Uses and Perceptions of Online Learning Components

in Hybrid Courses by Full-Time Business Instructors

at Comprehensive and Regional Public Universities

in Oklahoma

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CHAPTER I

INTRODUCTION

Background

In 2005, the president of Pennsylvania State University said in a speech that the convergence of online and resident instruction is "the single-greatest unrecognized trend in higher education today" (Young, 2002, ¶12). This convergence has a name – hybrid courses (also known as blended or sandwich learning courses) – and the model is an increasingly popular delivery format for university and adult education courses. In fact, the hybrid model is "quickly becoming the most popular format in distance education," (Reasons, 2004, p. 3). More and more traditional classroom instructors are moving to hybrid format, joining classroom instruction and best practices from the online learning environment.

The growth in popularity of hybrid courses is due to one simple reason: the blended delivery format promises the best of both worlds - the most effective components of online learning environments and or combined with the most effective components of traditional classrooms (Young, 2002). With few exceptions, the hybrid instruction model appears to be delivering on that promise. Riffell (2004) found that students in hybrid courses were more fully engaged in active learning: they read the textbook more frequently, studied in groups more often, and experienced high quality interaction with the instructor than did students in traditional courses only meeting in person. Brown (2001) found that the hybrid format could provide a higher success rate than traditional face-to-face or web-based classes. Researchers at Michigan State University concluded that "the hybrid course format was better or equivalent to the traditional course,"

specifically stating that "online assignments were equivalent to or better than passive lectures, and that active-learning exercises were more effective when coupled with online activities" (Reasons, 2004, p. 4).

With hybrid courses demonstrating their instructional effectiveness and growing in popularity as a distance learning format, a need has arisen for a descriptive, comparative study (Routio, 2007) of the current best practices and their implementation in specific contexts. This need in the academic field of interest to the researcher was the impetus for this study.

<div align="center">The Researcher's Perspective</div>

The researcher has more than 20 years of experience in corporate business in the United States including work with technology companies. She also has several years of experience facilitating traditional classroom and online courses for adult learners. She believes that technology plays an integral part in the success of any business and is a valuable tool for learners to master prior to business employment. Further, she believes that methods and strategies that support and enhance learning – including technology-driven components - should be fully explored and considered for use by educators focused on meeting the needs of adult learners. The researcher is a business instructor at a public university in Oklahoma and is interested in research to improve the quality of teaching skills and style in Oklahoma business colleges. She believes this study is necessary in post-secondary business educational institutions in Oklahoma for several reasons. First, business instructors in public universities are typically trained in the areas of their terminal degrees such as finance, marketing, and management rather than in adult education and may not be as familiar with the most recent research regarding the benefits

and benchmarks of hybrid courses. Second, the researcher believes that business instructors who incorporate technology into the classroom may gain credibility and respect from traditional students who already use technology as a normal part of their everyday lives. Third, business instructors who leverage hybrid courses may be able to better prepare college students for careers in today's technology-driven business world. Because technology is used in business and business faculty members teach business courses, they may use technology in teaching more or differently than, perhaps, faculty members in other disciplines.

Structure and Appeal of Hybrid Courses

Young (2002) identified hybrid courses as a blending of the best of both traditional and online environments. A typical hybrid course today meets regularly at scheduled times in a traditional classroom led by an instructor who supplements and enhances classroom learning with effective online learning components. This allows learning activities to be delivered in whatever method is most appropriate, and instructors have reported appreciating this opportunity because some activities are better delivered online rather than in person while some may be more effectively delivered online.

Hybrid courses can appeal to both learners who like traditional learning environments and those who like online study. Traditional classroom courses appeal to students who want reassuring support face-to-face for their learning endeavors. Many students are most comfortable with the traditional classroom because they are personally familiar with that format and value the learning opportunities delivered through face-to-face, real-time interaction with the instructor and fellow students (Reasons, 2004; Schmidt & Sullivan, 2004). A class that regularly meets at a specific time and place also

can provide time management structure for students. In addition, exams are easily proctored in the traditional classroom.

The online format also has unique and positive appeal for learners. Studies have shown that online learning is popular among today's postsecondary students for at least three major reasons: (a) access, (b) flexibility, and (c) comfort with technology.

First, the open access and flexibility of online courses often appeal to nontraditional students who are juggling multiple demands of family, work, and time. Older students are adults who may need to balance classes with the demands of work and family, and online learning provides the flexibility and convenience they require (Reasons, 2004). Online courses allow them to select the time and days that they will spend time in the virtual classroom attending to various learning activities.

Second, postsecondary students under age 19 have considerable comfort with technology. They have used computers and the Internet for most of their lives, are as comfortable with the format as they are with telephones and television, and many regularly access the Internet for social purposes (Jones, 2002). Studies have reported that children ages 8-18 spent more than six hours per day with one or more forms of digital media (Rideout, Roberts, & Foehr, 2005) and are "increasingly expecting to use the same or similar access [to digital media] in school" (Hirsch, 2005, ¶ 1). The online learning environment does not intimidate these technically skilled young learners, and a hybrid format allows them to use their technology skills while still delivering the traditional learning environment that they have experienced since preschool.

According to Young (2002), considerable research has documented both the success of online learning, including flexibility and access, and its failures, including

lower student retention rates. Some researchers have attributed the failures of online

learning to educators trying to simply transfer teaching and the classroom to the Internet

rather than understanding and leveraging the unique learning opportunities that online

courses can provide (Lynch, 2002; Schank, as cited in Caudron, 2001). The hybrid format

helps to eliminate this problem by creating a *both* environment rather than forcing an

either/or choice.

Young (2002) described the hybrid model as blending the traditional educational

experience most students expect with effective online learning components, such as

discussion boards, that can give a voice to every student and supplemental course

documents including online resources and links. As Osguthorpe and Graham (2003)

noted:

> Those who use blended learning environments are trying to maximize the benefits
>
> of both face-to-face and online methods [or technology delivery methods] – using
>
> the Web for what it does best and using class time for what it does best. (p. 227)

In this model, the student has real-time and face-to-face interaction with the

instructor and fellow students while also always having continuous and flexible access to

course documents, course learning materials, multimedia learning aids, and their

individual grade book. This is very appealing to many students. One student explained, "I

lose interest in a classroom setting, but meeting 50/50 is nice--it helps keep me in check

and also gives me freedom." (Young, 2002, ¶ 38)

Yet another valuable attribute of the hybrid course is its ability to create an

ongoing and dynamic community of learners and teachers. The face-to-face interaction of

the traditional classroom is engaging but also ends when class ends. In the hybrid model,

the interaction can continue online, extending the learning throughout the course or longer (Pittinsky, 2005). Ausburn (2004) agreed with the community and support aspects of hybrid model and cited several concurring studies:

> This mixed-mode instructional model, generally termed hybrid, blended or sandwich learning, has been recognized as an effective alternative that can combine the best features of each model, help foster rapport among participants, and decrease 'psychological' distances and isolation (Wolcott, 1996; Horton, 2000; Horton & Horton, 2003; Syllabus Magazine, 2003). There has, in fact, been considerable support in recent literature for the Internet plus face-to-face blended or hybrid model that joins technology, campuses, and people. Some believe that this 'mixing bricks and clicks' may be the ideal learning structure for non-traditional adult learners. It has been cited as the best way to resolve many e-learning concerns expressed by both faculty and students, a critical e-marketing strategy, and possibly ultimately the most popular and widely-used e-format (Bleed, 2001; Granitz & Greene, 2003; Horton & Horton, 2003). (Ausburn, 2004, p. 328)

Walker and Jeurissen (2003) also reviewed literature and concurred with the community and support characteristic of online learning. They stated:

> Technology provides the scope for enriched learning opportunities, facilitating the sharing of knowledge and understanding among members of a group, increasing interaction between students and supporting higher

order learning . . . (Brandon & Hollinsghead, 1999; Harasim, 1989;

Salmon, 2000; Tyuroff, 1990). (p.114)

Bailey and Cotlar (1994) and Berger (1999) suggested that from a learning

environment or community standpoint, students have greater opportunities with

electronic collaboration tools to solicit and share knowledge, while developing common

ground or intersubjectivity with their peers and teachers.

Several logistical and fiscal reasons have also been offered to support the hybrid

model. While this dissertation study will not examine those drivers of hybrid model

courses, it should be noted that some universities are opting for hybrid course delivery

formats for reasons other than learning effectiveness – including a shortage of classroom

space and cost effectiveness (Buzhardt, 2005; Young, 2002).

Transitioning to a Hybrid Model

Like other industries, education has experienced challenges in its journey from

industrial age to information age. Like online classes, hybrid classes may take some time

and research to determine the most effective designs and delivery methods. However,

compelling research is emerging to support the transition of traditional classroom format

courses toward a hybrid format that supplements face-to-face meetings with effective

online learning components. Dowling, Godfrey, & Gyles (2003) stated that "switching

from a traditional teaching model to a flexible delivery teaching model significantly

improves student learning outcomes" (p. 372). They found that "academic performance is

higher for students who studied under the flexible delivery model" (p. 373) which they

defined as a model combining face-to-face seminars and electronic delivery and

communication tools.

Several researchers have supported the hybrid format and encouraged a transition to its use. Smith (2004) noted that using a hybrid format allows facilitators to more easily use and link multiple sources regarding a learning concept and proposed that modeling this type of approach toward learning may foster critical thinking skills. Van Eijl, Pilot, & De Voogd (2005) found that the student completion rate of an 18th Century English literature course jumped from 60% to 90% when the traditional-classroom-only format was changed to a hybrid course format combining face-to-face classroom sessions with "extra content to enrich their learning" in the form of online learning components including self control tests, weekly graded quizzes, and assignments (p. 50). Riffell and Sibley (2004) found that "performance on a post-course assessment test indicated that the hybrid course format was better or equivalent to the traditional course" and that:

> Specifically, online assignments were equivalent to or better than passive lectures, and that active-learning exercises were more effective when coupled with online activities. Performance gains were greater for upperclassmen than for freshmen, indicating that hybrid course formats might be a superior option for upperclassmen when satisfying general science requirements. (p. 217)

The transition to hybrid environments is not only supported by research results. It is also being supported by students and curriculum developers. Researchers at Eduventures reported that 85% of prospective college students said they would be interested in a hybrid course (*Recruitment and Retention in Higher Education*, 2005). Textbook publishers are adapting, "providing an increasing range of electronically delivered content systems and customized companion Web sites to supplant traditional student guides" (Parker, 2004, p. 389).

The Challenge of Developing Effective Hybrid Formats

The problem proposed by hybrid models is two-fold: The growing complexity of the model due to rapid technological advancements, and the challenge of selecting the most effective components for the online and in-person parts of the course.

First, the hybrid model is becoming increasingly complex as technology drives new and more online learning innovations. The demand in the United States for telecommunications services, of which Internet demand is a part, reached $785 billion in 2004 and is expected to grow another 9.5 compound annual growth rate (CAGR) by 2008 (TIA, 2005). New learning components are developed as quickly as technology evolves, and researchers are challenged to keep pace in determining the effectiveness of online and hybrid courses. Duke University was among the first educational institutions to offer podcasting of instructor lectures to students via MP3 players (Duke, 2005).

Second, instructors may not know which online learning components are most effective in facilitating learning and in supplementing traditional learning in a hybrid model course. As a result, they may select a mix of online learning components and traditional classroom activities that do not effectively facilitate and support learning. In fact, instructors may actually harm the hybrid model rather than deliver on its promise of a more effective learning structure. For example, researchers at the University of Southern Indiana found that when a hybrid class is not clearly structured or when communications are limited, the hybrid model may cause a sense of confusion among students about issues such as what portion of the class is online and when the class meets in the classroom. Confusion can lead to student attrition (Reasons, 2004).

Nuckles, Schwonke, Berthold, and Renkl (2004) claimed that hybrid:

Adequately acknowledges that computer-based or Internet-based learning environments on the one hand and traditional types of learning arrangements on the other hand have different strengths and weaknesses. The main goal for educational research, as well as for practical education, is to find fruitful ways to combine both approaches in order to exploit their respective advantages. (p. 50)

Osguthorpe and Graham (2003) concurred, stating that:

The important consideration is to ensure that the blend involves the strengths of each type of learning environment and none of the weaknesses of each. Perhaps the face-to-face contact features a poorly-delivered lecture with no student participation and the online portion of the course includes tedious, over-prompted forms of practice. This is clearly not the type of blended learning environment that an institution wants to offer. (p. 228)

To begin to analyze how to overcome the two-fold problem of the growing complexity of the model due to rapid technological advancements and the challenge of selecting the most effective components for the online and in-person parts of the course, an extensive review of current literature was needed. Such a review would help identify best practices for hybrid courses and reveal important considerations for developing a model. That was a strong impetus for this study. The researcher's interest in growth of the hybrid model in business education then prompted the effort to determine if there was a difference and the size of any difference between actual practices by business instructors in Oklahoma and best practices as determined through the literature review and best practice model developed in this study.

It should be noted that this study examined the use online learning components in hybrid courses; it did not examine the use of face-to-face learning components other than those cases in the literature review when online learning components were compared to face-to-face counterparts such as online threaded discussions compared to face-to-face discussions.

Theoretical Foundations

While this study does not have a deductive theoretical framework, it does have theoretical foundations. This study codified best practices in hybrid course design and analyzed current practices in online business instruction in Oklahoma institutions to compare them with *best practice* in the field. The theoretical foundation upon which this study was based had two primary pillars: Best practices and model theory.

Best Practices

According to the Johns Hopkins Bloomberg School of Public Health, "There is no universally accepted definition of a *best practice*" (Info Project, 2006, ¶ 2). While many disciplines (including business, education, healthcare, manufacturing, and technology) propose conceptual definitions for the term, they tend to agree in research literature with the School's conclusion, concurring that the phrase *best practice* is a commonly used, overused, and misused term (Laugen, Acur, Boer, & Frick, 2005; Patton, 2001; Peters & Heron, 1993).

From a positivist epistemology, the word *best* in the term *best practices* may imply that all practices are known and that a single practice (or truth) can be identified as superior by scientific calculations. Applying a post-positivist epistemology, evaluation specialist Michael Quinn Patton (2001) proposed replacing the term *best practices* with

the term *effective practices* or *better practices*. He explained that, in general, research has failed to provide a common definition of the phrase in terms of "for whom the practice is best, under what conditions it is best, or what values or assumptions under gird its best-ness," (p. 331). Similarly, Laugen, Acur, Boer and Frick (2005) tied best practices to demonstrated best performance and claimed that "research on best practices suffers from some fundamental problems . . . authors tend to postulate, rather than show, the practices they address to be best - whether these practices do indeed produce best performance is often not investigated" (p. 131).

The information technology industry has proposed that best practices be defined as "processes that represent the most effective way of achieving a specific objective" (Skyrme, 2006, ¶ 3). Another definition relating best practices to demonstrated outcomes is "a technique or methodology that, through experience and research, has proven to reliably lead to a desired result" (Whatis.com, 2006). In education, Gander (2006) emphasized the newness of this approach to best practice, defining it as "the new art and science, the new standards" (p. 15).

Within the area of special education, Peters and Heron (1993) claimed that the term *best practices* is "misleading unless measurable criteria have been systematically applied" (p. 1). They proposed that any definition must focus on "the theoretical basis for a procedure, integrity of the research design and extent of replication, consensus with literature, process and product outcomes, and social validity" (p. 1).

Healthcare researcher Lopez also supported the role of measurable outcomes in establishing best practices. She stated that:

Best practice can't be based on opinion or anecdote . . . if it isn't measured and compared to a benchmark and you don't have consistent outcomes that improve performance, it's not best practice. The challenge is to measure against that benchmark and try to exceed it. (Gaskill, 2002, p. 2)

In summary, while the literature did not reveal a consensus on an exact definition of the term *best practices*, the majority of researchers in the literature reviewed suggested the following parameters:

- The term *best practices* may have meaning when it compares and ranks practices by their measurable outcomes against a measurable industry objective. So-called best practices might then be substantiated or validated through research as having the most effective and/or efficient results of the hypotheses tested. As a result, any proposed definition must include measurable outcomes to specific objectives and benchmarks (Gaskill, 2002; Peters & Heron, 1993).

- The stated objective of the *best practice* must also identify the beneficiary of the practice (Patton, 2001).

- An analysis of best practices must be situated within a context (Patton, 2001).

An exception to these performance and criteria-related requirements may be a statement by Patton (2001) that best practices that simply "constitute principles to guide practice can be helpful" (p. 331). In this light, best practices become not measured standards or benchmarks but rather ideals or goals that are mutually agreed upon by industry professionals not limited to practices that are researched, tested, and scrutinized by researchers using valid research methodologies. Similarly, a report by Maire, Bronet,

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and Pillet (2005) defined benchmarking as "the identification of good practices to acquire or transfer" (p. 45).

Indicative of this non-measured approach, a review of the literature revealed few quantitative studies that use the term *best practices*. Many defined effective practices in terms of findings and conclusions that identified a set of practices and results and then compared those findings to recognized industry standards to date. For example, in an article in *NurseWeek*, Gaskill (2005) related effective practice to industry practice and described identifying a best practice as simply "looking at what experts like the [American Heart Association] have said, examining [our own] current practice and results, making changes and evaluating those results, and implementing changes that produce the desired outcome" (p. 1).

In an example of this non-empirical approach in the field of education, community college professor Tom Drummond (2002) compiled a list of teaching techniques that he described as "a starting point for discussions about the performances we as teachers strive for . . ." (¶ 2). Drummond opened his paper with the statement that "collected here, without examples or detailed explanations, are practices that constitute excellence in college teaching" (¶ 1). Other than stating that the listed practices detailed ways to actively engage learners in the learning process, he did not describe any research or methodologies used to validate the listed practices as benchmarks or best practices. This clearly represents the non-empirical conceptual approach to identifying best practices offered by Patton (2001) as simply guiding principles.

Mortera-Gutierrez (2000) applied the *guiding principles* approach to best practices in hybrid courses. He defined best practice in this context as "those pedagogical

strategies that help and facilitate learning and instructional processes within a blended learning situation and the advantages that they imply" and worst practices as "those pedagogical strategies that constrain teaching and learning processes within a blended learning situation and the disadvantages that they involve" (p. 323).

In relating best practices specifically to online threaded discussions, Gilbert and Dabbagh (2005) did not use the term *best practices*. Rather, their findings approached best practices by identifying practices that they defined as contributing to meaningful discourse. These researchers used mixed methods in their study of online threaded discussions and the concept of best practices as guides to meaningful discourse to facilitate learning. The researchers examined student responses to three different structural elements of online discussions during four sections of the same course over a two-year period. They specifically determined whether each element had a positive or negative influence on student participation in online threaded discussions as defined by the types and number of posts and the resulting student interaction. The researchers used qualitative research methodologies to code student posts as reading citation, content clarification, prior knowledge, real world example, abstract example, making inferences, facilitator question, facilitator response, facilitator clarification, or instructor posting. They then positioned each code within in Bloom's taxonomy of learning outcomes (Bloom, 1956, as cited in Gilbert & Dabbagh, 2005). The researchers used descriptive quantitative methods to total the number of posts per discussion, per course, and per discussion forum. They also used quantitative, cross-tab calculations to compare the qualitative, coded responses by semester and by discussion forum topic. They found that when facilitators provided guidelines for posts to online threaded discussions, the number

and type of student postings increased. They found that posting evaluation rubrics also "had a positive impact on online discourse" (p. 16) because students posted more posts, which can lead to an increase in student interaction and a deeper discussion and understanding of the course content and that posting protocols that specified word lengths and required citations had a negative impact on the threaded discussions, which they defined as a significant drop in the number of posts.

Another approach to best practices was used by The Institute for Higher Education Policy, which used the term *benchmarks* instead of *best practices* in a study published 2000. The researchers identified 24 key practices they called benchmarks to ensure quality in online learning (Phipps & Merisotis, 2000). These benchmarks are listed in Appendix C. The Institute used expert opinion for their benchmarking identification. They began by compiling what several different organizations determined were principles, guidelines, or benchmarks to ensure quality distance education. They validated those benchmarks as they pertain to Internet-based distance education by documenting whether those benchmarks were included in the policies and practices of leading distance learning colleges and universities, and how important they were perceived to be by administrators and faculty. Through a comprehensive literature review, they developed a list of 45 benchmarks. They next identified postsecondary institutions that were leaders in Internet-based distance education. In the final step, they visited each university and conducted interviews with faculty, administrators, and students, asking each whether the benchmarks were present, if they were followed, and if they made a difference in quality of learning. From the initial list, the Institute identified 24 key benchmarks pertinent to online learning. The key benchmarks fell into seven

categories including institutional support benchmarks, course development benchmarks, teaching/learning benchmarks, course structure benchmarks, student support benchmarks, faculty support benchmarks, and evaluations and assessment benchmarks.

According to the literature (Maire, Bronet & Pillet, 2005; Patton, 2001), best practices in online instruction may appear as principles, protocols, or practices that benefit learners by positively improving or increasing their learning. They may also be identified as theoretical frameworks or models (Stover, 2005). The practices may be adapted from proven practices in traditional classroom settings or may be unique to the online environment. They also may be quantitatively measured from multiple sources of outcomes such as test scores or as student participation, completion, or retention, or qualitatively mined and coded from student posts, feedback, and evaluations, although these data may constitute perceptions rather than results. Ideally, best practices for online courses should leverage the strengths of the Internet medium, moving from repositories of information to interactive web-based learning experiences that actively engage the learner (Oliver & McLoughlin, 1999).

Studies have also defined best practices in online instruction as principles or procedures that effectively or efficiently facilitate course completion and student retention. These best practices have been categorized in a number of ways including both structural practices and instructor practices.

Regarding instructor practices, the concept of *instructor immediacy* has been repeatedly identified in the literature as a principle that can both enhance learning and improve student retention rates (Hutchins, 2003; Jensen, 1999), particularly in the online classroom where dropout rates are higher (Stover, 2005). Jensen (1999) claimed that as

an effective practice, instructor immediacy facilitates learning for the benefit the learner, motivates students to learn by making them feel included and involved, and also enhances student perceptions of the instructor as competent. Arbaugh (2001) found that the practice of instructor immediacy behaviors had a positive and statistically significant correlation with student learning and satisfaction in online MBA courses. In the online environment, instructor immediacy helps bridge the difference of time and distance and helps form an online community. The practice of instructor immediacy can include tactics such as facilitators responding promptly to all student inquiries (often within 24 hours in some educational institutions), identifying students by name, and contacting students when their individual participation or performance diminishes (Jensen, 1999).

Gaide (2005) linked student retention to "best practice benchmarks followed by institutions and faculty" (pp. 4-5) and suggested that institutions that offer online courses also provide a strong online technical support system, a strong online library access and services, and a student orientation program that teaches online students seven specific skills (time management, student hardware and software skills, email skills, word processing skills, learning styles, the e-learning platform such as Blackboard or WebCT, and Internet skills).

Regarding *structural practices*, Gilbert and Dabbagh (2005) identified practices that contributed to meaningful discourse. They identified two practices - defining guidelines and evaluation rubrics for threaded discussion posts - that promoted their objective of meaningful discourse and one - specifying word count and requiring citations - that was detrimental to the goal.

In summary, the concept of best practices, particularly as applied to components of online learning, has been approached through numerous methods in the research literature. No single definition of the concept has emerged, and a variety of approaches have been applied. For this study, the *guiding principles* (Mortera-Gutierrez, 2000) and expert opinion models (Dabbagh, 2004; Anderson & Garrison, 1998; Hall, Watkins, & Eller, 2003) of best practices identification were adopted.

Model Theory

Best practice is sometimes described in terms of a visual *model* that combines elements from several sources into a unified graphic representation of best practice. This study adopted a graphic model approach to summarizing best practices for effective hybrid courses. This necessitated an examination of model theory and definition.

Dictionary definitions of model have called it "simplified description of a complex entity or process" (WordReference.com, 2006), "a series of simplifying assumptions from which it is [deduced] how people will behave (Lifestyle Extra, 2006), and "a description or analogy used to help visualize something (as an atom) that cannot be directly observed; an example for imitation or emulation" (Merriam-Webster, 2006).

Physicist Ibrahim Halloun (1995) claimed that a model, whether scientific or behavioral, "represents many physical systems, sharing common structural and/or behavior features" and that "models have five characteristics: domain, composition, structure, behavior, and organization" (p. 2). He further asserted that "every model includes both content and environment" (p. 2). Stover (2005) claimed that models also explain and predict. Education researchers Schorr and Koellner-Clark (2003) defined a model as "a way to describe, explain, construct, or manipulate an experience, or a

complex series of experiences" (p. 197) and stated that models are organized around a specific situation or an experience. In the context of this study, that situation was identified on best practices in hybrid courses.

A model may be defined as a visual graphic that facilitates learning and understanding by identifying the components or elements of a process or concept, identifies its environment, and then maps the interaction or relationships of those elements. A model, then, would need to identify the components and environment of a concept or process and then graph those to illustrate and explain their relationships. This was the method of presenting best practices in hybrid courses adopted for this study.

The concept of graphic models may be a natural activity in human learning. In using models, Halloun (1995) explained that scientific modeling theory is rooted in "an evolving cognitive theory that holds that models are major components of any person's knowledge, and that modeling is major activity in the construction and deployment of any type of knowledge" (p. 4). Johnson-Laird (1983) agreed with this assertion, claiming that "all our knowledge of the world depends on our ability to construct models of it" (p. 402). Halloun (1995) pointed out White and Frederikson's (1990) notion that "students use models as efficient and powerful knowledge structures upon which to base (and manage) an intelligent learning environment" (p. 19). Halloun further explained that people use a modeling process to answer questions and that the modeling process has five steps: "selecting, constructing, validating, analyzing and deploying a model" (p. 2).

Schorr and Koellner-Clark (2003) supported the link between models and human cognition in their definition of a model and its characteristics:

A person interprets a situation by mapping it into his or her own internal

model, which helps him or her make sense of the situation. Once the

situation has been mapped into the internal model, transformations,

modifications, extensions, or revisions within the model can occur, which

in turn provide the means by which the person can make predictions,

descriptions, or explanations for use in the problem situation. Models help

us organize relevant information and consider meaningful patterns that can

be used to interpret or reinterpret hypotheses about given situations or

events, generate explanations of how information is related, and make

decision about how and when to use selected cues and information.

Models, according to our hypothesis, develop in stages where early

conceptualizations may be fuzzy, or even distorted versions of experience,

and several alternative models may be available to interpret a given

situation. (p. 197)

In the literature, a distinction appears to be made between a model and the use of

modeling. A model is a visual graphic that facilitates learning and understanding by

identifying components and illustrating their relationships within a process or context

(Schorr & Koellner-Clark, 2003). In contrast, modeling is a practice that facilitates

learning and understanding of behaviors within a social context by students observing

and mimicking a person with the identified desirable behaviors. Noted social cognitive

theorist Albert Bandura (1997) asserted that modeling was an effective way to establish

abstract or rule-governed behavior.

Schorr and Koellner-Clark (2003) speculated that models have been in use for a long time and claimed that they are effective for a given purpose. The effectiveness of graphic models in mapping complex processes and relationships, plus their apparent natural tie to human cognition, led the researcher to use a graphic model as a vehicle for presenting best practices in hybrid courses in this study.

<div align="center">Statement of the Problem</div>

The hybrid course format is rapidly becoming extremely important in the instructional delivery strategy of higher education. While this course format has strong appeal to many students and instructors, it also has challenges and can be ineffective if not well designed and presented. Because of personal background and experiences, this researcher is interested in the use of hybrid courses by full-time business instructors in comprehensive and regional universities in Oklahoma. At the present time, research on best practices in designing hybrid courses is sporadic, and has not been pulled together into a usable model for application. Specifically, no model was found for a hybrid course that identifies the components of a hybrid course model and their relationships to one another.

In addition, little is known about how business instructors in Oklahoma universities use or perceive the importance of various online learning components in designing hybrid courses. Without clear identification of best practices in using online learning components in hybrid courses and how instructors perceive and use these components, research cannot be undertaken to guide improvement in the design and presentation of hybrid business courses. Therefore, this study represents the first building block toward codifying and modeling known best practices in integrating online

components in hybrid courses and identifying current differences between best practices, perceived importance, and actual usage by Oklahoma higher education business instructors.

Purpose of the Study

The purpose of this study was to discover and describe the best practices in hybrid format courses and determine the use and perceived importance of various online learning components in hybrid format courses by full-time business faculty members in Oklahoma's comprehensive and regional universities. To accomplish this purpose, four procedures were used. First, the study identified best practices in online learning that could be adopted by traditional classroom instructors who are moving toward the hybrid model and consolidated these into a best practice model for hybrid courses. Second, the study described the demographic profile of full-time business faculty teaching in Oklahoma's comprehensive and regional public universities. Third, the study described the self-reported use and perceived importance of online learning components in hybrid model courses by full-time business instructors at comprehensive and regional public universities in Oklahoma. Finally, the study described the differences between best practice and current instructor uses and perceptions.

From a pragmatic philosophical perspective, the findings of this study were intended to provide insight into blending online and traditional classroom learning components into an effective hybrid model that could facilitate and augment learning for students.

Research Questions

This study was guided by six research questions:

1. What are the current best practices in online learning components in hybrid courses?

2. What is the demographic profile of full-time business faculty respondents teaching in Oklahoma's comprehensive and regional public universities?

3. What is perceived importance of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?

4. What is the self-reported use of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?

5. What are the relationships between the demographic characteristics of business instructors at Oklahoma's comprehensive and regional public universities and their perceived importance and use of common online learning components?

6. How closely do the uses and perceived importance of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities match best practices?

Table 1 below illustrates these research questions.

Table 1
Data Sources and Analysis Procedures for Research Questions

Research Question	Data Instrument or Source	Analysis Procedure
What are current best practices in online learning components in hybrid courses?	Refereed journals of published studies, doctoral dissertations, and professional trade journals.	A comprehensive literature review to determine best practices in the use of online learning components in hybrid courses and consolidate them into a best practices model based on model theory.
What is the demographic profile of full-time business faculty teaching in Oklahoma's comprehensive and regional public	Online survey instrument	Descriptive statistics

universities?		
What is perceived importance of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?	Online survey instrument	Descriptive statistics and cross tabulation analysis
What is the self-reported use of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?	Online survey instrument	Descriptive statistics and cross-tabulation analysis.
What are the relationships between the demographic characteristics of business instructors at Oklahoma's comprehensive and regional public universities and their perceived importance and use of common online learning components?	Refereed journals of published studies, doctoral dissertations, and professional trade journals; and data collected from the survey.	Logical analyses.
How closely do the uses and perceived importance of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities match best practices?		Descriptive statistics and logical analyses.

Overview of the Study

Population and Sample

The population for this study consisted of about 370 full-time business instructors

in 12 comprehensive and regional universities in Oklahoma. The actual sample

comprised 100 full-time business instructors in 10 of the comprehensive and regional

universities in Oklahoma because two declined to participate due to procedural difficulties in obtaining their IRB approvals.

Instrumentation

A validated survey instrument was used to collect quantitative data for the study. The survey instrument was validated in a pilot study conducted in the spring of 2006 and is included in Appendix A. The survey requested demographic information about the respondents as well as their perceived importance and use of a list of 19 online learning components described in the literature review.

Procedures

A letter of request to conduct research was mailed to the vice president of academic affairs at each of the 12 comprehensive and regional public universities in Oklahoma that requested their participation in the study. Approval was received from all but two (East Central University and Langston University), and Institutional Review Board (IRB) approval was then received from Oklahoma State University (OSU). Copies of OSU IRB approval were emailed to the participating universities that had requested them as part of their IRB approval process.

Following IRB approval, a postcard was mailed and an email sent to prospective respondents that explained the study and included a hyperlink to the online survey instrument. Contact information for prospective respondents was obtained from information available on the Internet and a database voluntarily provided by the University of Oklahoma.

Available information on best practices in hybrid courses was obtained through extensive literature review. This information was synthesized and codified into a graphic model of best practices that was used for gap analysis in this study.

Data Analysis

Responses were automatically collected and compiled by a server at Rogers State University. The data were input into SPSS Version 7 and descriptive statistics were calculated to analyze the data. Findings reported included the rating of respondents' use of online learning constructs in hybrid courses and their perceptions of the importance of the same online learning constructs in hybrid courses. The findings were analyzed by cross-tabulation with demographic variables including whether they worked full time or part time, tenure, rank, gender, age, self-reported computer literacy level, number of hybrid courses taught, type of Internet access, whether they are currently teaching any hybrid courses, and the percentage of current courses taught that are hybrid. Differences found between the rankings in use and importance of variables was noted.

Limitations and Assumptions of the Study

The following limitations apply to this study (Creswell, 2002):

1. To complete the online survey, respondents needed access to the Internet and an email address. Because the population was university professors, access to the Internet and an email address were provided by their respective universities, and access it was not expected to be a serious limitation.

2. The study was limited to full-time business instructors at comprehensive and regional universities in Oklahoma. Some business departments in comprehensive and regional

universities in Oklahoma also include technology departments; instructors in only technology departments have not been included as participants in this study.

3. Responses to survey questions were anonymous so there was no opportunity to request clarification or additional information from respondents.

4. The survey was distributed only to full-time business faculty member respondents at comprehensive and regional universities in Oklahoma, and the statistics reported were descriptive. The respondents comprised a population and were not considered to be a sample of any larger population and the findings were not generalized or applied to any larger group.

5. It was assumed that the list of business faculty names and email addresses was complete. The list was created based on information posted online and may not have included recent faculty changes.

6. It was also noted that the researcher of this study is a full-time business faculty member at Rogers State University and did not complete the survey instrument or participate as a member of the sample.

The following assumptions apply to this study (Creswell, 2002).

1. The methodology used in this study was appropriate for the subject being studied. Survey questions were based on a review of literature and common online learning components of leading online platforms. The survey questions also were assumed to be accurate.

2. The responses to the survey questionnaire were assumed to be truthful and accurate.

3. The researcher's analysis of the data was assumed to be accurate and represent the perceptions and responses of the participants.

Definitions of Key Terms

The following definitions were assumed in this study:

Conceptual

o <u>Best practices model</u> – A visual representation within the context of the hybrid course

format that researchers have identified and substantiated as the practices and

principles, and their relationships, that are the known methods to most effectively or

efficiently actively engage adult learners and facilitate learning for the benefit of the

adults learners (Gaskill, 2002; Patton, 2001; Peters & Heron, 1993).

o <u>Blended learning</u> – another name for the hybrid course delivery format that combines

face-to-face instruction with distance education delivery systems (Osguthorpe &

Graham, 2003).

The following definitions were operational in this study:

Operational

o <u>Hybrid course</u> - a course that regularly meets in person in a classroom but also uses

some online learning components and techniques (Amrein-Beardsley, Foulger, &

Toth, 2007; Glass, 2003).

o <u>Online course</u> – a course that is delivered via the Internet (IP-based data network

transmission). Students in the course meet regularly by logging on to the Internet and

accessing a learning software program such as WebCT, Blackboard, and eCollege.

o <u>Perceived importance of online components</u> – the ratings of various online learning

components as measured through self-report on an online survey.

o <u>Traditional classroom course</u> – a course in which the instructor and students regularly

meet in person at scheduled times in a classroom at a college or university.

o   <u>Use of online components</u> – the inclusion of web-based learning tools and techniques available in most web-based learning software programs by instructors in online and hybrid courses, as measured through self-report on an online survey.

Significance of the Study

This study revealed the current best practices and emerging trends in the use of online learning components in traditional classroom courses that may be considered to be hybrid courses. The study demographically profiled full-time business faculty member respondents teaching at Oklahoma's comprehensive and regional public universities. This study also reported the use and perceived importance of online learning components in hybrid course delivery formats by business instructors at comprehensive and regional universities in Oklahoma (the state in which the researcher works as a full-time business faculty member). Finally, the study compared best practices to the self-reported use and perceived importance of online learning components in hybrid model courses, and identified differences between theory and practice. The findings of the study and its best practices model may facilitate development of skills in hybrid courses design by business instructors in Oklahoma universities and thereby lead to improved hybrid courses and better learning opportunities for students.

Hybrid courses strategically blend the most effective learning tools from both traditional and online classrooms. They foster interaction within the classroom and within the online environment, removing the time and space limitations of the traditional classroom for ongoing interaction throughout a course.

CHAPTER II

REVIEW OF LITERATURE

Literature review was a primary component of the research methodology for this study. The researcher used the literature review to provide the data to identify best practices in hybrid courses and codification in a best practice model. The literature review used refereed journals, scholarly publications, and professional trade publications that reported research about the effectiveness of traditional classroom models, online learning models, and hybrid models. Books on the subject were also included in the review. Among the topics researched were the following tools and components:

- Communications and interaction tools including email between the facilitator and students and among students, discussion boards, web logs (blogs) or reflective journals, hosting and engaging in live chats online, group chat or group email, and the instant message programs.

- Administrative and navigation tools included the posting of course documents online for ongoing availability; posting course documents online; accessing instructor presentations online before class discussion; and providing online lecture notes, an online grade book, and access to online libraries.

The literature review began with research regarding existing hybrid format models for the purpose of identifying components and relationships in effective hybrid or blended courses. This information was used to develop a new model of hybrid courses. The literature review next focused on identifying and analyzing how effective hybrid

courses are developed in a dynamic learning environment to support the diverse needs of

learners and situations. The literature review then focused on specific online learning

components that have been adapted and used within hybrid courses. From this body of

knowledge, the researcher then identified, derived, and summarized best practices for

hybrid course designers.

<center>Current Models of Online Learning</center>

Several models of online learning were found in the literature. Figure 1 shows a

graphic developed by Dabbagh (2004) to define online learning. It identified three major

components of online learning: instructional/learning strategies, pedagogical models, and

learning technologies. As visually diagramed in the model, the three components relate to

each other and combine in a way that influences online learning.
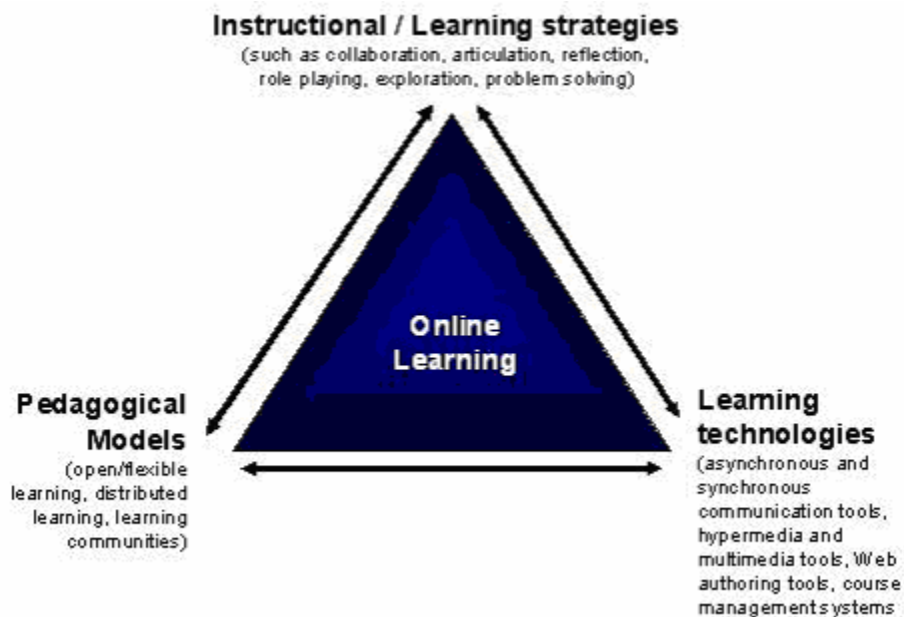
FIGURE 1. Dabbagh Online Learning Model.

The Dabbagh model identified the environment as online learning and the

environmental components as instructional/learning strategies, learning technologies, and

pedagogical models. It visually graphed the relationships of the three components (by

using a line with arrows at both ends) as being interactive with one another but it did not

explain the interaction, and the interaction is not particularly obvious or intuitive. Thus,

the model was useful in identifying components in an online learning environment but

not in analyzing the interactions among the components.

Gibson (1998) presented an online education model developed by Anderson and

Garrison. The detailed model identified three primary components (student, teacher, and

content) and visually graphed their intra- and inter-relationships within the context or

environment of deep and meaningful learning. This model is shown below in Figure 2.
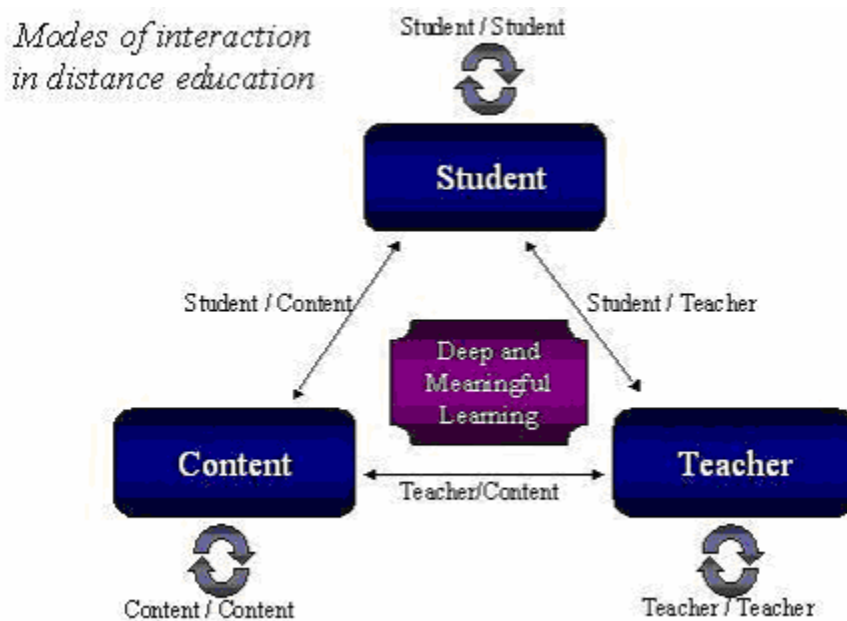
FIGURE 2. Anderson and Garrison Model of Interaction in Online Learning

Moore and Anderson (2003) presented a model developed by Hall, Watkins, and

Eller for designing Web-based learning, shown in Figure 3. This model identified three

themes (directionality, design, and accountability) and several components that relate to each theme of components. The relationship between the components is indicated in this model by the direction (one-way or two-way) and style (dotted or straight line) of the arrows.
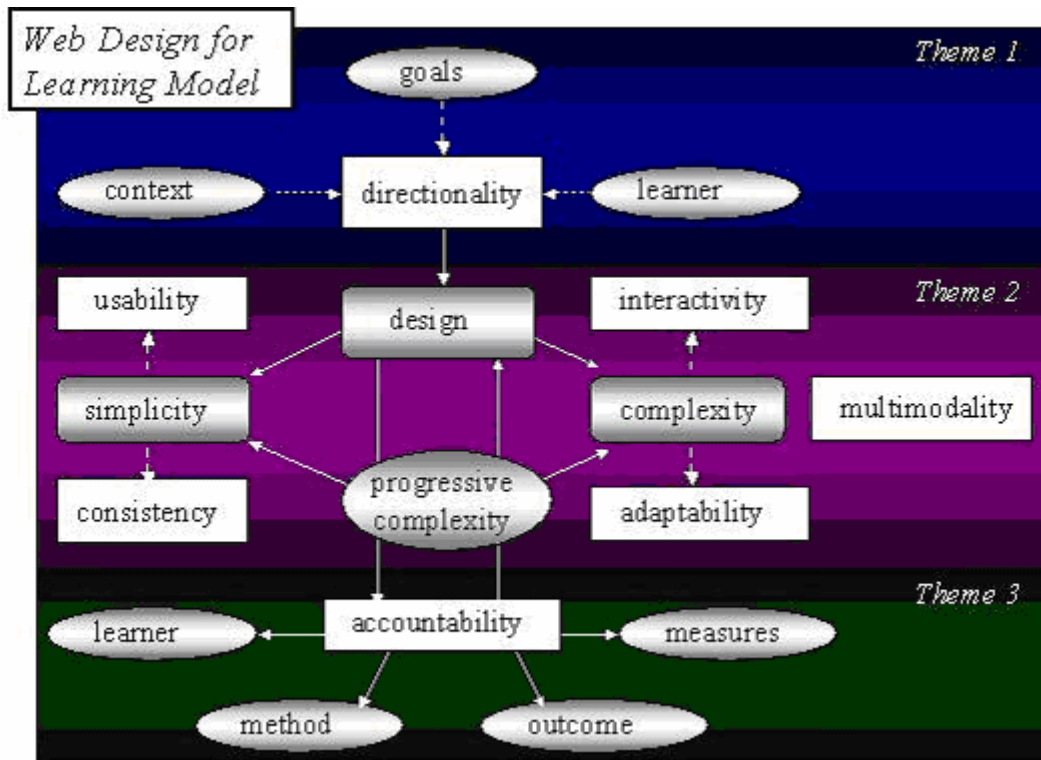
FIGURE 3. Hall, Watkins, and Eller Model for Web-Based Learning

Identifying Components of Hybrid Course Formats

To develop a model requires one to identify the elements or components involved in the process being modeled, as well as their roles and relationship to each other. Therefore, to develop a model for the hybrid course format, one must identify the components involved, and define their roles and relationships. This necessity guided this part of the literature review.

In one model of hybrid courses, Kerres and De Witt (2003) suggested a framework for hybrid courses that combines online and face-to-face meetings. Their 3C

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model lists three elements of any learning environment: content, communication, and construction (p. 101). They said that the content component is included when information is presented to learners for their consumption and recall, among other things; the communication concept is included as learning becomes deeper and the information becomes more complex; and the construction component is included if the knowledge is to be applied and practiced (p. 105).

In a second model of hybrid courses, Barnum and Paarmann (2002) identified four components of a hybrid course model used in initial training of new teachers in a school district: Web-based delivery; face-to-face processing, creating deliverables, and collaborative extension of learning. The first two components represent the two forms of interaction – online and face to face – while the latter two represent tasks for the learner. This model helps identify the platforms used in hybrid courses as well as some of the components but did not explain or illustrate how the components of the model related to one another.

In a third model of hybrid courses, Kitchenham (2005) proposed three distinct factors related to the success of hybrid courses (collaboration, a strong infrastructure and student demand) and three factors that prevented their success (a weak infrastructure, time and resources). While these are critical considerations for designing a hybrid course, this model also did not explain or illustrate how the components of the model related to one another. Douglis (2002) took yet a different approach and identified the following components of a hybrid format model: audience, learning outcomes, context, organization, infrastructure, and content. The components were visually displayed but,

again, the model did not explain or illustrate how the components of the model related to one another.

Technology as a Component of Hybrid Formats

Both Kitchenham (2005) and Douglis (2002) identified infrastructure as a components of hybrid courses, and equated technology with infrastructure. However, it could be argued that technology and face-to-face classroom meetings are both infrastructures and are simply the means through which learners engage with the content and social learning opportunities. In this view, it is the engagement that is the critical component for learning, not the delivery means. Margaryan, Collis, and Cook (2004) took this view in their statement that "technology does not replace the central importance of interpersonal contact: among learners, between the course director and learners . . . Technology is a tool to make this contact richer, more flexible, and reusable" (p. 272). Derntl and Motschnig-Pitrik (2005) wrote in their claim that modern communication technology has the potential to play a significant part in making learning effective, but that:

> the lead in effective still stays with persons, their capabilities, and interpersonal values. Technology has proven to be capable of supporting persons with regard to information transfer as well as organizational and administrative issues. In this way it has contributed to providing increased room for self-directed, meaningful interaction in class and richer learning experiences. (p. 112)

Interaction as a Component in Hybrid Formats

Leading adult and social learning theorists have agreed that interaction and dialogue are essential for productive learning and that this principle is supported by a substantial body of empirical research (Roschelle, 1992; Cohen, 1994; Slavin, 1994; and Qin, Johnson & Johnson, 1995; Worley, 2000). This literature generally supports the notion that students construct knowledge when they are actively engaged and interacting with the content and with other learners.

Based on this theoretical and empirical foundation, a fundamental design element or component of an effective hybrid format is provision of opportunities for students to engage and interact with one another, with the facilitator, and with the subject or course material. This core concept became the basis of the Moore Gray Hybrid Course Model developed within this study.

Numerous researchers have supported the critical importance of interaction and engagement as design components for effective learning (e.g. Aspden & Helm, 2005; Cairncross, 1997; Garrison & Anderson, 2003; Graetz & Goliber, 2002; Jeong, 2003; Laurillard, 2000; Palloff & Pratt, 1999). In support of this position, Palloff & Pratt stated that:

> Strong relationships built on contact and connection between students and the various elements of their learning experience are an important part of the educational process. While access to information is an important part of learning, intellectual development is largely achieved through active engagement and interaction with others. (Palloff & Pratt, 1999, as cited in Aspden & Helm, 2005, p. 245).

Several other researchers have also supported social interaction as conducive to learning and suggested that literature indicates that increased engagement with educational technology can have the effect of drawing staff and students closer together, both physically and virtually (Aspden & Helm, 2005; Cairncross, 1997; Graetz & Goliber, 2002).

Ellis, Goodyear, Prosser, and O'Hara (2006), studied learners in hybrid courses where the instructor had designed discussions to begin in the face-to-face environment and then continue via technology in the online environment. Their study supported the idea that the interaction in discussions help students to adopt a deeper approach to learning and their course grades.

Using both traditional classrooms that provide face-to-face encounters among students and the facilitator and online learning components that can develop a virtual community, hybrid course formats have numerous opportunities to promote interaction between learners and other learners, between learners and the content, between learners and the facilitator, and between the learner and himself or herself. Thus the model of effective hybrid courses developed in this dissertation stressed the role of interaction as a critical relationship among all of the components in the hybrid format model.

<center>Principles of Good Practice in Undergraduate Education</center>

Chickering and Gamson (1989) identified seven seemingly timeless principles of good practice in undergraduate education. All of the principles directly support increased interaction and active participation as fundamentals of effective learning. The principles were well received by higher education and have been expanded and updated over the years. The principles state that good instructional practice:

- encourages student-faculty contact

- encourages cooperation among students

- encourages active learning,

- gives prompt feedback,

- emphasizes time on task,

- communicates high expectations, and

- respects diverse talents and ways of learning (p. 140)

Ritter and Lemke (2000) supported the Chickering and Gamson principles and claimed that "the Internet offers a rich and efficient scaffolding for educators to address [the seven principles outlined by Chickering and Gamson]" (p. 101). In 1991, Chickering and Gamson updated their "seven principles of good practice in undergraduate education" with specific regard to technology, stressing that technology supported and enhanced all of the seven tenants previously identified by increasing the opportunities for interaction and engagement - the precise reasons that hybrid courses use online learning components. Table 2 below summarizes the principles and online learning components identified by Chickering and Gamson (1989, 1991) and Ritter and Lemke (2000) as principles of good practice in undergraduate education.

TABLE 2
Principles of Good Practice Applied to Online Learning Technology in Undergraduate Education

Principles (Chickering and Gamson)	With regards to technology (by Chickering and Gamson)	With regards to the Internet (Ritter and Lemke)	Sample learning components (derived from the literature)
Encourages student-faculty contact	Increases opportunity for contact in and out of classroom	Allows individual attention outside of class and office hours for students who can't or won't make contact during busy class	Email, online office hours via instant message, student-to-facilitator email and

		periods or can't meet during office hours.	facilitator-class group emails
Encourages cooperation among students	Increases opportunities for contact and sharing outside of the classroom		Email, IM, discussion boards, personal web pages, student-to-student email and student-to-class email, chat rooms
Encourages active learning		Access to learning materials outside the classroom allows students to cover material at their own pace as they study outside of class and prepare for class	Lectureware (instructor presentations) and courseware, online quizzes, self assessments, exams, activities, online field trips,
Gives prompt feedback			Email provides quick and personal, private feedback regarding progress and performance, self assessment quizzes and exams that give immediate results, information before the next class meeting
Emphasizes time on task		Increased effectiveness of time inside classroom and out, access to class materials at any time, printed outlines, lecture presentations for improved notes taken during class. "Allowing students to browse the internet for information is an ineffective teaching strategy because the material is not placed in any relevant context" (Chrisman & Harvey, 1998, as cited in Ritter & Lemke, 2000, p. 105) so instructors may select or recommend websites for learners.	Posting lecture presentations online before the lecture allows students to bring printouts to class, freeing them to focus more on the content of the lecture rather than on the note-taking task. By providing relevant online links, facilitators can guide learners to find the desired information, abbreviating the hunt for content.
Communicate high expectations		Each online lecture includes questions for reflection after class; posting review questions	Discussion boards, practice or self assessment quizzes,

	and practice test questions; guidelines on performance levels (rubrics)	blogs, and similar online learning components allow students to further digest and reflect on the content.
Respects diverse talents and ways of learning	High quality graphics, illustrative diagrams, online field trips, supplements for lab classes, photos, sound and video links, transcripts of presentations	Some learners learn by doing and the interactive nature of the Internet and World Wide Web offer interactive field trips, the use of moving graphics, etc., to present the content in diverse ways to learners.

Strategies for Designing Blends within Hybrid Courses

Additional models of hybrid courses have focused on the types of online and

classroom components used and attempted to identify ways to design hybrid courses to

be most effective.

Lim (2001) argued for a holistic approach to hybrid learning, stressing that

learning methods must change, not just the learning media (such as from overheads to

PowerPoint slides). Others have also indicated that a shift in basic pedagogy is necessary

for the success of hybrid courses. Boyle (2005) suggested that hybrid courses should be

pedagogically driven to meet the needs of the learners. Osguthorpe and Graham (2003)

identified six goals of educators designing hybrid courses and programs: pedagogical

richness, access to knowledge, social interaction, personal agency, cost effectiveness, and

ease of revision. Mortera-Gutierrez (2006) supported these goals in hybrid programs.

In developing an optimum blend for learning, Douglis (2003) went beyond pedagogy and identified six elements to consider and interrelate: audience, time, scale, resources, content, and business application. The Douglis model is shown in figure 4.
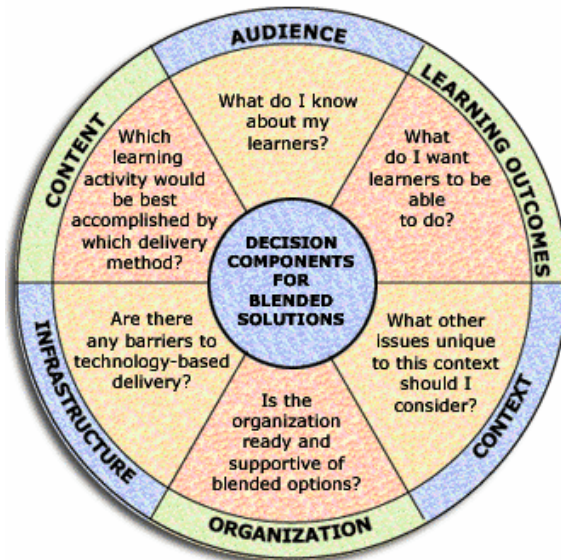
FIGURE 4. Douglis's Decision Components for Blended Solutions

Valiathan (2002) used a *driving factors* approach to identify three types of components to consider in designing hybrid courses: skill-driven learning, attitude-driven learning, and competency-driven learning. Using these categories, Kitchenham (2005) identified a five-step process that he followed in developing a hybrid course. Citing multiple sources in addition to Valiathan, Kitchenham listed the following procedures in hybrid course development:

- Consider the needs of the participants as the focus of the professional development methods (Bersin, 2003; Douglis, 2002; Rossett, Douglis, & Frazee, 2003),

- Pre-assess the infrastructure for each school (Douglis, 2002),

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- Plan the content, time and resources of each workshop and tutorial to meet the individual needs of the schools and teachers (Bersin, 2003; Douglis, 2002; Rossett, Douglis, & Frazee, 2003),

- Combine web-based and face-to-face deliveries (Barnum & Paarmann, 2002; Rossett, Douglis, & Frazee, 2003; Valiathan, 2002) and

- Encourage the teachers to extend, measure and share their learning (Barnum & Paarmann, 2002; Rossett, Douglis, & Frazee, 2003). (Kitchenham, 2005, p. 293).

Kerres and De Witt (2003) addressed complexities in selecting strategies for planning hybrid courses in their claim that "the major challenge is how to find the right mix for a blended learning arrangement" (p. 101), noting that [the guidelines for which] 'remain difficult to formulate" (p 111). They suggested the answer lies in analyzing the goals and objectives of the course as well the cost to the learner (in terms of money, time, effort, etc.) for each of Valiathan's three elements.

<center>Categories of Learning Components</center>

Several researchers have addressed this identification of types of learning components in hybrid courses. Mortera-Gutierrez (2006) used Reigeluth's (1983) instructional design components model to segment hybrid course components into three groups:

- Instructional conditions (e.g., needs assessment, learning objectives, content, etc.),

- Instructional methods (e.g., learning activities, teaching strategies, delivery techniques, motivation, student feedback, etc.), and

- Instructional results (e.g., learning outcomes, formative and summative evaluation) (pp. 331-332).

When researching adult learners, Ausburn (2004) used different classification logic to identify the following four categories of online learning components in rank order or perceived importance to learners in hybrid courses:

- Structure and security components including course announcements and reminders from instructor, course information documents such as syllabus, outlines, requirements, and grading procedures, and information about specific assignments and instructions for completing them (p. 332).

- Content components including instructional or content materials, such as documents, computer slide presentations, and Internet sites (p. 332).

- Convenience components including personal and contact information for instructor, and direct linkage to posted Internet sites for completing assignments or independent study (p. 332).

- Communication components including communication with classmates and instructor via asynchronous and synchronous discussion boards and virtual chat, and direct e-mail linkage to classmates and instructor (p. 332).

Asynchronous and Synchronous Components

An approach to categorizing learning components that is frequently used in online learning research is based on the time frame in which they are used. As discussed earlier, interaction and dialogue are fundamental components within the learning process (Nichol, Minty & Sinclair, 2003). Hybrid courses can promote interaction between students and with the facilitator, both within the classroom and online, and by using two

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different time frames for communication tools: synchronous (real time) and asynchronous (sequential time). One way to organize learning components is by their synchronous and asynchronous characteristics.

This literature review includes research regarding the use of synchronous and asynchronous online communication tools. Research has shown that there are advantages to using a specific format for interaction for various purposes, which are summarized below.

Asynchronous tools available online include discussion boards (also known as threaded discussions), and email. Nicol, Minty & Sinclair (2003), noted that "tools such as online discussion boards, chat facilities, and email are often used to support interaction and dialogue" (p. 270). Synchronous tools online include instant messaging tools and chat rooms, while the face-to-face classroom obviously supports real-time discussion opportunities. Kerres and De Witt (2003) claimed that "synchronous settings are more suited to reach a shared understanding (convergence), whereas asynchronous settings are better for the exchange of information (conveyance)" (p. 107).

Individual and Group Tools

Another way to analyze and classify learning components used within hybrid courses is to sort them by personal or individual use and by public or group use and interaction. Components used by individuals may include personal progress or navigational tools that help them plot their progress through the course and better understand their progress through personal feedback from the facilitator. The information conveyed via these tools may be considered private or personal information that the

learner may or may not chose to disclose to peers (*Blackboard*, 2007a; *Desire2Learn,* 2007).

Navigational tools include posting the syllabus and course documents online for continuous access by individual learners, online calendars with important deadlines marked and with pop-up due date reminders, course schedules, and descriptions of assignments and projects. Facilitators may also use online learning components that offer a form of privacy and convenience to learners including digital drop boxes to submit assignments in a private setting with comment boxes for private and personal feedback regarding assignments and grades, and online grade books that list all deliverables and their values in the course and compare individual performance with aggregate group statistics. Individual learners and facilitators may also use instant message programs and one-to-one email for individual questions or clarification, guidance, comments and feedback. These components are similar to those classified by Ausburn (2004) as structure and security components.

Privacy offered by these tools and learning components contrast sharply with the manner in which this information is conveyed in a traditional classroom setting where individuals receive personal feedback and grades within a public environment. By using online tools available within a secure e-learning platform, facilitators can address issues and concerns with individual learners and provide private and personal feedback regarding grades and performance (*Blackboard*, 2007b).

Learners and facilitators may also use a variety of group communication tools to interact with the content and with each other outside of the classroom. Like the private or personal tools, these tools bridge the limitations of time and place of the traditional

classroom but they also support group projects and ongoing interaction throughout the course and between classroom meetings. They include discussion boards and threaded discussions, group email, and chat rooms. These components were classified by Ausburn (2004) as convenience components.

Some online learning tools offer either or both individual and group use, depending on whether the facilitator designs them for individual or group access, including blogs and electronic reflective journals. Table 3 below the researcher has grouped online learning components by time and use. Time (synchronous/asynchronous) and use (individual/group) designations are included in the discussion below of specific online learning components.

Table 3.
Online Learning Components by Time and Use

	Synchronous time	*Asynchronous time*
Individual use	• Instant messenger	• Online grade book • Syllabus • Course documents • Course calendar • Course calendar with due date reminders • Assignment or digital drop boxes • One-to-one email
Group use	• F2F classroom discussions • Online chat rooms	• Group email • Discussion boards, threaded discussions
Individual and /or group use		• Blogs and reflective journals

Specific Learning Components Used in Hybrid Course Formats

Email

Email: Benefits. Merriam-Webster defines email as "a means or system for transmitting messages electronically (as between computers on a network)" (2006, ¶ 1). It

is a common and rapid form of asynchronous communications within all areas of life today including education, increasing the speed with which individuals communicate, interact, and respond outside of the face-to-face environment such as the classroom and in-person meetings.

Within education, email has the ability to bridge the differences of time, power, and space between the learner, facilitator, and other students. Email can support social relationships that may have begun within the social environment of the traditional classroom (Francescato, D.; Mebane, M.; Porcelli, R.; Attanasio, C.; & Pulino, M., 2007). It can enable ongoing communications outside of the classroom between classroom meetings and engage learners between classroom meetings. Email can give a voice to students who prefer not to speak during classroom meetings. Within the hybrid course model, email can facilitate interaction between the learner and facilitator as well as between the learner and his or her peers.

Within the literature, the list of advantages and benefits of using email between students and instructors is far lengthier than the list of disadvantages and cautions. Since 1994, several researchers have found that the use of email has positively affected learning and group interactions, and student-instructor interactions (Boles, 1999; Hannon, 2001; Poling, 1994). Email can be particularly valuable in classrooms where verbal interaction between instructors and students is limited (Bloch, 2002) for various reasons such as class size.

Perhaps its greatest advantage is that email gives students and instructors continuous access to each other between class meetings. Access to one another through email can greatly reduce anxiety by posing and answering questions, helping students to

prepare for the next classroom meeting, and notifying students in advance of any changes in assignment or classroom dates, times, or places. White and LeCornu (2001) said email had "the potential to maximize student teachers' learning outcomes in the practicum by giving them more control over the learning process, reducing their stress, and enabling them to manage their practicum experience more effectively" (abstract). Frey, Faul and Yankelov (2003) found email communication with the instructor to be one of the most valuable tools provided to them.

Email is asynchronous yet timely. Email is available 24/7 so students can use email to communicate with the instructor outside of the classroom and vice versa whenever the need arises. Through email, the instructor is available to students between classroom meetings and at times more convenient, more frequent, and more readily available than traditional office hours. Because of its availability and convenience, Hassini (2006) and Atamian and DeMoville (1998) found that the majority of students would rather write an email than make an appointment and waiting to visit the instructor's office.

Email gives a voice to every student without requiring them to speak. This is important for students who are hesitant to speak during class because of lack of time, because of personal shyness or anxiety, because of cultural reasons (Bloch, 2002) including English as a second language, or because of real or perceived limitations including speech and hearing disabilities (Hassini, 2006; Mowrer, 1996). Email allows students time to compose their messages and thoughts, use spell check if they wish, share thoughts any time they wish, and interact with the instructor and other students. Email allows for group dynamics to become more equal (Markus, 1994; Smith, Whiteley &

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Smith, 1999; Sproull & Kiesler, 1991). Smith, Whiteley, and Smith (1999) found that "email has the potential to be particularly advantageous not only for the poorer students, but also for some of the increasing number of students who are diagnosed as having special needs" (p. 23). Agreeing with Smith's finding, Hassini (2000) reported that "The use of email as a supplement helps increase the overall performance of a class, something that should encourage instructors to make use of emails" (p. 30). A primary importance of communications tools such as email "may be in demonstrating the necessity of having to make linguistic choices for a wider variety of audiences than can be found in the traditional classroom (Crystal, 2001, as cited in Bloch, 2002, p. 131). Smith, Whiteley and Smith (1999) and Hassini (2006) pointed out that, because email is asynchronous, which means it is not happening during the same time frame as its response, email gives both instructors and students time to carefully phrase their email messages with appropriate words and details for more thoughtful comments and responses.

Group email (that is, one sender and multiple recipients of an email) is efficient: synchronous in origin and asynchronous in reading and response. Group email allows the instructor to simultaneously send the same message to a group of students or to the entire class, dealing with ambiguity and questions online (Wilson & Whitelock, 1998), reducing or eliminating confusion, and redirecting an entire class or group of students toward the intended learning outcome. Mowrer (1996) suggested that group email for announcements and answering students' questions can also increase teaching time by reserving class time for course learning activities.

Using group email, instructors can help students stay on track regarding due dates and guidelines for upcoming assignments, classroom activities, content topics, and

assessments. This can also be accomplished with online learning platforms that provide announcements on the course home page and calendars with due date reminders, although not all students routinely log on to online websites for hybrid courses. Ausburn recommended overcoming this potential problem by using group email to call students' attention to new postings in online course sites (L. J. Ausburn, personal communication, February 21, 2007).

For students working together in a group or team, group email is a valuable communications tool. They can send a message to multiple recipients (Hassini, 2006) and collaborate remotely on team assignments (Wild & Winniford, 1993).

From an administrative and security perspective, email tools can document and confirm when individuals created and sent emails, to whom, and when recipients opened the emails (Smith, Whiteley & Smith, 1999).

Email can also deliver attachments such as assignments (Hassini, 2006) and links to related learning content items. Finally, email can increase and improve students' technology skills (Hassini, 2006) and effective writing skills (Hassini, 2006; Mowrer, 1996).

Email: Disadvantages. The disadvantages of email may be declining as availability becomes more widespread and students have increasingly developed computer skills including handling email. According to a 2005 Pew Report, 87% of all youth ages 12 to 17 use the Internet (about 21 million people), and 68% of all teenagers have used the Internet at school (Hitlin & Rainie, 2005). Still, for email to be a successful learning component, students and teachers must have access to email and the Internet, and have sufficient technical skills to access, compose, and receive emails, and be willing

to use email on a regular basis (Hassini, 2006). While email can be a time consuming task

for instructors (Hassini, 2006), it can be argued that the time spent sending and

responding to emails would otherwise consume valuable classroom time or require office

hours and appointments with students, perhaps totaling as much or more time in person

as by email.

Finally, the nature of email is text-based, which means it does not readily

accommodate numerical and graphic content such as mathematics (Hassini, 2006). It also

means that email loses the non-verbal aspects of communication including tone, facial

expression, voice inflection to emphasize specific words to convey unique meaning, and

situational context (Hassini, 2006; Smith, Whiteley, & Smith, 1999).

Email: Uses. Because email is not face-to-face communications, it has been called

a non-confrontational medium providing relative anonymity or privacy because of a lack

of visual content (Hassini, 2006; Lewis, Treves, & Shaindli, 1997). How students and

instructors use this characteristic of email communications is both interesting and diverse.

Instructors can use email to encourage students (Hassini, 2006) who may be too shy to

hear the words in person, reinforced by visual communications or at risk of being

overheard by other students (Hassini, 2006).

Some students may prefer email rather than face-to-face communications with the

instructor for several reasons. Bloch (2002) found that students use email for four

reasons: (a) to create and maintain personal relationships, (b) to make excuses such as for

absences and poor performance, (c) to ask for help, and (d) to make formal requests such

as asking for permission to enroll on a course. Because time during the classroom is

limited, particularly for social and personal relationships, students may use email to

strengthen relationships with the instructor and with other students. They often begin

their emails with phatic communications, defined by Malinowski as "ties of union. . .

created by a mere exchange of words" (Malinowski, 1947, as cited in Bloch, 2002, p.

124).

Email gives students the time and space to thoughtfully compose an excuse for

missing class or an assignment. The email format also prevents a hasty or embarrassing

real-time or face-to-face response from the teacher (Bloch, 2002). Although email is not

private on the Internet, using email for excuses gives students a sense of privacy between

themselves and the teacher, at least more privacy than is available in the public classroom

before, during, or after class where peers may overhear. However this feature can also

have a downside because some students may exploit the use email as a cowardly way to

challenge the instructor regarding negative grades or feedback without doing so in person

(Bloch, 2002).

Students may also use email to ask for help when they realize they need it, when

there isn't time before or after class to ask for help, when they feel it may be improper to

spent classroom group learning time on personal assistance, or when they feel they might

be embarrassed if their request is overheard (Bloch, 2002).

Email may also save facilitators time and effort to remind the entire class of

learners about an important issue raise by one learner via an email. Smith (2004)

supported this use of email, claiming that "While answering a student query by email

takes longer than face-to-face or by phone, a benefit is that the response can be

distributed to the group as a whole, forestalling repetitive enquiries, and ensuring

consistent advice" (p. 27).

Email: Instructor immediacy. While email is an asynchronous communication medium, it can also be extremely timely. Email is available 24/7 for students to use when they feel the need. Students are well aware of the expediency of email and tend to expect timely responses to their emails, much like people expect timely responses during a conversation. When students don't receive timely responses to their emails, say, within 24 hours, they may question whether the instructor received the email and may resend it, may make a phone call to ask if the instructor received the email or can answer their question, or may conclude that the instructor does not care about them or is rude or incompetent. For this reason, Hassini (2006) suggested creating and publishing an email turnaround policy so students will know what to expect from instructors and not develop unrealistic expectations or erroneous assumptions.

Email: Tips for instructors. The literature also provides tips for instructors and students regarding the use of email for educational purposes. Hassini (2006) suggested that instructors and students should know the institution's policy regarding the use of email at the school as well as learn proper netiquette (which is etiquette for the Internet). He also recommended (2006) that instructors should verify each student's email address at the beginning of the course, confirming whether the student is or should use a school-assigned email address or a personal email address, or is forwarding their school email address to a personal email account.

Hassini (2006) also suggested creating an email folder for each course taught and storing all incoming emails in the folder for the duration of the course. He recommended posting frequently asked questions from emails to the course website to avoid repetitive emailing, and developing a standard format or template for email that includes the

student's name, the course name and number, and an appropriate subject or reference title.

Another practice for using email effectively is using the built-in spelling and grammar tool that can be set in most systems to automatically check outgoing emails before sending (Gebhardt, 2003).

Johnson and Bayless (1993) provided some additional suggestions for email use. They suggested that facilitators help students access email, ask them to confirm receipt of student emails by sending a return email to the instructor, be positive and not critical in emails, consider students email content in terms of clarifying or revising instructions and questions, and use email to avoid using limited classroom time for topics that can be addressed in email.

Email: Additional Research Needs. Smith, Whiteley & Smith (1999) stated that "Email can be used successfully to deliver course materials, receive coursework, and provide feedback." (p. 18). Since this was reported nearly 20 years ago, additional and more secure forms of online communications tools have been developed within e-learning platforms that are capable of performing these functions. These tools include digital dropboxes and course documents folders in online learning environment software programs. These additional components are reviewed later in this literature review. Additional research is needed to more fully explore the role of email in supplementing traditional classroom-based courses, hybrid courses, and online learning courses, particularly as it functions in conjunction with these newer alternative components and features.

Discussion Boards

Another asynchronous online communications tools is online discussion boards, also called threaded discussions. Online discussion boards use asynchronous postings by learners in a classroom to simulate a discussion among learners regarding a topic posted by the facilitator. Some discussion boards primarily facilitate interaction between students along with varying degrees of participation by instructors. They may also be called threaded discussions because learners may post original comments or a response to another student's comments, each response appearing immediately below the original corresponding post. Ausburn pointed out that discussion boards can also be used synchronously, with groups of learners, participating in *live* online conversations, as an alternative to typical chat formats (L. J. Ausburn, personal communication, February 21, 2007).

Online discussions are viewed by some researchers as beneficial in language development in social settings. These researchers have claimed that "discussion boards are now being used to provide a natural language learning environment by promoting learners' social interaction and creating an authentic discourse community" (Al-Jarf, 2004; Lam, 2000; Singhal, 1998; Zha, Kelly, Park, & Fitzgerald 2006).

Asynchronous discussions online do not simply simulate classroom discussions; rather, research has found that discussion boards and threaded discussions in a virtual classroom have unique benefits and disadvantages compared to face-to-face discussions within a physical classroom. The asynchronous nature of the online discussion board uniquely gives a voice to each student, empowering those who may not speak during class because of shyness, disabilities, or cultural values. Discussion boards also allow

learners to carefully respond to the discussion by giving them more time to prepare and analyze their response as well as those of other learners (Chabon, Cain, & Lee-Wilkerson, 2001; Citera, 1998; Hernandez-Ramos, 2004). Perhaps because of these characteristics, less dominant students may perform better in online environments where privacy and response time options create a tendency for more equal participation (Citera, 1998; Warschauer, 1996). Online discussion formats also empowers quiet students, enabling them to "contribute to any point in a discussion, without waiting for a gap" (Smith, 2004, p. 26)

A study by Chabon, Cain, & Lee-Wilkerson (2001) confirmed several of these benefits of discussion boards. In this study, facilitators of an online diversity course used discussion boards and found that the course:

> . . . Provided students . . . with the opportunity to reflect on and incorporate perspectives about least-biased clinical management procedures, without the pressure of the time constraints of traditional class discussion . . . The nature of the online discussions prompted some students to express themselves in ways that they may have been reluctant to attempt in traditional classrooms, and rewarded students as much for generating questions as for providing responses. Seven students felt they participated more in this course than they did in other courses. One indicated that the structure of the 'course encouraged me to participate.' Another stated 'I felt more comfortable making contributions via email.' While a third remarked, 'This class required me to participate a lot more frequently and to think about my answers more deeply.' (p. 142).

Hernandez-Ramos (2004) studied the communication properties of asynchronous formats by using blogs and threaded discussions to "expose students to two different forms of reflection [because] learning is largely social and people learn better when they learn with someone else" (p. 4). He reported that

> Through the blogs and discussions you see a side of people that never comes out in class. That's been well documented in the literature, but it's an incredibly valuable asset for instructors to get a sense of where students are in their thinking. (p. 4).

Chun (1994) and Zha, Kelly, Park, and Fitzgerald (2006) also found that some students took a more active role in computer-mediated communication than they did in face-to-face classrooms.

Within the hybrid course model, discussion boards can facilitate the interaction between learners and facilitator and between learner and their peers. This was validated by Krentler and Willis-Flurry (2005) who found that the use of discussion boards can enhance student learning as demonstrated by improved performance. In the Krentler and Willis-Flurry study, the use of technology, defined in the study as participation on online discussion boards, as a learning tool appeared to *equalize* student performance across all student majors, and all levels of Internet usage. They reported that

> . . . students who are not interested necessarily intrinsically interested in a course topic or students who do not have a great deal of experience using technology may benefit from the availability of technological learning tools . . . instructors should make every effort to incorporate the use of technology in their institution. (p. 320).

In additional support of online discussions. Nichol, Minty, & Sinclair (2003) claimed that student posts in online discussion boards might be more substantive than comments made during a face-to-face classroom discussion because of the value of reflection in online posts. Schweizer, Paechter, & Weidenmann (2003) studied online discussion environments in several types of courses and found them to be more beneficial to learners in hybrid courses than to learners in purely online courses.

While online threaded discussions are designed and intended to promote learner interaction, the asynchronous yet timely nature of threaded discussions makes them fundamentally different from face-to-face interaction within a live classroom. There are several issues to consider in this comparison. Chabon, Cain, & Lee-Wilkerson (2001) addressed this issue by claiming about online discussion:

As this medium lacks the verbal and non-verbal cues present in

face-to-face or voice communications, it is dependent on students' efforts

and abilities to craft precise and complete bulletin board postings as well

as to consider carefully others' comments. (pp. 139-140).

Nichol, Minty, & Sinclair (2003) pointed out that other concerns deal with how to structure and manage online discussions. They also noted that "More structure might be required in the design of online learning tasks where the goal is participation and interaction than might be the case with conventional face-to-face learning" (p. 275).

One concern with structuring threaded discussions is how the facilitator will grade participation and how that criteria will be explained to learners via a rubric. While using online discussion boards can facilitate learning, assessing them can be a challenge to facilitators, particularly when there are several students in the course. Vidmar (2004)

raised the concern that grading may be reduced from a qualitative assessment to a quantitative one, with grading being based on the number of posts rather than the quality of their content. He suggested increasing student responsibility and awareness by clearly defining for students the facilitator's expectations for online discussions that are graded. He specifically suggested giving students a rubric at the beginning of the course that reflects the course's learning objectives. The rubric can address, for example, "the number and length of posts, grammar and writing clarity, content quality related to course content, and punctuality" (p. 1). Vidmar suggested posting examples of good quality and bad quality posts.

Krentler and Willis-Flurry (2005) addressed quality standards in online discussion posts. They defined minimal acceptable standards of discussion board posts as being "at least five sentences of input and the expression of a coherent thought based on class theory rather than solely personal opinion" (p. 318). Swan (2004) used a simple rubric recommending that "Each posting should relate to the course material and the student's experience" (p. 8). Vidmar (2004) suggested allowing students to self assess their posts, submitting examples of their best posts during the course along with an explanation of their reasons for selecting the posts based on the rubric. He asserted that "Having students self assess gives the facilitator a better idea of the quality of each student's work than the facilitator would have gotten by assessing each student based on the facilitator's impressions" (p. 2).

Facilitators using discussion boards and threaded discussions must also determine their role in the process. Does the facilitator participate in the threaded discussion and, if so, how often and to what extent? Does the instructor lead the discussion or do the

learners? Some researchers have suggested participating in the discussions to model

expected learner behavior (Vidmar, 2004,. p. 1) while others have recommended

minimizing the role of facilitators to avoid their posts being perceived as authoritarian

and dominating the learner-to-learner interaction (Swan, 2004, p. 8). Others have

suggested a moderate role to guide and promote discussions, perhaps diminishing

instructor participation in online discussions as learners become more comfortable with

the quality and format of posts that are expected (Walker & Arnold, 2004).

Additional recommendations regarding facilitation of online discussions have

been offered in the literature. Vidmar (2004) suggested that the facilitator post early and

post often to further online discussions because "students have to be guided in that

behavior" (p. 1). Virk (2005) added that:

Participating in threaded discussions effectively is not an inherent skill. It

must be learned through a combination of modeling, rubric, and feedback.

In other words, instructors must be effective asynchronous communicators

themselves, to provide clear expectations of what is expected of students in

these discussions, and let students know how well they are meeting these

expectations. (p. 7)

Swan (2004) contributed the idea that "students tend to imitate the communication style

and formality of the instructor in their threaded discussions" (p. 8). Virk (2005)

summarized by recommending limiting the role of facilitator to one of steering the

discussion to keep it on track and to foster participation. His view was that:

I think the instructor's presence definitely helps, if done appropriately.

That doesn't mean you don't let students think for themselves. It just means

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that you need to ask the right questions or provide insights where appropriate.

I don't mind it in every thread as long as it doesn't feel forced. (p. 7).

Virk also cautioned that

The instructor has to be very careful as to how much he or she can expand

or narrow a discussion. If the topic is too narrow, it doesn't get a good

discussion going, but if it's too expansive, if there's no resolution, or there's

no purpose in it, some students will get frustrated. (p. 7).

Swan (2004) concurred with Virk and suggested that facilitators use *restrained participation* in threaded discussions, fully participating during the first two weeks of a course and then gradually reducing participation to *elicit diverse opinions* from students. She asserted that "Although online discussion is more equitable and democratic than classroom discussion, there is the danger that students will view the instructor as the authority, which can hinder student participation" (p. 8). She added, though, that she had some interaction with each student each week, just not necessarily via the threaded discussions. "Everybody knew I was listening and that I cared about their opinions. But a teacher's response can just kill a discussion" (p. 8).

Ley (2005) took a different approach to online discussions facilitation, and suggested having the learners facilitate the online discussions as a way of empowering the learners and allowing the facilitator to better understand which content the learners found more complex or less clear. She suggested that "To get credit, the student had to ask a substantive question – one that could not be answered directly by quoting the course materials" (p. 3).

Vidmar (2004) agreed, noting that "formulating open-ended questions often takes higher level thinking than just formulating a response" (p. 2). To improve student learning, he recommended having each student moderate a discussion "because the person facilitating the discussion is the person learning it" (p. 2).

Vilberg (2005) reported on designing online discussions to foster research and critical thinking skills among individual learners, focusing on learner-to-self interaction rather than learner-to-learner interaction. He used written assignments to jumpstart threaded discussions and required students to research the content for their posts rather than stating personal opinions. He did not participate in the posts except to remind students to consider the validity of sources and to think critically about information. The results were lengthy posts rich in content but brief in number and exchange of learner-to-learner posts (p. 7).

Some researchers also cautioned against automatic use of threaded discussions in hybrid and online courses. Virk (2005) warned that "Threaded discussions must be evaluated for use in each course. [They] should not be an automatic course feature" (p. 7). Similarly, Vidmar (2004) wrote, "threaded discussions are most useful in addressing ambiguities within a subject, and not all courses lend themselves to their prominent use" (p. 2).

Reflective journals and Web logs (blogs)

Other forms of asynchronous communication are reflective journals and an adapted version that is online and web-based called web logs (blogs). Whether online or offline, reflective journals are academic tools that require the learner to engage with the content and with himself or herself to reflect on the information presented through

lecture, text, and other source formats. Reflective journals support learner-to-content and learner-to-self interaction and reflective thought. Blogs contain features that allow them to also support learner-to-learner interaction and dialogue.

The literature is rich with studies that found reflective journals to be valuable in the learning process, particularly when the subject or content is complex. For example, Park (2003) found that learning journals increase student interest, participation, and engagement with the learning material. Specifically, they "encourage and empower students to take more responsibility for their own learning, to be more reflective in their study, and to allow them to have a voice and provide valuable feedback to the teacher" (p. 183).

Nuckles, Schwonke, Berthold, and Renkl (2004) claimed that learning diaries (another term for reflective journals) stimulate students to use higher order thinking skills and retain knowledge longer by requiring learners to regularly recap information they have gathered throughout the course, to relate new information to knowledge that they already have, to bridge the information within entries over time, and to critically reflect on issues and content within the course.

Cooper (2006) and Dart, Boulton-Lewis, Brownlee, & McCrindle (1998) also supported the effectiveness of learning journals. Cooper summarized this support:

> The use of learning journals encourages students to appraise their own learning and achievement as well as examine their thoughts and feelings about what they are learning. The journal entries serve as a resource by which the students can revive their learning; comprehend how far they have progressed; and reflect on their personal work ethics, values,

attitudes, beliefs, and motivations. In addition to promoting independent

thinking, journaling also encourages students to take responsibility for

their learning by making them more autonomous and active in the learning

process Learning journals assist learners in processing new information by

motivating them to monitor their goals, to interrelate ideas and concepts

that will assist them in understanding and meaning, and to increase their

self awareness. (Cooper, 2006, p. 2, citing Dart, Boulton-Lewis,

Brownlee, & McCrindle., 1998)

Cooper's support for journaling also proposed that reflective journals facilitate

and enhance learning through a three-step process: recognition, in which learners

recognize their own relevant ideas and beliefs; evaluation, in which learners evaluate

their ideas in terms of what is to be learned and how it is to be learned; and conclusion,

where learners decide whether or not to construct their ideas and beliefs.

Educators who use reflective writing as graded assignments must make their

expectations known to learners at the beginning of the course. Reflective journals can be

structured or unstructured. Cooper (2006) suggested beginning the course with a

structured format for reflective writing to support students who are inexperienced in

writing reflective journals, structured in terms of defined lengths, content topics,

questions to answer, etc. (pp. 3-4).

Like reflective learning journals, the new online journaling format called web logs

or blogs is well supported in the literature. A blog is an online, web-based journal similar

to hand-written journal or diary except that it also provides a multimedia environment

because the learner can edit the content, add photos and multimedia, and support

comments and dialogue with others including experts (Boulos, Maramba, & Wheeler, 2006). Hirsch (2005) defined blogs as "today's equivalent of student journals but hosted on public Internet sites, moderated and maintained by the owner (student or teacher)" (¶ 23). Park (2003) defined a blog as falling somewhere "between a diary and a log: it consists of regular, thought not necessarily daily entries by which the writer focuses and reflects upon a given theme, or a series of events and experiences" (p. 194).

Blogs are posted online but may be private, viewed by only the learner and the facilitator, semi-public and available to all learners in the course, or public and available to anyone online. Blogs may also provide tools for learner-to-learner feedback in the form of responses. Nuckles, Schwonke, Berthold, & Renkl (2004) wrote

> The main function of such public learning diaries is to enrich traditional
> university courses (blended learning) with additional elaborative, organizational,
> critical reasoning, and meta-cognitive activities in order to foster a deeper
> processing and better retention of the contents to be learnt. (p. 49).

When a reflective journal is made public or shared with peers, as blogs typically are, the learning opportunities increase because the learner engages with not only the content and self but also with other learners, with experts, and with additional content. Numerous researchers have supported this assertion (Bielaczyc & Collins, 1999; Doise & Mugny, 1984; Lin., 2001; McKenzie & Freeman, 2002; Nuckles, 2004; Renkl, 1997; Scardamalia & Bereiter, 1994; Topping, 1998). Nuckles summarized the position, stating that by blogging, "The learner is exposed to differing thought processes; they deepen their understanding of a topic by viewing it through the questions of another learner; they gain insight through peer feedback; and the discussions are cumulative over time,

aggregating in a constructive process of learning (Nuckles, 2004, p. 50, citing Doise & Mugny, 1984).

The argument is strong in the literature for the use of blogs in some academic settings. First, blogs are a digital tool which has already been embraced by university students and teenagers, with more than 40% of people ages 18-28 reading blogs and 20% of them writing blogs (Rainie, 2005).

Second, blogs offer numerous learning advantages through enhanced interaction with the learning content, other learners, and experts. Blogs may motivate students to write more and interact more with learners outside the classroom (*Education Technology News,* January 1, 2005), to think and write more critically (*Hindustan Times,* September 2, 2005). For example, through blogs, students can collaborate with authors of books they're reading, interact with professionals in specific disciplines they're studying, and engage with people from other cultures. Blogs can be used in almost any discipline or study to interact with professionals in the field (Harper, 2005; *The Guardian*, June 2004; *Hindustan Times*, September 2, 2005). Because many fields actively use blogs, their use can help learners become part of a virtual community of bloggers, further engaging them with other learners (*The Guardian*, May 2005).

Third, blogs are easy to use and accessible wherever there is an Internet connection, partially because of blogging software widely available and no password restrictions (*The Guardian*, June 2004; *Hindustan Times*, September 2, 2005).

Finally, blogs and other digital tools promote learning beyond the classroom and after the course is completed. Richardson (2006) summarized this viewpoint:

Digital tools allow students to easily work together outside school – for

example, collaborating on projects through instant messaging or text

messaging on phones – and to share the results of that work with a broader

audience. We should encourage such collaboration and outreach. Instead

of just collecting student work to be graded and discarded at the end of the

year, teachers could urge students to publish their work online so that

others can learn from that work and interact with students about the ideas

it contains . . . It's no longer enough to simply consume information; we

must engage with that information and share what we have learned in

appropriate ways. (p. 25).

Oravec (2003) supported the sharing of information via blogs. He asserted that

Producing a weblog on a daily basis can inspire students to develop articulate

critical voices and relate to reader feedback. Plagiarism and apathy may thus

become less attractive as prospects as students learn the value of strong

knowledge communities that are built on trust and mutual interests. (p. 232)

The literature also offers several specific examples of the effective uses of blogs

to foster interaction and learning. At a middle school in Georgia, teachers maintain a blog

about their classroom activities and update it at least once a week. This makes it "a snap

for teachers, parents, and students to keep in touch" (Ishizuka, 2005, pp. 56-57). Shaffer,

Lackey & Bolling (2006) described how busy nursing faculty effectively used blogs for

professional development, keeping practitioners informed of professional topics

including best practices (p. 126).

Richardson (2006) reported publishing a blog about using blogs in classroom, available online at www.weblogg-ed.com. He wrote "Teachers are using blogs to build classroom resource portals and to foster online learning communities. Students create online, reflective, interactive portfolios of their work to share with worldwide audiences" (p. 24). Harper (2005) also asserted that "If self disclosure between teacher and student can boost learning outcomes, blogging may be its most effective mode" (¶ 1).

Faciliators also should be aware that blogs may be accessed through cell phones and other wireless technology, a tactic called moblog (*Guardian*, June 2004). A trend is emerging known as photo blogging, facilitated by cell phones equipped to take pictures. Similarly, video blogs are growing in popularity. One facilitator suggested combining popular digital tools with learning opportunities, such as combining a moblog with a field trip (*Guardian*, June 2004).

An important digital tool that is often used with blogs is Really Simple Syndication (RSS). This digital tool lets people subscribe to diverse feeds of information, including blogs. The tool then monitors the feeds for new information, aggregates new information when it is posted, and notifies the subscriber when new information is available (About.com, 2007).

Blogs are digital tools available globally and, as such, do require some precautions on the part of educators planning to use them. First, educators must take special precautions and exercise explicit control to protect learners who are minors when they use open access tools such as blogs (Harper, 2005). Care must be taken to ensure that learners do not post personal information such as phone numbers or addresses (Flannery, 2005).

Second, learners must learn about writing in the public domain which includes developing critical thinking skills to test the credibility or authenticity of comments made from bloggers (*Hindustan Times*, September 2, 2005).

> Students have the ability to reach audiences far beyond our classroom
>
> walls and to acquire their own primary sources . . . [students] need to
>
> know how to identify the source of a piece of information, gauge that
>
> source's reputation, compare the information with what's already known
>
> and make a judgment about its authenticity and relevance. (Richardson,
>
> 2006, p. 25).

Third, some learners are hesitant to use technology, and their concerns need to be addressed. Although research indicates that students born since 1987 have grown up digital (Tapscott, 1997), some may not be comfortable with using technology, and their concerns need to be privately addressed. Similarly, Langer (2002) cautioned of the "need to consider student reception and perceptions of the journal writing assignment in order to evaluate its usefulness as a tool for developing critical reflection among traditional as well as non-traditional students." (p. 349). Rainie found that 7% of U.S. adults (about 8 million) who use the internet say they have created a blog or web-based diary. Blog readership shot up 58% in 2004 but 62% of online Americans do not know what a blog is (Rainie, 2005).

Fourth, online writing styles often use informal language and terminology not typically found in formal academic writing (*Education Technology News,* January 1, 2005). Facilitators can make their expectations about writing style known to learners at the beginning of the course; they also may choose to not address writing style but, rather,

focus on the content of the blog and its role in fostering understanding of a new concept or subject.

Finally, researchers have found that facilitators may need to be aware of issues in discussing specific blog content in the face-to-face discussions within the classroom. Harper (2005) asserted that "People view online interactions very differently from face-to-face interactions" (¶ 15, citing Cathcard and Gumpert, 1983). He claimed that

> More introverted students who typically do not reveal in the
>
> classroom may expose a great deal online. Interestingly, these shy students
>
> do not believe that online self disclosure should be brought back into the
>
> face-to-face classroom . . . once a disclosure is made in the blog, it should
>
> stay in the blog. (Harper, ¶ 14).

Some of these cautions can easily be overcome with increased awareness and precautionary steps taken by educators. Richardson (2006) pointed out that

> Schools need to think through the potential privacy and safety implications
>
> that go along with widespread publishing of student-created content . . .
>
> teachers employing these [digital] tools must monitor student use and
>
> teach students how to use the tools safely to enhance learning. Issues such
>
> as how widely content is published, whether or not student names are
>
> attached to the content, how to handle inappropriate content. (p. 25)

Blogs have the potential to be valuable reflective learning tools but, the public nature of online that makes a formerly private reflective journal accessible to anyone in an online environment requires the instructor to be aware of the issues mentioned above by Richardson. The public nature may affect the learner's

comfort and interest in posting reflective thoughts in a public forum in either a positive way (taking advantage of the interactive nature of blogs) or in a negative way (by stifling the learner's interest in posting reflective thoughts in a public environment).

Posting of Course Documents Online for Ongoing Availability

A number of communications tools used in online courses can be used in hybrid courses to help learners chart their progress through the course, to ensure timely delivery of assignments, provide readily available access to course content and documents, and to provide confidentiality and privacy of work performance and grades (Farrior & Gallagher, 2000). Frey, Faul, & Yankelov (2003) found the online provision of course information to be one of the most valuable tools provided to them.

Kerres and De Witt (2003) also supported the value of online posting of course information. They found that "students can retrieve information, for example from a syllabus, in order to reduce uncertainty regarding schedule and assignments, which will be communicated best with asynchronous media" (p. 107) so that the information is available and accessible to learners when they need it.

While the literature is not extensive regarding these tools, available research indicates some benefits of using these tools throughout a course. Tools supported in the literature include an online grade book; posting of the course syllabus online for ongoing access; posting course documents, that may include lecture notes and a content online, for use in and out of the classroom; and the ability to submit and receive assignments via digital drop boxes (Blake, 2000; Byrne, 1997; Galloway, 1998; McEwen, 2001; McNeil & Robin, 2000).

Everhart (2005) claimed that facilitators have a significant responsibility to ensure that learners understand the performance expected of them, and that posting information online can help meet this responsibility. According to Everhart (2005), facilitators should post online at the beginning of the course the learning objectives, a detailed syllabus, learning materials required, step-by-step instructions regarding assignments and how grades are determined, and timeframes. The syllabus should be posted online, available throughout the duration of the course, and include precise details for all assignments, rubrics for the grading process. Posting the syllabus online allows students to have ongoing access to the information throughout the course and allows them to mentally navigate the activities of the course.

Regarding hybrid courses, Ballard, Stapleton, & Carroll (2004) discovered that students found course documents, announcements, and grade books to be helpful supplements to their face-to-face classroom meetings. Posting instructor presentations online allows learners to download the presentation in handout format before the classroom lecture or discussion, reducing the quantity of notes they need to take during class, allowing them to focus on the topic rather than note taking.

Online Grade Books

The literature strongly supports online grade books for all levels of education, including K-12 as well as adult learning in college and university courses. In lower levels, posting online grade books allows parents to monitor their child's progress and help the child make adjustments to pass the course before it ends (Branzenburg, 2000; Lacina, 2006; Vockell & Fiore, 2006).

For adults, online grade books have a number of benefits. They give learners a list of all graded activities and deliverables throughout the course, further communicating course expectations to the learner. Learners receive not only their score but also statistical information regarding overall peer performance for comparison. Learners receive their scores as soon as the scores are posted and do not need to wait until the next face-to-face classroom meeting. Online grade books also provide privacy by communicating scores, outcomes, and comments in a private setting that allows for a personal communications exchange between the facilitator and the learner that can continue via phone and email if desired (Blackboard, 2007b).

For instructors, online grade books are a secure place to store grades where they cannot be lost. Online grade books can be designed by the instructor to automatically total point values, reducing mathematical errors, although the instructor must correctly enter the grades to avoid errors. Electronic grade books can also flag learners who may need additional support to successfully complete the course. Because online grade books automate many processes including statistical analysis, comments, and alphabetizing names, the use of online grade books can tremendously reduce the time needed by instructors to enter the class list of members, alphabetize the class list, write grades, average grades, provide detailed progress reports, and prepare frequency distribution and statistical analysis (Vockell & Fiore, 2006). This reduction can be dramatic, from 87 minutes to 15 minutes, on average (Vockell & Fiore, 2006).

In a study presented to the Oklahoma Association of Teacher Educators (OATE) Moore Gray and Tollison (2006) found that online grade books were the highest ranking

online learning component (in terms of importance and use) desired by university business students attending face-to-face classroom courses.

Online textbooks

While posting course documents online has been found to be beneficial to learners, research is controversial and inconclusive regarding online textbooks except when online versions are used to supplement printed versions of the textbook. Carlson (2005) quoted Greenburg, chairman and CEO of Atomic Dog, a textbook publisher, as saying, "the real value of digitization of textbooks is interactivity, not readability and it is silly to believe that the book, as a printed item, is going to disappear" (¶ 45).

Proponents of online textbooks are primarily publishers, who listed several benefits of online textbooks: cheaper prices, newest versions thanks to faster revision capabilities, graphics that include animation, and features including search engines (Carlson, 2005). Another important fact is that the complete adoption of online textbooks would eliminate publishers' leading competition, the secondary market for used textbooks (Carlson, 2005).

The negative aspects of online textbooks include very strict intellectual-property protections and copyright regulations that can limit repeated access to the online textbook during the course; no access to the textbook after the course is completed and the password expires; a dislike for reading textbooks on a screen rather than on paper; lack of access to online textbooks from more than one computer if access is locked into one computer; and the fact that reading an textbook online requires a monitor that is not necessarily mobile (Carlson, 2005).

Some of these issues are being addressed by a global effort currently underway to develop a network of free or low-cost wiki-style online textbooks that are copyright-free, primarily intended to support the education needs in developing countries. Global Text Project launched its first online textbook in January, 2007. The concept leverages editorial oversight while calling for "academics, company executives, students, and anyone else in the world to contribute their thoughts and insight to its collection of online textbooks. The first two books in the series will be about information systems and business fundamentals." (Gordon, 2006, ¶ 3, 6, 8, and 9). Similar free-book web sites are beginning to appear, most written by faculty member respondents at U.S. universities. One example is Connexions (http://cnx.org/), founded by Rice University (Gordon, 2006).

Online libraries

Yet another important and fundamental online resource that can be used by hybrid courses is a link to online libraries to which the student has access. A significant digital, electronic movement in academic libraries has been underway for at least two decades as librarians have sought to increase access and use of library resources, including linking online libraries to student portals (Falk, 2003a) as well as online courses and online websites for hybrid courses. Falk wrote that

> Changes thus far may be merely an introduction to a much greater
> transition that lies ahead . . . a sweeping transition to electronic journals
> and growth in availability of other digital collections . . . and wider access
> to rare and special collections. (Falk, 2003b, abstract).

Carlson found that students and faculty member respondents first use online library materials over print and other library resources (Carlson, 2002).

Submitting Assignments Online

Like all online learning components, digital drop boxes and similar tools allow learners to submit assignments at any hour of the day in advance of the deadline, replacing the need to print a copy of the assignment and hand deliver it to a face-to-face class meeting. The use of digital dropboxes is a basic function of online courses and one easily adopted for hybrid courses using e-learning platforms.

For the facilitator, digital dropboxes and similar tools organize all submissions for an assignment in an electronic folder ensuring that none are lost or misplaced, and links the dropbox to the grade book. For the leader, this method provides date-marked proof that a learner submitted an assignment. One researcher, however, found that learners in hybrid courses prefer to be able to submit their assignments using their choice of digital dropboxes or handing in a printed copy to the facilitator during classroom sessions, and recommended that facilitators of hybrid courses accept assignments through both methods (Mortera-Gutierrez, 2006).

Face-To-Face and Online Meetings: Synchronous and Asynchronous

In a hybrid course, discussion and interaction can occur in real time (synchronous) or in non-real time (asynchronous). Further, synchronous communications can occur either face-to-face in the classroom or online using synchronous discussion tools such as chat rooms and instant message programs. Asynchronous discussion tools include group chat and email, discussion boards and threaded discussions, and email between the learner and the facilitator as well as between the learner and other learners.

Educators are challenged to determine which format(s) to use for the most effective instruction and support of learners. According to the literature, each format has unique benefits and cautions.

Regardless of the format, online or face-to-face, synchronous or asynchronous, "learning through discussions is a fundamental and key aspect of the higher education experience" (Ellis, Goodyear, Prosser, O'Hara, 2006, p. 91). In studies of third-year economics students using both online and face-to-face discussions, Ellis, Goodyear, Prosser, O'Hara (2006) found that many students did not accurately understand the purpose of discussions.

> They were not aware that discussions were part of an experience of reflecting . . . and engaging . . . in a deep way that promoted a more thorough understanding of the issues involved. This is a significant finding, especially since all the students were exposed to the same learning materials and context that explicitly revealed to them the purpose of the discussions [as learning tools for reflection and engagement]. (p. 90)

They summarized by stating that "Clearly both [online and face-to-face discussion formats] need stronger guidance about the purpose of the discussions and how to best engage in them" (p. 92).

Designing a hybrid course "raises the question of the role of face-to-face classes . . . on campus students valued the face-to-face interaction . . . valuing the opportunity for closer contact with teachers and fellow students." (Smith, 2004, p. 25). While noting that educators may have personal preferences for synchronous vs. asynchronous tools, Hines

& Peark (2004) and Lynch (2002) indicated that a fundamental rule for using online tools in education is to work beyond one's comfort zones.

Kerres and De Witt (2003) discussed the relationship between classroom discussions and online materials. They claimed that classroom meetings should focus on applying the knowledge and skills learning from the content found online and in textbooks, and on discussing and dissecting knowledge and theories that are more complex.

Information provided in previous parts of this literature review regarding online discussion boards and threaded discussions highlighted the fact that, in the asynchronous online environment, every learner has a voice and can share thought-out comments. In the purely online environment, awareness of demographics and culture virtually disappear as learners do not know one another's gender, age, race, religion, marital status, etc., unless an individual chooses to disclose it. This is not the case in hybrid courses where learners meet in person during face-to-face classroom sessions.

> In face-to-face learning, the personalities of the students play an important
> role in determining patterns of communication whereas in the online
> environment the cues for interaction are text-based with the result that
> students focus more on the ideas embodied in the text rather than on the
> person sending the message. (Nichol, Minty, & Sinclair, 2003, p. 273).

The remainder of this section, then, will focus on issues other than the socio-cultural factors of in-person discussion and engagement.

Kerres and DeWitt (2003) studied the issue of face-to-face meetings and online discussions within a hybrid course. They found that, within the blended or hybrid course

format, the face-to-face meetings are the most costly to the learner in terms of money, time, effort, etc. but are highly recommended because "learners who actively take part in FTF meetings are less likely to abandon their studies" (p. 111). They also found that face-to-face classroom meetings are most important at the beginning of the course when it is important for facilitators to build a common foundation among all learners, to boost interpersonal communication and build social relations, to gain a firm commitment from the learner for the course, and help the learners navigate the course in terms of expectations, learning components, deliverables and deadlines (p. 110).

Kerres and DeWitt (2003) further found that face-to-face classroom sessions help establish a strong foundation for learner interaction and peer group support for the course but, within a hybrid course, the face-to-face meetings must be perceived by learners as "an event that is worth the effort and necessary expenses" (p. 110). To accomplish this, they suggested presenting the bulk of the learning content outside of the face-to-face meetings, such as online and in textbooks, and encouraged using face-to-face meetings for developing a solid foundation for the course in terms of format, delivery, and use of online tools; for students as well as instructors to get to know one another; to organize study groups and develop rules for group work; to present group work; and to conduct examinations and evaluations.

Kerres and DeWitt (2003) suggested supplementing the face-to-face classroom with the use of asynchronous tools to give learners more time to discuss content online where they have more to time and write, beyond the time constraints of the classroom and where they can post graphics that support the discussion.

An and Frick (2006) found that some students considered face-to-face discussion to be quicker and easier as well as convenient, but others perceived online discussions to save time and be more convenient. Further, students thought speed and convenience were most important rather than format choice. Schweizer, Paechter, and Weidenmann (2003) found that learner groups that had to "share and exchange their knowledge to come to a joint solution . . . achieved better results in synchronous settings." (p. 211).

In researching 144 undergraduates in hybrid courses using both face-to-face and online discussion formats, Siegel, Dubrovsky, Kiesler, & McGuire (1986) asserted that the effect of computer-mediated communication on organizational decision making and problem solving was probably more complex. Specifically they wrote that, when groups of learners used the online format for discussions, all members participated more equally, took longer to make decisions, and made more uninhibited comments than in face-to-face discussions. Compared to groups discussing face-to-face, groups using online discussions made choices that moved further away from the members' individual choices. As a related phenomenon, Jeris (2002) found that power relations are redistributed in electronic environments. She claimed that online discussions were more student-to-student, while classroom discussions tended to be more student-to-teacher. Warschauer (1996) found similar results in his study comparing face-to-face and electronic discussions. In addition to finding more equal participation among learners using the computer mode, he also found that they used more formal and grammatically correct language in online discussions than in the face-to-face discussion. This may be a consideration for instructors wishing to develop writing skills.

Several studies offered support for using both face-to-face and online discussions. For example, Meyer (2006) found that, when discussing controversial topics, learners felt more comfortable stating their opinions in online discussions but the majority still preferred the face-to-face format. Tiene (2002) found online discussions to enrich face-to-face discussions among learners and student reactions to online discussions were positive, but that students in the study wanted online discussions to supplement rather than substitute face-to-face discussions.

Another group of studies examined synchronous vs. asynchronous discussions. Dietz-Uhler and Bishop-Clark (2001) studied undergraduates and found that using both synchronous online (chat rooms) and asynchronous online (discussion boards) can lead to subsequent face-to-face discussions that are more pleasant. Hines & Pearl (2004) pointed out that asynchronous online tools

> Provided richer, more inclusive types of interchange but . . . also required
> more time and provided less social interaction than classroom or virtual
> synchronous settings. While synchronous tools require immediate response,
> they have the advantages of providing a greater sense of presence and
> generating spontaneity. (Hines & Pearl, 2004, p. 34; citing Inglis, Ling, &
> Joosten, 1999)

In comparing online discussions with face-to-face interactions, Benbunan-Fich, Hiltz, & Turoff (2003) found that groups of learners using online discussion methods had broader discussions and submitted more complete reports than did groups using face-to-face discussions. They reported that face-to-face groups tended to cover case study questions sequentially, while groups using online discussion methods focused on solving

their general disagreements. Ellis, Goodyear, Prosser, & O'Hara (2006) supported online

discussions, reporting their finding that the online discussion format required more time

and forethought among participations, allowing them deeper opportunities for reflection,

a fundamental purpose of using discussions as a learning tool. They concluded that "It

would seem that online discussions are a useful way of foregrounding reflection in the

learning process." (p. 90). Regarding the outcomes of discussions held online vs. face-to-

face, found that

> Face-to-face discussions seem to be most useful to students if they use them
>
> to consider the issues discussed from a number of perspectives in order to
>
> more fully understand the complexity of the issues as they relate to the
>
> subject's objectives' [while online discussions] seem to be most fruitful if
>
> students use their peers' postings to reflect on the issue in a deep way. The
>
> students reporting this type of approach tended to better understand the full
>
> range of issues related to the discussions, even if it meant engaging in
>
> further research after reading the other postings. (p. 91).

The literature also cautions about the use of online components within a hybrid

course where learners may be accustomed to traditional classroom-only meetings.

Learners may lack keyboarding and computer skills (Smith, 2004) although this is a

rapidly decreasing concern as the vast majority of college students regularly use a

computer and the Internet (Hitlin & Rainie, 2005). Attention must be given online to

accurate composing of intended messages since the nuances of face-to-face

communications, including voice tone and gestures, are not present.

Leh (2002) reported in a three-year study that her students were in favor of hybrid courses and that they liked posting their assignments online and reviewing their peers' work. "By doing so they learned much from their peers." (p. 31). Leh did, however, substitute online learning time for many face-to-face classroom meetings to meet the needs of her students and found that presented some challenges to those with low technology skills or who lacked self discipline.

Synchronous Online Tools: Chat Rooms and Instant Messaging

Synchronous online tools have the unique characteristics of requiring written communications in real-time manner. Educational institutions have used instant message and chat rooms to orient new students and their parents (*Arizona Daily Star*, 2006), to tutor students (Burnett, 2003; Melzer, 2005), to discuss books with their authors (*School Library Journal*, 1991), and group discussions (Burnett, 2003).

Online Chat

In a study of the use of synchronous chat in online classes, Spencer and Hiltz (2003) found that instructors were positive about the use of synchronous chat to bring students closer to the instructor. Students who participating in the synchronous chat sessions found them to be rewarding and less complex than asynchronous tools such as the online discussion board.

Lin (2004) also supported use of synchronous discussion tools. He found that giving learners their choice of synchronous, text-based chat rooms and asynchronous text-based discussion boards had a positive effect on student satisfaction and self-efficacy and that self-efficacy was related to cognitive achievement and satisfaction.

Using synchronous tools require "students [to] sit down in front of their computers on a specific day, at a specific time" (Hines & Pearl, 2004, p. 34). The use of mobile phones with Internet access grants learners mobility but still restricts students to participating in synchronous online chats at a scheduled time. Facilitators may mark synchronous individual or group chats as optional to make the online experience truly beyond the limitations of time. Only one article was found in the literature regarding the use of audio tools (including Web-based speech voice technology) for participating in synchronous online chats and, in that study, the facilitator preferred oral communications rather than text-based group chats (Synchronous Chat--No Typing Required, 2003).

Because few, if any, people can type as fast as people read in real-time communications, users of synchronous online tools often use informal visual shorthand to simulate words and phrases. How facilitators manage this informal verbal shorthand is a separate philosophical issue from maximizing the learning potential of synchronous discussion. While an argument can be made against bringing online shorthand terms and abbreviations into formal writing, such abbreviated forms of writing have a valid purpose in online chat and instant message formats including being used to "expand and remain connected their social circle, but also as a form of self-expression" (Shiu & Lenhart, 2004, p. 2).

Other issues in using synchronous discussion tool options include using tutors and privacy options. Burnett (2003) studied the effectiveness of tutors using synchronous online chat tools to help students. She suggested that instructors interested in facilitating tutoring efforts "celebrate and encourage linguistic innovation which enables students to find effective ways of communicating through online chat" (p. 259). Naumann and

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Lemnitzer (2005) favorably discussed synchronous chat rooms for educational sessions that include tools for individuals to privately send questions to the facilitator.

Instant Messaging

Instant messaging is rapidly becoming a common form of synchronous online communications for children age 8-18 (the future traditional college age students) and Rideout (2005) asserted that instant messaging – which barely existed five years ago – has become one of the most popular computer activities, averaging 17 minutes a day out of a total of 1.02 hours average spent online each day by this age group. An estimated 66% of children have used instant message, according to Rideout (p. 31).

A 2004 Pew Report about instant messaging revealed that the people born after 1977 (common known as members of Generation Y) used instant messaging twice as much as any other demographic group, including Gen Xers (people born 1965-1976). Both Gen X and Gen Y members reported logging on to instant message programs several times each day, according to the report (Shiu & Lenhart, 2004, pp. iii and 11). An updated report found that 75% of online teens use instant messaging, which is about 16 million students. Of those, 78% reported using instant messaging to talk with peers about homework, tests, and assignments (Hitlin & Rainie, 2005, p. 13).

Hirsch (2005), a 2004 technology award finalist and associate superintendent of a Texas public school district, wrote that

> Most students are familiar with the concept of instant messaging and use it
> as one of their primary collaboration tools while away from school . . .
> [We should] consider new ways to use digital tools that allow students to
> work with one another in solving problems and creating projects. (¶ 18)

The education research literature has yet to explore the potential and learning effects of this new synchronous technology.

New Technologies

As technology continues to evolve, new learning opportunities will emerge and educators will find both challenges and opportunities to use new digital tools for learning purposes. Relatively new online learning components in use the past few years include wikis and podcasting as well as the emergency of true mobility. Perhaps even more critical is the need for educators to keep pace with the communications media used by students and to view new digital tools as opportunities to further connect with learners.

Hirsch (2005) wrote,

We need to place more effort in understanding tools that our students already access on their own and find responsible ways to leverage those tools in our schools. Students are investigating, collaborating and learning with these digital tools as soon as they leave our schools each afternoon. Providing an outlet during school hours that enables students to use their learning tools of choice can make the school environment more relevant to their overall learning preferences. (¶ 8)

Briefly mentioned earlier, wikis are interactive and comprehensive websites featuring collaborative work that is easily viewed, contributed to, and edited by individuals. Anyone can contribute to the collaborative effort and edit the existing content, although some wikis are designed to be subject to editorial approval. "A wiki is a web application that allows users to add content in a fashion similar to Internet message boards but also allows anyone to edit the content." (Hirsch, 2005, ¶ 1). Because they are

quick, simple, and provide a sense of ownership among participants, wikis are being used in education and business to "create content on-the-fly, as a repository for information and for archiving group learning" (Hall, 2006, p. 13).

Another relatively new technology is podcasting, the online subscription-based distribution of digital audio to MP3 players and PCs. Companies use podcasting to deliver timely information about training, products, and customers to employees (Hall, 2006, p. 13), while educational institutions such as Duke University, Kansas State University, and Fort Hayes State University have used podcasting to deliver lectures and supplemental learning content to students (Wistrom, 2006, pp. 5 and 7; Duke University website, 2005).

Hirsch (2005) supported the educational potential of these new technologies. He stated that "Most of these newer technologies involve students collaborating with one another . . . increasingly it is more often a many-to-many conversation using Internet connectivity and a variety of applications" (¶ 2). He further asserted that "It is important that educators today realize these 21st century skills will enable them to be better communicators and collaborative yet independent thinkers" (¶ 4).

Determining the Right Mix of Learning Components

Given the various online learning components and tools that can be used in a hybrid course to supplement face-to-face classroom learning techniques, the literature points to the challenge among educators to determine the appropriate blend or mix that best supports learning. "The instructor is challenged to select the combination of techniques that will best meet course goals and objectives. Selection of methods will vary with the teacher, target learners, and course material," (Farrior & Gallagher, 2000, p. 12).

Hines & Pearl wrote, "At issue is not which technology is better, but how each technology is best used for specific goals" (Hines & Pearl 2004, p. 34).

Sample Mixes

A 2003 survey by elearningguild.com reported that 85% of survey respondents reported using six to 10 different learning components and listed the following components of their mix in terms of relevance: classroom instruction, interactive Web-based training, email-based communication, self-paced content, threaded discussion, collaboration software, virtual classroom, print-based workbooks, and online testing. The reasons cited for using a mix of learning components included "more effective than classroom training alone; high learner value/impact; effectiveness greater than for non-blended approaches; and learners like it" (Kerres & De Witt, 2003).

In a hybrid course, Smith (2004) combined classroom instructions with online components. He used the online format for email with students regarding course materials and assignments, discussion questions, a list of course readings for each week that included tutorial questions, administrative announcements by the facilitator, and allowing learners to coordinate forming groups.

Farrior and Gallagher (2000) wrote that useful Internet-based features for hybrid courses include email (between facilitator and individual learners as well as between the facilitator and the entire class), discussion threads, quizzes that provide immediate feedback, questionnaires that automatically populate a database, and synchronous chat. They claimed that "All these features may be used to deliver courses that are more than reading screens of material" (p. 11).

In researching best and worst practices, Mortera-Gutierrez (2006) recommended

the following regarding blending of learning elements in hybrid courses (p. 334) (see

Table 4).

Table 4.
Best practices identified by Montera-Gutierrez

		Best practices
Conditions	•	Before courses begin, outline specific learning activities related to course content.
	•	At the beginning of the course, establish social contact with students.
Methods	•	Orient students on the role of the online component in the course, how to use the e-learning platform and the information found there.
	•	Develop orientation and tutoring sessions during the entire course to promote communications among students to minimize problems with planned learning activities
	•	Develop audio visual aids (stored online) to supplement and complement the F2F instruction.
	•	Understand and positively accept the e-learning platform in use; instructor acceptance and knowledge of the e-learning component is a key element in the course's success.
Outcomes	•	Organize every learning outcome on time throughout the complete semester to better accomplish learning objectives
	•	Be flexible regarding student assignments to improve student response and student personal development.
	•	Give prompt feedback to students' requests, questions, doubts to motivate their performance.

Taking the worst practices that Montera-Gutierrez found in his study and

rewording them into a positive form, the following additional practices may be added to

the list of best practices (see Table 5).

Table 5
Additional best practices derived from Montera-Gutierrez

Content	•	Define learning objectives based on the content of the syllabus
	•	Focus on individual learner needs rather than on completing the syllabus or coursework
	•	Strive to use the full potential of the online components (not simply using it to distribute the syllabus, for example)

Methods	• Accept assignments both online and in the face-to-face meetings.
	• Be very clear how assignments are to be submitted.
	• Post online assignments and homework in a logical, organized way
	• Know how to handle a technical problem or have technical support
	• Know how to correctly use each technology medium to deliver the instruction and learning activities
Outcomes	• Make the face-to-face format (not the e-learning delivery platform) the main engine of the course.
	• Give an appropriate amount of information to students to not saturate them.
	• Never mistreat students based on their learning outcomes.

Considerations

Researchers pointed out a couple of considerations for facilitators when

determining which online learning components and tools to include in a hybrid course.

The digital divide is a factor among many learners, making it more challenging to access

the Internet in a convenient and timely manner (Smith, 2004). However, this concern may

be reduced for students meeting on campus in a traditional or hybrid class because of

student access to computer labs on the university campus. The second consideration is

that posting materials online makes them available and accessible to students throughout

the duration of the course but also shifts the burden of printing to students who wish to

print the materials rather than read online (Smith). This may be a significant cost savings

for some learning institutions although universities may include printing of a limited

number of pages in on-campus computer labs.

Redundancy by Design

One research team suggested facilitators build redundancy into hybrid course

designs by providing at least two channels for communication with and between students

throughout the course (Farrior & Gallagher, 2000). Such planning may reduce frustration

and anxiety among learners when technical glitches occur and when they are unable to physically attend class.

Design redundancy and duplicity may also support different learning styles and preferences. As noted by Everhart (2005), "Offering materials in multiple media helps students with different talents and learning styles explore the materials in their own ways" (p. 26).

Additional observations

The innovative nature of online communications continues to bring new ways for students and facilitators to interact, learn, and communicate online. As more tools are developed, it is the role of educators to determine if, how, and when these tools may be adopted or adapted for beneficial use in a learning environment.

The literature is rich with information about the use of online communications tools to facilitate learning but information about their specific use in hybrid courses is less. While the literature presents varying numbers of studies for each online learning component, it can be noted that the amount of information available for older online learning tools is, of course, far more extensive than that available for the newer technologies. In addition to assessing individual online learning tools, several studies examined considerations, best practices, and models for online and hybrid courses.

According to the literature, online communications tools are widely used by traditional college age students and children who will become the next generation of college students (Jones, 2002; Rainie, 2005). They have been named the *N generation* for being networked (Tapscott, 1997) , the *M generation* for being millennials who are wired by both wireline and wireless telecommunications systems (Rideout, Roberts & Foehr,

2005), using online resources as a substantial part of their personal and social daily interactions. Online learning tools are widely used among young people today to supplement and enhance their private lives. It is the responsibility of educators to determine if and how these favored online communications tools can be used within an academic setting to support learning. Such research leverages tools and aids with which traditional college students and children are already familiar and use, and may have the unprecedented opportunity to enhance their learning outcomes.

This literature review examined the information available for current models of learning and identified components of hybrid course formats including technology and interaction. The literature review examined known principles of good practice and strategies for designing hybrid courses. It also examined categories of online learning components including asynchronous and synchronous components as well as individual and group tools, and examined the information available for specific online learning tools. Finally, the literature reviewed information from studies about new technologies and considerations in determining the proper mix of online learning components in learning environments.

CHAPTER III

Methodology

This descriptive comparative study (Routio, 2007) described the best practices of

online learning components in hybrid courses. This study also collected and analyzed

data regarding the use and perceived importance of online learning components in hybrid

courses by full-time business instructors at comprehensive and regional universities in

Oklahoma. Finally, it described the difference between best practices and the uses and

perceived importance of common online learning components of business instructors at

Oklahoma universities.

General Approach

This study was descriptive and comparative in nature, defined as a study that

"aims at describing and perhaps also explaining the invariances of the objects," (Routio,

2007, ¶ 10)). According to Frankell and Wallen (2006), "descriptive statistics describe a

given state of affairs as fully and carefully as possible" (p. 14). Carnine (2000) stated that

> Descriptive research is a very useful tool for analyzing problems and making
>
> complex problems more manageable and comprehensible. It can be very
>
> useful to build theory, to help shape interventions, and to help one
>
> understand the target or focus of an intervention. (¶ 10)

In the first phase of this study, literature review was used as the research method.

An extensive literature review was conducted to identify and analyze best practices,

research studies, and emerging trends in the area of effective online learning components within hybrid courses. These were subsequently used to construct a best practices model for hybrid courses, based on guidelines from model theory. The constructed model (presented in chapter 5) was used as the standard against which data collected from the study participants were compared. In the second phase of this study, a quantitative online survey was used to collect data about uses and perceived importance of various online learning components from full-time business instructors at comprehensive and regional universities in Oklahoma. The data were analyzed using the SPSS computer program, and descriptive statistics were reported as the results. Finally, the difference between the best practices model developed by the study and the current uses and perceptions of the study participants was described using descriptive statistics and logical analyses.

Population and Sample

Within the context of research, a population is defined as "the aggregate of all the cases that conform to some designated set of specifications" (Pedhuzer & Schmelkin, 1991, p. 319). The population for this study was full-time business faculty member respondents teaching in comprehensive and regional universities in Oklahoma. As of January, 2007, the population totaled approximately 330 full-time instructors in business departments and there were 12 comprehensive and regional public universities in Oklahoma, according to public information available on the respective schools' websites. Provosts or vice presidents of academic affairs at each of the following ten universities were contacted and gave their approved participation in this dissertation study (some also required Institutional Review Board approval by their respective schools and IRB approval was obtained from those schools):

- Cameron University (Lawton, Oklahoma), School of Business, 27 full-time instructors

- Northeastern State University (Tahlequah, Oklahoma), School of Business, 34 full-time instructors

- Northwestern Oklahoma State University (Alva, Oklahoma), Business Department, 10 full-time instructors

- Oklahoma Panhandle State University (Goodwell, Oklahoma), Business Administration, 4 full-time instructors

- Oklahoma State University (Stillwater, Oklahoma), William E. Spears School of Business, 103 full-time instructors (including 27 full-time instructors of management science and MIS)

- Rogers State University (Claremore, Oklahoma), Business Department, School of Business and Technology, 9 full-time instructors

- Southeastern State University (Durant, Oklahoma), School of Business, 15 full-time instructors

- Southwestern Oklahoma State University (Weatherford), 31 full-time instructors

- University of Oklahoma (Norman, Oklahoma), Michael F. Price School of Business, 60 full-time instructors (including 20 MIS full-time instructors)

- University of Central Oklahoma (Edmond, Oklahoma), College of Business Administration, 38 full-time instructors.

East Central University and Langston University were not included in this dissertation study due to procedural difficulties in obtaining their IRB approvals.

Within the context of research, a sample is defined as "a subset of elements from the population selected according to a sample design, which specifies the rules and operations by which the sample is to be chosen from the population" (Pedhuzer & Schmelkin, 1991, p. 319). The population for each university is listed along with the actual number of responses received for each university (see Table 6). Responses from participants who were not full-time faculty member respondents were not included in the sample. Of the 367-member population, 112 responses were received and 100 of those received were determined to be responses from full-time faculty member respondents as (indicated on the survey responses in answer to the demographic question about whether they worked full time or part time). These 100 full-time business faculty member respondents were the defined sample for this study.

Table 6: Population and Sample Sizes

Institution	Population N	Potential Sample	Sample n as % of population	Actual Sample Obtained	Sample n as % of population	% of Total Sample	Actual n Retained in sample
Cameron University	27	27	100%	5	18.51%	4.5	4
Northeastern State University	34	34	100%	10	29.40%	8.9	10
Northwestern Oklahoma State University	10	10	100%	6	60%	5.4	4
Oklahoma Panhandle State University	4	4	100%	3	75%	2.7	2
Oklahoma State University	103	103	100%	34	33%	30.4	33

Rogers State University	10	9*	100%	9	90%	8	8
Southeastern State University	15	15	100%	8	53.34 %	7.1	7
Southwestern Oklahoma State University	31	31	100%	5	16.12 %	4.5	5
University of Oklahoma	60	60	100%	18	30%	16.1	18
University of Central Oklahoma	38	38	100%	14	36.84 %	12.5	9
East Central University	15	15	100%	0	0%	0	0
Langston University	20	20	100%	0	0%	0	0
Total N	367			112		100.1	100

* As noted in the limitations section of Chapter 1, the researcher of this study is a full-time business faculty member at Rogers State University and did not complete the survey instrument or participate as a member of the sample.

Instrumentation

The survey developed for the study was designed to collect the quantitative data for analysis. A copy is provided in Appendix A. In the first section of the survey, respondents were asked to provide demographic data, including their self-diagnosed level of computer skills based on definitions used by Ausburn (2004). Demographic variables collected were the educational institution at which members of the sample taught, whether they were employed full time or part time, their academic rank, gender, age, level of self-assessed technology skills, number of hybrid courses they had taught, the type of Internet access they had, whether or not they currently taught any hybrid courses, and the percentage of current courses taught that were hybrid courses. Hybrid courses

were defined in both a postcard sent to the population requesting their participation as well as in the survey.

In the second section of the survey, respondents were asked to rate the importance of a list of online learning components in hybrid courses that were identified from the literature:

- Email

- Discussion boards

- Web logs (blogs) or reflective journals

- Posting of course documents online

- Submitting course assignments online

- Availability of email access between students

- Posting instructor presentations online

- An online grade book

- Live chats

- Group chats and emails

- Instant message programs

- Electronic library access

- Online lecture notes

- Online exams or quizzes

- Online calendar

- Online calendar with due dates

- Online bookmarks or links

- Student home pages, and

- Posting student presentations online.

Respondents used the following Likert-like scale to rate their usage of the online components: 1 = Very Important, 2 = Important, 3 = Unimportant, 4 = Very Unimportant, and 5 = Not Applicable. The five-point scale was selected because it forced the respondent to rate the importance of the components within a range of choices while providing an option for not applicable.

Respondents were then asked to rate their use of the same list of online learning components in hybrid courses as found in the literature review: email, discussion boards, web logs (blogs) or reflective journals, posting of course documents online, submitting course assignments online, availability of email access between students, posting instructor presentations online, an online grade book, live chats, group chats and emails, instant message programs, electronic library access, online lecture notes, online exams or quizzes, calendar, calendar with due dates, online bookmarks or links, student home pages, and posting student presentations online. Respondents used the following Likert-like scale to rate their usage of the online components: 1 = Very Often, 2 = Often, 3 = Sometime, 4 = Rarely, and 5 = Not Applicable. The five-point scale was selected because it forced the respondent to rate the importance of the components within a range of choices while providing an option for not applicable.

Validity and reliability of the instrument were investigated during a pilot study conducted as a research assignment for an Oklahoma State University doctoral level course, *Language, Literacy, and Culture*, in spring of 2006. Respondents in the content validity pilot study were graduate students taking the required doctoral course, which was itself a hybrid.

In the pilot study, the survey questions asked respondents to rate on a five-point Likert-like scale the clarity of the definitions of each listed common online learning component and then to rate the importance of each common online learning component. The online components selected by the researcher for inclusion in the survey were derived from an extensive review of distance education literature. The survey was available online and delivered via email to graduate students in the specified course. The results were compiled and analyzed to determine the mean, mode, median, standard deviation, and other descriptive statistics. To improve the validity of the survey instrument, online learning components with less than a 2.5 mean rating on the scale were planned to be dropped from the final version.

After the mean scores were calculated, it was determined that none of the learning components had a mean score of 2.5 or lower regarding clarity or importance, so none of the items was removed from the survey. One item, *grades*, had the lowest mean score for clarity at 2.333, and it was determined by the researcher that the item would be reworded as *online grade book* to be clearer. Based on the literature review, the data collected and descriptive statistics calculated on the pilot study, the survey questionnaire was accepted by the researcher as having content validity.

Reliability of the survey questionnaire was not addressed. Measures of internal consistency such as Cronbach's Alpha were irrelevant for the demographic variables and inappropriate for the literature-derived list of online learning components. Test/re-test reliability was not established because the study was conceived as a *snap shot* description of a specific group of people at a specific moment in time. The questionnaire was in no way a measurement of a well-defined construct with stability over time.

Procedures

A list was compiled of the comprehensive and regional public universities in the state of Oklahoma from the Oklahoma Higher Regents website. The names and addresses of the vice presidents of academic affairs and business faculty member respondents were obtained from the universities' websites. Letters requesting approval to conduct research were mailed to the Vice President of Academic Affairs at each of the 12 universities targeted for participation in the study. Eight of the 12 universities provided approval, two approved the request following an IRB application and review, and two universities declined to participate in the study due to IRB irresolvable complications including a misplaced request and a requirement of prior approval from Oklahoma State University before giving their approval. These two institutions were eliminated from the study. The approval responses of the remaining 10 institutions were submitted along with all other required documentation to the IRB at Oklahoma State University.

Following IRB approval for the study, a postcard was mailed to prospective instructor respondents at the 10 participating institutions explaining the study, defining a hybrid course, and including a hyperlink to the online survey instrument. Emails were sent one week later and two weeks later as reminders to help increase survey return rate. Names, mailing addresses, emails, and phone numbers for the institutions' Vice Presidents of Academic Affairs as well as the full-time business faculty member respondents were obtained from public information sources available on the Internet.

When respondents went to the website where the survey was posted, they clicked an online consent form to indicate their consent. To ensure confidentiality, email addresses of respondents who consented to the online survey and their individual

responses were sent to separate data files so the researcher was able to know who had

responded but was not able to identify and associate individual responses with any single

respondent. This preserved participants' anonymity. Before being able to access the

survey, a respondent had to consent to the study by indicating their consent in an online

form preceding the online survey form. A list of email addresses of respondents was

tracked in order to allow the researcher to identify and contact by telephone those who

had not responded in a timely manner to personally request their participation, thus

increasing survey return rate.

As respondents completed the online survey, their responses were automatically

collected and compiled by a server at Rogers State University. The data were then input

into SPSS Version 7, and descriptive statistics were calculated to analyze the data.

Data Analysis

Data from the survey were analyzed using SPSS to calculate appropriate

descriptive statistics. Findings reported included ratings of respondents' use of various

online learning components in hybrid courses and their ratings of their perceived

importance of the same online learning components in hybrid courses. The ratings were

cross-tabulated to the demographic variables collected for the study, which included

university, rank, gender, full or part-time employment, academic rank, gender, age, level

of self-assessed technology skills, number of hybrid courses they have taught, the type of

Internet access available, whether or not currently teaching any hybrid courses, and the

percentage of current courses taught that are hybrid courses.

Model of Best Practices

As defined earlier in this study, a model visually depicts elements of a relationship and their interrelationships. A model of best practices in hybrid courses was developed for this study by this researcher to identify critical elements of a hybrid course as described in the literature, and to determine how to best illustrate their relationships in a graphic format. The model was constructed because all models found in the literature were for online courses, not for hybrid courses which are fundamentally different because their base is the traditional, face-to-face classroom.

After extensive review of the literature, the researcher identified two principles in hybrid courses. First, based on the literature, it appeared to this researcher that the most important element of the hybrid format model is the learner who is the purpose and benefactor of the course. The learner, therefore, is placed in the center of the model developed in this study. Second, any learning activity that helped or encouraged the learner to interact or engage with the course subject matter are supported in the literature as valuable and, accordingly, online learning components that support and promote the learner's engagement with course content were viewed as are valuable in the learning process and support the hybrid format learning model.

In a traditional face-to-face course, the learner interacts or engages with course content, the facilitator, and with their fellow classmates during regularly scheduled classroom meetings. Outside of the classroom meeting time, the learner may make appointments with the instructor and with peers to review course content, study, or be tutored. Both inside and outside the classroom meeting time, the learner will typically engage with course content in a variety of formats and will engage internally regarding

study skills, personal goals, scheduling, and individual learning. Thus, the additional elements of the model were identified as: the facilitator, course content, peers, and the learner's self.

Finally, the relationships of the elements were identified in the developed model based on their interaction with one another. With the learner at the center, the learner engages with the course content, with the facilitator, with their peers, and internally with themselves to gain in understanding and knowledge of the subject. When the subject is taught in a traditional classroom format, the vast majority of that interaction occurs in the classroom. In a hybrid course, online learning components support learning outside the classroom, removing the limitations of time and place that bound a traditional classroom course to more fully engage the learner throughout the duration of the course, be it a semester or session. Thus, online learning components more fully engage the learner with other elements of the hybrid format model that support learning.

Unique within the hybrid format model is the fact that the learner has chosen to attend a traditional classroom that meets face-to-face during regularly scheduled in-person meetings. They may have selected the traditional classroom meetings because of personal limitations of technological access or skill. It is therefore essential that the facilitator of a hybrid course ensure that online learning components help the learner engage with the course content and other elements of the hybrid format model; it is incumbent on the facilitator to ensure that technology does not become a barrier to learning or assessment, penalizing the student by removing learning or assessment opportunities otherwise available in a course that only meets in the traditional face-to-face format.

The best practices model developed in this study is presented and discussed in

Chapter 5.

CHAPTER IV

FINDINGS

The field of education has undergone significant change in the past few decades,
the direct result of technological advances that offer new tools and formats for learning,
including online learning and hybrid courses that blend online and traditional learning.
The hybrid course offers educators the ability to use online tools and components to
supplement, enhance, and engage the learning experience for the traditional classroom
learner while maximizing the learning experience within the traditional classroom.
Simultaneously, the field of education has experienced a movement from the classical
methodological approach of a teacher-dominated classroom with passive learners toward
an approach wherein learners are more actively engaged in the learning process and take
more responsibility for their learning experience and achievements. The current
popularity of hybrid courses that encourage learner-centered methodology supports the
importance of the findings of this study of practices and perceptions of online learning
components in hybrid environments.

Research Question #1: Current Best Practices in Hybrid Courses

The first research question of this study dealt with the current best practice of
online learning components in hybrid courses. This question was addressed through
review of current literature, presented in Chapter II. The literature review suggested that
best practices within hybrid courses today are those that *support the learning process by*

more actively engaging the learner (Aspden & Helm, 2005; Cairncross, 1997; Graetz & Goliber, 2002; Palloff & Pratt, 1999).

The literature makes it clear that the compelling reason to adopt the hybrid course is that it allows learning and interaction to continue beyond the time and space of the classroom session throughout the course (Pittinsky, 2005; Reasons, 2004; Riffell, 2004), enabling the traditional classroom sessions to most effectively support the learning experience (Osguthorpe & Graham, 2003; Young, 2002). Learning can, does, and should also occur outside the classroom. Using online learning components to supplement a classroom-based course can extend, facilitate, and support learning beyond the three hours a week that students spend in the classroom.

After class is dismissed and the learners leave the classroom, each is on his or her own to study the material discussed during class, to *learn* the information shared, and to adapt the concepts learned to deliver an assignment. Supplementing the classroom with online learning components can provide support to students during this time, providing virtual one-on-one instruction, contact, and support with the instructor or with fellow students.

Also clear in the literature (Carlin, 2003; Reasons, 2004; Schmidt & Sullivan, 2004) is the principle that the most effective hybrid courses preserve the traditional classroom learner's preference to attend a traditional classroom while focusing on maximizing the classroom learning experience by moving course administrative tasks online. Hybrid courses should not be viewed as a threat to traditional classroom courses because hybrids are designed to *support and enhance the traditional classroom learning experience,* not replace it. Learners who choose to take traditional classroom format

courses may do so because they want the face-to-face interaction and support of the facilitator and their fellow learners. The hybrid format must respect learners' wishes to meet in face-to-face classroom sessions. The hybrid format should not take away the critically important role of the traditional classroom but, rather, supplement and enhance the role of the traditional classroom to most fully support the learning process.

As a result, the most effective hybrid courses use online learning tools and components that allow the face-to-face classroom sessions to maximize the learning experience. According to the literature, the goal of using online components to maximize the learning experience within the traditional classroom can be supported in several ways using online learning components (Farrior & Gallagher, 2000; Frey, Faul & Yankelov, 2003).

Specifically, time-consuming and rather personal administrative tasks such as assignments and assessment feedback can be moved to a *secure and private environment online* (Farrior & Gallagher, 2000; Frey, Faul & Yankelov, 2003). Moving administrative tasks to continuous availability online outside of the classroom frees time during the traditional class meeting that would otherwise be spent on submitting and returning assignments, checking grades, and similar administrative tasks. Doing so allows more of the limited classroom meeting time to be devoted to course content and to focus on engaging with the course content.

Such a strategy may also support confidentiality and respect the privacy of individual learners regarding their assessments and progress through the course. Students receive their respective assignments and feedback personally and do not accidentally see anyone else's individual scores or reactions to their scores. Using online tools, the

facilitator may also allow individual students to view class statistics to see how they performed compared to the class as a whole. Using these tools, individual learners may also request additional feedback or support from the facilitator regarding graded assignments and assessments. Additionally, online communications tools allow learners to privately communicate with facilitators, asking questions that they may not feel comfortable asking in a group setting such as questions about their grades and clarification of content. The same tools allow facilitators to customize assessment feedback and comments to individual learners in a private setting.

Outside of the classroom, learners can determine due dates for assignments and assessments, determine their personal pace for studying and working, and navigate their progress through the course. Online learning tools and components that support these factors are assignment drop boxes with instructions, comments, and attachments; course calendars with due dates for assignments and assessments; and an online grade book that records individual learners' scores to date and statistics on their performance compared to their classroom peers.

Using these online tools, learners can submit their assignments privately online when they complete the assignment instead of later, during the next classroom meeting. Using an assignment drop box or similar tool minimizes chances of the assignment being lost, misplaced, or damaged before being submitted during a classroom meeting, relieving learners of distractions and stress that can interfere with learning. Learners may also retrieve their scores and read personal feedback from the facilitator regarding student performance. The online format also provides a permanent and ongoing record of progress so details are not lost. It should be pointed out, however, that some learners may

prefer to submit assignments during the classroom and their preferences should be accommodated since they chose a course that has traditional classroom meetings.

Second, the most effective hybrid courses maximize the traditional classroom learning environment by *helping learners prepare for classroom sessions*. Online learning tools and components can provide ongoing and dual access to course content and navigation. Learners can download instructor presentations before classroom meetings, bringing the presentation handouts to class. Such preparation for class allows learners to then take strategic rather than copious notes to supplement the presentation information (Blake, 2000; Byrne, 1997; Galloway, 1998; McEwen, 2001; NcNeil & Robin, 2000). As a result, they can spend more time interacting in the classroom with the facilitator and the content. The same is true for student presentations if learners are presenting content during traditional classroom meetings.

The dual access to course content and navigation also supports learners who cannot attend a class session due to illness, transportation, and similar reasons, allowing them to minimize the impact of the classroom attendance disruption and focus on learning content missed during that session before the next session occurs.

Third, hybrid courses provide online communications tools that provide *timely interaction and exchange of information outside of the classroom* between a learner, the facilitator, and peer learners to clarify information or due dates, to overcome individual issues, or to further interact with course content (Al-Jar, 2004; Aspden & Helm, 2005; Bloch, 2003; Boles, 1999; Cairncross, 1997; Frey, Faul & Yankelov, 2003; Garrison & Anderson, 2003; Hannon, 20001; Lam, 2000; Palloff & Pratt, 1999; Poling, 1994; Singhal, 1998; Smith, 2004; White and LeCornu, 2002; Wild & Winniford, 1993; Zha,

Kelly, Park, & Fitzgerald, 2006). Online learning tools and components that support this are email access from the learner to the facilitators and to other learners, chat rooms, discussion boards (also called threaded discussions), and private tutoring. Having access to others between classroom meetings can provide a sense of support and security for learners, again relieving them of some distractions and stress that can interfere with learning. The online communications tools also support learners who are working in teams to prepare assignments for upcoming classroom sessions.

These tools may be especially helpful in courses where the traditional instructional environment is unable to fully engage learners for classroom reasons such as when the class is very large in size or uses compressed video to link various locations; for when the course content is highly complex and difficult to understand; and for personal learner reasons including culture, personality, disabilities, or shyness. In such cases, online learning components can be particularly helpful when course content is very extensive or complex and learners could benefit from continued interaction between classroom meetings, continuing the learning experience beyond the time and space of the traditional classroom.

Fourth, hybrid courses can provide online learning tools that *help the individual learner interact directly with course content and with additional learning resources* between classroom meetings (Everhart, 2005; Frey, Faul, & Yankelov, 2003; Farrior & Gallagher, 2000; Kerres & DeWitt, 2003). Access and links to online libraries and resources can streamline the process for learners to complete assignments. Online self-assessment quizzes help individual learners determine their knowledge of the course

content and may be particularly helpful in courses where success includes rote learning of definitions, procedures, and sequences.

Fifth, the most effective hybrid courses are *strategically designed* by facilitators before the course begins to meet the needs of disparate learners (Farrior & Gallagher, 2000; Mortera-Gutierrez, 2006; Smith, 1999). Syllabi and other course information documents are posted online and available before the course begins. Components of learning tools used within the classroom and those available online are determined before the course begins and are designed to best facilitate the learning process throughout the course. Content may be delivered online using written words, audio and video clips, interactive electronic means, and similar formats.

Finally, instructors teaching hybrid courses understand that their *students chose the face-to-face classroom format for a reason*. That reason may include the student's comfort level with the traditional format rather than an online format. Students choosing traditional courses may have challenges using online learning tools including limited access, technology skills, or comfort levels. Effective hybrid format instructors understand that students may have limitations regarding the use of online components and strive to ensure that online components used always support rather than detract from learning and do not penalize students for problems handling technology. They may accomplish this in numerous ways including providing dual methods to submit assignments online as well as in person when the class meets, and working with students through email and instant message as well as in person during office hours. They may also provide support and instruction to help students learn how to access and use the course materials online. They are particularly sensitive and careful to not require online-

only examinations and assignments where poor technical skills can penalize students'

performance in class. As an example, instructors may choose to offer some online

quizzes that may be taken repeatedly and be used as a learning tool rather than taken once

and used as an assessment tool. Authentic assessments ensure that students are tested

over their knowledge of the course material, not their technology access or skills in using

the assessment tool.

The literature-based characteristics of effective hybrid courses are summarized

below in Table 7.

Table 7
Characteristics of Effective Hybrid Courses as Identified in Current Literature

Characteristic of an Effective Hybrid Course	Comments
Maximize classroom time for learning by moving administrative tasks online	Provides greater privacy regarding individual performance and 24-hour availability to information required to navigate the course and plan assignments
Maximize classroom learning environments by helping students prepare in advance for classroom meetings.	Online learning tools and components can provide ongoing and dual access (where possible) to course content and navigation
Provide online communications tools that provide timely interaction outside of the classroom between the student, their peers, and the instructor	Bridges Differences between classroom meetings to clarify information or assignments, to overcome individual issues, or to further interact with course content.
Provide online learning tools that support and encourage students to interact with course content and subject matter between classroom meetings.	Access and links to online libraries can streamline the process for learners to complete assignments. Examples include self-assessment quizzes that can be taken repeatedly.
Design the hybrid course before the course begins to strategically meet the needs of disparate learners.	Syllabi are posted online and available before the course begins. Learning components used in the classroom and online are determined before the course begins and are designed to best facilitate the learning process

Ensure that any online components used always support rather than detract from learning and do not penalize students' technology performance.	They may be accomplished in numerous ways including providing dual methods to access and submit assignments and assessments, ensuring students are assessed in their knowledge of course content rather than technical access or skills.

Research Question #2: Demographic Profile of Full-time Business Faculty

The second research question of this study asked, "What is the demographic profile of full-time business faculty teaching in Oklahoma's comprehensive and regional public universities?"

Descriptive statistics were used to address this research question. The descriptive statistics were calculated for the demographic information provided by survey respondents. The demographic data were subsequently used to cross-tabulate data regarding respondents' ratings of the importance and use of the 19 online learning components identified in this study.

A total of 111 educators responded to the survey. Of that number, 11 self-reported that they were not full-time business faculty member respondents at Oklahoma's comprehensive and regional public universities; as a result, their responses were not included in the study results. Of the total respondents, 100 qualified as full-time business faculty member respondents at comprehensive and regional public universities in Oklahoma. All the statistics calculated for this study were based on the responses of this sample of 100 educators. The demographic profile of study participants is shown below in Table 8.

Table 8

Demographic Profile of Study Sample (N=100)

Demographic Variable	n/% (n=% for N=100)
Tenured Faculty	
Yes	64
No	36
Rank Held	
Professor	40
Associate Professor	33
Assistant Professor	19
Instructor	8
Gender	
Male	63
Female	34
No Response	3
Age	
20-29	1
30-39	7
40-49	26
50-59	36
60-69	28
No Response	2
Technology Skill Level (Self-Assessed)	
Novice	12
Fairly Skilled	60
Power Users	28
No Response	1
Internet Access Type	
Dial-Up	1
High Speed	99
Experience in Teaching Hybrid Courses	
0-3 Courses	44
4-7 Courses	21
8 or more Courses	34
No Response	1
Currently Teaching a Hybrid Course	
Yes	81
No	19
% of Current Courses That Are Hybrids	
0-25%	33
26-50%	14
51-75%	10
76-100%	42

In the study's sample, the typical full-time business faculty member was a tenured male age 40-70, who was most likely to be ranked as a professor or associate professor. He considered himself to be fairly skilled when it comes to computer and Internet technology and was currently teaching a hybrid course. He was as likely to have been either relatively new to the hybrid format concept, having only taught 0-3 hybrid courses (44%), or have used them extensively, having taught 8 or more courses (34%). Similarly, either less than 25% or more than 75% of the courses he now taught were hybrid courses.

Research question #3: Importance of Common Online Learning Components

The third research question of this study asked, "What is perceived importance of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?" An online survey instrument (see Appendix A) was used to collect this information, and the obtained importance data are reported here with frequencies and descriptive statistics. The importance data are also analyzed by relating them to the demographic variables by cross-tabulations and chi-square statistics.

Descriptive statistics by perceived importance

The descriptive statistics were calculated for the demographic information provided by study respondents and include the descriptive statistics regarding respondents' ratings of the importance of the 19 learning components identified in this study. For descriptive examination of relationships between demographic variables and importance of the 19 online components, cross tabulations were calculated. For inferential extension of these relationships to the population, chi-squares were calculated.

In order to obtain meaningful and accurate chi-square output, the rating choices for importance of online components were collapsed from 5 to 3 categories (very important and important; unimportant and very unimportant; and not applicable). Similarly, the rating choices for use of online components in research question #4 were also collapsed from 5 to 3 categories (very often and often; sometimes and rarely; and not applicable). In addition, the categories for age were collapsed from 5 categories (20-29, 30-39, 40-49, 50-59, and 60-69) to 2 categories (20-49 and 50-69). These collapses or consolidations of response categories allowed data cells of sufficient size (i.e., frequencies) for meaningful and accurate chi-square metrics.

Table 9 below shows the frequency distribution of respondents' ratings of the importance of the 19 online learning components in hybrid courses.

Table 9

Importance of Online Learning Components on a 5-point Scale

	Very Important (1)	Important (2)	Unimportant (3)	Very Unimportant (4)	Not Applicable (5)	No Answer	Mean	Standard Deviation
Email	60	21	5	3	9	2	1.449	1.168
Discussion boards	11	22	25	21	20	1	2.273	1.449
Web logs (blogs)	1	7	28	28	34	2	2.959	1.519
Post course documents	51	17	6	6	17	3	1.825	1.507
Submit course assignments	38	28	8	7	19	1	1.929	1.547
Email access between students	29	35	14	8	13	1	1.758	1.333
Instructor presentations	29	25	20	6	19	1	2.030	1.515
Online grade books	45	14	12	10	18	1	1.949	1.501
Live chats	2	9	28	29	30	2	2.816	1.488
Group chat or email	9	24	20	22	24	1	2.404	1.538
Instant message programs	2	7	28	29	33	1	2.919	1.502
Electronic library	31	21	10	12	23	3	2.196	1.624
Online lecture notes	35	22	16	7	18	2	1.969	1.502
Online exams or quizzes	23	16	17	16	27	1	2.424	1.642
Calendar	14	26	18	13	28	1	2.434	1.673
Calendar with due date reminders	14	28	18	12	26	2	2.367	1.646
Online bookmarks or links	9	31	21	12	26	1	2.384	1.627
Student home pages	1	7	26	30	33	3	2.938	1.513
Student presentations online	3	22	19	25	30	1	2.667	1.597

When ranked according to mean importance rating, the list of online learning components appears (see Table 10). According to the rank ordering, the oldest and most commonly used technologies were perceived as the most important online learning components for hybrid courses. With the exception of email between students, these tools are also the most instructor-centered, providing one-way, instructor-to-learner communications. Conversely, newer technologies that are interactive and student-centered - such as blogs, instant message, and live chats - were ranked as relatively less important.

Table 10
Rank Ordering of Online Learning Components by Importance

	Mean
Email	1.449
Email access between students	1.758
Post course documents	1.825
Submit course assignments	1.929
Online grade books	1.949
Online lecture notes	1.969
Instructor presentations	2.030
Electronic library	2.196
Discussion boards	2.273
Calendar with due date reminders	2.367
Online bookmarks or links	2.384
Group chat or email	2.404
Online exams or quizzes	2.424
Calendar	2.434
Student presentations online	2.667
Live chats	2.816
Instant message programs	2.919
Student home pages	2.938
Web logs (blogs)	2.959

Importance of Online Learning Components by Demographic Variables:

Cross Tabulations and Chi-Squares

Cross tabulations and chi-squares were calculated for demographic variables

except type of Internet access (because 99 out of 100 respondents have high-speed

Internet access and only one used dial-up Internet access). The importance ratings used

were very important/important, unimportant/very unimportant, and not applicable.

Cross Tabulations and Chi-Square of Tenure by Importance

Cross tabulations were calculated by faculty tenure for each of the 19 learning

components identified in this study (see Table 11). The output indicates that none of the

cross tabulations of tenure by importance are statistically significant at the 0.05 level.

Two online learning components were statistically significant at the .10 level: email ($p=$

.072) and email access between students ($p=$ .086). These data indicate no significant

relationships between faculty tenure status and rating of importance of online

components. The exception may be email components, for which untenured faculty may

be less likely to give ratings of unimportant and not applicable.

Table 11
Cross Tabulations and Chi-Square of Tenure by Importance of Online Learning Components

		Very Important and Important	Unimportant and Very Unimportant	NA	Pearson Chi-Square (χ^2) and df	p-level
Email	Tenure	48	8	6	χ^2=5.249; df=2	.072**
	No Tenure	33	0	3		
Discussion boards	Tenure	22	28	14	χ^2=.597; df=2	.742
	No Tenure	11	18	6		
Web logs (blogs)	Tenure	4	36	22	χ^2=.661; df=2	.718
	No Tenure	4	20	12		

Post course documents	Tenure	44	6	12	χ^2=1.354; df=2	.508
	No Tenure	24	6	5		
Submit course assignments	Tenure	40	10	13	χ^2=.233; df=2	.890
	No Tenure	24	6	6		
Email access between students	Tenure	35	18	10	χ^2=4.895; df=2	.086**
	No Tenure	28	5	3		
Instructor presentations	Tenure	33	16	14	χ^2=1.027; df=2	.598
	No Tenure	21	10	5		
Online grade books	Tenure	36	15	12	χ^2=.443; df=2	.801
	No Tenure	23	7	6		
Live chats	Tenure	7	38	17	χ^2=.884; df=2	.643
	No Tenure	3	20	13		
Group chat or email	Tenure	17	31	15	χ^2=2.870; df=2	.238
	No Tenure	15	12	9		
Instant message programs	Tenure	6	38	19	χ^2=1.059; df=2	.589
	No Tenure	2	20	14		
Electronic library access	Tenure	31	18	13	χ^2=1.903; df=2	.386
	No Tenure	19	6	10		
Online lecture notes	Tenure	39	14	10	χ^2=1.139; df=2	.566
	No Tenure	18	9	8		
Online exams or quizzes	Tenure	21	24	18	χ^2=2.901; df=2	.234
	No Tenure	18	9	9		
Calendar	Tenure	36	15	12	χ^2=.342; df=2	.801
	No Tenure	23	7	6		
Calendar with due date reminders	Tenure	25	21	16	χ^2=.872; df=2	.647
	No Tenure	17	9	10		
Online bookmarks or links	Tenure	25	23	15	χ^2=.943; df=2	.624
	No Tenure	15	10	11		
Student home pages	Tenure	6	36	19	χ^2=.949; df=2	.622
	No Tenure	2	20	14		
Student presentations online	Tenure	15	30	18	χ^2=.363; df=2	.834
	No Tenure	9	15	12		

$*p < .05$
$**p < .10$

Cross Tabulations and Chi-Square of Faculty Rank by Importance

Cross tabulations and chi-squares were calculated by faculty rank for each of the 19 learning components identified in this study (see Table 12). The output indicates that none of the chi-squares of faculty rank by importance are statistically significant at the

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p=0.05 level or even at .10 trend level. These data indicate no significant relationships

between faculty rank and importance ratings of online components.

Table 12

Cross Tabulations of Rank by Importance of Online Learning Components

		Very Important and Important	Unimpor-tant and Very Unimpor-tant	NA	Pearson Chi-Square (χ^2) and df	*p*-level
Email	Professor	30	4	5	χ^2=5.345; df=6	.500
	Associate Professor	26	4	2		
	Assistant Professor	17	0	2		
	Instructor	8	0	0		
Discussion boards	Professor	13	17	10	χ^2=1.548; df=6	.956
	Associate Professor	11	17	5		
	Assistant Professor	6	8	4		
	Instructor	3	4	1		
Web logs (blogs)	Professor	3	23	12	χ^2=3.317; df=6	.768
	Associate Professor	1	20	12		
	Assistant Professor	3	9	7		
	Instructor	1	4	3		
Post course documents	Professor	26	5	8	χ^2=2.255; df=6	.895
	Associate Professor	23	3	6		
	Assistant Professor	13	3	3		
	Instructor	6	1	0		
Submit assign-ments online	Professor	21	8	10	χ^2=6.635; df=6	.356
	Associate Professor	25	3	5		
	Assistant Professor	11	4	4		
	Instructor	7	1	0		
Email access between students	Professor	19	13	7	χ^2=7.686; df=6	.262
	Associate Professor	23	6	4		
	Assistant Professor	15	2	2		
	Instructor	6	2	0		
Instructor presen-tations	Professor	20	9	10	χ^2=4.460; df=6	.615
	Associate Professor	17	11	5		
	Assistant Professor	11	4	4		
	Instructor	6	2	0		
Online grade books	Professor	19	10	10	χ^2=6.722; df=6	.347
	Associate Professor	24	5	4		
	Assistant Professor	10	5	4		
	Instructor	6	2	0		

Live chats	Professor	5	22	11	χ^2=6.537; df=6	.366
	Associate Professor	2	23	8		
	Assistant Professor	1	9	9		
	Instructor	2	4	2		
Group chat or email	Professor	9	18	12	χ^2=7.426; df=6	.283
	Associate Professor	13	15	5		
	Assistant Professor	5	8	6		
	Instructor	5	2	1		
Instant message	Professor	3	23	13	χ^2=3.289; df=6	.772
	Associate Professor	3	22	8		
	Assistant Professor	1	9	9		
	Instructor	1	4	3		
Electronic library access	Professor	22	7	8	χ^2=7.349; df=6	.290
	Associate Professor	13	13	7		
	Assistant Professor	11	2	6		
	Instructor	4	2	1		
Online lecture notes	Professor	22	8	9	χ^2=1.937; df=6	.925
	Associate Professor	20	9	4		
	Assistant Professor	10	4	4		
	Instructor	5	2	1		
Online exams or quizzes	Professor	11	15	13	χ^2=6.576; df=6	.362
	Associate Professor	14	11	8		
	Assistant Professor	8	6	5		
	Instructor	6	1	1		
Online calendar	Professor	16	10	1	χ^2=2.154; df=6	.905
	Associate Professor	15	9	0		
	Assistant Professor	6	7	0		
	Instructor	4	3	0		
Calendar with due date	Professor	17	11	10	χ^2=2.062; df=6	.914
	Associate Professor	14	11	8		
	Assistant Professor	7	5	7		
	Instructor	4	3	1		
Online bookmarks or links	Professor	15	13	11	χ^2=6.154; df=6	.406
	Associate Professor	14	13	6		
	Assistant Professor	8	3	8		
	Instructor	3	4	1		
Student home pages	Professor	5	21	12	χ^2=4.617; df=6	.594
	Associate Professor	2	20	10		
	Assistant Professor	0	10	9		
	Instructor	1	5	2		
Student presentations online	Professor	9	18	12	χ^2=3.915; df=6	.688
	Associate Professor	7	17	9		
	Assistant Professor	4	8	7		
	Instructor	4	2	2		

*p < .05
**p < .10

<u>Cross Tabulations and Chi-Squares of Gender by Importance</u>

Cross tabulations and chi squares were calculated by gender for each of the 19

learning components identified in this study (see Table 13). The output indicates that 6 of

the online learning components' cross tabulations of gender by importance were

statistically significant at the 0.05 level: submitting course assignments online (*p*=.007),

email access between students (*p*=.012), the posting of instructor presentations online

(*p*=.040), an online grade book (*p*=.003), online bookmarks or links (*p*=.05), and instant

message programs (*p*=.05). The data indicate significant relationships between gender

and importance ratings for these online components.

Table 13
Cross Tabulations and Chi-Squares of Gender by Importance of Online Learning Components

		Very Important and Important	Unimportant and Very Unimportant	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	Male	47	6	8	χ^2=3.321; *df*=2	.190
	Female	31	2	1		
Discussion boards	Male	19	27	16	χ^2=2.796; *df*=2	.247
	Female	11	19	4		
Web logs (blogs)	Male	5	31	25	χ^2=2.050; *df*=2	.359
	Female	3	22	9		
Post course documents	Male	38	9	13	χ^2=2.636; *df*=2	.268
	Female	27	3	4		
Submit course assignments	Male	33	13	16	χ^2=9.895; *df*=2	.007*
	Female	29	2	3		
Email access between students	Male	33	17	12	χ^2=8.849; *df*=2	.012*
	Female	28	5	1		
Instructor presentations	Male	30	15	17	χ^2=6.455; *df*=2	.040*
	Female	22	10	2		
Online grade book	Male	29	18	15	χ^2=11.548; *df*=2	.003*
	Female	28	3	3		

Live chats	Male	5	35	21	$\chi^2=.802$; $df=2$	.670
	Female	4	21	9		
Group chat or email	Male	17	27	18	$\chi^2=1.962$; $df=2$	.375
	Female	13	15	6		
Instant message programs	Male	2	35	25	$\chi^2=5.877$; $df=2$	.05*
	Female	5	21	8		
Electronic library access	Male	26	19	16	$\chi^2=4.258$; $df=2$	.119
	Female	21	5	7		
Online lecture notes	Male	34	14	13	$\chi^2=.643$; $df=2$	.725
	Female	21	8	5		
Online exams or quizzes	Male	22	21	19	$\chi^2=1.274$; $df=2$	.529
	Female	16	10	8		
Online calendar	Male	21	19	22	$\chi^2=4.372$; $df=2$	.112
	Female	18	10	6		
Calendar with due date reminders	Male	22	19	20	$\chi^2=3.327$; $df=2$	.190
	Female	18	10	6		
Online book-marks or links	Male	19	23	20	$\chi^2=6.008$; $df=2$	.05*
	Female	19	9	6		
Student home pages	Male	4	32	24	$\chi^2=2.068$; $df=2$	.356
	Female	4	21	9		
Student presenta-tions online	Male	13	27	22	$\chi^2=1.718$; $df=2$	.424
	Female	10	16	8		

*$p < .05$

A higher percentage of females than males considered each of the five statistically significant online learning components to be very important or important. Submitting course assignments online was considered to be very important or important by 85% of all females responding but only by 53% of all males responding. Email access between students was considered to be very important or important by 82% of all females responding but by only 52% of all males responding. About 82% of all females responding also rated an online grade book very important or important compared to 46.7% of all males responding to the survey. The majority of females responding (64.7%) also considered the posting of instructor presentations online to be very important or important compared to only 48% of males responding to the survey. While the majority of all respondents considered instant message programs to be unimportant, very

unimportant, or not applicable, 14.7% of all female respondents but only 3% of all male

respondents considered instant message to be very important or important.

Cross Tabulations and Chi Squares of Age by Importance

Cross tabulations and chi squares were calculated by age for each of the 19

learning components identified in this study (see Table 14). The output indicates that 10

of the online learning components' cross tabulations were found to be statistically

significant at the .05 level: email (p=.0.03), discussion boards (p=.015), blogs (p=.004),

posting course documents online (p=.007), group chat or email (p=.031), instant message

(p=.005), online calendar (p=.021), calendar with due dates (p=.026), online bookmarks

or links (p=.046), student home pages (p=.006), and posting student presentations online

(p=.006). Three other components were significant at .10 trend level: submitting

assignments online (p=.10), online lecture notes (p=.10), and online quizzes and exams

(p=.10).

Table 14

Cross Tabulations and Chi Squares: Age by Importance of Online Learning Components

		Very Important and Important	Unimportant and Very Unimpor- tant	NA	Pearson Chi- Square (χ^2) and *df*	*p*-level
Email	20-49	30	0	1	χ^2=6.829;	.033*
	50-69	49	8	8	*df*=2	
Discussion boards	20-49	12	19	1	χ^2=8.340;	.015*
	50-69	20	27	18	*df*=2	
Web logs (blogs)	20-49	1	25	4	χ^2=11.221;	.004*
	50-69	7	31	28	*df*=2	
Post course documents	20-49	28	2	1	χ^2=9.804;	.007*
	50-69	38	10	16	*df*=2	
Submit assignments online	20-49	24	5	2	χ^2=4.692;	.096**
	50-69	39	11	16	*df*=2	
Email access between students	20-49	22	8	1	χ^2=3.519;	.172
	50-69	40	15	11	*df*=2	

Instructor presentations	20-49	20	8	3	χ^2=3.313; df=2	.191
	50-69	32	18	16		
Online grade books	20-49	21	8	2	χ^2=3.866; df=2	.145
	50-69	27	14	15		
Live chats	20-49	5	35	21	χ^2=12.314; df=2	.670
	50-69	4	21	9		
Group chat or email	20-49	13	16	2	χ^2=6.941; df=2	.031*
	50-69	19	27	20		
Instant message	20-49	4	24	3	χ^2=10.642; df=2	.005*
	50-69	4	34	28		
Electronic library access	20-49	16	9	5	χ^2=1.488; df=2	.475
	50-69	32	15	16		
Online lecture notes	20-49	21	8	2	χ^2=4.631; df=2	.099**
	50-69	34	15	16		
Online exams or quizzes	20-49	13	14	4	χ^2=4.624; df=2	.099**
	50-69	26	19	21		
Online calendar	20-49	15	13	3	χ^2=7.746; df=2	.021*
	50-69	25	17	24		
Calendar with due date	20-49	17	11	3	χ^2=7.291; df=2	.026*
	50-69	23	19	23		
Online bookmarks or links	20-49	15	13	3	χ^2=6.177; df=2	.046*
	50-69	24	20	22		
Student home pages	20-49	3	24	3	χ^2=10.309; df=2	.006*
	50-69	5	32	28		
Student presentations online	20-49	7	21	3	χ^2=10.374; df=2	.006*
	50-69	17	24	25		

* $p < .05$
** $p < .10$

All but 4 components had a chi-square significance of less than p=.10. The 4 components with a chi-square probability greater than .10 were: email access between students (p=.172), posting instructor presentations online (p=.191), an online grade book (p=.145), and electronic library access (p=.475).

About twice as many faculty member respondents over age 50 responded to the survey than did faculty member respondents under age 50, and respondents over age 50 were more likely to rate a component as *not applicable*. Even so, a higher percentage of the younger faculty member respondents valued the following components: email

(96.77% of younger faculty compared to 75.39% of older faculty), discussion boards (37.5% of younger faculty compared to 30.77% of older faculty), posting course documents online (90.32% compared to 59.38%), group chat or email (41.94% compared to 28.79%), instant message programs (12.9% compared to 6.06%), an online calendar (48.38% compared to 37.88%), an online calendar with due dates (54.84% compared to 35.39%), online bookmarks or links (48.39% compared to 36.36%), and student home pages (10% compared to 7.69%).

The two exceptions were web logs (in which 10% of faculty member respondents age 50 or older considered blogs to be very important or important compared to only 3.33% of younger faculty) and posting student presentations online (in which 25.76% of faculty member respondents age 50 or older considered them to be very important or important compared to 22.58% of younger faculty).

Younger faculty also valued the three components that were found to be statistically significant at the .10 trend level. The submitting of assignments online was valued by 77.4% of younger faculty and 59.09% of older faculty. Online lecture notes were valued by 67.72% of younger faculty and 52.31% of older faculty. Online exams and quizzes were valued by 41.94% of younger faculty and 39.39% of older faculty.

Cross Tabulations and Chi Squares of Technical Skill Level by Importance

Cross tabulations and chi squares were calculated by self-assessed technical skill level for each of the 19 learning components identified in this study (see Table 15). No respondents selected *none* as their level of self-assessed technical skill so that option was not included in Table 10 or in the reported statistical analysis. When chi-square was calculated for technical skill by importance of the 19 online learning components, 3 were

not calculated due to very small frequencies: discussion boards, submitting assignments online, and an online calendar with due dates. For the remaining items, all but three were found to be statistically significant at the .05 level. Those components statistically significant at the .05 level include: blogs (p=.026), posting course documents online (p=.002), email access between students (p=.010), the posting of instructor presentations online (p=.002), an online grade book (p=.007), group chat or email (p=.006), instant message (p=.017), electronic library access (p=.043), online lecture notes (p=.042), online exams or quizzes (p=.026), an online calendar (p=.001), online live chats (p=.002), and online bookmarks and links (p=.001).

Table 15
Cross Tabulations and Chi Squares: Technical Skill by Importance of Online Learning Components

		Very Important and Important	Unimportant and Very Unimpor-tant	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	Novice	7	1	3	χ^2=7.248; *df*=4	.123
	Fairly skilled	48	5	6		
	Power user	25	2	0		
Discussion boards	Novice	0	5	7	χ^2=20.179; *df*=4	NA***
	Fairly skilled	19	27	13		
	Power user	13	14	0		
Web logs (blogs)	Novice	0	4	8	χ^2=11.030; *df*=4	.026*
	Fairly skilled	7	31	21		
	Power user	1	20	5		
Post course documents	Novice	3	4	5	χ^2=17.420; *df*=4	.002*
	Fairly skilled	41	7	11		
	Power user	23	1	1		
Submit assignments online	Novice	2	5	5	χ^2=22.039; *df*=4	NA***
	Fairly skilled	37	9	14		
	Power user	24	2	0		
Email access between students	Novice	3	5	4	χ^2=13.240; *df*=4	.010*
	Fairly skilled	38	13	9		
	Power user	21	5	0		

Instructor presentations	Novice	3	4	5	χ^2=16.697; df=4	.002*
	Fairly skilled	29	17	14		
	Power user	22	4	0		
Online grade books	Novice	4	2	6	χ^2=14.037; df=4	.007*
	Fairly skilled	35	13	12		
	Power user	19	7	0		
Live chats	Novice	0	4	6	χ^2=17.093; df=4	.002*
	Fairly skilled	6	32	21		
	Power user	4	21	1		
Group chat or email	Novice	1	4	7	χ^2=14.391; df=4	.006*
	Fairly skilled	20	24	16		
	Power user	10	15	1		
Instant message	Novice	0	4	8	χ^2=12.115; df=4	.017*
	Fairly skilled	5	33	22		
	Power user	3	20	3		
Electronic library access	Novice	3	3	6	χ^2=9.854; df=4	.043*
	Fairly skilled	32	12	14		
	Power user	15	9	2		
Online lecture notes	Novice	4	3	5	χ^2=9.909; df=4	.042*
	Fairly skilled	2	15	12		
	Power user	20	5	1		
Online exams or quizzes	Novice	1	5	6	χ^2=11.006; df=4	.026*
	Fairly skilled	27	15	18		
	Power user	11	12	3		
Online calendar	Novice	2	3	7	χ^2=17.825; df=4	.001*
	Fairly skilled	20	20	20		
	Power user	18	7	1		
Calendar with due date	Novice	1	4	7	χ^2=21.398; df=4	NA***
	Fairly skilled	22	18	19		
	Power user	19	7	0		
Online bookmarks/ links	Novice	0	4	8	χ^2=19.337; df=4	.001*
	Fairly skilled	25	18	17		
	Power user	14	11	1		
Student home pages	Novice	0	5	6	χ^2=7.265; df=4	.123
	Fairly skilled	5	31	23		
	Power user	3	19	4		
Student presentations online	Novice	2	4	6	χ^2=5.402; df=4	.248
	Fairly skilled	15	25	20		
	Power user	7	15	4		

* $p < .05$
** $p < .10$
*** Not appropriate for chi square calculations due to small cell frequencies.

The data suggest that as technology skills increased and improved, faculty member respondents were more likely to perceive as important the following online learning components:

- posting course documents online (rated as very important or important by 92% of power users compared to 69.42% of fairly skilled users and 25% of novices)

- submitting assignments online (92.3% of power users compared to 61.67% of fairly skilled users and 16.67% of novices)

- email access between students (80.77% of power users compared to 63.34% of fairly skilled users and 25% of novices)

- posting instructor presentations online (84.62% of power users compared to 48.34% of fairly skilled users and 25% of novices)

- online grade books (73.07% of power users compared to 58.34% of fairly skilled users and 33.34% of novices)

- live chats (15.39% of power users compared to 10.17% of fairly skilled users and 0% of novices)

- group chat or email (38.46% of power users and 33.34% of fairly skilled users and 8.34% of novices)

- instant message (11.54% of power users compared to 8.34% of fairly skilled users and 0% of novices)

- electronic library access (57.69% of power users and 55.17% of fairly skilled users and 25% of novices)

- online lecture notes (76.92% of power users compared to 33.34% of novices and 6.9% of fairly skilled users

- an online calendar (69.23% of power users compared to 33.34 of fairly skilled users and 16.67% of novices)

- and online calendars with due dates (53.85% of power users compared to 41.67% of fairly skilled users and 0% of novices).

More fairly skilled faculty (45%) valued online exams and quizzes than did power users (42.3%) or novices (8.34%). This could reflect awareness that students in hybrid courses have chosen the classroom environment rather than the online environment for reasons that may include a lack the technical skills to succeed in high-stakes activities online. *Authentic assessment should assess a student's learning rather than their technical skills or access*. More fairly skilled users (11.86%) also valued blogs than did power users (3.84%) and novices (0%).

Cross Tabulations and Chi Squares of Hybrid Course Experience by Importance

Cross tabulations and chi squares were calculated by hybrid course experience for each of the 19 learning components identified in this study (see Table 16). Experience categories were 0-3 hybrid courses taught, 4-7 hybrid courses taught, and 8 or more hybrid courses taught. Pearson chi-square calculations revealed that the perceived importance of several of the online learning components were statistically significant by hybrid course experience: email (p=.038), discussion boards (p=.014), submitting assignments online (p=.002), email access between students (p=.023), posting instructor presentations online (p=.016), an online grade book (p=.180), and group chat or email (p=.023). Three additional components had a chi-square probability at .10 trend level:

online exams or quizzes (*p*=.066), online bookmarks and links (*p*=.085), and an online

calendar with due dates (*p*=.099).

Table 16

Cross Tabulations and Chi Squares: Hybrid Course Experience by Online Learning Components

		Very Important and Important	Unimportant and Very Unimportant	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	0-3 hybrid courses	33	4	6	χ^2=10.133; *df*=4	.038*
	4-7 hybrid courses	14	4	2		
	8 or more courses	33	0	1		
Discussion boards	0-3 hybrid courses	7	24	13	χ^2=12.471; *df*=4	.014*
	4-7 hybrid courses	8	9	4		
	8 or more courses	17	13	3		
Web logs (blogs)	0-3 hybrid courses	2	25	16	χ^2=6.953; *df*=4	.138
	4-7 hybrid courses	0	13	8		
	8 or more courses	6	17	10		
Post course document	0-3 hybrid courses	28	6	9	χ^2=7.989; *df*=4	.092
	4-7 hybrid courses	15	0	6		
	8 or more courses	24	6	2		
Submit assignment online	0-3 hybrid courses	18	12	13	χ^2=17.407; *df*=4	.002*
	4-7 hybrid courses	16	2	3		
	8 or more courses	29	2	3		
Email access between students	0-3 hybrid courses	20	14	9	χ^2=11.358; *df*=4	.023*
	4-7 hybrid courses	14	4	3		
	8 or more courses	28	5	1		
Instructor presentations	0-3 hybrid courses	17	13	13	χ^2=12.156; *df*=4	.016*
	4-7 hybrid courses	13	3	5		
	8 or more courses	23	10	1		
Online grade books	0-3 hybrid courses	20	12	11	χ^2=6.269; *df*=4	.180*
	4-7 hybrid courses	14	3	4		
	8 or more courses	24	7	3		
Live chats	0-3 hybrid courses	2	25	15	χ^2=4.424; *df*=4	.352
	4-7 hybrid courses	3	10	8		
	8 or more courses	4	23	7		
Group chat or email	0-3 hybrid courses	6	24	13	χ^2=11.375; *df*=4	.023*
	4-7 hybrid courses	9	7	5		
	8 or more courses	16	12	6		

Instant message	0-3 hybrid courses	3	23	17	χ^2=1.869;	.760
	4-7 hybrid courses	2	12	7	df=4	
	8 or more courses	2	23	9		
Electronic library	0-3 hybrid courses	18	11	13	χ^2=3.119;	.538
	4-7 hybrid courses	11	5	5	df=4	
	8 or more courses	20	8	5		
Online lecture notes	0-3 hybrid courses	23	10	10	χ^2=2.662;	.616
	4-7 hybrid courses	14	3	4	df=4	
	8 or more courses	20	9	4		
Online exams or quizzes	0-3 hybrid courses	10	18	15	χ^2=8.830;	.066**
	4-7 hybrid courses	11	5	5	df=4	
	8 or more courses	18	9	7		
Online calendar	0-3 hybrid courses	14	15	14	χ^2=3.653;	.455
	4-7 hybrid courses	10	4	7	df=4	
	8 or more courses	16	11	7		
Calendar with due date	0-3 hybrid courses	12	16	14	χ^2=7.801;	.099**
	4-7 hybrid courses	12	3	6	df=4	
	8 or more courses	17	11	6		
Online bookmarks/ links	0-3 hybrid courses	12	18	13	χ^2=8.185;	.085**
	4-7 hybrid courses	8	6	7	df=4	
	8 or more courses	20	8	6		
Student home pages	0-3 hybrid courses	2	24	17	χ^2=4.605;	.330
	4-7 hybrid courses	1	10	8	df=4	
	8 or more courses	5	21	8		
Student presenta-tions online	0-3 hybrid courses	7	20	16	χ^2=6.815;	.146
	4-7 hybrid courses	7	6	8	df=4	
	8 or more courses	10	18	6		

* $p < .05$
** $p < .10$

According to these data, as a faculty member's hybrid course experience increased, so did the perceived importance of several online learning components – although not all of the statistically significant learning components were perceived to be important by the majority of all respondents. Submitting assignments online was perceived to be most important by faculty member respondents who had taught 8 or more hybrid courses (85.24%) compared to those who had taught 4-7 hybrid courses (76.19%) or 0-3 courses (41.86%). Email access between students was perceived to be most

important by faculty member respondents who had taught 8 or more hybrid courses (82.35%) compared to those who had taught 4-7 hybrid courses (66.67%) or 0-3 courses (46.51%). Online grade books were perceived to be most important by faculty member respondents who had taught 8 or more hybrid courses (70.59%) compared to those who had taught 4-7 hybrid courses (66.67%) or 0-3 courses (46.51%). Posting instructor presentations online was perceived to be most important by faculty member respondents who had taught 8 or more hybrid courses (67.65%) compared to those who had taught 4-7 hybrid courses (61.9%) or 0-3 courses (39.53%). Discussion boards were perceived to be most important by faculty member respondents who had taught 8 or more hybrid courses (51.15%) compared to those who had taught 4-7 hybrid courses (38.1%) or 0-3 courses (15.91%). Group chat or email was perceived to be most important by faculty member respondents who had taught 8 or more hybrid courses (47.06%) compared to those who had taught 4-7 hybrid courses (42.86%) or 0-3 courses (13.95%). Email was perceived to be most important by the faculty member respondents most experienced in teaching hybrid courses (97.06%) followed by those new to teaching hybrid courses with 0-3 courses' experience (76.74%) and those with 4-7 courses' experience (70%).

Three learning components were found to be statistically significant at the .10 trend level. Online exams or quizzes were perceived to be most important by the faculty member respondents most experienced in teaching hybrid courses (52.94%) followed extremely closely by those with 4-7 courses' experience (52.38%) and those relatively new to teaching hybrid courses (23.26%). Online bookmarks and links were perceived to be most important by the faculty member respondents most experienced in teaching hybrid courses (58.82%) followed by those with 4-7 courses' experience (38.1%) and

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those relatively new to teaching hybrid courses (27.9%). Calendars with due dates were perceived to be most important by faculty member respondents with experience teaching 4-7 hybrid courses (57.14%) followed by the most experienced faculty member respondents (50%) and the least experienced (28.57%).

It is also important to note that, when looking at the percentage of each group that uses various online learning components, chi-squares indicate somewhat of a grouping. It appears that, after teaching their third hybrid format course, business faculty respondents more highly value and more frequently use various online learning components in hybrid courses.

Cross Tabulations and Chi Squares of Internet Access Type by Importance

Cross tabulations and chi squares of Internet access type and importance of online learning components were not calculated because 99 out of the 100 respondents had high-speed Internet access and only one reported having dial-up access. Therefore, possible relationships between type of Internet access and rated importance of online learning components could not be examined in this study.

Cross tabulations and chi squares were not calculated for the 19 learning components by whether the respondent was currently teaching a hybrid course because so few respondents in the sample (n=19) were not currently teaching a hybrid course. Therefore, possible relationships between these variables could not be examined in this study.

Cross Tabulations and Chi Squares of Percent of Current Courses that are Hybrid by Importance

Cross tabulations and chi squares were calculated by percentage of current courses that were hybrid format for each of the 19 learning components identified in this study (see Table 17). When cross tabulated by the percentage of current hybrid courses taught by importance, the majority of the online learning components were found to be statistically significant at .05 level, including: email (p=.004), discussion boards (p=.001), submitting assignments online (p=.004), email access between students (p=.014), posting instructor presentations online (p=.004), online grade books (p=.002), live chats (p=.047), group chat or email (p=.011), electronic library access (p=.007), online lecture notes (p=.001), calendar with due dates (p=.039), and online bookmarks and links (p=.047). In addition, two components were significant at the .10 trend level: online quizzes or exams (p=.06) and instant messaging (p=.07).

Table 17
Cross Tabulation and Chi Squares: Percentage of Current Courses that are Hybrid Format by Importance of Online Learning Components

	Very Important and Important	Unimportant and Very Unimportant	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level

Email	0-25%	22	2	8	χ^2=18.833; df=6	.004*
	26-50%	10	3	1		
	51-75%	9	1	0		
	76-100%	39	2	0		
Discussion boards	0-25%	7	12	13	χ^2=23.716; df=6	.001*
	26-50%	1	11	2		
	51-75%	7	3	0		
	76-100%	18	19	5		
Web logs (blogs)	0-25%	4	14	14	χ^2=7.045; df=6	.317
	26-50%	0	10	4		
	51-75%	2	5	3		
	76-100%	2	26	13		
Post course documents	0-25%	16	5	10	χ^2=8.552; df=6	.200
	26-50%	10	2	2		
	51-75%	8	1	1		
	76-100%	33	4	4		
Submit assignments online	0-25%	12	7	13	χ^2=19.026; df=6	.004*
	26-50%	10	2	2		
	51-75%	9	1	0		
	76-100%	33	5	4		
Email access between students	0-25%	16	7	9	χ^2=15.941; df=6	.014*
	26-50%	6	6	2		
	51-75%	8	2	0		
	76-100%	33	7	2		
Instructor presentations	0-25%	10	10	12	χ^2=19.035; df=6	.004*
	26-50%	9	1	4		
	51-75%	8	2	0		
	76-100%	27	12	3		
Online grade books	0-25%	10	8	14	χ^2=29.599; df=6	.000*
	26-50%	12	1	1		
	51-75%	5	5	0		
	76-100%	31	8	3		
Live chats	0-25%	6	11	15	χ^2=12.773; df=6	.047*
	26-50%	1	9	3		
	51-75%	1	6	3		
	76-100%	2	31	9		
Group chat or email	0-25%	7	10	15	χ^2=16.634; df=6	.011*
	26-50%	4	9	1		
	51-75%	4	6	0		
	76-100%	17	17	8		
Instant message	0-25%	4	12	16	χ^2=11.802; df=6	.067*
	26-50%	1	9	4		
	51-75%	2	6	2		
	76-100%	1	30	11		

					χ²	p
Electronic library access	0-25%	11	8	13	χ^2=17.701; df=6	.007*
	26-50%	4	7	2		
	51-75%	7	2	0		
	76-100%	27	7	8		
Online lecture notes	0-25%	12	7	13	χ^2=21.717; df=6	.001*
	26-50%	7	6	1		
	51-75%	7	3	0		
	76-100%	31	6	4		
Online exams or quizzes	0-25%	8	10	14	χ^2=12.100; df=6	.060**
	26-50%	8	4	2		
	51-75%	7	3	0		
	76-100%	16	15	11		
Online calendar	0-25%	8	10	14	χ^2=8372; df=6	.212
	26-50%	6	5	3		
	51-75%	6	3	1		
	76-100%	21	11	10		
Calendar with due date	0-25%	8	9	15	χ^2=13.264; df=6	.039*
	26-50%	7	4	2		
	51-75%	7	3	0		
	76-100%	20	13	9		
Online bookmarks/ links	0-25%	9	9	14	χ^2=12.741; df=6	.047*
	26-50%	4	8	2		
	51-75%	4	3	3		
	76-100%	23	12	7		
Student home pages	0-25%	3	12	15	χ^2=7.144; df=6	.308
	26-50%	0	10	4		
	51-75%	1	7	2		
	76-100%	4	26	12		
Student presentations online	0-25%	4	12	16	χ^2=10.132; df=6	.119
	26-50%	4	7	3		
	51-75%	3	6	1		
	76-100%	13	19	10		

*$p < .05$
**$p < .10$

As a faculty member's percentage of hybrid courses increased, so did the perceived importance for the following four statistically significant online learning components: email, group email or chat, online lecture notes, and online bookmarks or links. Email was perceived to be most important by faculty member respondents with 76-100% of their courses being hybrid format (95.12%) followed by those with 51-75%

hybrid courses (90%), those with 26-50% hybrid courses (71.43%), and those with a 0-25% hybrid courses (68.75%). Online lecture notes were perceived to be most important by faculty member respondents with 76-100% of their courses being hybrid format (75.61%) followed by those with 51-75% hybrid courses (70%), those with 26-50% hybrid courses (50%), and those with a 0-25% hybrid courses (37.5%). Online bookmarks and links were perceived to be most important by faculty member respondents with 75-100% of their courses being hybrid format (54.76%) followed by those with 51-75% hybrid courses (40%), those with 26-50% hybrid courses (28.57%), and those with a 0-25% hybrid courses (28.13%). Group chat or email was perceived to be most important by faculty member respondents with 76-100% of their courses being hybrid format (40.47%) followed by those with 51-75% hybrid courses (40%), those with 26-50% hybrid courses (28.57%), and those with a 0-25% hybrid courses (21.88%).

Faculty member respondents with 51-75% of their courses being hybrid format perceived the following online learning components to be most important: submitting assignments online, email access between students, posting instructor presentations online, electronic library access, discussion boards, online calendars with due dates, and instant message programs. Submitting assignments online was perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (90%) followed by those teaching 76-100% (78.57%), those teaching 26-50% (71.5%), and those teaching 0-25% (37.5%). Email access between students was perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (80%) followed by those teaching 76-100% (78.57%), those teaching 26-50% (42.86%), and those teaching 0-25% (50%). Posting instructor

presentations online was perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (80%) followed equally by those teaching 76-100% (64.29%) and those teaching 26-50% (64.29%), and those teaching 0-25% (31.25%). Electronic library access was perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (77.78%) followed by those teaching 76-100% (64.29%) and those teaching 0-25% (34.38%), and those teaching 26-50% (30.77%). Discussion boards were perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (70%) followed by those teaching 76-100% (42.86%) and those teaching 0-25% (21.88%), and those teaching 26-50% (7.14%). Online calendars with due dates were perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (70%) followed by those teaching 26-50% (53.85%), those teaching 76-100% (47.62%), and those teaching 0-25% (25%). Instant message programs were perceived to be most important by faculty member respondents with 51-75% of current courses being hybrid courses (20%) followed by those teaching 0-25% (12.5%), those teaching 26-50% (7.14%), and those teaching 76-100% (2.38%).

In addition, online grade books were found to be statistically significant at the .10 trend level and were perceived to be most important by faculty member respondents with 26-50% (85.71%) of current courses being hybrid courses followed by those teaching 76-100% (73.81%), those teaching 51-75% (50%), and those teaching 0-25% (31.25%).

The two demographic variables that reflect hybrid course experience and use provided similar results: as a faculty member's experience in hybrid courses and their current use of hybrid courses surpassed 50%, so did the faculty member's perceived

importance of more of the online learning components. They were similar to the finding that the perceived importance of online learning components increased with the faculty member's self-assessed technology skills. Further, a higher percentage of younger faculty member respondents valued more of the online learning components.

<u>Research Question #4: Use of Online Learning Components by Demographic Variables</u>

The fourth research question of this study asked, "What is the self-reported use of a list of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities?" An online survey instrument (see Appendix A) was used to collect this information and the following descriptive statistics were found, reported by demographics, by online learning components, and by cross tabulation of these variables.

Descriptive statistics were calculated regarding respondents' use of the 19 learning components identified in this study. In addition, cross tabulations were calculated for the demographic variables by the reported use of the 19 learning components.

<u>Descriptive Statistics for Use</u>

Table 18 shows the frequency distribution of respondents' rating their use of 19 online learning components in hybrid courses.

Table 18

Use of Online Learning Components on a 5-point Scale

	Very Often (1)	Often (2)	Sometime (3)	Rarely (4)	Not Applicable (5)	No Answer	Mean	Standard Deviation
Email	59	16	8	4	11	2	1.571	1.268
Discussion boards	12	8	12	36	30	2	2.684	1.557
Web logs (blogs)	1	2	3	46	44	4	3.344	1.541
Post course documents	54	4	4	7	21	3	1.979	1.627
Submit course assignments	40	17	12	11	18	2	1.969	1.502
Email access between students	16	18	15	24	24	3	2.433	1.561
Instructor presentations	31	14	9	19	25	2	2.306	1.639
Online grade books	46	7	8	13	23	3	2.165	1.637
Live chats	1	1	6	43	46	3	3.474	1.501
Group chat or email	6	10	12	35	35	2	2.908	1.606
Instant message programs	1	2	7	38	50	2	3.500	1.548
Electronic library	20	19	7	20	31	3	2.577	1.737
Online lecture notes	38	19	6	12	22	3	2.093	1.627
Online exams or quizzes	25	10	8	32	32	3	2.629	1.722
Calendar	17	28	5	24	33	3	2.660	1.737
Calendar with due date reminders	16	20	5	22	35	2	2.704	1.766
Online bookmarks or links	8	16	17	22	34	3	2.804	1.669
Student home pages	2	5	1	40	50	2	3.460	1.600
Student presentations online	4	10	16	29	38	3	3.031	1.623

When ranked according to mean rating for use, the list of online learning

components appears (see Table 19). According to the rank ordering, the oldest and most

commonly used technologies were the most frequently used online learning components

for hybrid courses. This was the same pattern reported for the perceived importance of

the components. Also, as was the result with the rank ordering by importance, the rank

ordering for use showed that the most used tools are the most instructor-centered tools.

Conversely, newer technologies that are interactive and student-centered - such as blogs,

instant message, and live chats - were ranked as relatively less used.

Table 19
Rank Ordering of Online Learning Components by Use

	Mean
Email	1.571
Submit course assignments	1.969
Post course documents	1.979
Online lecture notes	2.093
Online grade books	2.165
Instructor presentations	2.306
Email access between students	2.433
Electronic library	2.577
Online exams or quizzes	2.629
Calendar	2.660
Discussion boards	2.684
Calendar with due date reminders	2.704
Online bookmarks or links	2.804
Group chat or email	2.908
Student presentations online	3.031
Web logs (blogs)	3.344
Live chats	3.474
Student home pages	3.459
Instant message programs	3.500

Cross Tabulations for Use

Cross tabulations and chi squares for usage of the online components were

calculated by demographic variables, similar to that reported for research question 3. The

usage ratings on the questionnaire were Very Often, Often, Sometimes, Rarely, and Not

Applicable. For analysis, these categories were collapsed from 5 to 3: Very Often and

Often; Sometime and Rarely; and Not Applicable.

Cross Tabulations and Chi Squares of Tenure by Use

The first demographic variable used in the cross-tabulation calculations was

tenure (see Table 20). The use of only one of the online learning components was

statistically significant at the .10 trend level: online quizzes and exams ($p=.056$). Further

analysis of the responses to that learning component showed that 29.03% of all tenured

respondents used online quizzes and exams very often or often compared to 48.57% of

untenured faculty member respondents.

Table 20
Cross Tabulations and Chi Squares: Tenure by Use of Email

		Very Often or Often	Sometime or Rarely	NA	Pearson Chi-Square (χ^2) and *df*	*p-*level
Email	Tenure	48	8	8	$\chi^2=.334$;	.846
	No Tenure	27	4	3	*df*=2	
Discussion boards	Tenure	14	31	18	$\chi^2=.369$;	.832
	No Tenure	6	18	11	*df*=2	
Web logs (blogs)	Tenure	2	33	27	$\chi^2=.369$;	.832
	No Tenure	1	16	17	*df*=2	
Post course documents	Tenure	43	6	13	$\chi^2=.597$;	.742
	No Tenure	22	5	8	*df*=2	
Submit course assignments	Tenure	36	14	13	$\chi^2=.642$;	.725
	No Tenure	21	9	5	*df*=2	
Email access between students	Tenure	18	28	17	$\chi^2=2.083$;	.555
	No Tenure	14	13	7	*df*=2	
Instructor presentations	Tenure	28	19	16	$\chi^2=.240$;	.887
	No Tenure	17	9	9	*df*=2	
Online grade books	Tenure	32	16	14	$\chi^2=1.752$;	.416
	No Tenure	21	5	9	*df*=2	
Live chats	Tenure	0	33	3	$\chi^2=5.364$;	.147
	No Tenure	1	14	0	*df*=2	
Group chat or email	Tenure	12	30	21	$\chi^2=1.084$;	.582

	No Tenure	4	17	14	*df*=2	
Instant message programs	Tenure	2	32	29	χ^2=1.781;	.410
	No Tenure	1	13	21	*df*=2	
Electronic library access	Tenure	22	20	1	χ^2=3.429;	.330
	No Tenure	17	6	0	*df*=2	
Online lecture notes	Tenure	39	11	12	χ^2=1.401;	.496
	No Tenure	18	7	10	*df*=2	
Online exams or quizzes	Tenure	18	24	20	χ^2=5.759;	.056**
	No Tenure	17	6	12	*df*=2	
Calendar	Tenure	21	20	21	χ^2=.554;	.758
	No Tenure	14	9	12	*df*=2	
Calendar with due date reminders	Tenure	21	21	21	χ^2=2.976;	.226
	No Tenure	15	6	14	*df*=2	
Online bookmarks or links	Tenure	13	28	21	χ^2=2.107;	.349
	No Tenure	11	11	13	*df*=2	
Student home pages	Tenure	5	28	20	χ^2=.842;	.656
	No Tenure	2	13	20	*df*=2	
Student presentations online	Tenure	8	31	23	χ^2=.950;	.622
	No Tenure	6	14	15	*df*=2	

   * *p* < .05
  ** *p* < .10

Cross Tabulations and Chi Squares of Rank by Use

Cross tabulations and chi squares were calculated by academic rank for each of the 19 learning components identified in this study (see Table 21). The use of only one online learning component was statistically significant at the .10 trend level: online exams or quizzes (*p*=.059). Further analysis of the use of this online learning component showed that faculty member respondents tended to use it less as they advanced in rank. The largest users of this component were instructors (75% of all instructors responding) followed by assistant professors (47.37%), then associate professors (37.5%), and finally professors (21.05%). If there is a relationship between age and rank, then this finding may be consistent with the finding that faculty member respondents under age 50 perceived more online learning components to be very important or important.

Table 21

Cross Tabulations and Chi –Squares: Rank by Use of Online Learning Components

		Very Often or Often	Some-time or Rarely	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	Professor	26	7	7	χ^2=9.552; *df*=6	.145
	Associate Professor	28	2	1		
	Assistant Professor	13	3	3		
	Instructor	8	0	0		
Discussion boards	Professor	6	18	15	χ^2=4.625; *df*=6	.593
	Associate Professor	8	18	6		
	Assistant Professor	5	8	6		
	Instructor	1	5	2		
Web logs (blogs)	Professor	2	19	17	χ^2=5.741; *df*=6	.453
	Associate Professor	0	17	15		
	Assistant Professor	0	9	10		
	Instructor	1	4	2		
Post course documents	Professor	23	6	10	χ^2=4.287; *df*=6	.638
	Associate Professor	23	2	6		
	Assistant Professor	12	3	4		
	Instructor	7	0	1		
Submit assignments online	Professor	20	8	11	χ^2=6.905; *df*=6	.330
	Associate Professor	22	6	4		
	Assistant Professor	10	6	3		
	Instructor	5	3	0		
Email access between students	Professor	12	14	13	χ^2=11.201; *df*=6	.262
	Associate Professor	9	16	6		
	Assistant Professor	9	5	5		
	Instructor	2	6	0		
Posting instructor presentations	Professor	17	8	14	χ^2=8.575; *df*=6	.199
	Associate Professor	13	13	6		
	Assistant Professor	9	5	5		
	Instructor	6	2	0		

					χ²; df	p
Online grade book	Professor	17	11	11	$\chi^2=5.507$; $df=6$	.481
	Associate Professor	21	5	5		
	Assistant Professor	10	3	6		
	Instructor	5	2	1		
Live chats	Professor	0	22	16	$\chi^2=9.552$; $df=6$	.156
	Associate Professor	0	18	24		
	Assistant Professor	1	5	13		
	Instructor	0	5	3		
Group chat or email	Professor	5	18	16	$\chi^2=4.335$; $df=6$	.631
	Associate Professor	7	17	8		
	Assistant Professor	3	7	9		
	Instructor	1	5	2		
Instant message	Professor	1	20	18	$\chi^2=4.499$; $df=6$	.609
	Associate Professor	1	15	16		
	Assistant Professor	1	5	13		
	Instructor	0	5	3		
Electronic library	Professor	19	8	12	$\chi^2=11.462$; $df=6$	.245
	Associate Professor	7	14	11		
	Assistant Professor	8	4	6		
	Instructor	5	1	2		
Online lecture notes	Professor	22	7	10	$\chi^2=1.474$; $df=6$	.961
	Associate Professor	19	7	5		
	Assistant Professor	11	3	5		
	Instructor	5	1	2		
Online exams or quizzes	Professor	8	14	16	$\chi^2=12.118$; $df=6$	.059**
	Associate Professor	12	12	8		
	Assistant Professor	9	4	6		
	Instructor	6	0	2		
Online calendar	Professor	14	11	13	$\chi^2=5.215$; $df=6$	.516
	Associate Professor	10	12	10		
	Assistant Professor	6	4	9		
	Instructor	5	2	1		
Calendar with due date	Professor	14	12	13	$\chi^2=4.626$; $df=6$	.593
	Associate Professor	12	10	10		
	Assistant Professor	7	2	10		
	Instructor	3	3	2		
Online bookmarks or links	Professor	12	12	14	$\chi^2=8.063$; $df=6$	.234
	Associate Professor	3	18	11		
	Assistant Professor	6	6	7		
	Instructor	3	3	2		
Student home pages	Professor	4	17	18	$\chi^2=2.706$; $df=6$	.845
	Associate Professor	2	13	17		
	Assistant Professor	0	8	11		
	Instructor	1	3	4		

Student presenta-tions online	Professor	4	20	14	χ^2=1.911;	.928
	Associate Professor	5	14	13	df=6	
	Assistant Professor	4	7	8		
	Instructor	1	4	3		

* $p < .05$
** $p < .10$

Cross Tabulations and Chi Squares of Gender by Use

Cross tabulations and chi squares were calculated by gender for each of the 19 learning components identified in this study (see Table 22). The use of two online learning components by gender was found to be statistically significant at .05 level: submitting course assignments online (p=.022) and an online grade book (p=.002).

Table 22
Cross Tabulations and Chi-Squares: Gender by Use of Online Learning Components

		Very Often or Often	Sometime or Rarely	NA	Pearson Chi-Square (χ^2) and df	p-level
Email	Male	43	9	9	χ^2=2.723;	.256
	Female	29	3	2	df=2	
Discussion boards	Male	13	27	21	χ^2=2.676;	.262
	Female	5	21	8	df=2	
Web logs (blogs)	Male	2	27	31	χ^2=3.023;	.221
	Female	1	21	11	df=2	
Post course documents	Male	37	7	16	χ^2=1.853;	.396
	Female	25	4	5	df=2	
Submit course assignments	Male	29	16	16	χ^2=7.651;	.022*
	Female	25	7	2	df=2	
Email access between students	Male	18	25	18	χ^2=1.492;	.474
	Female	12	15	6	df=2	
Posting instructor presentations	Male	24	17	20	χ^2=4.050;	.132
	Female	19	10	5	df=2	
Online grade book	Male	25	18	18	χ^2=12.979;	.002*
	Female	26	2	5	df=2	
Online live chats	Male	0	30	30	χ^2=1.958;	.376
	Female	1	18	15	df=2	
Group chat or email	Male	8	30	23	χ^2=.925;	.630
	Female	7	15	12	df=2	
Instant message	Male	1	2	34	χ^2=2.079;	.354
	Female	2	17	15	df=2	

Electronic library access	Male	22	16	23	χ^2=3.446; df=2	.328
	Female	16	10	7		
Online lecture notes	Male	36	10	15	χ^2=.154; df=2	.926
	Female	20	6	7		
Online exams or quizzes	Male	19	21	20	χ^2=1.862; df=2	.394
	Female	15	8	11		
Online calendar	Male	20	17	23	χ^2=1.584; df=2	.453
	Female	15	10	9		
Calendar w/ due dates	Male	19	18	24	χ^2=3.309; df=2	.191
	Female	17	7	10		
Online bookmarks/ links	Male	15	23	22	χ^2=.694; df=2	.707
	Female	7	16	11		
Student home pages	Male	3	24	34	χ^2=2.082; df=2	.353
	Female	4	15	15		
Student presentations online	Male	8	25	27	χ^2=1.491; df=2	.474
	Female	5	18	11		

* $p < .05$
** $p < .10$

A larger percentage of female faculty member respondents reported using the submitting of course assignments online and an online grade book than did male faculty member respondents. Regarding the submitting of course assignments online, 73.53% of females reported using this component compared to 47.54% of male faculty member respondents. Similarly, 78.79% of female faculty member respondents reported using an online grade book compared to 40.98% of male faculty member respondents.

Cross Tabulations and Chi Squares of Age by Use

Cross tabulations and chi squares were calculated by age for each of the 19 learning components identified in this study (see Table 23). The use of eight of the online learning components by age was found to be statistically significant at the .05 level: the use of discussion boards (p=.018), posting course documents online (p=.015), live chats (p=.023), online lecture notes (p=.023), an online calendar (p=.002), an online calendar with due dates (p=.006), online bookmarks and links (p=.008), and posting student presentations online (p= .007). Several additional components were only slightly higher

than the alpha setting of .05: the use of email access between students (at .059), the use of

group chat and email (*p*=.058), and the use of instant message (*p*=.056).

Table 23

Cross Tabulations and Chi-Squares: Age by Use of Online Learning Components

		Very Often or Often (f)	Sometime or Rarely (f)	NA (f)	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	20-49	27	2	2	χ^2=3.077; *df*=2	.215
	50-69	46	10	9		
Discussion boards	20-49	7	20	3	χ^2=8.051; *df*=2	.018
	50-69	13	26	25		
Web logs (blogs)	20-49	0	20	10	χ^2=4.463; *df*=2	.107
	50-69	3	29	32		
Post course documents	20-49	26	2	2	χ^2=8.380; *df*=2	.015*
	50-69	37	9	19		
Submit course assignments	20-49	19	8	3	χ^2=2.237; *df*=2	.327
	50-69	37	14	15		
Email access between students	20-49	9	17	3	χ^2=5660; *df*=2	.059**
	50-69	22	24	20		
Instructor presentations	20-49	14	12	4	χ^2=4.901; *df*=2	.086**
	50-69	30	15	21		
Online grade books	20-49	19	6	4	χ^2=2.291; *df*=2	.318
	50-69	34	14	18		
Live chats	20-49	1	20	8	χ^2=7.553; *df*=2	.023*
	50-69	0	30	36		
Group chat or email	20-49	4	20	6	χ^2=5.709; *df*=2	.058**
	50-69	12	27	27		
Instant message	20-49	2	18	10	χ^2=5.779; *df*=2	.056**
	50-69	1	27	38		
Electronic library access	20-49	11	12	7	χ^2=4.238; *df*=2	.237
	50-69	26	15	24		
Online lecture notes	20-49	23	5	2	χ^2=7.522; *df*=2	.023*
	50-69	33	12	20		
Online exams or quizzes	20-49	12	12	6	χ^2=2.965; *df*=2	.227
	50-69	23	18	24		
Online calendar	20-49	10	16	4	χ^2=12.936; *df*=2	.002*
	50-69	24	13	28		
Calendar with due dates	20-49	14	12	4	χ^2=10.148; *df*=2	.006*
	50-69	20	15	31		
Online bookmarks/ links	20-49	6	19	5	χ^2=9.745; *df*=2	.008*
	50-69	17	20	28		

Student home pages	20-49	3	17	10	χ^2=4.854; df=2	.088**
	50-69	4	24	38		
Student presentations online	20-49	3	21	6	χ^2=10.019; df=2	.007*
	50-69	11	23	31		

*$p < .05$
**$p < .10$

A larger percentage of the faculty under the age of 50 reported using the following statistically significant online learning components than did the percent of faculty member respondents age 50 or older: posting course documents online, live chats, online lecture notes, a calendar with due dates, and student home pages. A larger percentage of faculty respondents age 50 and older reported using the following statistically significant online learning components than did the percentage of faculty member respondents under age 50: an online calendar, online bookmarks and links, and posting student presentations online.

Of the online learning components that were statistically significant at the .10 trend level, a larger percentage of the younger faculty member respondents used instant message (6.67% compared to 1.52% of faculty age 50 and older) and posting instructor presentations online (46.67% compared to 45.46% of faculty age 50 and older). Of the online learning components that were statistically significant at the .10 trend level, a larger percentage of faculty member respondents age 50 and older reported using email access between students (33.34% compared to 31.03% of younger faculty) and group chat or email (18.18% compared to 13.34% of younger faculty).

Additionally, faculty member respondents age 50 and older were 3-10 times more likely to rate their use of all of the online learning components as *not applicable* compared to faculty member respondents under age 50. As an example, 3 out of 30

faculty member respondents under age 50 reported that their use of discussion boards was *not applicable* compared to 25 out of 64 faculty member respondents who were age 50 or older.

Cross Tabulations and Chi Squares of Technical Skill Level by Use

Cross tabulations and chi squares were calculated by self-assessed technical skill level for the use of each of the 19 learning components identified in this study (see Table 24). No respondents selected *none* as their level of self-assessed technical skill so that option was not included in Table 19 or in the analysis in the following paragraphs.

Table 24
Cross Tabulations and Chi Squares: Technical Skill by Use of Online Learning Components

		Very Often or Often	Sometime or Rarely	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	Novice	6	2	4	χ^2=12.706; *df*=4	.013*
	Fairly skilled	43	9	7		
	Power user	25	1	0		
Discussion boards	Novice	0	3	9	χ^2=17.876; *df*=4	.001*
	Fairly skilled	13	29	18		
	Power user	7	16	2		
Web logs (blogs)	Novice	1	4	7	χ^2=2.908; *df*=4	.573
	Fairly skilled	1	30	27		
	Power user	1	14	10		
Posting course documents	Novice	2	3	7	χ^2=19.429; *df*=4	.001*
	Fairly skilled	40	6	13		
	Power user	22	2	1		
Submit assignments online	Novice	3	3	6	χ^2=19.672; *df*=4	.001*
	Fairly skilled	31	17	12		
	Power user	22	3	0		
Email access between students	Novice	2	4	6	χ^2=10.572; *df*=4	.032*
	Fairly skilled	19	23	17		
	Power user	11	13	1		
Posting instructor presentations	Novice	1	5	6	χ^2=17.888; *df*=4	.001*
	Fairly skilled	25	17	18		
	Power user	19	5	1		
Online grade	Novice	3	2	7	χ^2=11.216;	.024*

books	Fairly skilled	33	13	14	df=4	
	Power user	16	6	2		
Live chats	Novice	0	3	9	χ^2=13.286; df=4	.010*
	Fairly skilled	1	26	32		
	Power user	0	20	5		
Group chat or email	Novice	2	2	8	χ^2=10.107; df=4	.039*
	Fairly skilled	9	28	23		
	Power user	5	16	4		
Instant message	Novice	0	3	9	χ^2=8.317; df=4	.081**
	Fairly skilled	1	26	33		
	Power user	2	15	8		
Electronic library access	Novice	3	2	7	χ^2=5.281; df=4	.260
	Fairly skilled	26	15	18		
	Power user	10	9	6		
Online lecture notes	Novice	4	2	6	χ^2=10.637; df=4	.031*
	Fairly skilled	33	11	15		
	Power user	19	5	1		
Online exams or quizzes	Novice	2	3	7	χ^2=11.236; df=4	.024*
	Fairly skilled	24	14	22		
	Power user	9	12	3		
Online calendar	Novice	2	2	7	χ^2=12.766; df=4	.012*
	Fairly skilled	20	16	24		
	Power user	13	10	2		
Calendar with due date	Novice	1	3	8	χ^2=18.772; df=4	.001*
	Fairly skilled	19	25	26		
	Power user	15	9	1		
Online bookmarks/links	Novice	0	4	7	χ^2=12.372; df=4	.015*
	Fairly skilled	14	22	24		
	Power user	10	12	3		
Student home pages	Novice	0	3	0	χ^2=7.167; df=4	.127
	Fairly skilled	4	22	1		
	Power user	3	14	0		
Student presentations online	Novice	1	3	7	χ^2=8.716; df=4	.069**
	Fairly skilled	10	24	26		
	Power user	3	17	5		

 * $p < .05$
** $p < .10$

The use of almost all of the online learning components by self-assessed technical skill level was found to be statistically significant. Only three online learning tools were not statistically significant: blogs (p=.573), electronic library access (p=.260), and student home pages (p=.127). In addition, two online learning components were found to be

statistically significant at the .10 trend level: instant message (p=.081) and posting student presentations online (p=.069).

The data show that as the faculty member respondents' self-assessed technology skills advanced, so did their use of most of the online learning components (with two exceptions). A larger percentage of power users reported using the following learning components more than did fairly skilled users, who also reported a higher usage than did novices: discussion boards, posting course documents online, submitting assignments online, posting instructor presentations online, a calendar with due dates, live chats, an online calendar, email, online bookmarks or links, online grade books, online quizzes or exams, online lecture notes, email access between students, and group email or chat. The first five components listed were all statistically significant at the .001 level. One exception was the use of live chats that was only reported as being used by fairly skilled users.

Of the two online learning components statistically significant at the .10 trend level, the use of instant message paralleled the increase of faculty member respondents' self-assessed technology skills. The posting of student presentations online, however, was used more by the fairly skilled (at 16.67%) compared to power users (12%) and novices (9%).

Without exception, the lower the faculty member's self-assessed technical skills, the more likely they were to rate their use of the online learning component as *not applicable*, a finding consistent in the literature that some differences in the use of online communications tools lies in different levels of technical skill among users (Hargittai, 2002; Norris, 2001).

Cross Tabulations and Chi Squares: Hybrid Course Experience by Use

Cross tabulations and chi squares were calculated by hybrid course experience for use of each of the 19 learning components identified in this study (see Table 25). Experience categories were 0-3 hybrid courses taught, 4-7 hybrid courses taught, and 8 or more hybrid courses taught.

Table 25
Cross Tabulations and Chi-Squares: Hybrid Course Experience by Use of Online Learning Components

		Very Often or Often	Some-time or Rarely	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	0-3 hybrid courses	30	6	8	χ^2=7.325; df=4	.120
	4-7 hybrid courses	14	4	2		
	8 or more courses	30	2	1		
Discussion boards	0-3 hybrid courses	4	21	18	χ^2=7.945; df=4	.094**
	4-7 hybrid courses	6	11	4		
	8 or more courses	9	17	7		
Web logs (blogs)	0-3 hybrid courses	1	17	24	χ^2=4.746; df=4	.314
	4-7 hybrid courses	1	11	8		
	8 or more courses	1	21	11		
Posting course documents	0-3 hybrid courses	27	5	11	χ^2=3.521; df=4	.475
	4-7 hybrid courses	14	1	6		
	8 or more courses	23	5	4		
Submit assignments online	0-3 hybrid courses	18	13	12	χ^2=11.008; df=4	.026*
	4-7 hybrid courses	12	5	4		
	8 or more courses	26	5	2		
Email access between students	0-3 hybrid courses	7	19	17	χ^2=14.978; df=4	.005*
	4-7 hybrid courses	9	7	5		
	8 or more courses	15	15	2		
Instructor presentations	0-3 hybrid courses	14	13	16	χ^2=9.315; df=4	.054*
	4-7 hybrid courses	10	5	6		
	8 or more courses	20	10	3		
Online grade book	0-3 hybrid courses	18	9	15	χ^2=7.411; df=4	.116
	4-7 hybrid courses	14	3	4		
	8 or more courses	20	9	4		
Live chats	0-3 hybrid courses	0	17	25	χ^2=5.693; df=4	.223
	4-7 hybrid courses	0	13	8		
	8 or more courses	1	19	13		
Group chat	0-3 hybrid courses	3	18	22	χ^2=13.643;	.009**

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or email	4-7 hybrid courses	2	12	7	*df*=4	
	8 or more courses	10	17	6		
Instant message	0-3 hybrid courses	2	14	27	χ^2=5.918; *df*=4	.205
	4-7 hybrid courses	0	11	10		
	8 or more courses	1	19	13		
Electronic library access	0-3 hybrid courses	12	13	18	χ^2=7.197; *df*=4	.126
	4-7 hybrid courses	9	7	5		
	8 or more courses	18	7	7		
Online lecture notes	0-3 hybrid courses	21	9	13	χ^2=8.782; *df*=4	.067**
	4-7 hybrid courses	16	0	4		
	8 or more courses	20	8	5		
Online exams or quizzes	0-3 hybrid courses	10	16	17	χ^2=8.634; *df*=4	.071**
	4-7 hybrid courses	8	8	4		
	8 or more courses	17	6	10		
Online calendar	0-3 hybrid courses	13	11	19	χ^2=5.713; *df*=4	.222
	4-7 hybrid courses	10	4	6		
	8 or more courses	12	13	8		
Calendar with due date	0-3 hybrid courses	11	11	21	χ^2=9.783; *df*=4	.044*
	4-7 hybrid courses	12	3	6		
	8 or more courses	13	12	8		
Online bookmarks/ links	0-3 hybrid courses	8	16	19	χ^2=11.216; *df*=4	.024*
	4-7 hybrid courses	2	12	6		
	8 or more courses	14	11	8		
Student home pages	0-3 hybrid courses	1	16	26	χ^2=6.647; *df*=4	.156
	4-7 hybrid courses	1	10	10		
	8 or more courses	5	15	13		
Student presentations online	0-3 hybrid courses	2	18	23	χ^2=10.998; *df*=4	.027*
	4-7 hybrid courses	3	10	7		
	8 or more courses	9	16	8		

*p < .05
**p < .10

Several online learning components by course experience were found to be statistically significant at the .05 level: submitting course assignments online (p=.026), email access between students (p=.005), group chat or email (p=.009), a calendar with due dates (p=.044), and posting student presentations online (p=.027). In addition, three online learning components by course experience were statistically significant at the .10 trend level: posting instructor presentations online (p=.054), online lecture notes (p=.067), and online exams or quizzes (p=.071).

The data indicated that as faculty member respondents' hybrid course experience increased, so did their use of the following 10 online learning components: email, posting course documents online, submitting assignments online, email access between students, posting instructor presentations online, group chat or email, electronic library access, online exams and quizzes, student home pages, and posting student presentations online. Of the 2 remaining online learning components found to be statistically significant, online bookmarks were used by the highest percentage of the most experienced faculty member respondents (at 42.42%) compared to 18.6% of users with 0-3 courses of experience and 10% of users with 4-7 courses of experience.

Of the two components found to be statistically significant at the .10 trend level, both were most used by those with experience teaching 4-7 hybrid courses. Eighty percent of this group used online lecture notes compared to 60.6% of users with 8 or more courses of experience and 48.88% of users with 0-3 courses of experience. Users with less experience were also more likely to rate their use of online lecture notes as *not applicable* (44.19% of those with 0-3 courses of experience compared to 30% of those with 4-7 courses of experience and 24.24% of those with 8 or more courses of

experience). Regarding discussion boards, a slightly higher percentage of users with 4-7

courses of experience (28.57%) reported using them compared to 27.27% of the most

experienced users and 9.3% of the least experienced users.

Cross Tabulations and Chi Squares of Internet Access Type by Use

Cross tabulations and chi squares of Internet access type by use of online components were not calculated because 99 out of the 100 respondents had high-speed Internet access and only one reported having dial-up access. Therefore, possible relationships between type of Internet access and rated use of online learning components could not be examined in this study.

Cross Tabulations and Chi Squares of Teaching Hybrid Now by Use

Cross tabulations and chi squares were not calculated for the use of the 19 learning components by whether the respondent was currently teaching a hybrid course because so few respondents in the sample (*n*=19) were not currently teaching a hybrid course. Therefore, possible relationships between these variables could not be examined in this study.

Cross Tabulations and Chi Squares of Current Courses That are Hybrid by Use

Cross tabulations and chi squares were calculated for percentage of current courses that are hybrid format by each of the 19 learning components identified in this study (see Table 26). The use of five online learning components by percentage of current hybrid-format courses was found to be statistically significant at the .05 level: email (*p*=.011), posting course documents online (*p*=.003), submitting assignments online (*p*=.003), email access between students (*p*=.019), posting instructor presentations online (*p*=.036), and online lecture notes (*p*=.011). In addition, the use of online quizzes and exams by percentage of current hybrid-format courses was found to be statistically significant at the .10 trend level at *p*=.088.

Table 26

Cross Tabulation and Chi Squares: Percentage of Current Courses that are Hybrid Format by Use of Online Learning Components

		Very Often or Often	Sometime or Rarely	NA	Pearson Chi-Square (χ^2) and *df*	*p*-level
Email	0-25%	19	4	9	χ^2=16.581; *df*=6	.011*
	26-50%	10	2	2		
	51-75%	9	1	0		
	76-100%	37	4	0		
Discussion boards	0-25%	6	11	15	χ^2=10.266; *df*=6	.114
	26-50%	2	10	2		
	51-75%	3	4	3		
	76-100%	9	24	8		
Web logs (blogs)	0-25%	2	14	16	χ^2=5.871; *df*=6	.438
	26-50%	0	8	5		
	51-75%	1	6	3		
	76-100%	0	21	20		
Posting course documents	0-25%	12	8	12	χ^2=19.666; *df*=6	.003*
	26-50%	11	1	2		
	51-75%	8	0	2		
	76-100%	33	2	5		
Submit assignments online	0-25%	10	9	13	χ^2=20.126; *df*=6	.003*
	26-50%	10	2	2		
	51-75%	7	2	1		
	76-100%	30	9	2		
Email access between students	0-25%	8	10	14	χ^2=15.158; *df*=6	.019*
	26-50%	3	8	3		
	51-75%	2	6	2		
	76-100%	19	17	4		
Instructor presentations	0-25%	8	10	14	χ^2=13.479; *df*=6	.036*
	26-50%	7	3	4		
	51-75%	6	3	1		
	76-100%	24	12	5		
Online grade book	0-25%	10	7	15	χ^2=31.135; *df*=6	.000
	26-50%	13	0	1		
	51-75%	2	6	2		
	76-100%	27	8	5		
Live chats	0-25%	1	15	16	χ^2=4.356; *df*=6	.629
	26-50%	0	9	4		
	51-75%	0	4	6		
	76-100%	0	22	19		

Group chat or email	0-25%	5	11	16	χ^2=5.762; df=6	.450
	26-50%	3	8	3		
	51-75%	1	6	3		
	76-100%	7	22	12		
Instant message	0-25%	2	14	16	χ^2=3.950; df=6	.683
	26-50%	0	9	5		
	51-75%	0	5	5		
	76-100%	1	17	23		
Electronic library access	0-25%	9	10	13	χ^2=7.821; df=6	.252
	26-50%	4	5	5		
	51-75%	4	4	2		
	76-100%	22	7	11		
Online lecture notes	0-25%	14	5	13	χ^2=16.519; df=6	.011*
	26-50%	6	6	2		
	51-75%	8	1	1		
	76-100%	29	5	6		
Online exams or quizzes	0-25%	8	10	14	χ^2=11.024; df=6	.088**
	26-50%	8	3	3		
	51-75%	7	2	1		
	76-100%	12	15	13		
Online calendar	0-25%	8	10	13	χ^2=5.639; df=6	.465
	26-50%	4	6	4		
	51-75%	6	2	2		
	76-100%	17	11	13		
Calendar with due dates	0-25%	8	9	15	χ^2=6.642; df=6	.355
	26-50%	5	5	4		
	51-75%	6	3	1		
	76-100%	17	10	14		
Online bookmarks/ links	0-25%	5	13	13	χ^2=8.409; df=6	.210
	26-50%	2	9	3		
	51-75%	3	5	2		
	76-100%	14	12	15		
Student home pages	0-25%	2	12	18	χ^2=2.845; df=6	.828
	26-50%	0	8	6		
	51-75%	1	4	5		
	76-100%	4	17	20		
Student presentations online	0-25%	3	13	15	χ^2=8.790; df=6	.186
	25-50%	0	10	4		
	50-75%	3	3	4		
	75-100%	8	19	14		

*p < .05
**p < .10

Of the eight learning components found to be statistically significant, three learning components – email, posting course documents online, and submitting assignments online - followed the pattern of being used most by those with the highest percentage of current courses being hybrid, followed followed by those with 51-75%, followed by those with 26-50%, followed by those with 0-25%. No particular pattern was found regarding the remaining components: most had a different sequence in the percentage of users by hybrid course percentage.

Research Question #5: Relationships between the demographic characteristics of business instructors at Oklahoma's comprehensive and regional public universities and their use of common online learning components.

A faculty member's age, gender, and several demographic variables concerning their experience in teaching hybrid format courses appear to be the most influential demographics among the most commonly used and most valued online learning components rated by faculty member respondents.

Regarding age, faculty member respondents under age 50 tended to value more online learning components than do those over age 50. In addition, faculty member respondents age 50 and older were more likely to consider more online learning components as *not applicable* in importance. The role of age requires further research to determine the reasons for age to have been an influential demographic in this study.

Regarding gender, more female faculty member respondents perceived more online learning components to be important than did their male counterparts. Additional research is required to determine the reasons for the finding in this study as well as validity in other academic and faculty populations.

The perceived importance of online learning components also increased with the faculty member's self-assessed technical skill level, with their hybrid course experience, and with the percentage of current courses that are hybrid. Additional research is required to determine if these three variables measure similar concepts.

Research Question #6: Differences between Importance and Use, and Differences between Best Practices and the Reported Importance and Use of Online Learning Components among the Sample

The fifth research question of this study asked, "How closely do the uses and perceived importance of common online learning components of business instructors at Oklahoma's comprehensive and regional public universities match best practices?" The online survey instrument (see Appendix A) was used to collect this information which was subjected to descriptive statistical and logical analysis.

For each of the online learning components, cross tabulations of the collapsed categories of importance and use could not be calculated due to small cell sizes.

Differences between Importance and Use

Table 27 compares online learning components by demographic variable, noting which were found to be statistically significant by importance and by use. In cases where a learning component was found to be statistically significant in both importance and use, there is agreement. In cases where a learning component was not found to be statistically significant in both importance and use, there is agreement. Of concern are the items that were found to be statistically significant in importance but not in use, and vice versa. For these online components, the faculty's usage patterns did not match their perceived importance patterns.

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Regarding gender, three components were found to be statistically significant in importance but not in use: email access between students, posting instructor presentations online, and online bookmarks or links. This means that males and females varied in how they viewed the importance of these online learning components but use patterns did not vary by gender.

Regarding age, there was a discrepancy with eight components. The following 3 components were found to be statistically significant in importance but not in use: email, blogs, and student home pages. This means that different age groups varied in how they viewed the importance of these email, blogs, and student home pages but use patterns did not vary by age. The following 2 components were found to be statistically significant in use but not in importance: live chats and online lecture notes. This means that different age groups varied in how they used live chats and online lecture notes but did not vary in how they viewed the importance of these online learning components.

Regarding self-assessed technical skill, there were 7 discrepancies. The following 2 components were found to be statistically significant in importance but not in use: blogs and electronic library access. This means that groups with different self-assessed technology skills varied in how they viewed the importance of blogs and electronic library access but use patterns did not vary by self-assessed technical skill. The following 5 components were found to be statistically significant in use but not in importance: email, discussion boards, submitting assignments online, a calendar with due dates, and posting student presentations online. This means that different groups of self-assessed technical skill levels varied in how they used email, discussion boards, submitting

assignments online, a calendar with due dates, and posting student presentations online but did not vary in how they viewed the importance of these online learning components.

Regarding hybrid course experience, there were 5 discrepancies. The following 3 components were found to be statistically significant in importance but not in use: email, discussion boards, and posting instructor presentations online. This means that among groups with varying hybrid course experience, the distribution patterns differed for this demographic variable regarding the perceived importance of email, discussion boards, and posting instructor presentations online but their use did not vary based on hybrid course experience. The following 2 components were found to be statistically significant in use but not in importance: calendars with due dates and posting student presentations online. This means distribution patterns by this demographic were different for use of calendars with due dates and posting student presentations online but the distribution patterns did not vary for perceived importance among groups with varying hybrid course experience.

Regarding whether the faculty member was currently teaching a hybrid course, there were 5 discrepancies. Only discussion boards were found to be statistically significant in importance but not in use. This means that the distribution patterns of perceived importance of discussion boards differed between faculty member respondents who are currently teaching a hybrid course and those who are not, but the distribution patterns did not vary in use based on this demographic variable. The following 4 components were found to be statistically significant in use but not in importance: electronic library access, an online calendar, online calendars with due dates, and posting student presentations online. This means that the use of these four components varied

depending on whether the faculty member was currently teaching a hybrid course but did the perceived importance of these components did not vary among faculty member respondents based on whether they were currently teaching a hybrid course.

Regarding the percentage of current courses taught that were hybrid format, there were 8 discrepancies. The following 7 components were found to be statistically significant in importance but not in use: email, discussion boards, live chats, group chat and email, electronic library access, calendars with due dates, and online bookmarks or links. This means that the distribution patterns of perceived importance of these 7 online learning components differed between faculty member respondents group by the percentage of current courses taught that were hybrid courses, but the distribution patterns did not vary in use based on this demographic variable. Only the posting of course documents online was found to be statistically significant in use but not importance. This means that the use of posting course documents online varied among faculty member respondents depending on the percentage of current hybrid courses taught but the perceived importance of this online learning component did not vary by this demographic variable.

Table 27

Online Learning Components by Demographic Variables: Comparing Those Statistically Significant in Importance and Use

	Tenure		Rank		Gender		Age	
	Importance	Use	Importance	Use	Importance	Use	Importance	Use
Email							X	
Discussion boards							X	X
Web logs (blogs)							X	
Post course documents							X	X
Submit course assignments					X	X		
Email access between students					X			
Instructor presentations					X			
Online grade books					X	X		
Live chats								X
Group chat/email							X	
Instant message							X	
Electronic library access								
Online lecture notes								X
Online exams or quizzes								
Calendar							X	X
Calendar with due dates							X	X
Online bookmarks or links					X		X	X
Student home pages							X	
Student presentations online							X	X
Total	0	0	0	0	5	2	11	8

Online Learning Components by Demographic Variables: Comparing Those Statistically Significant in Importance and Use, continued

	Tech skill		Hybrid course exp		Teaching hybrid now		% currently hybrid	
	Importance	Use	Importance	Use	Importance	Use	Importance	Use
Email		X	X				X	
Discussion boards		X	X		X		X	
Web logs (blogs)	X							
Post course documents	X	X						X
Submit course assignments		X	X	X			X	X
Email access between students	X	X	X	X			X	X
Instructor presentations	X	X	X				X	X
Online grade books	X	X						
Live chats	X	X					X	
Group chat/email	X	X	X	X	X	X	X	
Instant message	X	X						
Electronic library access	X					X	X	
Online lecture notes	X	X					X	X
Online exams or quizzes	X	X						
Calendar	X	X				X		
Calendar with due dates		X		X		X	X	
Online bookmarks or links	X	X			X	X	X	
Student home pages								
Student presentations online		X		X		X		
Total	13	16	6	5	3	6	11	5

<u>Differences between Best Practices and the Reported Importance and Use of Online Learning Components Among the Sample</u>

To identify the differences between best practices of hybrid courses identified in the literature and current practices of hybrid courses facilitated by full-time business faculty member respondents in Oklahoma's comprehensive and regional public universities, the best practices were listed along with related online learning components. Each of the identified best practices was examined along with a list of online learning components that could be associated with each practice. Finally, that information was compared to the findings of the perceived importance and use of these variables among the sample of this study. *It is important to note that the final finding of best practices stressed that online learning components supplement and enhance (not detract from) traditional classroom learning.* They should not increase the stress level among learners but rather enhance the learning experience and learning outcomes. Mandatory use may cause problems for learners who have limited access or skill in using online learning components (Jacobsen, 2006) unless the facilitator is available to answer questions and help learners better understand how to access and use the online learning components.

<u>Best Practice #1: Move Administrative Tasks To a Secure and Private Environment Online</u>

Given that caveat (Jacobsen, 2006), the first best practice identified in the literature was to *move administrative tasks online* for ongoing availability and private feedback to students (Farrior & Gallagher, 2000; Frey, Faul & Yankelov, 2003). This also helps to free the limited classroom meeting time for learning opportunities. To achieve this, facilitators may use assignment drop boxes that include instructions, comments for feedback, and attachments such as examples or edited assignments. They

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may configure course calendars online with due dates marking important deadlines for assignments and assessments in the classroom. They may also set up online grade books including a list of assignments and assessments with the associated points or grade value for each, allowing private access for each learner to see their individual scores and to compare their performance with aggregate statistics for the entire class. Thus, the online learning components that may support this include assignment drop boxes, online calendars with due dates, and online grade books.

The mean scores for importance and use of these three variables are shown below in Table 28. The lower the mean, the more important and the more frequent the use of the online learning component by the sample in this study. The means were calculated according to the following scale: Very Important = 1, Important = 2, Unimportant = 3, Very Unimportant = 4, and Not Applicable in importance = 5; Very Often = 1, Often = 2, Sometime = 3, Rarely = 4, and Not Applicable in use = 5.

Table 28:
Mean for Importance and Use of Online Learning Components Identified for Best Practice #1

Online learning component	Mean for Importance	Mean for Use
Submitting assignments online	1.929	1.969
online calendars with due dates	2.367	1.969
online grade books	1.949	2.165

By examining the means for importance for these online learning components, it was found that full-time business faculty member respondents in this study found submitting assignments online and online grade books to be important and online calendars with due dates to be ranked closer to important than unimportant. By examining the means for use for these online learning components, it was found that full-

time business faculty member respondents in this study used submitting assignments

online and online calendars with due dates often and online grade books closer to often

than occasionally.

Best Practice #2: Maximize Classroom Learning Environments by Helping Students
Prepare in Advance for Classroom Meetings

The second best practice identified in the literature was to maximize the

traditional classroom learning environment by *helping learners prepare for classroom*

sessions. This may be accomplished by posting online the materials and documents that

pertain to the upcoming classroom sessions (Blake, 2000; Byrne, 1997; Galloway, 1998;

McEwen, 2001; NcNeil & Robin, 2000). To achieve this, facilitators may post online the

course syllabus, instructor presentations of course content to be reviewed during the face-

to-face classroom meeting, and student presentations so students can have detailed notes

of information shared by their peers in class. All of these variables help learners prepare

for the classroom meeting or review what was presented in class as well as navigate their

way through the course content according to when it is discussed in the traditional

classroom.

Table 29:
Means for Importance and Use of Online Learning Components Identified for Best
Practice #2

Online learning component	Mean for Importance	Mean for Use
Post course documents online	1.825	1.979
Post instructor presentations online	2.030	2.306
Post student presentations online	2.667	3.031

By examining the means for importance for these online learning components, it

was found that full-time business faculty member respondents in this study found posting

course documents online to be between very important and important but closer to

important, the posting of instructor presentations online to be important, and the posting of student presentations online to be between important and unimportant, the mean closer to unimportant. Examining the means for use for these online learning components reveals that full-time business faculty member respondents in this study used the posting of course documents online often, the posting of instructor presentations online between often and sometimes but closer to often, and the posting of student presentations online as sometimes.

Best Practice #3: Provide Online Communications Tools That Provide Timely Interaction and Exchange of Information between Classroom Meetings

The third best practice identified in the literature was to provide online communications tools that provide *timely interaction and exchange of information outside of the classroom* between a learner, the facilitator, and peer learners to clarify information or due dates, to overcome individual issues, or to further interact with course content (Al-Jar, 2004; Aspden & Helm, 2005; Bloch, 2003; Boles, 1999; Cairncross, 1997; Frey, Faul & Yankelov, 2003; Garrison & Anderson, 2003; Hannon, 20001; Lam, 2000; Palloff & Pratt, 1999; Poling, 1994; Singhal, 1998; Smith, 2004; White and LeCornu, 2002; Wild & Winniford, 1993; Zha, Kelly, Park, & Fitzgerald, 2006). Online learning tools and components that support online communications include email access between the facilitator and the learner as well as email access between learners, group email and chat, discussion boards (also called threaded discussions), live chats, instant message, and student home pages.

Table 30:
Means for Importance and Use of Online Learning Components Identified for Best Practice #3

Online learning component	Mean for Importance	Mean for Use
Email	1.449	1.571
Email access between learners	1.758	2.433
Discussion boards	2.273	2.684
Group email and chat	2.404	2.908
Live chats	2.816	3.474
Instant message	2.919	3.500
Student home pages	2.938	3.459

Examining the means for importance for these online learning components reveals that full-time business faculty member respondents in this study found the mean of email and email access between learners to be between very important and important. The mean for discussion boards and group email or chat was between important and unimportant but closer to important. The mean for live chats, instant message, and student home pages was closer to unimportant than important.

Examining the means for use for these online learning components, it was found that the mean for use for email was between very often and often. The means for use for email access between learners and discussion boards were between often and sometimes. The use of group email and chat was also between often and sometimes but much closer to sometimes. The means for live chats, instant message, and student home pages were between sometimes and rarely.

Best Practice #4: Help Learners Interact With Course Content and Learning Resources between Classroom Meetings

The fourth best practice identified in the literature was providing online learning tools that *help the individual learner interact directly with course content and with additional learning resources* between classroom meetings (Everhart, 2005; Frey, Faul,

& Yankelov, 2003; Farrior & Gallagher, 2000; Kerres & DeWitt, 2003). Online learning components that may support this practice include electronic library access, access to supplemental course content such as online bookmarks and links, blogs, online lecture notes, and student presentations posted online. Online exams and quizzes that are used as learning tools rather than high-stakes assessments may be helpful – such as online self-assessment quizzes that can be taken numerous times.

Table 31:
Means for Importance and Use of Online Learning Components Identified for Best Practice #4

Online learning component	Mean for Importance	Mean for Use
Online lecture notes	1.969	2.093
Electronic library access	2.196	2.577
Online bookmarks and links	2.384	2.804
Posting student presentations online	2.667	3.031
Blogs	2.959	3.344

Examining the means for importance for these online learning components, the mean for online lecture notes was between very important and important but closest to important. The means for electronic library access and online bookmarks and links were between important and unimportant but closer to important. The mean for posting student presentations online and blogs was between important and unimportant but closer to unimportant.

Examining the means for use for these online learning components, the mean for use for online lecture notes was important. The means for electronic library access and online bookmarks and email were between often and sometime but closer to sometime. The mean for posting student presentations online was sometime. The mean for blogs was between sometime and rarely but closer to sometime.

Best Practice #5: Strategically Design the Hybrid course to Meet the Needs of Disparate Learners

The fifth best practice identified in the literature was to *strategically design* the hybrid course to meet the needs of disparate learners (Farrior & Gallagher, 2000; Mortera-Gutierrez, 2006; Smith, 1999). To accomplish this, facilitators may post online the course syllabus and other course information documents available before the course begins so learners can evaluate the course topics. This best practice requires that facilitators know the course content and have insight about the students before the course begins – perhaps their age ranges, their understanding of the subject matter, whether the course is an entry level course or an advanced course in which learners may have a better understanding of basic concepts. They may have insights about cultural demographics of the group and select course content and online learning tools that they believe the learners in the class may better understand or use. No specific online learning components are associated with this best practice because it, by definition, is customization and adaptability based on the needs of the learners. By using concepts such as dual access to course materials and information, however, the facilitator may increase the likelihood of using delivery and communications methods that reach more diverse groups of learners. Perceptions and use of tools to accomplish this practice were not assessed in this study.

Best Practice #6: Support Learners Challenged to Use Online Learning Components

The final best practice identified in the literature is that hybrid course format instructors understand that their *students chose the face-to-face classroom format for a reason*. They understand that learners may have concerns with access or skill regarding online learning components and ensure dual access to materials, provide support to learners with questions about how to access or use the technology. Instructors may be

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alert for learners who appear to never use online learning components and privately offer

to provide assistance in using the online learning components. They also are flexible in

logistics, focusing on learning rather than personal preference (for example, they may

provide an assignment drop box and encourage its use but will also accept papers handed

in during the classroom meeting), and providing dual access to course content. Finally,

they do not require the use of online learning components that substantially affect a

student's grade (such as online exams) without providing technical support and

instruction; nor do they use assessments that may not be authentic, mistakenly assessing

the learner's technical skills rather than their knowledge of the content. Perceptions and

use of strategies to accomplish this practice were not assessed in this study.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Hybrid courses uniquely facilitate learning by strategically using the most
effective learning tools from both traditional and online classrooms. The hybrid format
meets the needs of learners who prefer face-to-face classroom interaction, yet removes
the time and space limitations of the classroom for ongoing and continuous learning
opportunities throughout a course. This study examined current best practices in using
online learning components in hybrid courses and the perceived importance and use of 19
online learning components by full-time business faculty in 10 Oklahoma public
universities.

Summary of Study Methodology

This descriptive comparative study began with an extensive review of the
literature to identify the best practices of online learning components in hybrid courses. A
list of full-time business faculty member respondents at public universities in Oklahoma
was developed using public information sources including the World Wide Web.
Approval for faculty participation was granted by 10 of the 12 public universities in
Oklahoma, and postcards and emails were sent to the approved faculty member
respondents requesting their participation in the study validated by a separate pilot study.
They were specifically asked to complete an online survey where their responses were
kept in a separate file from their permissions to participate, thus ensuring that responses
could not be linked to the names of the participants.

Using the survey, the study collected and analyzed data regarding the use and perceived importance of online learning components in hybrid courses by full-time business instructors at comprehensive and regional universities in Oklahoma. Specifically, the survey responses were calculated for means for importance and use of 19 identified online learning components, and cross tabulations and chi-squares were calculated for the importance and the use of each of the 19 identified online learning components by the demographic variables listed in the survey.

Finally, differences were identified between the perceived importance and the use of the online learning components as well as differences between best practices identified in the literature and current practices of the study's sample. Additionally, differences were identified between best practices identified from the literature and the perceived importance and use of common online learning components of business instructors at Oklahoma universities as indicated by the survey responses.

<center>Summary of Findings</center>

Best Practices of Effective Hybrid Courses

Current literature was reviewed to identify best practices in hybrid course design and presentation. The compelling advantage of hybrid courses is to facilitate interaction both within and outside of the traditional classroom to maximize learning. As Saba (2000) wrote, "traditional American pragmatism is evident in the search for best practices and the establishment of methodological benchmarks" (p. 3). The methodological benchmarks established in the hybrid course literature clearly favor a pragmatic combination of in-class interaction coupled with online components to maximize learning opportunities outside the classroom. A summary of the best practices of effective hybrid

courses discussed in chapter 4 appears in Table 32 below, including the best practice

identified from the literature, the rationale for its inclusion as a best practice in hybrid

courses, and sample online components of the best practice.

Table 32.
The Best Practices in Hybrid Courses

Best Practices (from Literature)	Rationale	Sample online components
1. Move administrative tasks online for continuous availability and private feedback and to free the limited classroom meeting time for learning opportunities.	• Support and respect learner privacy • Provide feedback that is individual and private • Improve student performance on assignments by reminding them of due dates and providing time flexibility for submitting assignments • Allow learners to plot individual progress compared to group norms	• Assignment drop boxes with instructions, comments, and attachments • Course calendars with due dates for assignments and assessments • Online grade books that record the individual learner's scores to date and statistics on their performance compared to their classroom peers.
2. Maximize classroom learning environments by helping students prepare in advance for classroom meetings	• Post syllabus and course documents online before the course begins to help learners prepare for the course, understand deliverables and expectations, and prepare for classroom sessions • To help prepare learners to interact with course content when the class meets, to develop their plan to navigate the course materials, assignments, and deadlines within their personal schedules • To maximize interaction time during classroom sessions • To help bridge learning and minimize interruptions to individual learning when student are unable to attend classroom meetings.	• Online syllabus posted • Instructor and student presentations posted online prior to class • Student presentations posted online for students who want to review the content more closely or who missed class.

3.	Provide online communications tools that provide timely interaction and exchange of information between classroom meetings	• To facilitate individual interaction for learners who are quiet due to personal learner reasons including culture, personality, disabilities, or shyness. • To facilitate interaction when course content is complex and learners could benefit from continued interaction between classroom meetings or when interaction within the classroom is limited due to course size or distance (such as compressed video courses). • To provide a sense of support and security for learners by removing the sense of isolation between classroom sessions that could otherwise cause distractions and stress that can interfere with learning. • To support learners working in teams to prepare assignments for upcoming classroom sessions.	• Email access between the learner and the facilitator as well as to other learners. • Group email and chat • Discussion boards (also called threaded discussions) • Instant message • Student home pages
4.	Help learners interact with course content and learning resources between classroom meetings.	• Providing online learning tools helps learners directly interact with course content, facilitates rote learning, and may help learners to complete assignments between classroom meetings. • To streamline the process for learners to complete assignments. • To facilitate rote learning.	• Online self-assessment quizzes that can be taken numerous times • Electronic library access • Access to supplemental course content, for example through online bookmarks and links • Blogs or reflective journals • Online lecture notes • Student presentations posted online

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5.	Strategically design the hybrid course to meet the needs of disparate learners	• This best practice requires that facilitators know the course content and have insight about the students before the course begins – perhaps their age ranges, their understanding of the subject matter, whether the course is an entry level course or an advanced course in which learners may have a better understanding of basic concepts. • They may have insights about cultural demographics of the group and select course content and online learning tools that they believe the learners in the class may better understand or use. • Provide dual access so that learners who cannot access online learning components may receive the materials and support during the classroom.	• Post online the course syllabus and other course information documents, available before the course begins so learners can evaluate the course topics. • No specific online learning components are associated with this best practice because it, by definition, is customization and adaptability based on the needs of the learners but, by using concepts such as dual access to course materials and information, the facilitator may increase the likelihood of using delivery and communications methods that reach more diverse groups of learners.
6.	Provide support for learners who are challenged to access or use online learning components	• Ensure dual access to materials – anything provided online is optional and supplemental, and the course content is available in the classroom (such as in a textbook) as well as online. • Be alert for learners who appear to never use online learning components and privately offer to provide assistance in using the online learning components. • Be flexible in course logistics and make decisions that support learning (for example, assignments may be accepted online but also during the classroom meeting).	• Assessments are conducted in the classroom where all learners are tested on their knowledge of the course content rather than their use of technology. For example, online quizzes may used as a learning tool but not for high-stakes assessments.

Perceived Importance of Online Learning Components in Hybrid Courses

Overall, the oldest and most commonly used online learning components (email, posting course documents online) were also perceived as the most important online learning components while newer online learning components (such as instant message and blogs) were considered to be least important when ranked by mean. This means that the perceived importance may be related to the faculty member's familiarity with the online learning component as well as reflect the online learning components' different functions.

The perceived importance of online learning components also increased with the faculty member's self-assessed technical skill level, with their hybrid course experience, and with the percentage of current courses that are hybrid. This finding indicates that, by offering additional technical training and support as well as opportunities to experience hybrid courses, faculty member respondents may be likely to integrate online learning components in their traditional classroom courses. Hargittai (2002) asserted that "time spent on the Web is also associated with level of Web skill," (¶ 40), and recommended providing additional teaching and learning opportunities for educators.

More online learning components are also generally perceived to be important by faculty member respondents who are under age 50. Conversely, faculty member respondents age 50 and older were more likely to consider more online learning components as *not applicable* in importance. This finding indicates that age may be a factor in an instructor's value and use of online learning components, diminishing both their perceptions and use of online learning components, a finding consistent with the literature (Millward, 2003; Norris, 2001; Zhao, 2007).

Finally, in general, more female faculty member respondents perceived more online learning components to be important than did their male counterparts. Additional research is required to determine the reasons for the finding in this study as well as validity in other academic and faculty populations.

Use of Online Learning Components in Hybrid Courses

Similar to the results for perceived importance, the oldest and most common online learning components (email, posting course documents online) were also reportedly used more often than newer online learning components (such as instant message and blogs) when ranked by mean. Educators interested in technologies that increase interaction among learners may wish to actively monitor new online communications tools and their relevance to learning opportunities. Specifically in designing hybrid courses, educators may at least partially evaluate the value of an online learning component within a hybrid course based on its support of learner interaction.

The reported use of online learning components also increased most with the faculty member's self-assessed technical skill level. Other demographic variables - such as whether the faculty member is currently teaching a hybrid course, with their hybrid course experience, and the percentage of current courses that are hybrid – also indicated an increase in reported use by to a lesser degree than technical skill level.

While gender did not appear to be related to use of online learning components in this study, the faculty member's age did. Faculty member respondents under age 50 were more likely to use more online learning components. Conversely, faculty member respondents age 50 and older were more likely to rate their use of online learning components as *not applicable*. Additional research is required to determine the reasons

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for the finding in this study as well as validity of this finding in other academic and faculty populations.

Comparison of Perceived Importance and Reported Use of Online Learning Components in Hybrid Courses

The technical skill level of the faculty member, followed by his or her age, was the dominant demographic variable for both the importance and use of online components in hybrid courses. As a faculty member's experience with hybrid courses increased, so did their use of online learning components. This is consistent with the results that show, according to the ranked means, that the oldest and most common online learning components that were primarily instructor-centered were perceived to be the most important and were reported to be the most frequently used while the newer technologies that were more interactive and student-centered were perceived to be the least important and reported to be the least used. Many online learning components began in support of online courses and are now being adapted and adopted for use in hybrid courses. It could be that the newer, more student-centered and interactive online learning components – such as live chats and blogs – are perceived to be important yet reported to be least used because of the opportunities for in-person interaction within the traditional classroom.

While age was an indicator of the importance and use of online learning components, tenure and rank were not which was surprising, indicating that age, rank, and tenure do not measure the same concept.

<u>Importance and Use of Online Learning Components Compared to Best Practices in Hybrid Courses</u>

Best practices in hybrid courses identified within the literature reflect a focus on the learner as the purpose for the effort. Some faculty member respondents who are using hybrid courses may be doing so because their philosophy toward teaching aligns with this perspective. Others may be adopting online learning components from online courses that they have found to help save time and organize work, perhaps reflecting a pragmatic approach toward teaching.

The best practices within hybrid courses also indicate that faculty member respondents may wish to provide more student-focused and student-interactive online learning tools (Hirsch, 2005; Krentler & Willis-Flurry, 2005; White & LeCornu, 2002;) such as student email access to one another, posting student presentations online, live chats, and instant message programs. Traditional college students report using these technologies in their personal and social lives, so perhaps using them in their academic lives may be a logical growth in the use of these technologies for learning (Jones, 2002).

<div align="center">Conclusions and Recommendations</div>

<u>The Moore Gray Hybrid Course Model</u>

All of the models found in the literature only described online courses. No hybrid course model was found in the literature that identified the principle components of a hybrid course and explained their relationship to one another. It was concluded that the principal aspects of effective practices in hybrid courses can be codified and illustrated within a model. As a result, the researcher developed the Moore Gray Hybrid Course Model, shown below in Figure 5. As discussed in the literature review and findings was the principle that an effective hybrid course model will center on the *learner* as the focus

of the course. Facilitating knowledge and understanding within the learner is the purpose of the effort and of the course, and the focus of the facilitator. Therefore, the learner was placed at the center of the Moore Gray Hybrid Course Model.

The model includes the principal elements with which the learner engages and interacts to facilitate learning during the hybrid course: the facilitator, the content, and other learners, and within themselves. These elements are connected and support one another through both classroom and online *interaction*, a basic principle upon which knowledge is generated and shared. As a result, with the learner placed at the center of the model, his or her interaction with the identified principal elements of the hybrid course: the facilitator, the content, other learners, and internally within themselves as they study and experience paradigm shifts in thinking and perspective. The facilitator is placed at the top of the model to illustrate his or her responsibility in designing and overseeing the hybrid course to facilitate learning and interaction for each learner.

Within the model, the learner interacts within the classroom with the facilitator, the content, with other learners, and internally within themselves. Outside of the traditional face-to-face classroom, learning and interaction continue in the online environment. The limitations of time and space within the traditional face-to-face classroom are removed so that learning and interaction continue 24 hours a day, 7 days a week, throughout the course. The double-ended arrows illustrate that interaction flows both ways between each identified component, both inside the traditional classroom and in the online environment.

As noted earlier in the literature review, a model was not found that identified the principle components in a hybrid course and illustrated their relationship with one

another. All graphic models found were for online courses, not hybrid courses. As a result, the Moore Gray Hybrid Model was developed to meet this need.

The literature did inform the Moore Gray Hybrid Model by identifying the principle components in hybrid format courses, identifying the critical role that fostering interaction plays in the learning phenomenon, and illustrating how online learning components are used to supplement and enhance the traditional face-to-face classroom meetings throughout a course. As a result, the Moore Gray Hybrid Model is a solution that meets this study's problem statement by identifying the components of a hybrid course model and their relationships to one another.

The hybrid model supports and enhances traditional classroom learning by using *online components* to increase learner interaction with course content, with other learners, with the facilitator, and with themselves regarding their progress. The hybrid model removes the time and place limitations of the traditional classroom, allowing ongoing and continuous interactions throughout the course.

Within a hybrid course, interaction takes place both within the classroom and outside of the classroom. Online tools provide the *means* with which this interaction and engagement can occur outside of the classroom. Further, the supplemental use of online tools can also support both individual and group learning opportunities.

The Moore Gray Hybrid Course Model

24/7 online interaction via online learning components

Facilitator

Classroom interaction

Content ↔ Classroom interaction ↔ Learner ↔ Classroom interaction ↔ Other learners

Classroom interaction

Self
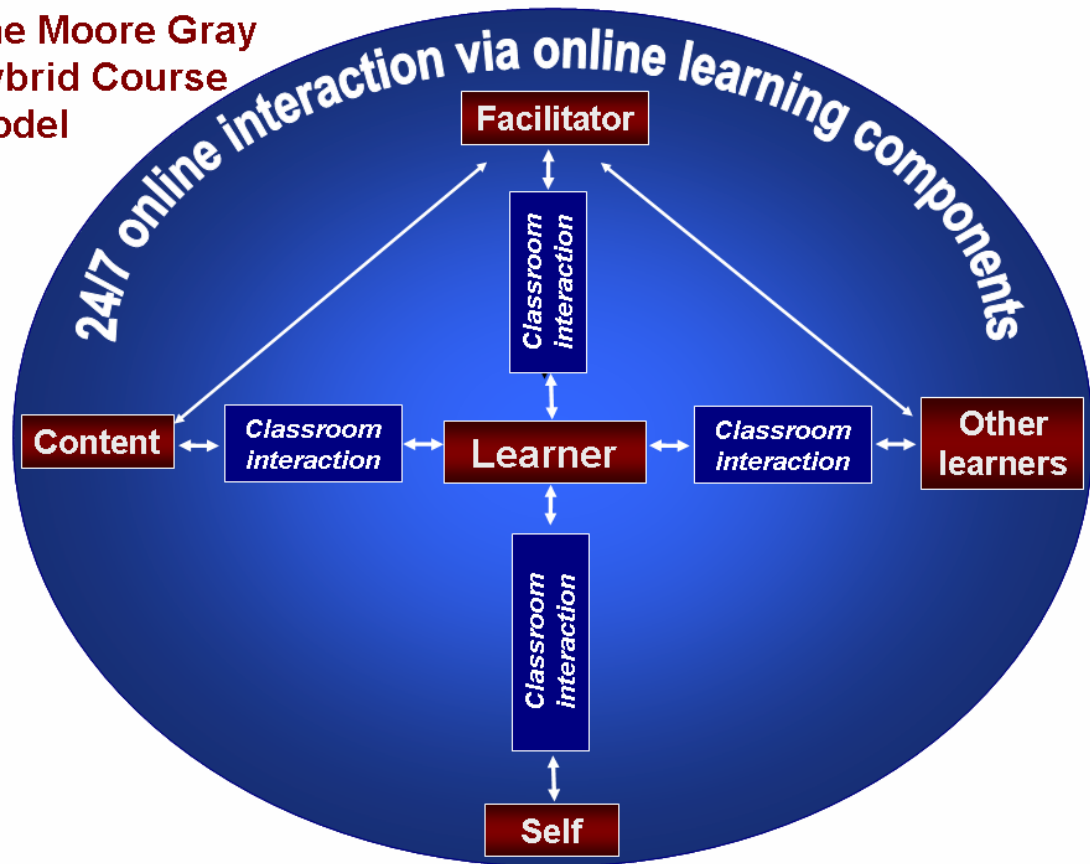
Figure 5: The Moore Gray Hybrid Course Model

When online learning components are introduced within a traditional classroom course, the classroom limitations of time and place are removed, allowing learners to increase their interactions 24/7 throughout the course. Dowling, Godfrey & Gyles (2003) claimed that an increase in the interaction of the learner with course content "can increase his or her engagement with the material and their commitment to learning" (p. 378, citing Alexander, 1999). While appealing and intuitive, this claim is at the present time an assumption, and further research is needed to determine if an increase in learners' commitment to learning actually improves their learning outcomes quantifiably.

The Moore Gray hybrid format model stresses learners' interactions with the course content, with the facilitator, with other learners, and within themselves to

maximize learning opportunities in both the face-to-face and online environments. The model is centered on the learner because the focus of learning rests with this person. To maximize learning, a learner must be an active participant and pursue learning (Knowles, 1973). In the classroom, the learner must have opportunities to interact with the instructor and with other students within a social environment. The learning content and experiences are designed to introduce concepts and create intrapersonal learning experiences. Outside the classroom, online learning components can support the individual learning effort to that learning is continuous from one class period to the next. Outside the classroom, via online learning components, learners can interact with the instructor, with other learners, with course materials, and with outside resources. In this way, online learning components encourage learners to engage with learning outside the classroom. These components can support and supplement classroom learning, creating an ongoing opportunity for continuous learning to occur.

The hybrid format model uniquely provides for both individual and group interaction, private and public interaction, and independent and collaborative learning. Lambert, Walker, Zimmerman, Cooper, Lambert, Gardner & Slack (1995) asserted that to create effective learning environments, the main focus, rather than being on the knowledge, teaching performance, and competence of the teacher, should be on fostering the engagement of the student with both the instructional content and with other students, creating opportunities inside and outside of the *classroom* to learn and to demonstrate or model what has been learned, and using assessment strategies that enable the growth and development of the learner in more personally meaningful land (pp. 17-18 and 73).

Holmberg (2003) supported interaction in learning at the institutional level and outlined how an educational institution can foster communication and interaction with learners that can facilitate their learning:

- The stronger the conversational characteristics [with an organization], the stronger the students'

    feelings of [a] personal relationship to the supporting organization;

- The stronger the students' feelings that the supporting organization is

    interested in making the learning matter personally relevant to them,

    the greater their personal involvement;

- The stronger the students' feelings of personal relationship to the

    supporting organization and of being personally involved with the

    learning matter, the stronger the motivation and the more effective

    the learning;

- The more independent and academically experienced the students, the less

    relevant the conversational characteristics. (p. 82)

Perhaps the greatest benefit of using a hybrid format that uses online learning components to supplement traditional classroom is the ability of its design to encourage and promote active interactivity and engage the learner outside of the classroom so learning is continuous until the course is complete.

Best Practices and Oklahoma Business Faculty Respondents

Broadly speaking, full-time business faculty member respondents in Oklahoma's comprehensive and regional public universities appear to value and use the most common online learning components such as email, posting course documents online, etc. They value and use least the online learning components that are based on newer, interactive technologies. The data from this study suggest that they may choose to use in an academic environment those components that are most familiar and comfortable rather than experiment with what may be most comfortable and used by learners outside an academic environment. The perceived value and use of online learning components is primarily related to the faculty member respondents' technical skill level and age.

It should also be noted that the choice of online learning components may be based on their relationship with the course content. Tools differ in nature – some are designed for communications, some are designed for calculations, and some are designed for assessment and administrative purposes. The content taught may influence the choice of online learning components used within the hybrid course.

Educators that are focused on the success of the learner may tend to value and use more online learning components that may help support the student's learning process. This requires a thoughtful analysis of the online learning components chosen for use in a hybrid course and an examination of the reasons for their use. The Moore Gray Hybrid Model suggests that hybrid course design components may be determined by focusing on the application of online learning components to best practices as well as the components' ability to facilitate interaction for the learner.

In best practices, faculty member respondents are careful to also provide support to learners who may have limited technical access or skill, ensuring that any online learning components used support rather than detract from the learning experience (Everhart, 2005; Farrior & Gallagher, 2000). As more faculty member respondents become familiar and comfortable with more online learning components, so may their students grow in technical access and skill level. By experimenting in the learning environment with the use of online components that have been shown to be commonly used and accepted in students' social and personal lives (Jones, 2002; Rainie, 2005), faculty member respondents may have an opportunity to reach more students by using the communications channels that students choose to use.

The best practices of hybrid courses and the Moore Gray Hybrid Model should be used to guide educators in developing hybrid courses to facilitate interaction and enhance learning opportunities. Both the identified best practices and the model were developed based on information from an extensive literature review, focus on the learner as the centerpiece of the hybrid course design, and stress the educator's role in effective course design.

Finally, full-time Oklahoma business faculty at comprehensive and regional universities experienced an increase in their perceived value and use of various online learning components after teaching their third hybrid format course. Further research is needed to determine if this is valid for other groups and underlying reasons that may support and further explain this finding.

Recommendations for Further Research

The online learning components that were perceived to be important but not used deserve further study. Future research should be conducted to reveal barriers within full-time business schools in comprehensive and regional public universities in Oklahoma that may limit the use of important online learning components, barriers that may include limitations such as time, training, fear, or a lack of resources.

Research is also needed to determine if similarities and differences between newer technologies and perceived importance and use by faculty compared to perceived importance and use by students. Could newer technologies such as blogs and live chat be under-valued by academics? Do students have the same perceptions, or is there a difference?

By delving deeper into the issue that age, tenure, and academic rank are not all indicators of the same concept, further research may reveal that business faculty could be more likely to have had a non-academic career before joining higher education faculty. If so, the question arises of whether business experience outside of academia may influence, business faculty member respondents' perceived importance and use of online learning components compared to faculty in other colleges such as social and behavioral sciences, healthcare, and the arts.

In conducting this study, information about using online learning components in hybrid courses was not found. As a result, additional studies should be conducted to determine if faculty are aware of best practices in hybrid courses and if training in these would impact perceived importance and use of online components.

Additional research regarding the outcomes of hybrid course formats that follow the identified best practices to determine if the use of these practices and the various online components do, indeed, positively result in improved learner attitudes and performance in hybrid courses.

Finally, the line of inquiry may be extended using statistical procedures including factor analysis and cluster analysis, further revealing relationships among the online learning components, their use, and perceived importance.

Final Conclusions

Hybrid courses are changing the way that traditional classroom courses are taught, engaging the learner within the learning process in unprecedented ways while supporting learning continuance between classroom meetings, facilitating the learning process and helping each learner to maximize personal learning potential (Douglis, 2002; Dowling, Godfrey & Gyles, 2003; Everhart, 2005; Smith, 2004; Van Eijl, Pilot, & De Voogd 2005). Educators interested in improving the learning process and focused on learner-centered practices, have the unique opportunity to experiment with the use of online learning components to supplement and enhance traditional classroom courses. Simultaneously, technology continues to rapidly advance and provide new online learning components that can be leveraged to support learning in unique ways.

In addition, the knowledge base of hybrid courses is still relatively small, based primarily on research documenting the effectiveness of web-based learning components for online courses. There is tremendous opportunity for research, for growth, and for rewarding experiences in designing and developing hybrid courses that deliver improved learning opportunities. With increased awareness and additional research, hybrid courses

may move from being "the single-greatest unrecognized trend in higher education today"

(Young, 2002) to a well known and more commonly used learning format in education.

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APPENDICES

Appendix A: Study survey instrument

Survey

Thank you for participating in this survey. Your individual answers are confidential and anonymous. Please answer the following questions.

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1. At what institution do you teach? (drop-down list)

Cameron University , East Central University, Langston University, Northeastern Oklahoma State University, Northwestern Oklahoma State University, Oklahoma Panhandle State University, Oklahoma State University, Rogers State University, Southeastern State University, University of Oklahoma

2. Do you teach full-time or part-time?

☐ full-time

☐ part-time

3. Do you have tenure?

☐ yes

☐ no

4. What is your academic rank as a teacher?

☐ instructor

☐ assistant professor

☐ associate professor

☐ professor

5. What is your gender?

☐ male

☐ female

4. What is your age?

☐ 20-29

☐ 30-39

☐ 40-49

☐ 50-59

☐ 60-69

5. What is your level of self-assessed technology skills?

☐ None (no experience with computers)

☐ Novice (know how to do basic functions, can use basic functions in a few software programs, have basic Internet skills such as opening and navigating *no frills* websites, can send and receive email, can use key-word search engines)

☐ Fairly skilled (know how to do most things I need, can function skillfully in a variety of software, can perform such Internet functions as plug-in
   download and install)

☐ Power user (can do advanced software and hardware tuning, can modify systems settings and install new hardware components, is a sophisticated
   user of a variety of high-end software, can create own web pages)

6. How many course experiences (as an instructor or as a student) have you had with technology-based learning including distance learning and online learning?

☐ 0-3 courses

☐ 4-7 courses

☐ 8 or more courses

7. What type of Internet access do you have?

☐ None

☐ Dialup

☐ High-speed Internet

8. Do you teach any courses that meet in the traditional classroom and also use online resources or any form of online learning activities or online communications?

☐ yes

☐ no

9. What percentage of courses do you teach that both meet in the traditional classroom and have an online component (called a hybrid format in this survey)?

☐ 0-25%\ of courses are hybrid formats

☐ 25-50% of courses are hybrid formats

☐ 50-75% of courses are hybrid formats

☐ 75-100% of courses are hybrid formats

---

10. *Hybrid courses are defined in this survey as traditional classroom courses that also include online learning components. Each of the following online learning components may be used in hybrid courses. How important as an effective learning component is the use of each of these terms to you?*

	Very important	Important	Unimportant	Very unimportant	Not applicable
Email	☐	☐	☐	☐	☐
Discussion boards	☐	☐	☐	☐	☐
Web logs (blogs) or reflective journals	☐	☐	☐	☐	☐
Post course documents	☐	☐	☐	☐	☐
Submit course assignments	☐	☐	☐	☐	☐

Email access between students	☐	☐	☐	☐	☐
Instructor presentations	☐	☐	☐	☐	☐
Online grade book	☐	☐	☐	☐	☐
Live chats	☐	☐	☐	☐	☐
Group chat or email	☐	☐	☐	☐	☐
Instant messenger programs	☐	☐	☐	☐	☐
Electronic library	☐	☐	☐	☐	☐
Online lecture notes	☐	☐	☐	☐	☐
Online exams or quizzes	☐	☐	☐	☐	☐
Calendar	☐	☐	☐	☐	☐
Calendar/due date reminders	☐	☐	☐	☐	☐
Online bookmarks or links	☐	☐	☐	☐	☐
Student home pages	☐	☐	☐	☐	☐
Student presentations	☐	☐	☐	☐	☐

11. *How frequently do you use or include each of the following online activities or components in hybrid classes?*

	Very often	Often	Sometimes	Rarely	Not applicable
Email	☐	☐	☐	☐	☐
Discussion boards	☐	☐	☐	☐	☐
Web logs (blogs) or reflective journals	☐	☐	☐	☐	☐

Post course documents	☐	☐	☐	☐	☐
Submit course assignments	☐	☐	☐	☐	☐
Email access between students	☐	☐	☐	☐	☐
Instructor presentations	☐	☐	☐	☐	☐
Online grade book	☐	☐	☐	☐	☐
Live chats	☐	☐	☐	☐	☐
Group chat or email	☐	☐	☐	☐	☐
Instant messenger programs	☐	☐	☐	☐	☐
Electronic library	☐	☐	☐	☐	☐
Online lecture notes	☐	☐	☐	☐	☐
Online exams or quizzes	☐	☐	☐	☐	☐
Calendar	☐	☐	☐	☐	☐
Calendar/due date reminders	☐	☐	☐	☐	☐
Online bookmarks or links	☐	☐	☐	☐	☐
Student home pages	☐	☐	☐	☐	☐
Student presentations	☐	☐	☐	☐	☐

Submit Form   Reset Form

Appendix B: 24 Key Benchmarks for Quality in Internet-based education

The following is a direct quote of the 24 Key Benchmarks for Quality in Internet-based education (Phipps and Merisotis, 2000, p. 2-3).

Institutional Support Benchmarks

- A documented technology plan that includes electronic security measures (i.e., password protection, encryption, back-up systems) is in place and operational to ensure both quality standards and the integrity and validity of information.

- The reliability of the technology delivery system is as failsafe as possible.

- A centralized system provides support for building and maintaining the distance education infrastructure.

Course Development Benchmarks

- Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes—not the availability of existing technology—determine the technology being used to deliver course content.

- Instructional materials are reviewed periodically to ensure they meet program standards.

- Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

Teaching/Learning Benchmarks

- Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.

- Feedback to student assignments and questions is constructive and provided in a timely manner.

- Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Course Structure Benchmarks

- Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.

- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.

- Students have access to sufficient library resources that may include a *virtual library* accessible through the World Wide Web.

- Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

Student Support Benchmarks

- Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

- Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

- Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

- Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Faculty Support Benchmarks

- Technical assistance in course development is available to faculty, who are encouraged to use it.

- Faculty member respondents are assisted in the transition from classroom teaching to online instruction and are assessed during the process.

- Instructor training and assistance, including peer mentoring, continues through the progression of the online course.

- Faculty member respondents are provided with written resources to deal with issues arising from student use of electronically-accessed data.

Evaluation and Assessment Benchmarks

- The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.

- Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.

Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.

VITA

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