, one must realize that a high quality hybrid course starts, just as all good course design does, with sound educational theory. In the U.S. Department of Education's meta-analysis that showed better learning outcomes in hybrid courses, Means et al. (2010) cautioned that there were more instructional differences in the research studies than just the medium (online or face-to-face). The amount of time spent on learning tasks, the curriculum materials, and the pedagogy were all variable factors in the hybrid and face-to-face classes. It is

the combination of all these factors, the authors stressed, that can produce better learning. The types of media elements used are not as important as the way in which they are used. Dziuban et al., agrees, stating that “the emphasis is on pedagogy, not technology” (2007, p. 3). Reynaud (2007) emphasizes that “teachers must think through the pedagogical implications of both methods (face-to-face and online) to develop new designs for instruction and course delivery that maximize the dual environments” (2007, p. 1). She recommends that more time be spent helping instructors to understand the methodology of online instruction instead of the technology involved. Hsu & Hsieh call for developing “student-oriented teaching pedagogies that include face-to-face and online instruction, rather than just focusing on the provision of technical skills” (2011b, p. 24). Rovai and Jordan (2004) agree, arguing that technology needs to be accompanied a by pedagogical basis in order to realize the greatest benefit to students.

A sound theoretical framework upon which to build a hybrid course is *Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1987). This classic work is still relevant today, and was expanded in the mid 1990s to include use of technology for effective instruction. Manning and Emmons (2010) showed how the *Seven Principles* aligned with best practices for hybrid instruction identified by a Delphi panel of 18 instructors at a community college. Martyn (2003) also used the *Seven Principles* in developing the hybrid model at Baldwin-Wallace College in Ohio. These principles are reflected in the qualities for hybrid courses discussed in this paper.

The Seven Principles for Good Practice in Undergraduate Education are:

1. Encourages contacts between students and faculty.
2. Develops reciprocity and cooperation among students.
3. Uses active learning techniques.

4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning. (Chickering & Gamson, 1987, p. 2)

Technology plays a significant role in implementing the *Seven Principles* in hybrid courses. Four main ways that instructors can use online technology to enhance traditional instruction are to present course content, structure student interaction and communication, develop a learning community, and use learning assessment tools (Woods et al., 2007). Osguthorpe and Graham assert that technology brings a pedagogical richness to course design, offering many possible combinations of instructional mediums and ways to promote learning (as cited in Mortera-Gutiérrez, 2006).

Online technology for a hybrid course is most commonly housed within a learning management system (LMS), a computer-based application that provides internet space for the course. Individual courses, learning activities, and materials are created, organized, and stored in the LMS. Schools typically purchase a commercial LMS such as Blackboard, D2L, or Moodle. The LMS contains areas for content, communication, and course management. The content area contains announcements, course syllabus, staff information, PowerPoint, grading rubrics, sample assignments, online quizzes, and links to online resources such as YouTube videos and web pages. The communication area may include separate discussion boards for assigned individual and group discussions, email, links to wikis, blogs, and social networks (asynchronous communication) and a virtual chat room (synchronous communication). The course management area includes student grades, a drop box for assignments, personal home pages for students, contact information, and a calendar. Podcasting, web conferencing, and online instant messaging

are further online options (Woods et al., 2007). The LMS provides consistency within an institution and ease of use in designing, implementing, and maintaining the online components of all courses offered by the institution.

Online technology is linked, or in some way blended, with the face-to-face components of hybrid learning: these include skills labs, classroom instruction and discussion, and clinical experiences. Success in hybrid education requires understanding the strengths and challenges of the various mediums and how to use them to best advantage, as well as understanding the students, how they engage in learning in the different mediums and how they handle the hybrid combination of teaching methods (Mortera-Gutiérrez, 2006).

Means et al. (2010) developed a conceptual framework to illustrate the interaction of three variable characteristics of online learning. These characteristics and their interactions are shown in Table 1, Conceptual Framework for Online Learning. The three variables are (a) the purpose of online learning; (b) the type of learning; and (c) whether it is synchronous or asynchronous. The purpose of online learning is either to replace face-to-face instruction or supplement it. The authors point out that these purposes each have a different objective. If face-to-face instruction is being replaced, the course will be successful if the student outcomes are the same. If, on the other hand, the purpose is to supplement face-to-face instruction, then improved student outcomes should result from the time, effort, and money invested in supplemental online materials. The second variable is the type of learning, which may be didactic, active, or interactive. Expository, or didactic, learning is information delivered via lecture, PowerPoint or reading assignments. Active learning occurs when the student uses drills, simulations, and games to aid learning. Interactive, or collaborative, learning results through student interactions and discussions, with the teacher acting as a facilitator. The third variable describes synchronicity.

Synchronous learning occurs in real time, whether face-to-face or online in a chat room or live discussion forum. In asynchronous learning, there is lag time between presentation of information and responses, such as threaded discussions, email, or message boards. Table 1 shows possible interactions between these three variables. Examples of online learning fit within the grid in a variety of ways; the mix of possibilities provides a sense of the big picture.

Table 1 Conceptual Framework for Online Learning

Exhibit 1. Conceptual Framework for Online Learning

Learning Experience Dimension	Synchronicity	Face-to-Face Alternative	Face-to-Face Enhancement
Expository	Synchronous	Live, one-way webcast of online lecture course with limited learner control (e.g., students proceed through materials in set sequence)	Viewing webcasts to supplement in-class learning activities
	Asynchronous	Math course taught through online video lectures that students can access on their own schedule	Online lectures on advanced topics made available as a resource for students in a conventional math class
Active	Synchronous	Learning how to troubleshoot a new type of computer system by consulting experts through live chat	Chatting with experts as the culminating activity for a curriculum unit on network administration
	Asynchronous	Social studies course taught entirely through Web quests that explore issues in U.S. history	Web quest options offered as an enrichment activity for students completing their regular social studies assignments early
Interactive	Synchronous	Health-care course taught entirely through an online, collaborative patient management simulation that multiple students interact with at the same time	Supplementing a lecture-based course through a session spent with a collaborative online simulation used by small groups of students
	Asynchronous	Professional development for science teachers through "threaded" discussions and message boards on topics identified by participants	Supplemental, threaded discussions for pre-service teachers participating in a face-to-face course on science methods

Exhibit reads: Online learning applications can be characterized in terms of (a) the kind of learning experience they provide, (b) whether computer-mediated instruction is primarily synchronous or asynchronous and (c) whether they are intended as an alternative or a supplement to face-to-face instruction.

Note: Table 1 is from *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies*, by B. Means, Y. Toyama, R. Murphy, M. Bakia, and K. Jones, 2009, Washington, D. C., U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. This report is in the public domain. Authorization to reproduce this report in whole or in part is granted.

Quality 3: The hybrid course is thoughtfully planned and designed.

Start with knowledge and experience.

With a theoretical framework and an understanding of online technology features, one can begin to design a hybrid course. Commonly, instructors adapt a course they have been teaching face-to-face into a hybrid format. All authors in the literature review agreed that a hybrid course must be redesigned. One cannot plug a traditional course into a hybrid format and expect to see the maximum benefits. Objectives and instructional methods need to be recreated (Dziuban et al., 2007). Simply loading PowerPoint lectures online or moving content from a face-to-face class does not make best use of the online capabilities. Instead, a well thought-out design will integrate face-to-face and online elements. Without this, students will feel like they are in two separate courses (Aycock et al., 2002). Still, research literature, according to Hsu and Hsieh (2011a), has provided very little information about the way in which classroom lecture content can be reformatted to be most effective in an online format.

Experience with hybrid learning is a good starting point. King and King (2010) strongly recommend that instructors who plan to design and teach a hybrid course first take one themselves, to gain personal insight from a student's perspective. McCown (2010) suggests that instructors teach both face-to-face and online courses before developing a hybrid course. The LEONARDO-DA-VINCI project, which developed an e-learning tool for nursing instructors in European Union countries, took a practical approach. The instructors received training for using the e-learning tool in a hybrid format, consisting of online and face-to-face workshops, which allowed them to experience hybrid learning before teaching a hybrid course. The majority of the instructors who participated, 83%, reported success in developing and implementing a hybrid unit (Pfefferle, Van den Stock & Nauerth, 2010).

Seeking advice and support from instructors who have experience with hybrid courses is helpful, according to Dziuban et al. (2007) and Aycock et al. (2003). Other sources of guidance are technology support centers, such as the University of Milwaukee Learning Technology Center; online help sources; and textbook publisher resources ("Faculty resources," 2012).

Allow adequate time for course design.

Allowing adequate time to design a hybrid course is another point that all authors in the literature review agreed upon, with the consensus being six months (Aycock et al., 2002; "Faculty resources," 2012; King & King, 2010; McCown, 2010). This investment of time is necessary to learn the technology, design the course, and develop activities. Instructors need to think about education in a different way, to use new tools, and to create a course design that uses the strengths of both mediums (Napier et al., 2011). The amount of time required for course development was identified as a challenge for instructors by King and King (2010) and Dziuban et al. (2007).

Write objectives.

Designing a hybrid course begins by writing down the learning objectives, another point recommended by all the authors (Aycock et al., 2002; King & King, 2010; McCown, 2010; Mortera-Gutiérrez, 2006). Learning objectives will answer the question, "What should students be able to do and to know at the end of the course?" Even though an instructor has taught the same class face-to-face, starting with a fresh look at the learning objectives is important and helpful. Focusing on the objectives can prevent an instructor from putting too much emphasis on technology (Sands, 2002). Objectives guide the development of a syllabus which will include a course map, meeting times and locations, learning activities, rubrics, and course expectations (King & King, 2010).

Plan the mix of face-to-face and online activities.

Once the objectives are written, one must consider how to divide the course time between face-to-face class time and online time. The developer should start by determining which objectives can best be met online and which can best be met face-to-face ("Faculty resources," 2012). The combination of face-to-face and online instruction will be unique to each course and depends on the overall plan for meeting course objectives (Mortera-Gutiérrez, 2006).

There can be great variation in how a hybrid class is structured, as reported by Aycock et al. (2002), in a summary of the University of Wisconsin Hybrid Course Project. One instructor used class time for discussion and online time to present content and another did the opposite. Instructors will consider their own strengths and weaknesses in planning the course design. For example, someone who is not a strong lecturer may choose to deliver content online and use class time for discussion (Napier et al., 2011). One instructor replaced 30 minutes of every class period with online work; one had students meet in class for several weeks, followed by several weeks of online assignments; one replaced one class a week with online work. Generally, face-to-face time was reduced by 20 to 25%.

Not only will course time be divided between the face-to-face and the online venues, it must be integrated, so that students will experience the hybrid as one course and not two separate courses. Activities, assignments, and discussions must tie together and support each other in an integrated way (Napier et al., 2011). McCown (2010) prefers to use face-to-face sessions to reinforce online learning. Woods et al. (2007) designed online activities to reinforce face-to-face work. Either way, developers should plan specifically to connect online and face-to-face components of the class. For example, students might be instructed to bring several online discussion posts to class to continue the discussion. The instructor might ask students to write

definitions of key terms and post them online for discussion and revision and use this as a starting point for class discussion. This distributes a student's thinking and engagement throughout the week (Sands, 2002).

In a case study designed to identify best and worst practices of 10 instructors teaching hybrid courses at Mexico University, failure to integrate online with face-to-face learning was named as a "worst practice" by some instructors. This was evidenced by instructors who either loaded all the information on the LMS and did not prepare for in-class sessions or who used the LMS just for syllabus information and neglected to make use of online learning activities (Mortera-Gutiérrez, 2006).

Napier et al. (2011), in a study of faculty and student perceptions of hybrid learning at Georgia Gwinnett College, reported that some instructors were challenged to achieve the best balance between face-to-face and online time. For example, one instructor wanted to use in-class time for collaboration and discussion, rather than to give information. However, this was difficult to accomplish when students came unprepared, not having completed the online assignments.

When a course consists of lecture, lab, and clinical hours, such as a nursing assistant class, a logical division is to use online time for content, discussion, and watching skill videos. The lab and clinical portions continue to take place in a face-to-face setting. Students practice skills in the lab that they observed in online videos. Finally, summative testing of online learning occurs in the face-to-face classroom setting. Madison Technical College's hybrid nursing assistant course offers 50 hours of online learning, 25 hours of lab for skills practice (five sessions, five hours each), and 45 hours of clinical practice (nine sessions, five hours each) (V. Bredeson, personal communication May 11, 2012).

Plan face-to-face content.

Face-to-face sessions may include instructor and student presentations, review of chapters, discussion of concepts, or guest speakers (Woods et al., 2007). Face-to-face time may use other personnel, such as graduate assistants, laboratory coordinators, and peer tutors (Chacon & Hawkins, 2011). A challenge for some instructors in redesigning a traditional course was deciding what to omit in the hybrid course, since there was less in-class time. Guest speakers and trips to the library were sometimes omitted due to lack of time (Napier et al., 2011).

Plan online content.

In using online tools, keys to success are the instructor's knowledge of and positive attitude toward technology (Mortera-Gutiérrez, 2006) and the instructor's ability to use technology innovatively (Napier et al., 2011). Instructors will find flexibility as they combine subject matter expertise with knowledge of technology and the LMS to develop active, engaging online course content activities. Online learning activities include web scavenger searches, textbook treasure hunts, case studies, critiques of YouTube videos, web site reviews, discussion board questions, daily logs, and group projects using wikis. Content may include PowerPoint slides, MP3 files, grading rubrics, textbook content, and video demonstrations (Woods et al., 2007). Instructors can plan to include a variety of online and face-to-face activities in order to appeal to different learning styles (McCown, 2010).

When planning online activities, a number of authors stressed the value of simplicity. The Wisconsin Hybrid Project advises to start with small and simple technology and a few learning activities and build over time ("Faculty resources," 2012). Means et al. (2010) meta-analysis revealed that adding various media elements to online learning, such as video, color, graphics,

and images did not improve student learning. In a study by Zhang et al., a student group who used video interactively was compared to a group with non-interactive video, and one with no video. The group with interactive video showed better learning outcomes, suggesting that not the media, but how it is used, may improve learning (as cited in Means et al., 2010).

Another reason to keep online technology simple is out of consideration for students' potential difficulties with internet access. The speed of network connection, availability of network connections at home, and bandwidth availability are all factors to consider. Complicated technology, such as streaming video, requires high bandwidth which students may not have on home computers. For online information requiring high bandwidth, provide alternatives such as a CD-Rom. Students may have to use other locations for access, such as a library. This, in turn, may negatively affect the flexible scheduling which students enjoy and value. In addition, more complicated technology, such as streaming video, has a high risk of malfunctioning (Parsad & Lewis, 2008). Another category of access issues to consider in course planning is for students with disabilities. For these concerns, work with a disability specialist (Varvel, 2001).

Develop a simple LMS layout.

Students need to be able to navigate easily through the course as is it laid out in the LMS. The number of online learning tools which will be developed and stored in the LMS can present a challenge. Weekly tasks may include reading assignments, videos to view, threaded discussions, group projects, homework, and journaling; without a carefully planned layout, the LMS will become cluttered and confusing to students. On the other hand, a well designed LMS will organize the content and learning tools in a way that facilitates student use. Consistency and clarity are important: home work and assignments should be separated, due dates clearly stated, and consistent instructions given for how to submit homework. McCown (2010) suggests using

the expertise of instructional designers, who may help develop benchmarks or standards for clear and consistent design. Napier et al. (2011) states the need to clearly connect objectives to supplemental reading, lecture, tutorial videos, and podcasts. Lack of clear communication and poorly organized information on the LMS were “worst practices” identified by Mortera-Gutiérrez (2006).

Quality 4 The course has appropriate time expectations.

“Emphasizing time on task” is one of Chickering and Gamson’s seven principles for good practice in undergraduate education (1987). Yet according to a Delphi panel of experts, emphasizing time on task was one of the least frequently found best practices in hybrid courses (Manning & Emmons, 2010). Creating a hybrid course that has the appropriate work load for students is a challenge identified by a number of authors (“Faculty resources,” 2012; McCown, 2010; Mortera-Gutiérrez, 2006; Napier et al., 2011). Online learning gives more opportunities to increase the time spent in learning (Means et al., 2010). Online activities often take students longer to complete than expected and online discussion, which is written, takes longer than simply stating an answer in class. Instructors may unintentionally create a “course and a half” (Napier et al., 2011).

Excessive workload was a “worst practice” identified by Mortera-Gutiérrez (2006), causing student to feel overwhelmed and confused. Even if the workload is appropriate, students often mistakenly believe that less work, and thus less time, will be required in hybrid courses (Dzuiban et al., 2007). The amount of time spent completing online tasks was a dissatisfier for students in Zolfaghari’s et al. (2010) study.

When planning workload, instructors should remember that in traditional classes, the standard practice is that undergraduate students complete three hours of work outside of class for

every one hour spent in class. In a hybrid class, the instructor needs to plan the same way. With online assignments and activities, keep in mind what would be considered “class time,” such as viewing videos or participating in a discussion thread; and what would be considered out of class homework time, such as reading a text or writing a report (“Toward success in,” 2011).

A guide for hybrid course development at Bowie State University recommends creating a modular format which requires completion of each module before starting the next. With feedback and guidance, instructors can ensure that all students complete modules within the designated time (Chacon & Hawkins, 2011).

It is important that instructors do not simply import face-to-face material online. A 50 minute lecture may be suitable in class, but it is too long for online listening or viewing. Video clips should be 10 minutes at most. Instructors should intersperse short lectures with learning activities which engage students (Aycock et al., 2002).

V. Bredeson (personal communication, July 30, 2012) said that students are surprised at the amount of work in a hybrid course. They come into the class thinking it will be easy because it is partly online and may become overwhelmed when they see how much work is expected of them. She was unable to find guidelines for determining workload as she converted the nursing assistant course to a hybrid format, but did find experienced instructors at the college to be an excellent source of advice. Nursing assistant curriculum must be approved by the State of Wisconsin Department of Health Services, and Bredeson’s first submission was not accepted because it did not include enough coursework for students. Online work must account for 50 hours, but needs to *exclude* time in activities that would be completed outside of the classroom in a traditional course such as reading the text, completing a workbook or writing a report.

Quality 5: Online and face-to-face activities promote active learning.

Reynard (2007) urges instructors to understand not just how to incorporate technology into a course but why. Online content may become busy work tacked onto a course if the instructor does not clearly understand the benefits. “My focus throughout was to look at how the design of instruction and the use of technology could heighten the engagement of the students in their learning process” (Reynaud, 2007).

It is well established in literature and theory that active learning results in better learning outcomes and promotes critical thinking. In hybrid courses, online tools help to create active learning (Ishtaiwa & Abulibdeh, 2012). The U.S. Department of Education meta-analysis supports this, with the conclusion that giving online learners more control over the learning process through opportunities to interact, trigger activities, reflect, and evaluate learning improves learning outcomes (Means et al., 2010). Simulations, tutorials, exercises, practices quizzes, threaded discussion, group projects, summary and analysis assignments, blogs, and journals are all options for active learning (Chacon & Hawkins, 2011).

Asynchronous discussion.

Asynchronous discussion, sometimes called threaded discussion, is a common and important tool in hybrid courses. The National Center for Education Statistics reports that asynchronous tools are the most widely used technology in all distance education: this includes threaded discussion, textual, and pre-recorded media. At post secondary schools, 92% use asynchronous and 31% use synchronous technology in distance learning (both hybrid and online) courses (Parsad & Lewis, 2008).

Discussion is asynchronous when it can occur from any location with internet access, at any time. The instructor begins a discussion by posting a question, which all participants can see. Messages can be grouped by date, topic, or contributor. Participants may respond to any message within the discussion thread. Discussion guidelines are given by the instructor, such as the number of times students must post a reply to the original question or post a response to other students, deadlines for posting, and rubrics that define the quality of the message content. Grade points may be given for posts, and in fact, awarding points for posts is a motivator for students to provide timely and well thought out comments. Asynchronous discussion has the advantage of providing a forum in which all students participate, whereas in a classroom, some talkative students dominate while reserved or shy students may not contribute. Students have time to reflect before composing responses, leading to deeper thinking skills. The challenge for instructors is to design good online questions that stimulate thoughtful responses and promote discussion (Napier et al., 2011). Students perceive that online discussion enhances their relationships within the class, increases their understanding of content, improves critical thinking, and improves the quality of discussion; all results reported in studies of online communication tools (Ishtaiwa & Abulibdeh, 2012; Martyn, 2003; Woods et al., 2007).

A summary of the results of four studies which examined the use of online communication tools in hybrid classes is given in Table 2. Comparison of Benefits of Online Communication Tools in Hybrid Courses, shown on the next page. The results primarily focus on asynchronous discussion boards. Of significance are two studies that found a positive relationship between the amount of time students spent online and posting to discussion boards and their course grade (Hsu & Hsieh, 2011b.; Woods et al., 2007). Two of the studies included synchronous live chat and or a virtual synchronous classroom. While one study did not comment

on the live chat, the other study found that the synchronous communication totaled less than 1% of the hits on the course site (Woods et al., 2007).

Table 2. Comparison of Benefits of Online Communication Tools in Hybrid Courses

Author and Study Sample	Asynchronous Tools Used	Synchronous Tools Used	Results/Comments
Hsu & Hsieh 99 Nursing students in ethics course	Discussion board (DB)		<p style="text-align: center;">Positive Results</p> <ul style="list-style-type: none"> • Better learning outcomes for students who: <ul style="list-style-type: none"> ○ Contributed more on DB ○ Spent \geq 100 minutes/day on internet ○ Had higher CAAS score (positive attitude)
Ishtaiwa & Abulibdeh 10 Information technology students	Web log Email Discussion board (DB)		<p style="text-align: center;">Positive Results</p> <ul style="list-style-type: none"> • Student perception that online discussion enhanced their interactions with students, instructor and content • Encouraged reflection, critical thinking and opportunity to be heard <p style="text-align: center;">Comments</p> <ul style="list-style-type: none"> • Students would like instructor to: <ul style="list-style-type: none"> ○ Give more detailed criteria for posts ○ Facilitate more focused, specific discussion ○ Grade posts • DB was on intranet, accessible only on campus
Martyn 107 Students and 3 instructors of college courses	Discussion board (DB) Email	Virtual chat	<p style="text-align: center;">Positive Results</p> <ul style="list-style-type: none"> • Student perception that DB enhanced: <ul style="list-style-type: none"> ○ Understanding of content ○ Feelings of community ○ Interaction with instructor ○ Course grade <p style="text-align: center;">Comments</p> <ul style="list-style-type: none"> • No data given on virtual chat • Scores for writing projects 10-12% higher compared to students in traditional courses

Woods, Badzinski, & Baker 151 Students in media literacy course	Discussion board (DB) Email	Virtual classroom Virtual chat	<p style="text-align: center;">Positive Results</p> <ul style="list-style-type: none"> • Students with greater number of online posts had higher final grades than those with fewer posts • Student perception that DB enhanced: <ul style="list-style-type: none"> ○ The quality and quantity of classroom discussion ○ Relationships with student and instructor ○ Enjoyment of class <p style="text-align: center;">Comments</p> <ul style="list-style-type: none"> • The virtual chat and classroom received < 1% of total hits on the site
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Synchronous discussion.

Synchronous discussion, or live chat, can also create interactive online learning.

However, it is used much less frequently in hybrid courses. Synchronous discussion offers less of the flexibility students enjoy; even though it can occur in multiple locations, it must occur at the same time. It is also more cumbersome to type and wait for responses in real time as opposed to asynchronous discussion (Woods et al., 2007).

Martyn used 1-2 hour weekly synchronous chat sessions to clarify course concepts. In preparation, students read text assignments, reviewed the chat outline, and took an online quiz. Points were earned for chat participation. The chat could be archived, downloaded, and printed. The author did not report on student or instructor perceptions of the live chat (Martyn, 2003). Reynard reported high satisfaction with using weekly, synchronous chat during eight years of teaching hybrid courses. Her opinion was that the chat sessions were very dynamic as students read assignments ahead and came prepared to chat in small groups for an hour and a half with focused questions (Reynard, 2007).

Varvel (2001) offers the following tips for synchronous communication. To have a successful live chat:

- post the agenda in advance and keep on schedule;

- limit the discussion group size to 5-10 students;
- provide a specific order for students to take turns;
- use audio for the instructor;
- allow socializing in a synchronous chat room before or after the discussion; and
- offer flexible scheduling by offering the same discussion at different times.

Instructors may also hold synchronous weekly office hours via live chat. Synchronous communication can take the form of instant messaging with text, voice, or video, such as Skype (McCown, 2010).

Using online tools initiates active learning and this carries over into the face-to-face classroom. Aycock et al. (2002) reported that the student-to-student and student-to-instructor interactions that began online, often in the form of asynchronous discussion, carried over into the classroom. Students in another study believed that the quality and quantity of in-class discussion was improved as a result of asynchronous online discussion (Woods et al., 2007). Napier et al. (2011) found that instructors were able to use face-to-face time for more active learning in a hybrid course. V. Bredeson (personal communication, July 26, 2012) says students in the hybrid nursing assistant courses she teaches are more actively engaged in learning and are more accountable than in the face-to-face course, as they are not allowed to attend lab sessions if online work is not completed.

Online assessment tools.

Thoughtfully planned use of online assessment tools is another important way that instructors can engage students in active learning (Chacon & Hawkins, 2011). Assessment tools should match the course objectives, define grading standards, and provide timely feedback. At

their best, online assessments have the capability to individualize learning by tailoring responses to student needs.

According to Chacon and Hawkins (2011), grading the outcomes leads to more student engagement and better outcomes. Students benefit by understanding what is graded and how the grade is calculated. Instructors can facilitate this by creating rubrics as a guide for grading online discussion and other assignments (King & King, 2010; McCown, 2010). Students asked for clarification of assignments and grading standards in several studies (Ishtaiwa & Abulibdeh, 2012; Mortera-Gutiérrez, 2006). In addition, students in Ishtaiwa and Abulibdeh's (2012) study of online asynchronous tools indicated that awarding grade points for good discussion was a positive motivation.

The U. S. Department of Education's meta-analysis of online learning research studies attempted to identify specific practices that enhance student online learning. These practices include online quizzes, simulations, individualized instruction, and tools to prompt students to reflect on their learning. The researchers concluded that the number of studies on any single practice were so limited that no firm conclusions could be made, but they offered tentative recommendations based on the limited evidence. Online practices that were found to increase learning outcomes for students in a limited number of studies were: the use of tools that trigger student reflection or self-monitoring of their learning, simulations, and individualization of learning with content that is generated based on student responses. Self-reflection may be stimulated by a guidance system that encourages thinking and problem solving without giving the answer. Examples of self monitoring include giving students the ability to track study time or to create self assessments (Means et al., 2010).

A significant finding of Means et al. (2010) was that, “simple multiple choice quizzes did not appear to enhance online learning” (p. 4). However, quizzes were not shown to have a detrimental or negative effect. The question might be raised as to whether online quizzes can be a means of promoting student reflection and self-monitoring of learning. Designing a quiz with prompt feedback and explanations of incorrect responses may be an effective formative evaluation tool because it engages the student in active learning and provides an opportunity for self-assessment. In fact, Means et al. (2010) does recommend when online quizzes are used, to provide immediate feedback on answers and opportunities for more practice when responses are incorrect. Other authors found ongoing assessment to be a valuable way to give students information about their progress in a course (Napier et al., 2011). Martyn (2003) allowed students to take online quizzes several times with alternate questions from a test bank.

Most authors in the literature review for this paper reported using face-to-face class time to give summative assessments, such as final exams. Martyn (2003) points out that online testing can be a concern in accreditation review, so in-person testing avoids that concern.

Quality 6: Online and face-to-face activities promote a learning community.

It is important for a learning community to develop in the hybrid course because “that sense of community is significantly associated with perceived learning” (Garrison, 2007, p. 61). Instructors will do well to understand the face-to-face and online conditions that promote community formation and capitalize on both in their hybrid course.

Means et al. (2010) concluded in their meta-analysis that online learning was more effective when there was student collaboration and when the instructor directed the learning, as opposed to independent study. Garrison, Anderson and Archer developed a framework to describe how an online learning community forms. Learning is based on problem identification

and problem solving that takes place through group interaction and self-reflection. The social and cognitive presence of students forms a learning community where interactions take place. The instructor is a facilitator who designs, implements, and evaluates the course. In addition, the instructor moderates and guides online learning activity and discussion (as cited in Garrison, 2007). To paraphrase, students need to be able to relate on a social level first in order to move on to a deeper thinking and problem solving level. The instructor's role is to set the tone which will facilitate these interactions.

Research suggests that a face-to-face environment provides social and emotional support more easily for students than an online environment. Generally, hybrid courses start with a face-to-face orientation class which includes ice breakers and opportunities to make social connections. The social connections that are initiated, perhaps more easily, in the face-to-face class can then continue online. Instructors can set up the online environment to provide a structure for social interaction from the very beginning of class and continuing throughout the course (Garrison, 2007). A discussion board labeled *coffee shop* or *water cooler* may be designated for personal, non-subject related communication (Woods et al., 2007).

After social relationships are established, the focus will shift to purposeful activities such as reflective and threaded discussion. There will be less need for social reinforcement as the sense of community grows. Sands (2002) advises instructors to design assignments so students need to return to the online discussion space regularly and students depend on each other for participation. Such asynchronous and synchronous discussion opportunities were described previously in this paper.

Finding ways to move the quality of student discussion deeper is a key to success. Garrison (2007) defines students' progress in working together as exploration, construction,

resolution, and confirmation of understanding through collaboration and reflection. However, student discussion has difficulty moving beyond the exploration stage to deeper levels of applying knowledge. In some cases, discussion may be no more than a series of monologues by students. The role of the instructor is crucial. Meyer states that, “The question initiating each of the online discussions influenced that level of the responses from students” (as cited in Garrison, 2007, p. 65). A study in which students were given an online, collaborative problem solving activity concluded that well-designed tasks promote higher levels of collaboration. Garrison (2007) recommends that instructors provide students with problem-based or case-based activities, clear expectations, and a teaching presence to facilitate successful collaboration.

Community building can also occur through online or in-person group projects. V. Bredeson (private communication, May 11, 2012) has students use a wiki to complete a group project in her nursing assistant courses. The wiki format allows the instructor to track individual participation and it easily allows all members of the group to add content to the web page.

The hybrid format may lend itself to community formation among students. Rovai and Jordan (2004) compared how a sense of community differed among students in face-to-face, online, and hybrid courses. Participants were elementary and secondary teachers enrolled in graduate level courses at a small university in Virginia. According to the Classroom Community Scale (CCS), students in the hybrid course experienced a stronger sense of community than either the students in the fully online or face-to-face course. The authors’ hypothesis was that a hybrid course offers a greater variety of ways (both online and in-person) for students to interact with each other and with the instructor. Interactions lead to socialization, discussion, formation of a learning community, and a sense of satisfaction in the participants.

Martyn (2003) found a nearly 100% completion rate for students in the hybrid courses in her study. Only one student out of 107 failed to persist in the courses. She attributed that to the students' strong sense of being part of a learning community. The majority of students in the study agreed or strongly agreed that asynchronous discussion increased their feelings of community and interaction with the instructor.

Quality 7: The instructor provides students with tools for success.

Inform students about the hybrid course.

In the literature reviewed, common themes emerged as to what students need to know to be successful in the course. To begin with, authors stress that students need to know what a hybrid course is and understand what they are signing up for one at the outset (King & King, 2010). Surprisingly, it is possible for students to come into a course not knowing that it is hybrid and with no understanding of the expectations (Mortera-Gutiérrez, 2006).

Even though we have been teaching hybrid classes at the college for six years, I still get students who did not understand that “hybrid” means part of the class takes place online. Starting in 2012 fall semester, students will take a readiness assessment before they can register for the hybrid class. The assessment walks the student through the basics of online learning so they can decide if it is a good choice for them. (Bredeson, personal communication, July 26, 2012)

The hybrid format is still a new approach for most students. The current generation of students has had most of their educational experience in a traditional setting. It is important to explain the purpose of hybrid education, how it works, and what its advantages are, and then be prepared to reinforce these ideas throughout the course. Be very clear about course expectations (Aycock et al., 2002; “Faculty resources,” 2012; Napier et al., 2011; Woods et al., 2007).

Provide a face-to-face initial orientation.

Skills in technology, time management, and self-direction are critical to student success in a hybrid course (Napier et al., 2011). Helping students acquire those skills starts with the first class being a face-to-face orientation; this is unanimously preferred by instructors (Aycock et al., 2002; King & King, 2010; Martyn, 2003; McCown 2010; Mortera-Gutiérrez, 2006; Woods et al., 2007). Even instructors who did not want to lose class time to non-course topics found this to be valuable (Aycock et al., 2002). The face-to-face orientation also lays the foundation for a learning community to develop. Social contacts, ice breakers and exercises to begin team building, and even serving refreshments, are all ways instructors use to begin developing a learning community that will continue in the online environment. Often, the last class in a hybrid course is also scheduled as a face-to-face class and the final exam is given then.

Provide orientation to technical skills.

A student's technical expertise in computers may be limited to email, facebook, chat, and web-surfing. Students may need orientation to other skills related to word processing and using the learning platform (Sands, 2002). Early identification of students who need additional support is important. Instructors can guide students in developing a plan to increase their technology skills and refer students, as needed, to sources of ongoing support. Orientation to computer technology can occur in a variety of ways. Instructors may choose to

- administer a computer literacy survey (King & King, 2010; Napier et al., 2011; Woods et al., 2007);
- guide students through use of the learning management system (Martyn, 2003; Woods et al., 2007);

- provide hands-on practice, such as downloading or submitting an assignment (Martyn, 2003);
- administer an online quiz (Martyn, 2003);
- provide clearly written tip sheets and how-to fact sheets (Aycock et al., 2002; “Faculty resources,” 2012; King & King, 2010; Martyn, 2003);
- provide contact information for technology support, such as campus help desk hours and phone numbers and LMS support (“Faculty resources,” 2012; King & King, 2010; Napier et al., 2011; Varvel, 2001);
- direct students to online tutorials (King & King, 2010; Napier et al., 2011; Varvel, 2001) and;
- refer those needing additional help to student mentors (King & King, 2010).

Faculty teaching a pharmacology course added a second face-to-face class to allow enough time for orientation to technology. They decided it was not helpful to assign online activities prior to the first class, as students were not familiar enough with the technology or did not access the LMS prior to class and were not aware of assignments (King & King, 2010).

Encourage time management skills.

Because the hybrid format is new to many students, anticipate that they will need guidance in developing time management skills to be successful. This is a point upon which many authors in the literature agree, and at least one found it to be a bigger need than technology skills (Aycock et al., 2002; “Faculty resources,” 2012; Napier et al., 2011; Sands, 2002; Varvel, 2001). Ways in which instructors can encourage time management are to

- provide time management tips;
- clearly post assignments;

- clearly post due dates and give frequent due date reminders;
- provide in-class and online schedules (“Faculty resources,” 2012);
- provide estimated times for assignment completion in the syllabus and;
- design learning segments to be completed in 15-30 minutes (Varvel, 2001).

Encourage self-direction skills.

Self-direction is required in a hybrid course, as students are required to take more responsibility and accountability for their own learning. Self-direction can be described variously as motivation, discipline, independence, or maturity (Aycock et al., 2002; Varvel, 2001). Ideally, students should be assessed prior to class to see if they possess the skills and maturity needed to succeed in a hybrid course (Napier et al., 2011). Madison Technical College is introducing a readiness assessment tool to identify students who possess skills needed for success in an online class. V. Bredeson states that student satisfaction seems higher in the hybrid nursing assistant course than in the face-to-face course. She thinks it is because the students who take the hybrid course are self-motivated and take an active role in learning (personal communication, July 26, 2012). One may still encounter students with attendance and motivation issues, such as not turning in assignments or being late to the face-to-face classes (Napier et al., 2011). Instructors are advised to communicate directly with students who lag behind. They should ask students about barriers, issues, or concerns that may need to be addressed (Varvel, 2001).

Quality 8: The instructor is a facilitator of learning.

Facilitate discussion.

In Garrison’s study of online learning communities, he concludes that the role of the instructor is a key to the success of a hybrid course. “The consensus is that teaching presence is a

significant determinate of student satisfaction, perceived learning, and sense of community” (2007, p. 67). Arbaugh and Hawang agree, stating that an instructor “with a strong presence in blended learning is an excellent predictor of student satisfaction and success” (as cited in King & King, p. 106).

In a hybrid course, the instructor’s role is not primarily that of an information giver. As explained in a previous section, the hybrid course structure fits well with the active learning model. Active learning theory maintains that students are led to engage with information, reflect upon learning, and build their own understanding; instructors act as *facilitators* of the learning process (King and King 2010). Dziuban (2001) agrees, asserting that the technology itself impacts the teaching and learning process; as a result, students take active roles in directing their own learning and teachers become *facilitators*.

Garrison (2007) advises instructors to be aware of a balance between facilitation comments and direct instruction comments. Instructors must know when to contribute information, when to correct misconceptions, when to provide direction, and when to hold back so as not to dominate. Student discussion can be facilitated by providing clear instructions to students, providing specific problems to be resolved, and encouraging groups to integrate their ideas.

Provide prompt feedback.

Providing timely and positive feedback to students on performance and answering questions were “best practices” for hybrid course instructors identified by a Delphi panel of experts (Manning & Emmons, 2010) and by Mortera-Gutiérrez (2006) in his study of faculty who taught hybrid courses at the University in Mexico City. Conversely, lack of involvement by the instructor, lack of clear instructions, and lack of guidance when students got off track with

online discussions were weaknesses that students noted in hybrid courses (Ishtaiwa & Abulibdeh, 2012; Hsu & Hsieh, 2011a).

Instructor feedback is important because it affects learning outcomes. According to Pascarella and Terenzini, “Students function more effectively when they receive regular, consistent, and incremental feedback about their performance in class” (as cited in Dzuiban, 2007, p. 277). Instructors motivate students by maintaining a visible presence revealed through consistent online activity. This can be achieved by giving positive feedback for correct answers (McCown, 2010), monitoring and responding to online discussion (Napier et al., 2011), email messages to individual students (Varvel, 2001), and posting announcements (Woods et al., 2007). It is helpful for students if standards are established for feedback. If answers are not correct, instructors should let students know they will provide cues to assist in finding correct answers (McCown, 2010).

An online environment can present challenges to the way instructors assess and respond. Martyn (2003) points out that instructors cannot rely on nonverbal cues and body language to assess student understanding. Instead, they must find alternative ways, such as noting “written stammering,” the online version of verbal stammering, to realize that a student needs additional support. It is also important that instructors be aware that one’s own workload will increase as the number of assignments and online discussions increase (“Faculty resources,” 2012).

Define availability.

Instructors must be prepared to manage their own time differently (Sands, 2002). With online technology, the instructor is theoretically available 24 hours a day, seven days a week. An instructor may unwittingly set up just such an expectation by answering email and posting comments on weekends and late at night. V. Bredeson (personal communication, July 26, 2012)

found that some students expected her to be available every day, 24 hours a day, just because the course was online, even though she had posted office hours. Instructors should define for students exactly what their availability will be. A 24-48 hour response time is reasonable. Office hours may be held as a synchronous or asynchronous chat. Instructors may provide students with a schedule of office hours for the entire course (King & King, 2010).

Seek student input for improvement.

Finally, instructors must realize that teaching a hybrid course is a process of trial and error. King and King (2010) gave students a graded course survey at midterm and the end of the class to find out what worked well and what suggestions students had for changes. In addition, King and King sought peer review for their course. By responding to suggestions and making modifications, they expect the course to evolve over time. V. Bredeson (personal communication, July 26, 2012) constantly strives to improve her course by adding variety to the activities. As technology is ever changing, she plans to keep up with changes in the kinds of activities included in the course. She notes, however, that it is difficult to find the time to make curriculum changes, regardless of the teaching forum.

Summary

Hybrid education, in which coursework is completed in a combination of face-to-face and online time, is a fairly recent variation of online distance education. Hybrid education is popular with students, faculty, and institutions of higher learning, as it offers flexibility along with an economical solution to overcrowding and access issues.

Learning outcomes are better for students in hybrid courses than in either face-to-face or online courses. This may be a result of hybrid education being able to use the best features of both online and traditional formats. Initial face-to-face classes establish social connections and

provide a strong orientation to the computer technology required in the course. Online technology engages students in active learning in which the instructor functions as a facilitator. Asynchronous threaded discussion is a widely used online tool which facilitates the development of a learning community through increased student-to-student and student-to-instructor interactions, reflective thinking, and problem solving.

Many instructors convert an existing face-to-face course into a hybrid format. A literature review reveals eight characteristics that will lead to a high quality course. These are:

- institutional leaders support hybrid course development;
- the hybrid course is built upon sound theory;
- the hybrid course is thoughtfully planned and designed;
- the course has appropriate time expectations;
- the combination of online and face-to-face activities promote active learning;
- the combination of online and face-to-face activities promote a learning community;
- the instructor provides students with tools for success in required skills such as technology, time management, and self direction, and;
- the instructor functions as a facilitator of learning.

By carefully considering available resources and planning how to implement high quality features into a hybrid course, an instructor may expect a successful result.

Chapter Three: Conclusions and Recommendations

In summary, the review of literature illustrates that it is well worth an instructor's time and effort to consider converting an existing course from a face-to-face to a hybrid format. Better learning outcomes have been demonstrated for students in hybrid courses as opposed to either online or face-to-face courses. Students, instructors, and institutions all find hybrid courses appealing for a variety of reasons. However, developing a hybrid course is a project that cannot be taken lightly. It must be approached with a realistic view of what is required: this includes institutional support in terms of philosophy, technology, and time. At least six months should be allowed for a complete course redesign. This begins with writing objectives; designing online activities, content, and assessments; integrating online and face-to-face content; and developing a simple, user-friendly layout in the learning platform.

It is very important that students understand what a hybrid course is when they register for it. Both students and instructors must consider the skills required for students to succeed in a hybrid course: skills in technology, time management, and self direction. Screening students to determine their readiness for an online course is a good idea. Some schools offer students the option to take an online survey, such as *READI Survey*, to determine if they have the skills needed to be successful in an online course; other schools require such an assessment before students can register for a hybrid or online course. A good assessment will help students to evaluate not only their technical computer skills but also the soft skills of time management and self direction. If an assessment is not part of the school policy or requirements, instructors may consider how to incorporate this into their course. Finally, instructors should be prepared assist students in acquiring these skills.

Online technology has the potential to improve learning outcomes by impacting the way students learn. Hybrid education lends itself to active learning methods that engage students in

ways that encourage collaboration and critical thinking. There appears to be a need for more research into how to create effective online learning conditions. The limited research in this area indicates the better learning outcomes are produced through online learning activities that involve

- self reflection;
- self monitoring;
- simulations; and
- individualized learning with dynamic feedback based on user responses.

Online quizzes, even those that provide immediate feedback, may not be enough to produce better learning outcomes for students in hybrid courses. While online quizzes are easy to design in a LMS and have been widely viewed as an effective active learning method, they may fall out of favor if the evidence continues to point toward better outcomes with the other activities listed above. Quizzes may have been the simplistic starting point in using online technology to create active learning tasks. However, if online quizzes are not beneficial, more work needs to be done to guide instructors in how to create online assessments and tools that effectively engage students in active learning. Additional research focused on creating online tools for self reflection, self monitoring, individualized learning, and simulation will be helpful. Consideration must be given to whether the LMS supports the creation of such tools and how to train instructors in using the LMS to develop good learning activities.

The U.S. Department of Education meta-analysis of online education called for more research on effective online tools to enhance learning. In fact, Means et al. (2010) point out that not only is the number of research studies in this area lacking, but that there is a need for better designed studies:

Finally, readers should be cautioned that the research on alternative online learning practices has been conducted for the most part by professors and other instructors who are conducting research using their own courses. Moreover, the combinations of technology, content, and activities used in different experimental conditions have often been ad hoc rather than theory based. As a result, the field lacks a coherent body of linked studies that systematically test theory-based approaches in different contexts.

(p. 4)

Instructor presence in the online environment is another topic that will benefit by further research and clarification. Asynchronous threaded discussion is the most commonly used online tool for student interaction with other students, the instructor, and the content. However, groups can have difficulty in moving discussion beyond the initial exploration stages. The instructor's role as a facilitator is crucial in posting well constructed discussion questions and in providing some guidance to the discussion, without dominating it. More clarification on the role of instructors in online learning is needed. Questions such as, "How much instructor presence online is helpful, what is the balance between over and under involvement for the instructor, and what standards can be used to measure instructor presence?" are worth consideration.

Instructors will also benefit from guidelines for determining appropriate amounts of time on task when planning online work. Creating a course where online content produces excessive workload for students appears to be a fairly common problem. Instructors may know that information that had been delivered in a 50 minute lecture needs to be condensed into smaller bits: perhaps through PowerPoint slides, video segments under ten minutes, condensed notes, succinct discussion questions, or a combination of these. However, they may not know the best way to go about making this transition. Specific guidance on how to gauge appropriate time

frames when creating activities and assignments will help instructors who are adapting classroom teaching to a hybrid model.

Nursing assistant courses, which include lab and clinical hours, adapt well to the hybrid model. Such courses do not fit with a totally online format, because lab and clinical must occur as face-to-face activities; these components create divisions for a hybrid model. The literature review included only one study of a hybrid clinical laboratory science course that included lab and clinical hours. McCown (2010), the author of that study, listed benefits of the hybrid course in that situation as enhanced communication and collaboration between multiple lab and clinical instructors and the ability to place students in remote clinical sites. An interview and email communication with V. Bredeson, a nursing assistant instructor at a Wisconsin Technical College who has been teaching hybrid nursing assistant courses for six years, provided anecdotal information that aligned well with conclusions in the literature review (personal communication, May 11, 2012). One of the practical advantages of the hybrid course is the ability accommodate greater numbers of students, in a program that has a low instructor to student ratio, without increasing the number of faculty. This is achieved because one instructor can manage all of the online learning.

Initially, it appears that the division between online and face-to-face time in a nursing assistant course is clear-cut and simple. Theory content can be delivered online. Lab skills and clinical practice take place in a face-to-face setting. Further consideration, though, reveals the possibility that part of the skill portion of the course may take place online. Madison Area Technical College provides hybrid nursing assistant students with a kit consisting of a disposable gown, gloves, and mask; gait belt; emesis and bath basins; and nail care items as part of their purchased supplies. Students watch skill videos online and are expected to practice some skills

before they attend the skills lab. The videos being used at the time of the interview with V. Bredeson, the instructor, were over ten years old (personal communication, May 11, 2012). Variations in skills and techniques that change with ever evolving, evidence based practice present a challenge in keeping videos current. There is a need for high quality skill videos that accurately demonstrate skill steps. When this need is met, instructors can develop innovative ways to encourage students to practice and self-assess skills prior to lab. Using online time for learning and practicing some of the skills will add to the efficiency the hybrid course design.

Looking toward the future, one may expect the body of knowledge related to hybrid education to continue to grow, through research and practical experience. As it does, educational institutions will further refine their standards and guidelines. There will be greater consistency and clarity in course design within individual institutions and eventually, universally recognized standards of practice will develop.

At the same time, educators must also anticipate ever-changing educational models as new technology is introduced. Even today, we are entering the fifth generation of distance learning, mobile learning, which uses small portable communication devices, such as smart phones and pad computers, as the delivery platform for education. Mobile courses are marked by their use of podcasts, real-time collaboration, and capture of information from the student environment by means of cameras and microphones (Chacon & Hawkins, 2011). Educators can view technology as a means to an end, a tool to enhance education and improve learning outcomes, and accept the challenge to continually develop evidence based practice for effective use of these tools.

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