Special Issue: Blended Learning (Part 2)

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Introduction to the Special Issue on Blended Learning
Part 2: Blended Learning Programs

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This is the second part of the Journal of the Research Center for Educational Technology's special issue on blended learning which we are defining here as the integration of face-to-face and online instruction in a planned and pedagogically sound manner. In his introductory article to the entire two-part special issue, Blending with Purpose: The Multimodal Model, Anthony Picciano writes, "Of all the opportunities for using online technology, blended learning may be one of the more important pedagogical approaches that can help in this regard, particularly for mainstream higher education."

In the first part of the special issue, the articles dealt mostly with blended learning at the class level. In this second part of the special issue, the articles are concerned with blended learning at the program level. It is also international in nature, including articles about blended programs in Ireland and Pakistan, as well as programs from West Virginia, Michigan and Illinois. The variety of blends and lessons learned from these program implementations should be of interest to those considering blended delivery as well as blended learning veterans. In the final article in this second part, researchers from Marquette University address a vital part of any blended program – faculty development designed to get instructors ready to teach in a blended mode.

These articles are described individually below:

In Finding the Recipe for the Best Blend: The Evolution and Assessment of a Blended Master's Degree Program**,** Camille Ramsey, Andrew Hawkins, Lynn Housner, Robert Wiegand, and Sean Bulger describe the development and assessment of a blended masters degree program in physical education. Assessment of the program was conducted primarily through an anonymous online survey of members of five graduating classes. Additionally, an analysis of standards-based exit portfolios completed by students in one recently graduating class and an analysis from an independent, external evaluator were utilized in the assessment. Results indicated that the graduates were meeting the relevant standards and associated outcomes, and that the blended program was largely responsible for their performance. Graduates were highly positive about both face-to-face and online portions of the program and clearly resonated with the blended approach. Discussion includes observations about curriculum changes made since the program's inception, the enhancement of the learning community through the blended approach, and technological issues that need to be addressed in order to maximize the effectiveness of a blended program.

This combination of student need, technological feasibility, and a professional bias toward face-to-face instruction provides the perfect environment for a blended programs that combine the best features of face-to-face, videoconferencing, and online instruction. In Increasing Access to Graduate Education: A Blended MSW Program, Paul Freddolino, Christina Blaschke, and Sally Rypkema discuss the underlying assumptions and primary components of the blended program model adopted for Michigan State University's clinical Master of Social Work (MSW) Program. The MSW Program was developed to respond to the serious access issues facing students in areas of the state where accredited master's programs were either too far away or did not provide needed flexibility in course loads and/or scheduling. At the time this article was written the first MSW cohort was in the final year of its three year program. Results from preliminary evaluation of the program show good results for retention and access.

In Blended Program Development: Applying the Quality Matters and Community of Inquiry Frameworks to Ensure High Quality Design and Implementation, Len Bogle, Vickie Cook, Scott Day, and Karen Swan describes how two theoretical frameworks, Quality Matters (QM) and the Community of Inquiry (CoI) framework, were used to help guide the design and implementation of a blended masters degree program in educational leadership (EDL) at the University of Illinois Springfield. The EDL program was moved from solely face-to-face delivery to a program in which fifty percent of all courses were delivered online to make it easier for working professionals to complete their degrees. As the QM framework is a design model and the CoI framework is a process model of online and blended learning, the former was used to guide the redesign of EDL courses, while the latter was used to inform teaching and learning during program implementation. The use of the two frameworks helped make the changeover successful for all involved.

Comparing Online Learning with Blended Learning in a Teacher Training Program , by Susan Kirwin, Julie Swan, and Nicholas Breakwell, describes the establishment and delivery of a blended learning higher diploma for primary school teachers at Hibernia College in Ireland. This innovative course represents a major departure from the traditional mode of delivery of teacher training in Ireland. The online elements of courses are delivered through a combination of downloadable lectures and resources, synchronous online tutorials, forums, and blogs. However, as teaching is so practical by nature, it was felt that a face-to-face element was essential to the success and quality of the program. To facilitate this, the College collaborated with the Department of Education & Science's existing network of regional education centers, ensuring that students could keep travel (and travel expenses) to a minimum. This article also reports on a comparison of the two primary modes of course delivery – solely online and blended – in terms of clarity of goals, convenience and workload, student support, benefit as a teacher, and final examination grades. Its authors conclude that both modes of delivery are highly appropriate for the training of primary school teachers.

In Pakistan, tertiary education is generally restricted to those who can afford it in urban areas. An ICT equipped blended learning initiative can, however, deliver tertiary education with high levels of interaction to females and underprivileged ethnic groups living in rural and remote areas. In Access Strategy for Blended E-learning: An AIOU Case Study, Nazir Sangi describes a such a plan being initiated at Allama Iqbal Open University (AIOU). Allama Iqbal Open University (AIOU) initiated e-learning in Pakistan about a decade ago, and the program has been continuously evaluated. Owing to its success and cost effectiveness, AIOU planned a major organizational change to incorporate ICT-based blended learning. These ICT-based access models for blended learning are described with multiple accessibility options to provide content delivery over TV, radio, Internet, and video conference-based communications. Dr. Sangi also reports on progress to date in implementing the model.

It is not always easy to get faculty to adopt blended approaches to courses delivery, and it is definitely not easy for faculty to teach blended courses well without some sort of training. In Using Cognitive Apprenticeship to Provide Faculty Development in the Use of Blended Learning, Carrianne Hayslett, Ed O'Sullivan, Heidi Schweizer, and Janna Pochert describe a somewhat unorthodox but quite successful approach to faculty development based on a cognitive apprentice ship model. At Marquette University, faculty interested in teaching in a blended format participated in a two semester course which was itself blended. The focus of the course was the design of a blended module that participating faculty would teach during the second semester in one of their own courses, supported through the courses asynchronous discussion board by the course developers and their peers. The faculty development thus followed the modeling, coaching, and fading framework of cognitive apprenticeship. This article also presents research examining faculty participation in the course to provide guidance for others attempting to add blended instruction to the teaching repertoire of faculty.

Finding the Recipe for the Best Blend: The Evolution and Assessment of a Blended Master's Degree Program

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Abstract

A comprehensive analysis was conducted of West Virginia University's Physical Education Teacher Education Master of Science program. This program is a blended learning hybrid model, which combines courses taught on site with courses taught through web-based distance education. The purpose of the study was to describe and assess the program. A description of the program is provided based on interviews conducted with the faculty. Assessment of the program was conducted primarily through an anonymous online survey of members of five graduating classes. Additionally, an analysis of standards-based exit portfolios completed by students in one recently graduating class and an analysis from an independent, external evaluator were utilized in the assessment. Results indicated that the graduates were meeting the relevant standards and associated outcomes, and that the blended program was largely responsible for their performance. In addition, two standards dealing with systematic inquiry were deemed the weakest of the program's effects, and program modifications were undertaken to respond to those weaknesses. Graduates were highly positive about both face-to-face and online portions of the program and clearly resonated with the blended approach. Discussion includes observations about curriculum changes made since the program's inception, the enhancement of the learning community through the blended approach, and technological issues that need to be addressed in order to maximize the effectiveness of a blended program.

Introduction

Distance education involves instruction that takes place when teachers and students are geographically separated. Distance education does not rely on the face-to-face communication typical of traditional educational delivery systems. Instead, it delivers learning experiences in an environment that is not face-to-face, nor is the student on-site. Conceivably, distance educators can be located anywhere, and so may their students.

Historically, distance education began over 300 years ago (Holmberg, 2005) and has always relied on some form of technological delivery system. For example, in the early 1700s, advertisements were printed

in newspapers to recruit students to enroll in lessons. This was the first form of distance education technology used to facilitate communication between instructor and student. Teachers posted homework assignments in newspapers and students responded accordingly. The United States Postal Service also played a role in advancing distance education in higher education as early as the 19th century (Moore & Kearsley, 2005). Teachers would mail instructional materials and assignments to students who would then use the mail system to return completed assignments. Later instructors would mail audio books and VHS tapes to students who would watch and/or listen to lectures and assignments and mail back their responses.

Early distance education communication strategies such as newspapers, postal service, audio books, and VHS tapes were slow and time-bound. Although this type of communication, referred to as asynchronous, is flexible and permits the learner to respond whenever it is convenient in a self-paced manner, it can be inefficient, with response times and instructor feedback taking days or weeks.

Contemporary distance learning has been changed dramatically by technological advancements such as the personal computer and the development of the Internet. Faster and more reliable channels of communication via the Internet have contributed to improved student-teacher communication. Current technology has enabled the transfer of information without delay, using synchronous strategies such as "live" transmissions of audio or video, chat rooms with text and voice discussions, iPods, and virtual environments that provide closer teacher-student interactivity. These types of synchronous delivery systems allow the instructor to provide more immediate feedback, motivate students to progress through the course on schedule, and if done properly, can assist in building a sense of community among students. Of course, there have been advances in asynchronous strategies as well with the addition of problem-solving vignettes, electronic books, text-to-speech software, blogging, and web-based instruction, to mention a few (Jefferies & Maeder, 2009; Rhode, 2009; Rughooputh & Santally, 2009). Advances in technology and improvements in communication strategies have permitted distance education to become more effective and convenient, thus increasing its popularity (Gold & Maitland, 1999).

Internet or web-based courses have certain advantages over courses taught in the traditional face-to-face classroom format. The primary benefit is that students are able to complete coursework at a time and in a place that is convenient for them. Students enrolled in web-based courses can complete coursework wherever Internet access is available (at their place of employment, home, the library, an Internet cafÉ) and during any period of the day. Flexibility is the primary advantage, as students can have a variety of responsibilities such as full-time employment, stay-at-home parenting, or owning a business, and still pursue an education. Because of its flexibility, distance education has increased dramatically at elementary and secondary levels, as well as in higher education (National Center for Education Statistics, 2005). Recent estimates are that 2.35 million higher education students enrolled in online courses in fall 2004 (Allen & Seaman, 2004) and most institutions of higher education include distance education as a strategic element in their plans for delivery of courses and programs (Kim & Bonk, 2006). Universities and colleges have been quick to realize that students who cannot attend traditional face-to-face classes can be recruited into distance education programs. Additionally, the physical space requirements and costs necessary to educate distance learning students can be greatly reduced compared to traditional course delivery.

In spite of the technological advances, growth, and popularity of web-based distance education, concerns have been expressed regarding this approach. For example, since students and teachers are not physically in the same location while instruction is occurring, students may be denied valuable and immediate teacher access (El Mansour & Mupinga, 2007). Lack of student accessibility to instructors is a primary disadvantage when web-based learning is the sole instructional approach. The physical presence and immediate accessibility of the instructor before, during, and after class allows for answering questions, responding to non-verbal cues, and taking advantage of teachable moments that are reflected in spontaneous and responsive teaching. Even when synchronous delivery is used to augment asynchronous approaches there can be a problem with students gaining access to instructors, particularly if students are from different time zones. Just within the continental United States alone students can be

separated by three hours, and increased globalization has increased the difficulties with synchronous delivery. Traditionally, education has taken place in the classroom setting, and that has occurred for a reason. Much is to be gained by physically being in the same room with an instructor, listening to a lecture, engaging in educational banter and debate, and participating in lesson activities with peers. Substantial learning can indeed be achieved in the traditional face-to-face classroom environment.

Concerns have also been expressed about the retention rates for web-based learning as compared to traditional face-to-face learning. Research supports these concerns as data indicate higher drop-out rates for distance learning than for on-campus courses (Kember, 1995; Verduin & Clark, 1991). Attrition rates are higher for both distance learning courses and programs (Chyung, 2001; Fenner, 1998). A number of reasons for lower retention rates have been hypothesized. Lack of peer support and peer interaction have been raised as concerns when courses are taken in a web-based format (Verkoost, Meijerink, Lintsent, & Veen, 2008). D istance learning can presumably lead to feelings of isolation and a lack of a feeling of community (Song, Singleton, Hill, & Hwo Koh, 2004; Vonderwell, 2003; Woods, 2002).

Students may also encounter technological difficulties in web-based courses, which may contribute to frustrations leading to attrition. Power outages, Internet connection difficulties, and course web page glitches can cause frustration and interrupt student progress. Students also need to be confident in the learning processes themselves, and technological difficulties undermine that confidence (Chacon-Duque, 1987). Of course, advances in technology require instructors to assume new roles and poses challenges that require ongoing training and support (Lee & Hirumi, 2004).

A final concern is student assessment. Confidence in accurate and reliable assessment of the learner in web-based environments can be problematic. Although an array of projects, simulations, quizzes, tests, and written reports can be assigned and managed in web-based environments, a question regarding the reliability and validity of the assessment remains a concern. Are the assigned assessments being completed by the students themselves or have they received assistance? How does one proctor online exams, assignments, etc.? Also, informal methods of assessment that would be employed in a classroom setting such as direct observation, class discussion, and oral questioning would be less reliable and even problematic in web-based learning environments if you cannot be certain who is responding even with synchronous technology.

In an effort to maximize the strengths and minimize the weaknesses of web-based and face-to-face approaches to teaching, the concept of blended learning was developed (Verkoost, Meijerink, Lintsent, & Veen, 2008). Blended learning combines elements of face-to-face instruction with web-based delivery using both synchronous and asynchronous technologies. It employs a mix of pedagogical methods, using a combination of different learning and communication strategies that is designed to take advantage of available technology for web-based delivery of content while at the same time providing face-to-face instruction. A primary purpose of the blended approach is to alleviate many of the feelings of isolation or lack of community that students may have, and promote traditional student-teacher relationships that evolve during face-to-face instruction (Verkoost, Meijerink, Lintsent, & Veen, 2008; Woods, Baker, & Hopper, 2004). Blended learning includes time spent in the classroom, face-to-face with the instructor. The lectures, educational debates and lesson activities that are arguably crucial for student learning occur at regular intervals during the blended learning process. This allows for student accessibility to the teacher that would not occur when distance education is the sole approach.

Blended learning also permits more reliable assessment strategies to be utilized by the instructor (Woods, Baker, & Hopper, 2004) as well as direct observation, class discussions, and oral questioning in the classroom. Meeting students face-to-face in a regular classroom setting during a blended learning course or program also enables the instructor to "personally" have students reestablish personal and academic connections with classmates, resolve technological issues that have arisen, clarify issues regarding assignments and grading, and in general reduce student frustrations. One can reasonably argue that these aspects of blended learning would contribute to the retention of students. In summary, proponents of blended learning posit that the hybrid structure allows for more coherent pedagogical, technical, and

organizational methods within the entire learning experience for the students (El Mansour & Mupinga, 2007).

Blended learning has been used for activities, courses, programs, and institutions (Graham, 2006). Most often, course material is posted for students to complete online and subsequent class meetings are held for professors and students to discuss the work that was completed via the Internet. Blended learning formats will vary, as the instructor meets with the students face-to-face a percentage of the course time, and the rest of the time is spent utilizing web-based instruction to supplement the course. Of course, synchronous technology may also be used in the web-based portion of the course so that students and the instructor can interact in real time.

The conceptual framework of blended learning has also been used to create blended learning programs. A blended learning program combines distance education and face-to-face learning in an entire program of study. The premise of the program is that students will spend a portion of the program completing coursework in a web-based format and another portion in a traditional face-to-face format. The "hybrid" or mixed delivery approach of a blended learning program allows instructors to combine the advantages of online class learning with the benefits of F2F interaction (Edling, 2000). Such blended learning programs originated to provide students with what distance learning courses have provided students in the past: flexibility.

Although the rationale for blended learning approaches appears intuitively appealing, questions remain about the efficacy of the model. In a recent study, Strickland and Domachowski (in press) compared traditional face-to-face content delivery with a blended approach. They found no differences in student achievement or satisfaction levels. However, they also pointed out that the blended approach is at least as effective as a traditional classroom environment and that there is additional promise for blended learning in the future .

In another recent study, Verkroost et al. (2008) argue that there are at least four continuums of dimensions that one must consider when designing blended learning: a) structured or unstructured, b) individual or group, c) face-to-face or distance, and d) teacher-directed or student-directed. They found that the effectiveness of the balance within each dimension depended on a variety of student variables such as student level of self-regulation and subject matter knowledge (structure/unstructured), the students' experience with group work, the place in the curriculum, the value of group work (individual/group), working conditions and travel distance (face-to-face/distance), and student responsibility (teacher/student-directed). Thus, although blended learning represents a promising balance between distance learning and traditional face-to-face learning, it is clearly a complex instructional approach and more research is needed to delineate the variables associated with its effectiveness.

The West Virginia University (WVU) Blended Program

Initial impetus for the WVU Blended Master's Degree (BMD) program was pragmatic and represented an administrative initiative to substitute a distance education program for a long-standing resident program. A significant drop in the enrollment of the program and the availability of funds through a competitive WVU Distance Education Grant were significant factors driving the initiative.

Although the initial impetus for the BMD program was pragmatic, the physical education teacher education (PETE) faculty soon found themselves confronted with theoretical and pedagogical issues that accompany the transformation of a resident program to Internet and web-based delivery. Goals and outcomes for learners in the PETE program included: 1) providing program participants with comprehensive understanding and knowledge surrounding the disciplines of physical education teacher education; 2) educating, training, and producing highly competent graduates to function within PETE professions as researchers, grant writers, teachers, and effective and reflective practitioners; and 3) producing scholars and professionals who will make significant contributions to the advancement of

empirically-based knowledge in PETE. Utilizing these goals from the onset of programmatic formation, the PETE BMD program evolved.

Program Description

Recognizing the obvious obstacles that full-time teachers and coaches have to negotiate in order to pursue advanced degrees, the College of Physical Activity and Sports Sciences at WVU began offering the blended Master's of Science (M.S.) degree in PETE in the summer of 2002. The M.S. degree program is a 36-credit-hour program with both on-site (classroom based) and distance education components (Web-CT, Web Vista, and Blackboard at various points in its history). The WVU PETE faculty determined that there were specific courses that would be delivered most effectively on campus, and that other courses would better lend themselves to a distance learning approach. A hybrid model with online and resident courses was thus adopted.

Given that the program was designed for teachers, it was obvious that the summer was ideally suited for the resident courses. The model that evolved was a two-year program comprised of resident courses offered during three summer sessions. Each summer session consists of two intensive weeks during which two courses are completed, totaling six credit hours per summer. During the two school years, web-based courses are delivered. In sum, program completion is designed to take two academic years and three summers, with 6 of the 12 three-credit courses taught in residence and the other six taught online. The hybrid program structure allows teachers and coaches who could not have enrolled in an exclusively face-to-face program to enroll in our blended learning program. It is important to note here that the *courses* themselves are not blended. Rather, the blended Master's degree is a blended *program* comprised of both resident and online courses.

The PETE faculty realized the challenges that a blended program of study presented. One of the more obvious challenges relates to the loss of face-to-face contact, which means that instructors must pay careful attention to personalizing the online version as well as put careful consideration into what courses are taught online versus what courses are taught in residence (Woods et al., 2004). The faculty wanted their students to feel a strong affiliation with the program and with each other, and the WVU PETE faculty felt that if students had a sense of community, they would provide emotional, social, and academic support for each other as they navigated the program.

Thus, collaborating as members of a learning community and contributing to the growth of other educators were central objectives of the BMD program. Effective online learning instructors have come to realize that building a sense of community is necessary for successful learning outcomes (Gunawardena, 1994; Gunawardena & Zittlle, 1997; McLellan, 1999; Wegerif, 1998; Wiesenberg & Hutton, 1996). A learning community engages participants in meaningful, interactive, and collaborative learning experiences in both formal (i.e., courses, workshops) and informal (i.e., meals, recreation) settings. As participants work toward program objectives, they are enrolled in cohorts that progress through the program together, course by course. The initial cohort began the BMD program in the summer of 2002 with an on-campus, face-to-face session. Participants and faculty were thrust together in two intensive weeks of academic challenges and social interactions in order to facilitate the building of a community of learners. Teachers from about twenty states and Canada, as well as a number of English-speaking teachers who were serving in international contexts (Europe, Japan, the Middle East, and Southeast Asia) have participated in the five cohorts who have completed the program so far. The geographical range of the students has had implications for online delivery, preventing the use of synchronous communication due to the wide variance in time zones. The program has thus opted for asynchronous strategies.

The PETE faculty viewed the BMD program as an opportunity to ultimately improve the quality of physical education programming available to children from across the United States, and indeed, the globe. This was done by creating courses that offered current, research-based concepts and clinical projects for teachers that would enable them to design, implement, and assess standards-based curricula and

instruction in their own schools (NASPE, 2008). Therefore, all courses were designed with building-quality, standards-based K-12 programs in mind. A variety of clinical experiences that were performed both independently and collaboratively were integrated into the courses.

Table 1 includes a description of the courses taught in the blended learning Master's program. Courses are listed chronologically and are designated by session, identified as either being held on campus or online, and the relevant instructional characteristics are listed. The reader will note that the majority of clinical activities which might involve the teachers' own students are found in the online courses.

Table 1: Blended Masters Degree Program Description .

Course / Delivery / Session	Course Goals	Learning Activities	Assessment Strategies
PET 668-Motor Development On Campus Summer I	-Examination of developmental motor skill acquisition - Comprehension of motor skill of the maturing individual	- Daily reading responses - Lecture responses - Group Project	-Daily quizzes - Evaluation of reading responses, lecture responses, and group project
PET 665-Curriculum in Physical Education On Campus Summer I	-Comprehension of factors affecting curriculum development	-Posted readings -Discussion board postings -Written reports	-Evaluation of written reports -Individual project evaluating the curriculum of a K-12 physical education program
PET 615-Research Methods Online Fall I	-Usage of quantitative and qualitative assessment strategies -Construction of comprehensive programmatic assessment plans	-Pre-test -Literature search -Data analysis project -Research methods project -Teaching self-evaluation report	-Evaluation of learning activities
PET 683-Principles of Effective Instruction Online Spring IA	-Formation of instructional systems and instructional tasks -Strategic lesson planning -Management of instructional and student task systems -Provide programmatic extensions outside of classes	-Online lectures -Discussion board postings -Posted readings	-Tests -Participation in on-line discussions -Lecture responses -Clinical assignments -Video analysis
PET 680-Applied Motor Learning Online Spring IB	-Creation of tasks based on motor learning and psychological principles -Critical thinking regarding skill acquisition, fitness, physical activity, and interpersonal relationships	-Posted readings -Task analysis -Creation of health-related fitness programs -Creation of task sheets -Interviews	-Evaluation of all learning activities -Final exam

Course / Delivery / Session	Course Goals	Learning Activities	Assessment Strategies
PET 683-Operant Principles On Campus Summer II	-Describe key concepts in applied behavior analysis -Describe relevant applications for use of positive reinforcement, negative reinforcement -Describe applications for use of scheduled reinforcement, punishment, penalty, stimulus control procedures, chaining, shaping -Verbally respond to behavior analysis issues and principles	-Readings from text -Study guide completion -Lectures -Class discussion	-Tests -Group contingency paper -Group contingency class presentation -Oral responses to lectures
PET 680-Fitness Education Theory On Campus Summer II	-Infusion of health-related fitness throughout a comprehensive physical education curriculum	-Completion of project involving measurement, data entry, analysis, and reporting -Assigned readings -Acquisition of passing score on Physical Best Health-Fitness Specialist Examination -Peer teaching episode	-Evaluation of learning activities
PET 671-Childhood & Adolescent Motor Development Online Fall II	-Evaluate the interactive role physical education has with the childhood and adolescent developmental process	-Posted readings -Discussion board postings -Group motor development projects (2)	-Quizzes -Discussion board postings -Evaluation of group projects
PET 685-Physical Education Supervision Online Spring IIA	-Implementation of effective supervision techniques -Possession of current strategies for supervision in clinical settings	-Posted readings -Discussion board postings -Lecture responses	-Quizzes -Generation of a 4 lesson observation supervision report
PET 681-Motor Development for Special Populations Online Spring IIB	-Conduct inquiry into special populations -Acquire professional knowledge and practice as it relates to motor development	-Posted readings -Study guides -Discussion board postings	-Quizzes -Scenario responses -Discussion board postings

Course / Delivery / Session	Course Goals	Learning Activities	Assessment Strategies
PET 605-Professional Issues On Campus Summer III	-Assume leadership role within school, district, community, and state -Membership in professional organizations, attendance at conferences, innovative programming, and national board certification	-Written abstract -Group presentation -Participation in focus group -Completion of one professional development plan	-Evaluation of learning activities
PET 686-Master Teacher Practicum On Campus Summer III	-Identify specific plans for continued professional development based upon reflective assessments of own teaching	-Completion of research portfolio that contains evidence of application of knowledge obtained in M.S. program	-Completion of research portfolio that contains evidence of application of knowledge obtained in M.S. program

Although it appears that the goals for the program are being met, a formal assessment of the program had not yet been conducted. Therefore, the purpose of this study was to describe and assess the West Virginia University Blended Master's of Science program in physical education teacher education.

Methods

Participants

Program graduates (N=70) were all teachers in either K-12 public schools or similar educational contexts. They were teaching in at least 16 different states in the U.S. and the program has had participants from 7 foreign countries (though most were teaching in English speaking international or Department of Defense schools on U.S. bases abroad). Of those responding to the survey (N=30) about 80% were teaching physical education at the time of the survey, though some of those were also teaching in other subject areas. Approximately 20% were teaching exclusively in other subject areas (math, English, health education, etc.). About 50% of the respondents were teaching at the elementary level, while the remaining were split between middle and high school settings.

Approximately 55% of respondents were female and 45% were male. Fifty percent were in the age range of 27-32 at the time of the survey. Considering those surveyed represented five graduating cohorts, the majority of participants were likely in the 25-30 age range while actually in the program. About 10% of respondents were age 26 or below at the time of the survey, while another 34% ranged in age from 33-44. Forty-three percent had between 4 and 7 years of teaching experience, indicating that a significant portion of participants were pursuing the masters' degree at a time very common for practicing teachers who possessed only a baccalaureate degree. Thirteen percent had less than 4 years of teaching experience, and a declining percentage of participants had more than 7 years of experience (17% with 8-11 years, 13% with 12-15 years, and 10% 16-19 years). Approximately 82% either were presently, or had been, coaches.

Data Collection and Analysis

In order to assess effectiveness of the program, the following data were collected.

Survey. All program graduates were asked to fill out a survey on the strengths and weaknesses of the BMD program and courses, the knowledge, skills, and dispositions that they acquired in the program, and how the BMD program contributed to their achievement of advanced teaching standards and application of standards to their teaching. The online survey that was used to conduct the primary assessment of the

program was the most practical vehicle available to collect responses from as many past program participants as possible. The survey was formatted on Survey Monkey.

All 70 graduates of the program were e-mailed, introduced to the study, and invited to participate. They were assured of confidentiality regarding the survey. The e-mail addresses that were used for the study were on file, as these had been given to the university when the graduates were students. Fifteen of the e-mail addresses were found to be invalid after the initial e-mail. Remaining were 55 possible participants for the study. Of those, 30 chose to participate in the study. The response rate was thus 55%. Survey respondents over-represented the most recent cohorts (83% were from the three most recent cohorts). However, faculty are unaware of significant demographic differences between early and later cohorts. The oversampling of later cohorts was likely a function of the probability of invalid email addresses being higher for earlier cohorts, or that interest in completing the survey was higher among graduates for whom the program was more recent in their experience. Faculty experience with each cohort confirms that the demographics reported for the respondents seem applicable to all graduates (age, subject and level of teaching, years of experience, gender, etc.).

The survey for this study was designed collaboratively by the PETE faculty and a doctoral student. The final draft version of the survey was very extensive, covering demographic information, the graduates' own curriculum characteristics for their students, perceptions of their accomplishments of professional standards (NASPE, 2008), WVU's influence in their achievement, as well as their own participation in professional and community activities relevant to the Master's program. Rough drafts were circulated among the faculty for revisions before it was deemed ready for dispersal. The participants were given 16 days to fill out the survey. Three follow-up e-mails were sent out reminding them of the survey's availability. Not all sections of the survey were used to inform this article. Only those sections which were relevant to the program's effectiveness in enabling graduates to meet professional standards and the degree to which specific courses contributed to their success were examined for this study.

The final version of the survey included close-ended, multiple-response, and open-ended questions. Participants responded to the close-ended questions using four-point Likert scales. There were 30 such questions which related to the application of professional standards, each of which involved two responses: one for the degree to which teachers applied the standard and one for the degree to which WVU contributed to its application. Each of those 30 questions was associated with one of the eight NASPE (2008) outcomes. The survey questions arranged by NASPE outcomes are located in Appendix A, and the actual Likert choices are included there as well. The participants also responded to 12 open-ended questions, several of which were germane to this study. In those questions, graduates were asked to comment on program strengths and weaknesses, aspects of the blended learning model which were attractive and beneficial, and how the program influenced their own teaching.

Master Teacher Practicum portfolios. In the final course, the Master Teacher Practicum, teachers were required to present data-based evidence that each of the national standards for advanced preparation had been achieved. In addition, within these presentations, program participants aligned the national standards to courses that were taught throughout the program. These presentations were an opportunity to unite the knowledge and skills attained throughout the program and present them to their colleagues and faculty. Embedded in PowerPoint presentations were video teaching episodes, Excel spreadsheets showing student learning data, video interviews with the teachers' stakeholders, and other documents. Thus, various multimedia strategies were used by teachers to demonstrate how their coursework had positively affected their teaching, and ultimately, the learning experiences of their own students. Faculty and fellow teachers adjudicated the quality of the presentations and determined the degree to which the standards were achieved. Five-point Likert scales were used to assess the degree to which standards were met and the degree to which specific courses contributed to their overall program success. The portfolios had always been a part of the program's culminating experience, but data for only the most recent cohort's presentations (N = 21) that were adjudicated by faculty and colleagues based on the most recent set of NASPE/NCATE Advanced Standards were collected, thus providing data relevant to this study's purpose.

Independent evaluation. An independent evaluator from another university with expertise in program design and evaluation conducted an on-site assessment of the BMD program in the summer of 2008. He observed classes and interviewed teachers enrolled in the program as well as program faculty. His findings were used to provide triangulation for the other data sources.

Results

Survey

Standards-oriented questions. One of the most significant dimensions of the WVU BMD is that the program is standards-driven. The National Council for the Accreditation of Teacher Education (NCATE) utilizes the National Association for Sport and Physical Education (NASPE) as the learned society to set professional standards for physical education teacher education programs for their accreditation process. From the very beginning, the BMD was heavily influenced by these NASPE/NCATE advanced standards. Two such sets of standards have been in use throughout the BMD's existence. The most recent set was published in 2008 and became the basis for our examination of the program in this study. The standards stipulate eight outcomes organized according to three general standards: professional knowledge, professional practice, and professional leadership. Three levels of performance are available for performance assessment for each outcome: 1) Target level, 2) Acceptable level, and 3) Unacceptable level. Table 2 delineates those standards and outcomes and specifies the target performance level. Much of the program evaluation described herein is rooted in an assessment of the program's effectiveness in meeting the target level of those outcomes.

Table 2: NASPE/NCATE Advanced Standards.

Standard 1: Professional Knowledge. Advanced physical education teacher candidates come to understand disciplinary content knowledge, the application of that knowledge to the teaching of physical education, and modes of inquiry that form the bases for physical education programs and instruction.	
Outcomes	**Target**
1A. Knowledge of learners from biological, physical, social, and psychological science perspectives	Synthesizes concepts from multiple disciplines and tests theories through analytical application to specific students and contexts.
1B. Knowledge of processes and methods of systematic inquiry and intentional inquiry about teaching and learning	Identifies pertinent questions about learning and teaching, as well as designs processes for collecting, analyzing, and interpreting data to answer those questions.
1C. Knowledge of how to represent the disciplinary knowledge/content to make it comprehensible to learners (i.e., pedagogical content knowledge).	Knows how to blend the disciplinary/content knowledge so that it is transformed into understandable forms tailored to the variations in ability and background presented by the learners and the learning context.

Outcomes	Target
Standard 2: Professional Practice. Advanced physical education candidates use content knowledge and pedagogical content knowledge to design and conduct appropriate learning experiences that facilitate and enhance the growth of learners.	
2A. Teaching reflects integration of planning, instruction, and assessment as a unified process to achieve long- and short-term outcomes/goals	Uses learners' prior knowledge and personal history (e.g., language, culture, family and community) to plan, implement, and assess meaningful learning experiences. TC engages learners in the process of defining long- and short-term outcomes/goals, designing or choosing learning experiences, and monitoring their own learning in ways that are developmentally appropriate.
2B. Teaching reflects differentiation of instruction based on personal and cultural characteristics of learners	Establishes a learning environment that respects and celebrates learners' diverse experiences and approaches to learning. ATC uses multiple strategies to engage learners in appropriate opportunities that promote the development of performance capabilities, critical thinking skills, and/or the ability to recognize their own needs and seek experiences to meet those needs.
2C. Teaching reflects systematic inquiry about their practice and the learners they serve	Engages learners in the process of analyzing teaching effectiveness and learning and uses the results of systematic analysis to test hypotheses and generate knowledge according to the methods of inquiry and standards of evidence used in the discipline.
Standard 3: Professional Leadership. Advanced physical education candidates are continuous, collaborative learners who further their own professional development and use their abilities to contribute to the profession.	
3A. Conducts inquiry into professional knowledge and practice and communicates results of inquiry to the profession and community	Questions professional knowledge and practice by conducting formal inquiry into teaching and learning. ATC seeks formal means of sharing findings with the profession as a whole and/or advocating for instructional and school improvement.
3B. Continues personal development through contributions to the growth and professional development of others	Provides sustained formal instructional support to fellow professionals by serving as a mentor, instructional coach, or other leadership roles.

A major part of the graduate survey involved 30 questions which were standards-related. Each question asked graduates to rate the degree to which they currently applied the outcome in their teaching, as well as the degree to which the WVU BMD program contributed to their application of the outcome. Both ratings were four point Likert scales, with 4 being the highest rating. Each of the 30 questions was associated with one of the eight NASPE/NCATE outcomes. Table 3 includes the percentage of responses organized by outcome. The percentages are the average ratings of all graduates for all questions that were associated with the specified outcome.

Table 3: Graduate Standard Application Assessment Outcomes (in %).

Apply Question: I apply this standard 4) Regularly, 3) Occasionally, 2) Infrequently, 1) Never

WVU Contribution Question: The WVU program contributed to my application of this standard 4) Significantly, 3) Somewhat, 2) Minimally, 1) Not at all

Standard	*4*	*3*	*2*	*1*
1A. Knowledge of learners from biological, physical, social, and psychological science perspectives				
Apply	75	21	4	0
WVU Contribution	54	21	17	8
Standard	*4*	*3*	*2*	*1*
1B. Knowledge of processes and methods of systematic inquiry and intentional inquiry about teaching and learning				
Apply	33	38	29	0
WVU Contribution	63	29	8	0
1C. Knowledge of how to represent the disciplinary knowledge/content to make it comprehensible to learners (i.e., pedagogical content knowledge).				
Apply	59	34	16	2
WVU Contribution	57	39	2	2
2A. Teaching reflects integration of planning, instruction, and assessment as a unified process to achieve long- and short-term outcomes/goals				
Apply	62	32	6	1
WVU Contribution	54	36	9	0
2B. Teaching reflects differentiation of instruction based on personal and cultural characteristics of learners				
Apply	79	16	4	1
WVU Contribution	51	32	14	2
2C. Teaching reflects systematic inquiry about their practice and the learners they serve				
Apply	21	52	21	6
WVU Contribution	46	44	10	0
3A. Conducts inquiry into professional				

knowledge and practice and communicates results of inquiry to the profession and community				
Apply	42	44	15	2
WVU Contribution	55	42	4	2
3B. Continues personal development through contributions to the growth and professional development of others				
Apply	62	26	7	13
WVU Contribution	62	33	3	1

An examination of Table 3 reveals that the overall response pattern was positive. Graduates rarely indicated that they never applied particular outcomes, and at least 70% of graduates indicated that they either regularly or occasionally applied the standards in their own teaching. For only two outcomes did more than 20% of graduates indicate that they infrequently or never applied the outcome in their teaching. A similar pattern existed for the graduates' responses to the WVU contribution question. At least 80% of graduates indicated that WVU either significantly or somewhat contributed to their application of every outcome. Ratings of "not at all" for WVU's contribution for any particular outcome were rare.

This is not to say that the responses to the two questions (i.e., standards application and WVU contribution) were uniform. Five outcomes revealed some differences in response patterns between the two questions. Two outcomes (1A and 2B) revealed that more than 90% of graduates believed they applied those outcomes in their teaching, but a somewhat lower number believed WVU was the primary contributor to their success. However, it should be noted that a large majority still believed that WVU contributed to the success in those two outcomes (75-80%) by choosing either "significant" or "somewhat" to the contribution question. In other words, some graduates (probably 10-15%) believed their successful application of two outcomes was due to other factors (undergraduate preparation, other professional development, etc.) rather than the BMD.

One of the outcomes in which some graduates minimized the WVU contribution (1A) involved knowledge of learners from the perspective of various disciplines. This outcome may have been (and often is) covered to a significant degree in undergraduate teacher education programs. The other outcome (2B) in which this difference in response pattern was noted involved the differentiation of instruction based on learner characteristics. This may either have been due to strong undergraduate preparation for some graduates in this area, or to relatively weaker coverage in the WVU BMD program. In any event, it should be noted that the difference between the two questions for these two outcomes was not marked; only about 10% of graduates tended to minimize the WVU contribution while a strong majority still credited the BMD for contributing to their successful application of these outcomes.

The pattern was the opposite for three other outcomes (1B, 2C, and 3A). All of these outcomes deal with the knowledge and application of systematic inquiry in teaching and learning. They are not usually stressed in most undergraduate programs or in in-service professional development, so it is not surprising that a Master's degree program would be viewed as an important source of knowledge in this area. Some graduates tended to minimize their application of these outcomes in their teaching, but in whatever degree of application they engaged, they heavily credited the BMD program. A significant minority believed they infrequently fulfilled these outcomes. Nevertheless, more than 90% believed the BMD was responsible for their application of them.

Overall there were similar patterns between the two questions for all eight outcomes. The WVU BMD can be considered at least reasonably successful in enabling its graduates to apply professional standards in their own teaching, and graduates believe the BMD has had much to do with their applications. The

outcomes that were comparatively weaker in application were those dealing with systematic inquiry (application of research methods). Even these outcomes, however, revealed a large majority was engaged in this area. While this portion of the survey did not address how the distinctive characteristics of a blended program may have contributed to the success, it is nevertheless clear that graduates believed they profited from the program, constituted as it was as a blended approach.

Open-ended questions. The open-ended questions on the survey revealed some additional dimensions of graduates' perspectives that were not oriented so much toward standards, but were more indicative of their views of blended learning. One question asked what attracted the graduates to the program. Some responses were typical of anyone involved in distance learning: they liked the convenience, especially for busy teachers, some of whom also coach. One student wrote, "I also liked the setup of the program-summers on campus, online during the year. And especially that it was very manageable for teachers who work." Other responses, however, were more relevant to the supposed advantages of a blended approach, particularly the relational dimensions. One student wrote, "It was important to me to know the people that I was communicating with." Another wrote, "I was attracted by the idea of meeting other people from all over the country and world that teach PE." Another question addressed the degree to which the BMD influenced how they teach their content area, and some responses bore directly on the blended learning advantages. The fact that the WVU BMD involved a number of practical clinical experiences in the online portion seemed important to the graduates. Some of the relevant comments included:

It made me want PE to mean more to my students and I try to get them to take it home to their parents.

Made me more aware of my importance and how to communicate that to other teachers. Made me more of an advocate for PE in my community. The knowledge I acquired made me more professional as a teacher.

Graduates were also asked specifically about the strengths and weaknesses of the blended learning approach. Their responses reinforced the perceived advantages of blended learning, and especially focused on relationships that were established and in many cases continued well after the conclusion of the program. It was clear that even though these graduates valued the convenience dimension of online instruction, they very much treasured the on-campus aspect of the BMD and believed the on-campus dimension contributed to the success of the online portion. It was obvious by their responses that these graduates would not have viewed the blended program in the same way if it had not included the significant face-to-face dimension along with the online portion. Some of the responses included:

[We] get to meet professionals from all over the world.

We became very close friends and colleagues because of the on-campus experience. This has led to lasting friendships and great collaboration across the states. I liked that I could go back home and still continue my work which was easy since I already knew everyone and what I could expect of them.

The networking with others has continued beyond the program.

Negative aspects were less related to blended learning and more indicative of issues that affect online instruction generally. Technological problems (usually involving the graduates' own computing capabilities more than the delivery system per se), general work load, and the inability to make contact with some professors during online courses were the most repeated concerns.

Course-oriented questions. In addition to graduate ratings of the BMD in relation to national standards, the survey also examined student perceptions of the effectiveness of the courses that make up the curriculum. Specifically, the survey asked them to assess the degree to which each course added to their knowledge base and, more importantly, whether that knowledge was being used in their teaching. A four-point Likert scale was used with 4 as the highest rating. Table 4 summarizes the results of this

assessment. Percentages as well as the number of responses are reported, and the courses are designated as either on campus or online. (It should be noted that this question was near the end of the very lengthy survey – four parts with 101 total questions, many of which required multiple ratings. Toward the end of the survey the number of respondents who skipped questions increased. In this section, 21 of the 30 participants responded).

Table 4: Graduate Course Usefulness Assessment Outcomes.

The course provided you with new knowledge and this new knowledge is being used in your teaching. (4 = strongly agree, 3 = agree, 2= disagree, 1 = strongly disagree)

Course	4	3	2	1
PET 615- Research Methods On campus	14.3% (3)	42.9% (9)	38.1% (8)	4.8% (1)
PET 668- Motor Development On campus	61.9% (13)	33.3% (7)	4.8% (1)	0.0% (0)
PET 665- Curriculum Online	61.9% (13)	33.3% (7)	4.8% (1)	0.0% (0)
PET 683- Principles of Effective Instruction Online	57.1% (12)	42.9% (9)	0.0% (0)	0.0% (0)
PET 688- Applied Motor Learning Online	33.3% (7)	57.1% (12)	9.5% (2)	0.0% (0)
PET 638- Operant Principles On campus	38.1% (8)	52.4% (11)	9.5% (2)	0.0% (0)
PET 680- Fitness Education On campus	71.4% (15)	19.0% (4)	9.5% (2)	0.0% (0)
PET 671- Motor Development Online	47.6% (10)	52.4% (11)	0.0% (0)	0.0% (0)
PET 685- Supervision Online	42.9% (9)	42.9% (9)	14.3% (3)	0.0% (0)
PET 681- Special Populations Online	28.6% (6)	42.9% (9)	23.8% (5)	4.8% (1)
PET 685- Issues On campus	52.4% (11)	38.1% (8)	4.8% (1)	4.8% (1)
PET 686- Practicum On campus	66.7% (14)	28.6% (6)	0.0% (0)	4.8% (1)

As was the case with the standards-oriented assessment, the overall perception of the graduates with respect to specific courses was positive. For every course, large majorities agreed that new knowledge was acquired and applied, usually in the 90% range, and strong disagreements with the statement that new knowledge was acquired and being used in teaching were rare. Only two courses indicated a significant number of disagreements on the survey; one course was an on-campus course, the other an online course. PET, 615 Research Methods, was an on-campus course taken during the first summer session of the program. About 40% disagreed that new knowledge was acquired and applied. This assessment correlated with the standards-oriented assessment in that the outcomes that dealt with knowledge and application of systematic inquiry tended to receive most of the lower ratings. That is, a significant number of graduates indicated that they tended not to use systematic inquiry in the context of their own teaching, and the Research Methods course was the primary one relevant to those outcomes. It should be noted that for the systematic inquiry outcomes a number of graduates indicated that they did not apply the outcomes in their teaching, but their assessment of the WVU contribution to these standards was more positively perceived. In other words, it appears that what knowledge they had about systematic inquiry was likely derived from the BMD program. One likely conclusion is that students found the WVU course most related to systematic inquiry to have contributed to their knowledge base, but felt that its content was less relevant to their own teaching.

The faculty responded to this assessment by moving the Research Methods course online for all subsequent cohorts. In addition, content changes were made to make this course more applicable to the students' teaching activities which now require utilizing action research and employing authentic assessment with their own students. The purpose for the move was to require students to apply systematic inquiry concepts with their own students, making the course more practical and less academic in nature. Another course was moved on-campus as a result of this transition – PET 665, Curriculum in Physical Education. Again, the content of this course was also modified and began to be used as an advanced organizer for the entire program, particularly as it provided several curriculum models that students could use as organizing centers for their own program development during the school year.

The other course that received a relatively lower rating was PET 681, Special Populations, an online course. More than 25% of the graduates disagreed that they acquired and applied new knowledge from this course. This assessment may also correlate with the standards-oriented assessment (see Table 3). In the standards-oriented assessment, most graduates (nearly 80%) indicated that they applied differentiation of instruction based on learner characteristics (2B), but somewhat fewer (about 50%) indicated that the BMD program contributed to their application of the standard. PET, 681 Special Populations, while not corresponding precisely to this outcome, and while not being the only course to contribute to it, would have had a significant relationship to the concepts related to the differentiation of instruction. It is interesting that graduates found this course to be one of the weaker ones in the program. It does not appear to have been an issue of whether this course was online or on campus. Rather, faculty leadership in the area of special populations has been rather inconsistent. No full-time faculty currently specializes in special populations, and several adjunct faculty have taught the course. Moreover, this course, more than any other, needs attention in order to maximize its impact on graduates and their teaching. That having been said, it should be pointed out that graduates still maintained relatively positively perceptions of this course; more than 70% agreed that they acquired and applied new knowledge as a result of this course.

Master Teacher Practicum Portfolios

Since the inception of the BMD, the final course in the program has required students to make an hour-long presentation in which they use empirical evidence to demonstrate how the program has promoted their growth as a teacher. Students are to develop PowerPoint presentations and are encouraged to be as creative and technologically sophisticated as possible in embedding such evidence as video excerpts and various forms of data-based analyses of their own teaching. Generally, those presentations have been organized according to courses taken in the program. Once NASPE/NCATE published the more recent advanced standards in 2008, and since the BMD was conceived as a standards-driven program, it made more sense to the faculty to have students organize their presentations according to the standards.

These presentations represent a comprehensive professional portfolio of curricular experiences in the BMD, and have been a particularly valuable means of judging overall program effectiveness. One cohort has completed the program under this reorganization.

This most recent graduating cohort made presentations designed to summarize, with evidence, the degree to which the program contributed to their ability to reach the target level of each of the eight NASPE/NCATE standards. In the assessment of the presentations, students rated each other. In addition, one or two available faculty rated the students. A five-point Likert scale was used with ratings of 5 and 4 indicating meeting the target level, ratings of 3 and 2 indicating the acceptable level, and a rating of 1 indicating the unacceptable level. Table 5 indicates the results of this assessment, including the mean student ratings of each other for each outcome (Cohort Mean) and the mean ratings of the faculty for all students for each outcome (Faculty Mean).

Table 5: Portfolio Assessment Scores by Standard.

Rating scale: 5) Excellent, 4) Good, 3) Above Average, 2) Average, 1) Inadequate. (Ratings of 5 and 4 defined as meeting NASPE/NCATE Standard "Target" outcome; ratings of 3 and 2 defined as meeting NASPE/NCATE Standard "Acceptable" outcome; rating of 1 defined as the NASPE/NCATE "Unacceptable" outcome.)

Standard	Faculty Mean	Cohort Mean
1A. Knowledge of learners from biological, physical, social, and psychological science perspectives	3.58	4.58
1B. Knowledge of processes and methods of systematic inquiry and intentional inquiry about teaching and learning	3.53	4.42
1C. Knowledge of how to represent the disciplinary knowledge/content to make it comprehensible to learners (i.e., pedagogical content knowledge).	3.84	4.55
2A. Teaching reflects integration of planning, instruction, and assessment as a unified process to achieve long- and short-term outcomes/goals	3.53	4.71
2B. Teaching reflects differentiation of instruction based on personal and cultural characteristics of learners	3.21	4.47
2C. Teaching reflects systematic inquiry about their practice and the learners they serve	3.63	4.46
3A. Conducts inquiry into professional knowledge and practice and communicates results of inquiry to the profession and community	3.21	4.62
3B. Continues personal development through contributions to the growth and professional development of others	3.33	4.70

The results of this cohort's presentations were impressive in a number of respects. First, both faculty and students collectively judged the portfolios as having demonstrated at least the acceptable level for all eight outcomes. Averages for each outcome as assessed by both students and faculty were above 3. As might be expected, students assessed each other's portfolios more favorably than faculty; all cohort means were above 4, and individual student assessments of outcomes at the 3 or 2 levels were rare. While faculty were more stringent in their assessments, no ratings of 1 were given for any portfolio for any outcome, and ratings of 2 were unusual.

Variance across ratings by standard for both faculty and cohort means were small (SD = .22 and .11 respectively). However, there were some observations worth noting. First, the lowest cohort rating (which

was by no means low) dealt with one of the systematic inquiry outcomes (1B). This is reminiscent of the results of the graduate survey. In addition, the lowest faculty ratings had to do with differentiation of instruction and with one of the systematic inquiry outcomes (2B and 3A). These results tend to confirm earlier observations based on the graduate survey. Also interesting is that the cohort rated two outcomes most strongly: 2A (integration of planning, instruction, and assessment) and 3B (contribution to the professional growth of others). Two of the primary objectives of the BMD have to do with becoming highly competent teachers and professional leaders. Cohort assessments of these two outcomes are certainly encouraging in that regard.

Independent Evaluation

Finally, a scholar at a comparable institution conducted an independent evaluation of the BMD program. His primary scholarly engagement has been in the area of program evaluation and he has published extensively on the subject. He conducted an on-site visit while the summer on-campus sessions were in session, and examined course syllabi, interviewed faculty and several members of each currently active cohort (three cohorts are present at one time during each summer session), and watched a number of the final student portfolio presentations. He submitted a written evaluation based on his observations.

A number of observations of the evaluator are relevant to the concept of blending learning. The reviewer commended the faculty for implementing the cohort plan because of the relational strength that it provided. He was also impressed with how much the students learned about each other over the course of the program, and how the cohorts grew into learning communities. In addition, with regard to the emphasis that the program put on national standards he wrote,

…the tie-in with the national standards gives the program great cohesion – and lots of legitimacy. If you can generate some data on that re: NCATE and NASPE review, you'll really have something. … I think you could document a lot of standards-based outcomes, and be the first Master's program to have ever done that.

Certainly, data generated and presented in this study were meant to respond to his encouragement.

The one suggestion that he offered to strengthen the program even further was to consider the constraints that the time limit of two weeks on campus during the summer put on the program. He suggested ways of extending the time frame for the summer courses, either on the front end, by beginning preliminary work at home which might be completed on campus, or on the back end, by allowing the completion of written projects later in the summer:

The summer courses might be too time-bounded. I think you'd get even higher quality work if you let students turn things in two-three weeks after the on-campus segments are finished. I know that this extends the time commitment on the part of the faculty, but I think it would immensely improve the quality of student work.

Finally, the reviewer was very interested in evaluating the WVU BMD because of his own institution's interest in expanding online Master's programs in teacher education. Questions concerning how best to organize and deliver the program were paramount for him. He came away from the site visit convinced that a blended program was the preferred option due to the quality of the learning community, along with the flexibility in designating specific courses according to strengths in either the online or on-campus formats. While the BMD faculty is not thrilled about encouraging competitors, we nevertheless were pleased: imitation is, after all, a form of flattery.

Discussion

All aspects of the evaluation tended to support the blended learning approach. Graduates were highly positive of nearly all aspects of the program, especially of those that contributed to the establishment of a learning community. While a few areas of weakness were identified, it was clear that graduates could not imagine participating in the program without both on-campus and online components, and that the primary reasons for a blended approach were being fulfilled. The program provided both the flexibility and convenience of online instruction for busy professionals in disparate locations, as well as a collegial learning community established primarily through on-campus experiences.

It was clear that the program course work could be divided effectively into courses which were more appropriate for online delivery and others which were more appropriate for on-campus instruction. Certainly, the clientele for this blended program influenced the nature of those decisions. These were all teachers, nearly all physical education teachers, most with at least 4 years of on-the-job teaching experience.

One of the faculty's objectives was to try and influence the way physical education is taught in the schools. The original residence program (which was replaced by the blended program) could only hope to influence physical education teaching indirectly. Program graduates under the old program, having taken the requisite on-campus course work, might be influenced to try and apply the curricular and pedagogical principles learned in the program. However, there was no requirement to do so, and very little means of assessing the degree to which it may have happened. In the blended program, half the credit hours were online courses taken during the regular school year. That gave innumerable opportunities to require the actual implementation of pedagogical principles in teachers' own classes and to document those changes in order to fulfill course requirements. Thus, the faculty believed that the blended program enabled direct enhancement of actual school instruction. The quality of the final portfolio presentations provided direct evidence of this effect, an artifact of the program that has been very encouraging.

At the program's outset, the decisions about which courses would be offered on-campus or online were made logically. Those courses which had the possibility of involving practical applications of principles were slated for online delivery. Those which had stronger "academic" content (i.e., content which could be effectively and primarily delivered through readings and lectures) were slated for the summer on-campus experience. Certainly, some compromises were made in that process. Some courses had substantial "academic" content, but also could have had extensive applications during the regular school year. One example of that is PET 638, Operant Principles, a course which covers behavior analysis principles applied to teaching settings. This course could have been taught in either venue. Its destination as a summer course was legitimately due to strong literary content, but also due to the fact that the instructor already had another online course during the school year. Sometimes, attempts were made to balance instructional opportunities for professors, providing both online and summer on-campus teaching opportunities.

Curricular Revisions

As the program unfolded, some changes were made due to feedback from students in the earlier cohorts, and more recently changes were planned which have resulted directly from the present study. One of the first changes made was the restructuring of the number of online courses taken at one time. Originally, the program called for three online courses during the two semesters of the regular school year. This required students to take two online courses at the same time in one semester. This proved to be too arduous for a significant number of students, leading to poor academic performance and incomplete grades. Still, in order to complete the program in two years it was necessary for 18 credit hours to be completed in the four semesters of the regular school year (spring and fall). The solution took advantage of the difference between the university calendar and the normal public school calendar. Since the university calendar concludes about four or five weeks before the public school calendar it was decided that three online courses could be taken, one at a time, during the regular public school year: one course

in the university fall semester, one course in the university spring semester, and one course immediately following the university spring semester when public schools were still in session. Technically this fell in the university's summer session, but it was still offered online, and the courses offered during this month could involve practical applications in our participants' teaching settings. Thus, half the credit hours could be taken, one course at a time, involving content that could be directly applied to our participants' teaching situations.

The most significant curricular change rooted in this study's results is the moving of PET 615, Research Methods, from the summer on-campus line-up to a fall semester online experience. Traditionally, research methods have been a challenge for teachers who characteristically have an applied, practical application orientation to their profession. Nevertheless, Master's programs have routinely included at least one research methods course, and the most recent NASPE Advanced Standards have two outcomes which are relevant to such a course. Originally, the course was taught in the summer due to its strong academic nature and literary foundation. However, informal feedback from earlier cohorts and this study's results indicated that the primary weakness of the blended program focused on this course. This study, for instance, indicated that the outcomes associated with systematic inquiry (which would be associated with PET 615, Research Methods) were the least likely to be utilized in our graduates' own teaching.

The following changes were made to PET 615. First, the course was given a stronger focus on assessment and the use of assessment data to influence instructional decisions. Changes in the primary and secondary texts have also taken place, which were correlated with this adjustment. Second, a change in the way statistics were used in the course was made in order to enable the participants to find feasible ways of using data in their own teaching. The use of Excel spreadsheets to organize and calculate data has become a standard technology that is being taught to our students. Finally, a data-based self-evaluation of teaching has become a cornerstone of this course, in which teachers can systematically collect and analyze data from their own lessons, reflect on those results, and make appropriate adjustments in their teaching. Thus, Research Methods has become a much more relevant course, bearing heavily on instructional applications, and being more focused on teachers' instructional decision making.

The corollary to this change, of course, was the move of PET 665, Physical Education Curriculum, to the summer. This was a course that could easily have been placed in either venue. It could have a strong curricular application emphasis and be appropriate for online delivery. However, it also has a strong literary base and academic focus, which would lend itself to an on-campus delivery. In retrospect, it was discovered that its applied focus might actually be more appropriate for a summer experience. The course impacts primarily on curricular planning, and being taught in the summer, it gives students the opportunity to develop new yearly curriculum plans based on the curricular models presented during the (now) summer course. In sum, the switching of PET 615, Research Methods, and PET 665, Physical Education Curriculum, appears to have tangible benefits for students and enables the program to address weaknesses related to meeting the NASPE Advanced Standards dealing with systematic inquiry.

An additional curricular revision is being investigated based on the independent evaluator's analysis as well as this study's data: expanding the summer time frame. It was clear from both sources that the most challenging aspect of the summer on-campus experience is the intensity of instruction, which consists of two three-credit courses in two weeks, with in-class activities from 9-5 nearly every day along with additional homework and group work in the evenings. Regardless of the constraints of this venue, the university requires that the content and requirements of all three-credit courses be equivalent, whether the course is offered for 15 weeks or one week. An intensive course format is thus a daunting endeavor for both student and professor.

At the same time, one of the great advantages of our blended program, evidenced by student responses to our open-ended survey questions, was the relative convenience of the summer portion of the program. Only having to spend two weeks on campus was an attractive dimension of the program, minimizing as it does, costs for housing and food, time away from other summer employment, and family activities. The

faculty therefore wanted to retain the two-week time frame. One of the suggestions made by the independent evaluator was to extend the summer course time by having either pre-session assignments or post-session due dates for projects. That way, the intensity of the time on campus could be diminished somewhat, making the experience more enjoyable, and perhaps, enhancing the quality of the performance in those courses. Presently, faculty are examining how that may be done for the next summer courses.

Learning Community Enhancements

The on-campus portion of the blended program was deemed by our students as a critical aspect of the development of a learning community. While such communities could be developed online, students surveyed in this study found that face-to-face interaction with their own cohort and the faculty greatly facilitated communication and support experienced during the online portion of the program. The importance of this dimension of the blended program has led the faculty to consider a number of adjustments to further enhance the communitarian aspects of the program.

First, technological enhancements are now available for online application, which can enhance the social networking begun in the on-campus venue. Tools like LinkedIn and other online social networking sites are now becoming commonplace. There do seem to be some generational issues with such sites, as younger professionals seem more easily attracted to their use. However, the most recent graduating cohort had established their own professional online network before they completed their final summer coursework. Faculty are now examining ways to use this trend to our benefit to enhance the learning community beyond the parameters of the program and to maintain professional contact with faculty in the future. Such networking would likely have had an added benefit of increasing the response rate of the survey due to continued contact with graduates.

Second, the use of social activities during the summer sessions themselves is being reconsidered. Initially, an introductory picnic was held for all cohorts and a trip to the local major league baseball city for a ball game was part of the program. More recently, scheduling issues prevented one or both of those experiences from taking place. However, the important of the social dimension of the program was reinforced by this study, so faculty are considering ways to institutionalize experiences like those each summer.

Third, connections between cohorts appear to be a valuable aspect of the program, an aspect previously neglected in our blended program. Through feedback from earlier cohorts, and through some comments on the open-ended portion of the survey, it was clear that newer cohorts would profit from the experiences of the older ones. Some adjustments have already been made and others are being planned. One of the most highly regarded final portfolio presentations has been designated for a repeat presentation to the two earlier cohorts at the end of each summer session. That way, cohorts can see the kinds of instructional changes teachers have made as a result of their participation in the blended program and they can see the kinds of evidence and documentation of change needed to be successful in bringing the program to a conclusion. In addition, a celebratory graduate ceremony is being planned for the concluding cohort, which would be attended by the three cohorts present during each summer. That kind of festivity would likely be an asset to the atmosphere and successful operation of a program like ours, and an extension of the sense of community enjoyed by program participants.

Fourth, retention has been a long-standing issue with distance learning programs. Various reasons have been posited, from changes in interest vis-a-vis course structures, struggles with online learning processes, and life changes or events (Chacon-Duque, 1987; Fenner, 1998; Verduin & Clark, 1991). Ostensibly, one of the benefits of blended programs revolves around how the establishment of a learning community can alleviate the drop-out rate. While this study has not compared our blended program with an online-only program, drop-outs have been rare in our program. One or two participants have been released from an occasional cohort in the program due to poor academic performance. A few others have taken a sabbatical from the program due to significant life events (pregnancy, job changes, etc.).

However, almost always those who have taken sabbaticals have returned and finished with subsequent cohorts. It appears, therefore, that retention has not been a problem with our blended program. The way in which graduates responded to the open-ended questions on the survey indicates that they very much appreciate the help and support of their cohort members, indicating the importance of the learning community within the blended program.

Technological Enhancements

Finally, an assessment of a blended program is not complete without the recognition that there are always technological challenges, and addressing them is a never-ending enterprise. Three different versions of web-based environments have been employed since our program's inception, all requiring adjustments by both students and faculty. Clarity in the technical requirements for enrollment is needed, and there have usually been one or two students in each cohort who have been especially challenged by the online environment. At the same time, tune-ups for faculty in the use of the newest environments is useful, enabling the distance portion of the program to take advantage of the best features online learning offers. While faculty can sometimes be too far ahead of the students in terms of technological capacity, it is clear that even in the five years of this program substantial enhancements have been made in online environments, some of which have been adopted while others have not. Blended programs like ours must always seek to be on the cutting edge of technology, at the same time providing support for students so their online learning capacities may be stretched.

In conclusion, this study of the blended master's degree program in physical education teacher education at West Virginia University has yielded important insights into the relative value of blended programs (versus blended courses), as well as into the successful operation of a program uniquely designed to develop master teachers. This standards-based program has been shown to be effective, even to the degree that the teachers' own instruction has been impacted in demonstrable ways. (See this portfolio example from a recent cohort). Changes have been made based on this evaluation and others are planned, but in general faculty are encouraged by the results. Continuation of the program is certain, and continued assessment will become the norm for the program's faculty.

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Increasing Access to Graduate Education: A Blended MSW Program

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Abstract

Students who live in remote areas and have work and family responsibilities frequently face considerable challenges completing graduate education. Accredited programs in their professional field may be several hundred miles away, on campuses where traditional face-to-face programs are the primary – if not the only – options available. This means considerable windshield (driving) and seat (classroom) time that their situations make prohibitive. At the same time, new technological developments and continued research and experience have made quality online learning feasible in many fields. Nevertheless, there is still a strong bias to have adequate face-to-face elements in the preparation of professionals for whom face-to-face contact with clients will be the norm.

This combination of student need, technological feasibility, and a professional bias toward face-to-face instruction provides the perfect environment for a "blended" program that combines the best features of face-to-face, videoconferencing, and online instruction. The Michigan State University Blended Statewide Clinical Master of Social Work (MSW) Program was developed to respond to the serious access issues facing students in areas of the state where accredited master's programs are either too far away or do not provide flexibility in course load and scheduling. In this article, the program's underlying assumptions are explained and the primary components of the Blended Program model are described in detail. It should be noted that this is not just a theoretical model – it has, in fact, been implemented, with the first cohort of students in the third year of the three-year MSW program. Results to date are presented.

Introduction

Online learning has continued to expand its position in the higher education arena. In fact, the latest data indicate that close to four million students were enrolled in at least one online course in Fall 2007, a 12.6 percent increase over the number reported the previous year (Allen & Seaman, 2008). Although offerings of blended courses decreased slightly between 2003 and 2005 while online course offerings grew, there are a slightly larger percent of blended program offerings than online programs across all disciplines (Allen, Seaman, & Garrett, 2007, emphasis added). In this article we will examine the importance of improved student access to educational resources as a force driving the increase in both online and blended courses and programs, and discuss challenges and potential benefits of these approaches. We will then describe the origins and implementation of one graduate professional master's program using a blended learning approach designed to improve student access.

Access Issues

Results of a survey of over 2,500 colleges and universities presented in the fifth annual report on U.S. online learning show that " improving student access is the most often cited objective for online courses and programs" (Allen & Seaman, 2007, p. 2). Furthermore, Allen & Seaman (2007) report that this is the top reason noted by all of the different types of institutions included in the study. The most recent data (for 2007) indicate that both chief academic officers and online teaching faculty rated the need for flexible access above other motivations for teaching online presented to them (Allen & Seaman, 2008).

Access, however, can be defined in many ways and include many different dimensions. As is commonly understood in the context of the growth of online and blended learning, the "access issue" generally incorporates the idea that large numbers of students confront challenges in pursuing higher education courses and programs due to factors such as:

1) geographical barriers – they simply live "too far" from the physical location of a campus providing traditional (i.e., face-to-face in a classroom) courses and programs; these geographical barriers can be expressed in terms of mileage (e.g., living 100 miles away from campus in a rural area) and/or driving time (living in urban areas but an hour-or more commute from the target campus);

2) employment/time availability barriers – regardless of how far away they live, some potential students work full-time jobs or even two jobs, making it difficult to allocate time on a fixed schedule to attend face-to-face classes for a specific period of time; and

3) family and community responsibilities – regardless of how far away they live, some potential students have a combination of family and community responsibilities that make attendance at and participation in traditional classes in a specific geographic site on a fixed schedule very difficult if not impossible.

The literature is filled with reports about the importance of access. Braun (2008) notes that "students' desire for flexibility outweighing the apparent need for instructor and peer interaction as one of the driving reasons behind enrollment in an online course" (p. 63). Tamburri (2004) notes that what students seek "above all else is the flexibility to pursue their studies when they want and where they want, while they continue to work and raise their families" (¶ 1). The United States Distance Learning Association (n.d.) notes that there are issues of equity, cost, and convenience to potential students. Kennedy (2008) suggests that expectations of potential students, especially adult learners, "include the ability to have their education tailored around their needs — courses they can take when and where they want, and at a pace that fits their lifestyle" (¶ 4), but he does note realistically that there is a continuum of program types ranging from those with more specific demands and structure to those with fewer demands and more options for choice in content. Ostrow and DiMaria-Ghalili (2005) comment that for nursing students the combination of fulltime employment, parenting, and school leads to the inevitable conclusion that "time is a precious commodity" (p. 5), another aspect of the access issue. In short, "students are seeking to reduce the costs, in terms of both time and money, of commuting to classes on campus" (McCracken, 2008, ¶ 11).

The types of issues described above are even more salient and problematic for graduate and professional education in fields like nursing (Ostrow & DiMaria-Ghalili, 2005; Stanton et al., 2005); pharmacy (Vuchetich, 2003); special education (Luna & Medina, 2007); and social work (Regan & Youn, 2008). T here are also examples of important access needs for various groups of students identified by geographic location such as rural areas (Ostrow & DiMaria-Ghalili, 2005) and island communities (University of Hawaii at Manoa, 2008); and by demographic/cultural characteristics (Oklahoma State University, 2008).

Potential Challenges

While many colleges and universities have successfully launched online courses and programs, reports in the literature suggest that there are additional challenges beyond simply offering courses on web sites. For students these challenges include:

- students need more discipline to succeed in online courses (Allen & Seaman, 2007)
- insufficient interaction with faculty can lead to lower rates of retention (Muller, 2008)
- the need to insure that their learning styles are appropriately matched to the online learning environment (Illinois Online Network, 2000)
- academic advising is often not available (Luna & Medina, 2007)
- unclear expectations for coursework (Stanton et al., 2005)
- lack of socialization (Stanton et al., 2005)
- less exposure to role models and local resources to support professionalization (Stanton et al., 2005)
- higher rates of dropping out (Tyler-Smith, 2006)
- financial aid challenges (Kennedy, 2008)
- challenges in the admissions process (Kennedy, 2008)
- computer competence, especially for technically advanced courses (Elliott & Kukula, 2007; Stanton et al., 2005; Tyler-Smith, 2006)
- greater time required for students to cover material online (Ostrow & DiMaria-Ghalili, 2005)
- 24/7 technology support (Ostrow & DiMaria-Ghalili, 2005)
- availability of adequate bandwidth (Ostrow & DiMaria-Ghalili, 2005)
- student need for prompt feedback on submitted work and questions (Ostrow & DiMaria-Ghalili, 2005)
- becoming familiar with the course management system (e.g., Blackboard, Angel, etc.) – structure, multiple levels, documents spread out in folders, etc. (Tyler-Smith, 2006)
- becoming familiar with new – sometimes very difficult – learning content (Tyler-Smith, 2006)
- becoming an e-learner – isolated, self-directed, no coffee conversations (Tyler-Smith, 2006)
- negotiating online 'classroom' interaction – dealing with strangers (Tyler-Smith, 2006)

For faculty the challenges include:

- teaching online takes more time and effort than teaching face-to-face courses (Allen & Seaman, 2007)
- many faculty have yet to accept the value of online instruction (Allen & Seaman, 2007)
- faculty workload (Stanton et al., 2005)
- need for ongoing faculty development (Stanton et al., 2005)
- student need for prompt feedback on submitted work and questions (Ostrow & DiMaria-Ghalili, 2005) but at the same time the expectations can be unrealistic (Li & Irby, 2008)
- need for technical skills and support (Li & Irby, 2008)
- becoming familiar with the course management system (e.g., Blackboard, Angel, etc.) – structure, multiple levels, documents spread out in folders, etc. (Tyler-Smith, 2006)
- 24/7 technology support (Ostrow & DiMaria-Ghalili, 2005)
- significant upfront planning and organization (Li & Irby, 2008)
- some materials may not translate well into digital formats (Li & Irby, 2008)

Administrative challenges include:

- coordination among all required academic, technology, and student support units (Hebert, 2007)
- coordination of adjunct instructors (Hebert, 2007)

- providing adequate library resources available 24/7 and everywhere (Slade, 2005)
- providing adequate student services (Hebert, 2007; Ludwig-Hardman & Dunlap, 2003; Luna & Medina, 2007)

Potential Benefits

While the list of challenges identified in the literature is quite extensive, a number of important benefits have also been articulated. For example, students find that online courses and programs provide greater time flexibility, which translates into greater access to higher education (Li & Irby, 2008). Students also report that online courses provide greater access to their instructors by virtue of the asynchronous communication options (Stanton et al., 2005), especially because of the availability of frequent and timely feedback (Li & Irby, 2008). Faculty also see the advantage of increased access for students from online courses (Stanton et al., 2005). Finally, one of the consequences of fewer trips to physical locations for classes is that online courses and programs are more affordable (Li & Irby, 2008).

Perhaps of greatest importance is the fact that the overwhelming result from research and evaluation studies in the field is that there are no significant differences between face-to-face and online courses (Russell, 2009). Yet there is considerable discussion in the field about exactly what these findings mean, and whether they are in fact asking the right question (Oblinger & Hawkins, 2006; Shearer, 2002). The types of issues raised in analyses along these lines lead to the question of whether online courses and programs are the only – or even the better – option to address access issues while providing the best education that technology can support.

Why Might a Blended Approach Be Better Than Strictly Online?

A review of the challenges to online learning noted above reveals a number of important areas where a different approach – one combining some face-to-face elements along with online components – offer a possible solution that may result in more positive results (Martyn, 2003). Specifically, issues related to interaction and socialization with faculty and peers; dealing with learning in isolation or with strangers; the presence of role models and local resources; and the likelihood of increasing the match between student learning style and what is available in the course or program may all be better addressed by blended (also called hybrid) approaches.

What do we mean by blended learning? There are many definitions in the literature, and essential agreement that there is no one best way to combine the various elements that make up a "blend" (Cyrs & Conway, 1997). Some consider blended as a mix of synchronous and asynchronous content, including audio and video but without any face-to-face components (Regan & Youn, 2008). The definition used in Sloan-C studies is that a course is considered blended or hybrid if 30-79% of the content is delivered online, with some face-to-face meetings (Allen & Seaman, 2007). Sethy (2008) notes that blended learning brings together what appear on the surface to be "seemingly opposite approaches, such as formal and informal learning, face-to-face and online experiences, directed paths and reliance of self-direction, and digital references and group connections" (p. 32). For programs, blended can mean a combination of some courses on the web and others in traditional or web-assisted mode (Ostrow & DiMaria-Ghalili, 2005; University of South Florida, 2008), or it can combine online, face-to-face, and other types of technologies in all or most courses and in other components of the program (Graham, 2006).

At a very pragmatic level, there is the simple fact that not everything can be transformed to the online environment successfully. While small group discussions can be provided – and even enhanced – by online tools, Coyner and McCann (2004) note that " there may be certain content-related activities that does not lend itself to a web-based environment; role-playing may be best suited for face-to-face meetings" (p. 455). Yelon (2006) discusses when to teach in-person in blended courses in some detail.

Graham, Allen, and Ure (2005) suggest that blended learning approaches tend to be selected for three principal reasons: 1) improved pedagogy and educational outcomes, owing to the possibility of more

active learning components; 2) highly desired access and flexibility by offering reduced classroom time and commuting time to fixed locations without sacrificing all human interaction; and 3) higher cost-effectiveness because of the potential to expand component elements to multiple locations, and to draw on human resources to support the program from multiple locations.

An important reason for the strength of a blended approach lies in the potential for the development of a learning community in a blended course, and especially in a blended program. Hanna, Glowacki-Dudka and Conceicao-Runlee (2000) define learning communities as a "group of people who have come together to form a culture of learning in which everyone is involved in a collective effort of understanding" (p. 14). Schwier (2002) believes the idea of "community" describes "richer, deeper, more complex types of interplay among learners" (p. 1) than the notion of interaction, which does not begin to describe the significance of the relationships between the members of learning communities. DuCharme-Hansen and Dupin-Bryant (2005) believe that online learning communities are important because they help students learn and offer social support. They argue that "the common denominator in successful web-based courses is the people, not the technology" (p. 36). Thus, learning activities that help students see each other as human beings, with all the complications of human life, are useful.

The literature suggests that learning communities can help to address the issues of low course satisfaction and high drop-out that may be due to lack of community in courses that do not meet face-to-face (Ludwig-Hardman & Dunlap, 2003). Hill and Raven (2000) explore best practices for community building in online learning environments—students need to feel they are in a safe environment where trust is built and supported; students must feel a sense of cohesion (a "we're in this together" feeling); the course must be well-organized around the supporting technology; and communication must be encouraged and supported. Again, technology is used to enhance the courses, but the emphasis remains on the personal relationships.

Moisey, Neu, and Cleveland-Innes (2008) conducted a study of students in a computer-mediated graduate course and found significant correlation between satisfaction with the course and the strength of community cohesion. "Learning communities elevate distance instruction above isolated correspondence models. They provide interaction, support individual and collective learning, and promote a sense of belonging and mutual support" (Moisey, Neu, & Cleveland-Innes, 2008, p. 16). The authors argue that students need opportunities to get to know each other and the things they have in common as the notion of community implies social support, which ultimately promotes learning. Being in relationships and feeling a sense of connection increase the cohesiveness of the learning communities and may also enhance satisfaction with the learning experience itself. Cox and Cox (2008) argue that these relationships can extend to future classes and professional contacts.

Palloff and Pratt (2007) believe that learning communities, based on interaction between students and between students and faculty, are essential to the learning process in distance education. In fact, an "effective" learning community is the "vehicle through which learning occurs online" (Palloff & Pratt, 2007, p. 4). The authors devote an entire volume to strategies for building effective online learning communities and collaborative learning, arguing that learning communities meet the need for connectedness as well as enhancing acquisition of knowledge. Tyler-Smith (2006) suggests that "cognitive overload …is a likely contributor to high drop out rates, particularly in terms of those withdrawing within the first few weeks of the course start" (p. 73). He suggests the use of early face-to-face interactions and learning group formation to provide early structure and support to the learning process.

Kaplan (2002) believes it is the strength of the relationships that develop in learning communities that creates significant learning experiences for students and helps them learn collaboratively. These relationships are best developed using team-building activities face-to-face, thus building community (Kaplan, 2002). Kerres and DeWitt (2003) argue that student groups that have a face-to-face history

together, where they have established norms and roles, will be able to handle the online environment more comfortably. Thus, Brunner (2007) argues that a sense of community can be built if students are given the opportunity to interact face-to-face as the course begins. Such interactions help with group processes and enhance later online discussions. Garrison and Kanuka (2004) agree that it is useful for students to have face-to-face time together in order to build community as a way of launching the course.

Haythornthwaite, Kazmer, Robins, and Shoemaker (2000) describe a program where a "boot camp"—an intense face-to-face session that meets on campus and in which they complete a course in two weeks—helps students build a sense of community within a computer-supported master's level distance education program in library and information science. Because students interact often during those two weeks, they build the sense of community important to sustain them when they meet only online.

Misanchuk and Anderson (2001) also promote community by emphasizing communication and interaction and build in face-to-face interactions in an on-campus orientation to help students get to know each other. The authors believe that communication must be on a personal level (students should share information about their work, their families, their lives) as well as about course content and assignments.

Finally, McFarland and Hamilton (2005-6) recommend teams as way to promote collaborative learning and avoid isolation among students in online environment. Teams can help students learn and increase satisfaction with the course.

At the same time, the literature is clear that blended learning approaches are not without their challenges. Vaughn (2007) summarizes the challenges nicely:

For students:

- issues in time management
- taking greater responsibility for their own learning
- using sophisticated technologies

For faculty:

- lack of time, support, and resources for course redesign in a 'blended' format
- acquiring new teaching and technology skills
- risks associated with teaching a course in a new format

For administration:

- aligning blended learning with institutional goals and priorities
- resistance to organizational change
- lack of organizational structure and experience with collaboration and partnerships

On balance, however, the literature suggests that blended approaches may have some clear advantages over completely online approaches in certain situations. Given this literature on the potential advantages of a blended approach, what would be the organizing principles for a program attempting to take advantage of the multiple possibilities? In the next section we turn to the origins of a specific graduate masters in social work program designed to address the serious access challenges for potential students while also maximizing the potential benefits suggested by the blended learning literature.

Origins of the Blended Mentored Learning Community Model

In 2004, the distance learning program in the School of Social Work at Michigan State University (MSU) faced a dilemma. Interest and enrollments in our site-based distance education programs – where students completed all of their course work in one location using interactive video connections to faculty on the main campus – were decreasing, making it difficult to start a new program in any one location that would be financial feasible. Reports from potential students indicated that the demands of their work situations – with many working full time in social work settings – combined with their family responsibilities made a weekly commute to a site 50 miles away problematic. Taking time off from work to attend graduate school full time was impossible.

At the same time, there were other changes appearing in the environment. Faculty and administrative leaders were becoming familiar with the advances in online technology tools that could be utilized in combination with site-based, in-person, and interactive video resources. The social work profession was awakening to the importance of technology in social work practice, thereby lending support to the possibility – even the advantage – of using more technology in social work education (National Association of Social Workers & Association of Social Work Boards, 2005).

This combination of necessity and opportunity led to an administrative decision to form a core group of faculty charged with exploring the possibility of creating a blended program model for the Master of Social Work (MSW) curriculum. In doing so, the group was able to build on two essential foundational elements: 1) MSU's land grant mission that charges it with attending to the access needs of students throughout the state; and 2) MSU's and the School of Social Work's 25 years of experience in providing graduate social work education to locations throughout the state consistent with this land grant mission.

The decision to design a blended learning program rather than a completely online program was based upon some essential characteristics of social work education. Social work is a profession in which a license to practice is now required in all 50 states, and one of the requirements for licensure is a degree from a program accredited by the Council on Social Work Education (http://www.cswe.org/CSWE/). If potential students were to search for online social work programs at a site like e-learners (http://www.elearnersindex.com/) they would find several programs in human services (http://www.elearners.com/online-degrees/master/human-services.htm) but no master's degree in social work. All accredited MSW programs require almost 1,000 hours of supervised field education that simply cannot be done in any way other than in a face-to-face social work agency environment. Although there was at the time one MSW program that provided all required courses except field education online (http://ssw.fsu.edu/index.php?clickLink=online-offcampus), the faculty core group (FCG) was aware of the emerging literature on the challenges of faculty-student interactions in the online environment. Furthermore, the FCG was acutely aware of the resistance of faculty in the MSU School of Social Work to the concept of a totally online program.

Building a new program was thus based on several core values:

- Both as an ethical responsibility to students and as a requirement to maintain accreditation, the new program had to include components known to be important for quality education.
- Relationships are important to the learning process, and they are essential in social work practice.
- Interactions among all of the key players – students, faculty, mentors, advisers, and field agency personnel – must be supported and enhanced by technology to help initiate and sustain relationships.
- Teams and peer learning are essential building blocks in adult learning and must play a central role in the program.
- Modeling is an important part of social work education, and the program must provide effective mechanisms for modeling by faculty, field agency personnel, local practitioners, and peers.

- Mentoring is an effective tool for supporting the growth and development of professionals across fields, and mentors can play an important role in developing and sustaining learning communities.
- Technology is simply a tool to be used in support of all of the above; it must not drive the program.

The FCG realized in the early stages that several key areas of support had to be identified and committed to the program before any public announcement could be made or students recruited. There was keen awareness of the dangers of promising something to the public that could not be delivered subsequently, or that would be delivered poorly, thus damaging marketing prospects for several years (Cook & Ley, 2008). These areas are identified in Figure 1.
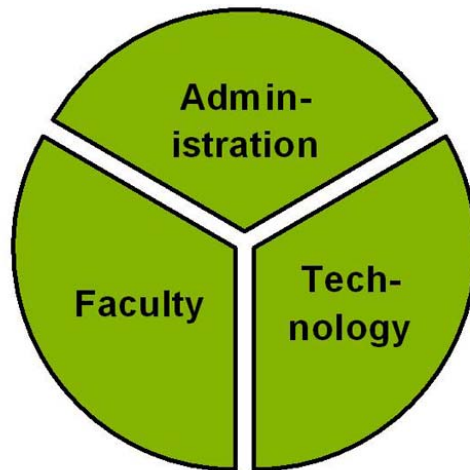
Figure 1: Core Resources Required for Program Launch

Administrative supports deemed to be critical included endorsements from the School of Social Work, the College of Social Science, and the Graduate School of the university. Endorsements with financial commitments were sought and obtained. On the technology side, the FCG was concerned about a variety of resources including a stable, user-friendly course management system; technical staff and resources to provide training to faculty in course redesign; adequate support for faculty and students related to the course management system during academic semesters and summer sessions; library resources that could be accessed online 24/7; production support for stand-alone video and audio lectures; and technical support for interactive video efforts to sites throughout the state.

The FCG knew that the faculty issue would be a bit of a challenge. Twelve years of operating distance education MSW programs using interactive video technology had revealed four types of faculty within the unit: those who were enthusiastic or at least open to teaching using emerging technology; some who were not excited, but who might be persuaded; some who were not at all interested in teaching in these formats themselves; and a small group who were opposed to teaching in this format, especially teaching the "clinical social work" courses that are at the heart of interpersonal or direct practice in social work (Regan & Youn, 2008). Given these realities, it was decided to begin the program with a small group of tenure-system and contract faculty for the first year courses, with the intent to recruit faculty as needed for subsequent years.

While establishing the connections and ensuring the support of these core resources, the FCG continued work on developing the model for the program, drawing on the conclusions of the literature noted above, technology resources available at MSU, and our own experience in distance learning. It was decided that the basic structure of the program would consist of five groups of five students each, with a mentor

assigned to each group, all connected to the faculty and other resources through a variety of technologies (see Figure 2).
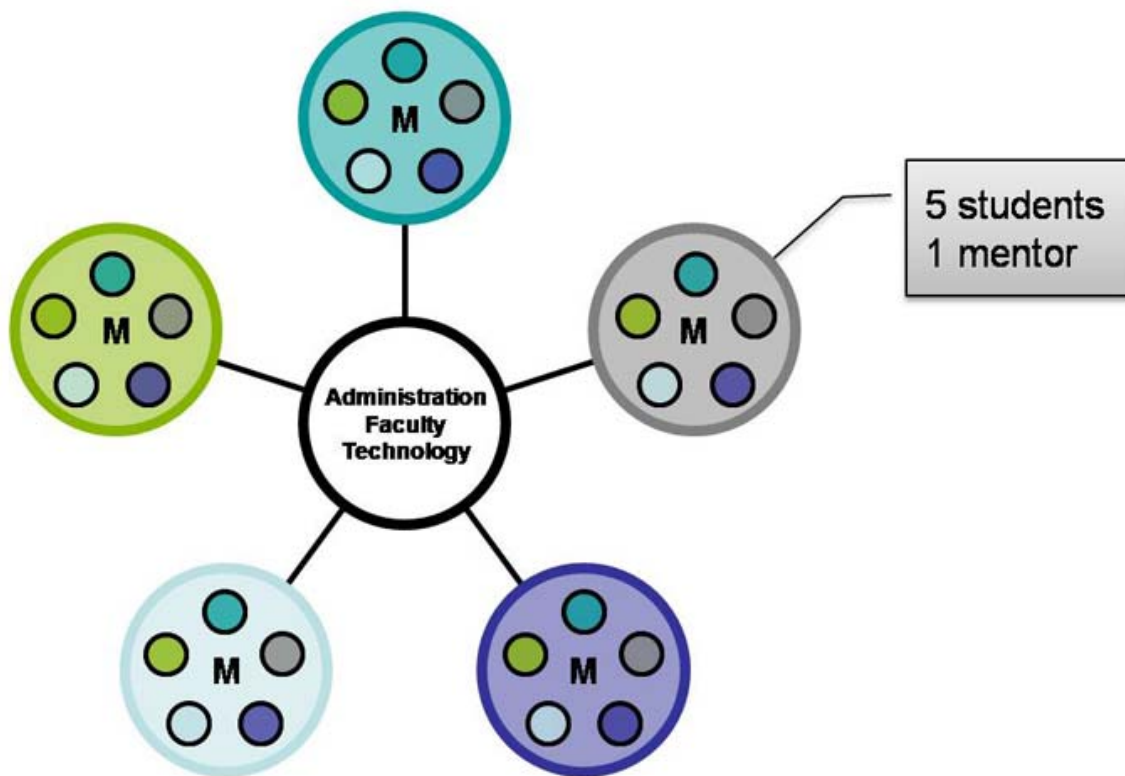

Figure 2: Basic Program Structure: 5 Students, 1 Mentor (M) Per Group

The decision to include a mentor for each learning community was based on our conviction, based on much of the literature cited above, that to be successful the program needed to provide a human point of contact for the students that was both geographically closer than the MSU campus faculty and staff, as well as structurally between the students and the faculty/administration of the program. Mentors were intended to be seasoned social work practitioners with experience in – or interest in developing – educational relationships with students as field advisers or supervisors. They were seen as providing a two-way intermediate level of contact between faculty and students in courses, and between the School and field placement agencies during the field education courses. In describing the mentor role at Florida State University, Thomas (2005) notes the key role that mentors play in enhancing interaction, providing the "high touch" aspect of the program that "might be even more important in the virtual campus than on the physical one" (p. 50).

For each student, the program thus was designed to provide several peers who would be together in each planned learning community, with a mentor assigned to each learning community to provide support and modeling. What was NOT specified in the design was the specific location of the five learning communities. Instead, it was the intent of the program to create these learning communities by dividing up an admitted cohort of 25 students into five groups based on their geographic location in the state. The goal was to admit the 25 most qualified students and then divide them into meaningful geographic clusters with the goal of reducing the amount of travel to the regional sites for the students. The only other requirement for the location of the five sites was that they had to have the capacity for a high quality interactive video linkage to MSU.

One additional element to the social work education model in general, as noted above, is the field education requirement for all students. In the MSW program, this requires two different field assignments and thus two different agency-based field instructors. Thus, a more complete picture of the human resources and the possible interactions and relationships within each of the learning communities is displayed in Figure 3.
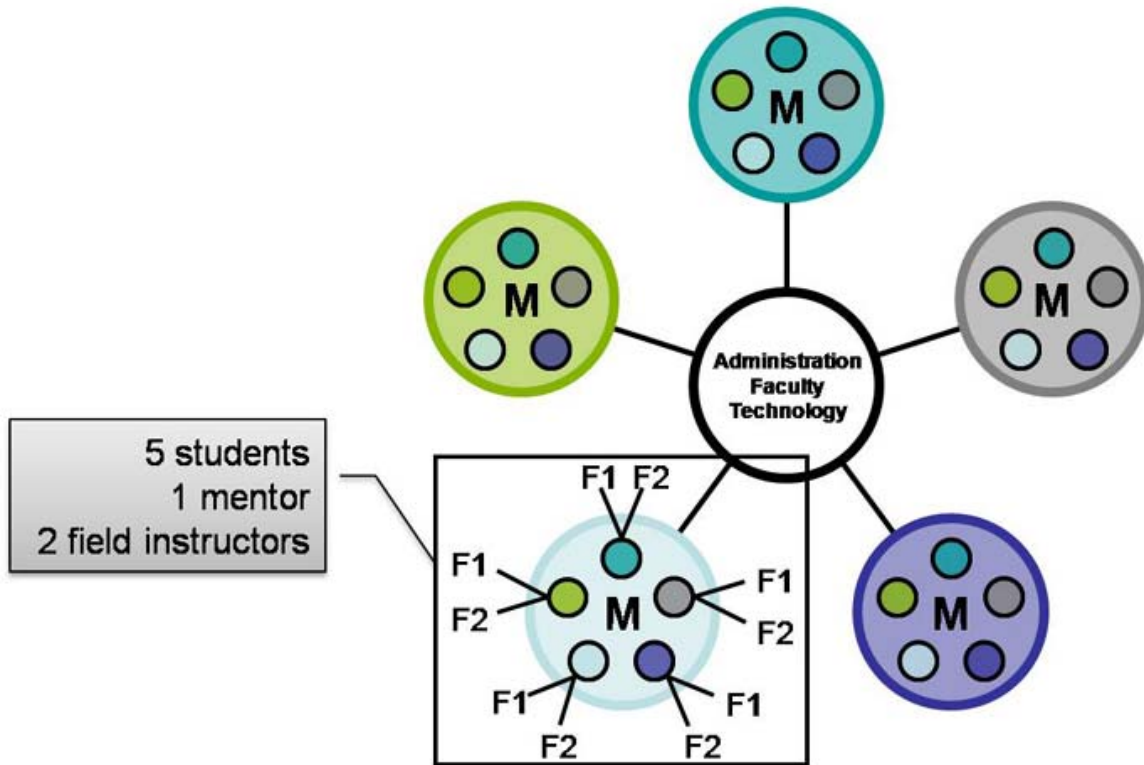

Figure 3: Regional Learning Community Components: 5 Students, 1 Mentor (M), and 2 Field Instructors (F1, F2) per group

Another way to view the potential for interactions and relations envisioned for each student is presented in Figure 4 below, where the focus is clearly on the individual student and the human resources intended to be available for support. It should be noted that the Field Coordinator is a staff member on the main MSU campus who supervises and supports all of the field placements for students in the Blended Program.
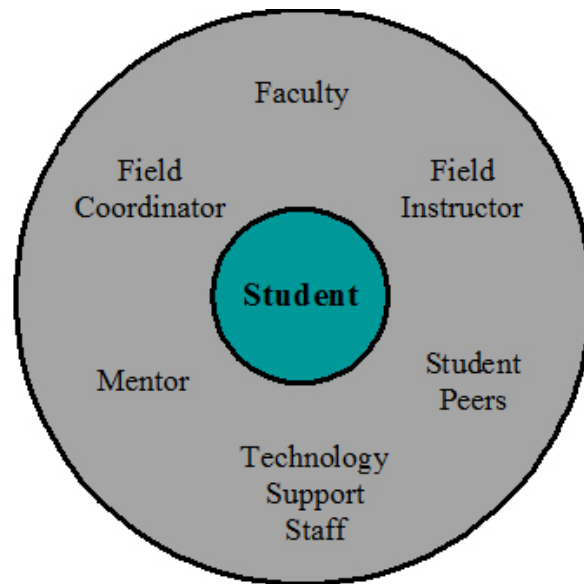
Figure 4: Human Sources of Support for Students

Implementation of the Model

When all of the pieces were put together, the Mentored Learning Community Model in the Blended Statewide Clinical MSW Program (https://www.msu.edu/~swdisted/statewide.html) was ready to be submitted for various approvals and then prepared for marketing. In this section these details are delineated and described.

The principal components of the Blended MSW Program include: 1) face-to-face instruction during the week-long Summer Institute that is held each June; 2) face-to-face instruction in small regional groups (the learning communities) one Saturday each month during the fall and spring semesters (September through April) for three years; 3) required courses year-round for three years; 4) considerable online course content; 5) field education activities arranged close to where students live or work, scheduled for Fall and Spring semesters in the second and third years of the program; and 6) mentors in each of the learning communities.

During the annual *Summer Institute*, students from across the state commute to the University's main campus where they stay for one week. During the students' first Summer Institute, the primary focus is on team building within each learning community. Students take part in team building activities, develop a team contract, and undertake several team projects. Although they will have had some online contact through a course they are taking simultaneously, this will be the first time they meet in person. Students also receive training on various online tools that will be used throughout the program, such as Angel (the course management system used), the University's library website, Skype, and various collaboration tools. In conjunction with their first course, which is an introduction to social work practice, a significant portion of the week is also dedicated to course work. Various speakers are lined up to discuss concepts central to the course, and consultants from the university's Writing Center spend a considerable amount of time with students working on graduate level writing. The course proceeds at a fairly slow pace in keeping with recommendations for strategies to avoid cognitive overload (Tyler-Smith, 2006). During the students' second and third Summer Institutes, more of the week is dedicated to course content. Each year, the learning communities revisit team contracts and make any necessary changes. Events are scheduled throughout the week to allow for interaction between cohorts.

The other face-to-face component of the Blended MSW Program consists of *instructional meetings one Saturday each month* during the fall and spring semesters. Learning communities throughout the state

meet at a local college or university that is linked through interactive television (ITV) to instructors on the University's main campus. Each learning community consists of four to six students and a faculty mentor. The exact locations of the regional sites are not determined until after applicants are admitted into the program. In general, locations are selected to minimize the average distance traveled by students in each regional group.

The Blended MSW Program is a three-year part-time 57-credit hour program. In order to complete program requirements within this time frame on a part-time basis, students *take courses year-round*. Most semesters involve either two courses or one course plus field education. *A considerable portion of course work is completed online* through the use of electronic collections of readings, asynchronous discussion forums, synchronous chats, and other assignments.

Field education is the experiential component of the MSW program where students are able to integrate theory with practice. The purpose of field education is to provide supervised opportunities directed toward student development of professional identity, self-understanding, and competent practice. Students in the Blended Program complete four semesters of field education (two semesters in each of two different agencies) during the second and third years of the program. This means students spend sixteen hours per week, or 240 hours for each of four semesters (960 hours total), in human service organizations affiliated with the University and arranged close to where students live or work. These experiences must be supervised by a staff member with an accredited MSW degree and two years of post-master's experience in social work practice.

Each faculty *mentor* works with the same group of students for the duration of the program, fulfilling the four mentor roles as outlined by Evans (2000): role model, tutor, sponsor, and motivator. Mentors in the program are known for their academic and professional excellence (role model), support students in the pursuit of course objectives (tutor), advocate for students as a field liaison (sponsor), and serve as a mediator and source of encouragement within each group (motivator). As is true of many graduate social work programs, many students in the Blended Program are non-traditional. The combination of returning to school and completing coursework online is anxiety-provoking for some. The utilization of mentors "provides the new student with a certain sense of security by reducing the anxiety and apprehension that may occur" (Peyton, Morton, Perkins, & Dougherty, 2001, p. 348). Essentially, mentors play a critical role in humanizing the online environment (Gunawardena et al., 2006).

Recruiting and Preparing Faculty and Mentors

Two of the six faculty members expected to teach in the first year of the program participated in a three-day workshop on Blended Learning offered by the MSU unit that supports online and blended learning efforts of faculty. Subsequent conversations with this unit led to their agreement to provide all technical support needed to work with the faculty in the Blended MSW Program to convert all of the required courses in the program from tradition to blended formats.

The promise of this support made it easier to recruit four additional faculty for the first set of courses for the first cohort. In September, 2005, nine months before the first course scheduled for the first cohort, we began a series of meetings with the staff of this technical support unit to address the issues related to course conversion. After several group meetings, subsequent work was accomplished by individual faculty working alongside individual technical consultants.

During the fall of 2005, the first class of prospective mentors came together to learn about the Blended MSW Program and what the role of mentor might look like. To support this process, members of the FCG created a mini-course on mentoring using the course management system that students and mentors all would be required to learn. The course content included more details about the mentor role, literature related to mentoring, and an 'opportunity' to practice with some of the tools that students would be using like online quizzes and uploading short essays. The mini-course was archived on the course management system for subsequent mentor training and orientation.

Arranging Technology Resources

As noted above, aligning the appropriate technology support services was an absolutely essential part of the planning for the Blended MSW Program. During the year before the public launch of the program, arrangements were made with the following on-campus units for specialized support services:

1) As noted above, support for faculty in instructional design and course conversion to blended formats was to be provided by the unit of the MSU's Libraries, Computing, and Technology (LCT) division that provides technical support for faculty in online and blended learning.

2) An agreement was reached with the LCT unit responsible for interactive video instructional efforts and related video services. This unit would take responsibility for negotiating contracts with all of the regional sites that were needed for the five learning community groups' monthly sessions linked to faculty on campus, as well as for actual interactive video operations on those Saturdays. It was known at the time but this unit eventually took the lead in MSU podcasting efforts and invited our Blended MSW Program faculty to play a role in early podcast productions.

In addition to these specialized arrangements, the FCG engaged in conversations with other units on campus to insure that other services would be available for the new program and its students. Specifically:

3) We were assured that there would be 24/7 technical support available to faculty and students to assist with any issues related to the courses run on the MSU course management system.

4) Conversations with distance learning library staff at MSU identified key staff to assist faculty and students with accessing and utilizing in the course management system library-owned and other resources. They also agreed to provide instruction to students during the Summer Institute on how to access all library resources remotely 24/7.

Student Support Services

Accreditation requirements for MSW programs determine a large part of the coursework in the 57-credit MSW program at MSU. In fact, students only have six credits of electives. This results in very few needs for academic advising during the program. In addition, since all students in a given cohort take all of the same courses at the same time, students know even before they are admitted which courses they will have to take in which semesters for the entire three years. The only academic questions that arise relate to elective options, and these can be addressed to individual faculty or to the Blended MSW Program Coordinator who serves as the official adviser of record for the students.

After the first year, the focus of the program changes considerably to the students' field placements, and during this period the students' mentors generally provide the first level of support for student issues. Given the relative geographic proximity of the mentors and the fact that students meet with their mentors face-to-face at the regional sites once each month, in-person, phone, and online mechanisms for contact are all available. Mentors are backed up by the campus-based Field Coordinator for the program as well as by the Blended MSW Program Coordinator. Most routine questions about schedules, registering for courses, etc. are addressed to staff in the School of Social Work's Graduate Program Office, where the Blended Program is structurally housed.

Marketing and Recruitment

Marketing for the program continues online year round, but there is only one admissions cycle because all applications are due by January 10 for the cohort that begins four months later in mid-May. Because of

the deadline, the heaviest period for marketing is during the fall semester each year. The program uses a mix of tools and strategies in its marketing efforts including

- a program web site with detailed information about the program, video presentations, a Frequently Asked Questions document, and links to application and admissions resources;
- printed brochures and posters which can be distributed by mail and email; printed materials are mailed to human services agencies throughout the state, but over time there has been a transition to distributing documents my email;
- information sessions held in 4-6 locations each year; the sessions include onsite presentations as well as a video link to main campus.

The application process for the Blended MSW Program contains all of the elements of the standard MSW process as well as a few additional components. First, in addition to the standard requirements for admission to any MSW program at MSU, applicants for the Blended Program must:

- live more than 50 miles from BOTH the main and one satellite MSU campus;
- have easy access to high speed Internet service (not dial-up) on a regular basis;
- have at least two years of full-time experience (or equivalent) in the human services during the last five years, generally after completion of your bachelor's degree;
- complete an online assessment and orientation program on how to learn effectively in the online environment;
- participate in a personal interview.

The Online Assessment and Orientation Program (OAOP) was developed to benefit both applicants and the School. Built on the course management system that students will use in the program if admitted, the OAOP permits applicants to get a realistic picture of the types of technology, assignments, and demands on their time to be expected in the program. It provides links to resources where they can self-assess the match between their learning styles and the features of online courses, and it requires applicants to then consider what they have learned and write an essay describing how they see the match between their learning style and the Blended Program's features. This essay provides another useful resource for faculty to consider in review of the applicants' admissions materials.

Throughout the OAOP and other contacts with applicants – from the information sessions to the written materials to the OAOP and the personal interview – applicants are repeatedly told about the high level of expectations in the program and the extensive amount of time commitment involved (8-12 hours per week per course; 16 hours per week for field placement). The objective is to stress this information and to encourage applicants to consider seriously if this is the right program for them at this time. Because students who drop out cannot be replaced with other students once the program begins, we must choose carefully whom to admit to each year's cohort.

Experience to Date

The first cohort was recruited to begin in May, 2006, and they will graduate in May, 2009. Thus far the program has been successful in generating considerable interest each year, and we have received complete applications from more than the 25-28 people we can admit each year. Information about expressions of interest and attendance at information sessions is presented in Table 1.

Table 1: Program Inquiries and Information Session Attendance

Year	Inquiries (Phone / Email)	Information Session Attendees
2005	104	54
2006	166	20
2007	201	51
2008	188	43

It is very interesting to note that the majority of our completed applications each year comes from potential students who neither came to one of the information sessions around the state nor contacted the Blended MSW Program office to ask questions of clarification, request additional information, etc. Given the complexity of the program and the application process, we expected that most applicants would have made some contact with us prior to submitting the documents. Instead, we saw the importance of using the OAOP and the personal interview to repeat the most important details about the program in the OAOP and even to quiz applicants in the OAOP on what they remember/know of the principal features of the program.

Prudent planning requires factoring into the admissions process an expectation that several students may not be able to complete the program, and thus far this strategy has been right on target (see Table 2). As you can see from the data, a few students each year have had to ask for either a deferment or a leave of absence. Our assumptions about the number of potential student losses were very optimistic, but we were convinced that the high level of interpersonal support built into the program would ultimately lower program losses. In our experience, it is the learning communities that offer the kind of support that makes learning possible when "life intrudes." For instance, a number of our students have experienced significant life stressors—severe illness, injuries or deaths of family members. It is their learning communities that give them the emotional support, at a time of crisis, to continue in the program.

Table 2: Student Retention and Deferments

Group	# Admitted	# of Withdrawals	Reason for Withdrawal	# of Postponements	Reason for Postponement	# Active in Program
Cohort 2006	26	2	Personal Issues Family Issues	0		24
Cohort 2007	24	1	Unknown	2	Family Issues Medical Issues	21
Cohort 2008	27	3	Medical Issues Family Issues Time Constraints	2	Medical Issues Financial Issues	22

Note: Postponements refer to what are categorized by the university as either 'deferments' or 'leaves.' A *deferment* is a one-year leave that is given when a student has been accepted into the program but has not taken classes yet. A *leave of absence* is a one-year leave that is given when a student has started taking classes but needs to stop out for a time. Leaves and deferments are given in cases of illness, family issues—really, any legitimate reason the student has for taking time out of studies. **The expectation in all cases is that the student will return to the program at a later date**, generally not to exceed one academic year.

In terms of location, applications have been received from potential students from throughout the state. (Because out-of state tuition is double the in-state rates, we get few applicants from out-of-state, but we do have a few who have been admitted.) As noted above, all applications are reviewed and assessed using a variety of approaches, and the five geographic groupings are arranged after students are admitted. Figure 4 below portrays the locations of the fifteen regional groupings from the first three cohorts of the program. Several locations have students in all three cohorts, thus facilitating local connections across years in the program and even such concrete actions as selling books from one cohort to the next.
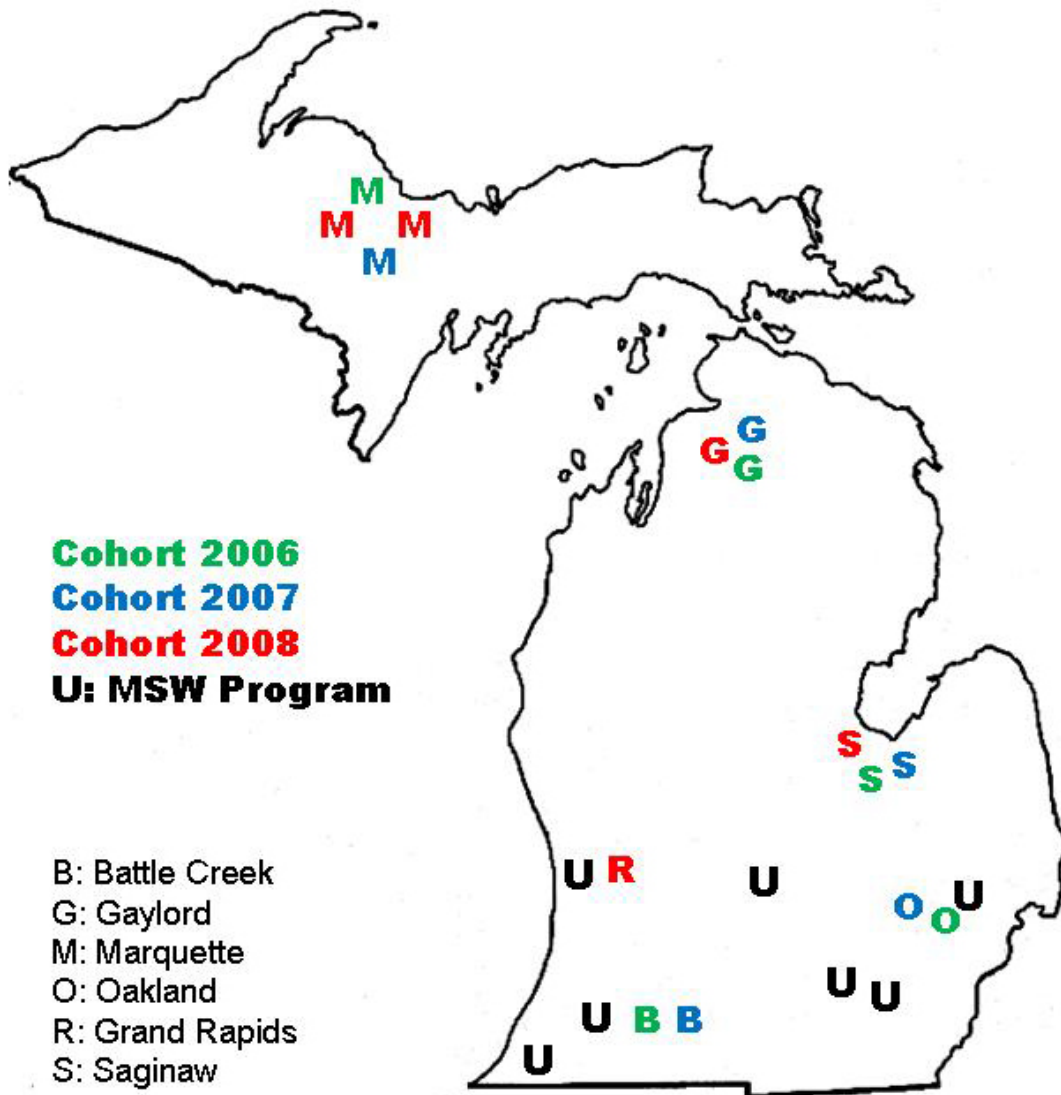
Figure 5: Location of Regional Groups for First 3 Cohorts and all 7 MSW Programs in the State

One way of viewing the program's impact on the access issue is presented in Table 3 below, which shows average distances for students in the five regional groups in each of the first three cohorts from the regional sites, from the MSU campus, and from their nearest MSW program. The data show that some students in the MSU Blended Program are there despite having MSW programs closer to them. What this reflects is the importance of the flexibility created by the blend of technologies. Access is not just about distance.

Table 3: Student Mileage Chart

Location & Legend for Figure 5	Distance to Regional Learning Community Location (in miles)	Distance to Main Campus (in miles)	Distance to Nearest MSW Program (in miles)
Cohort 2006	**58.82**	**131.13**	**161.47**
Battle Creek (B)	68.43	89.79	43.95
Gaylord (G)	63.18	230.53	230.53
Marquette (M)	63.48	160.16	416.71
Oakland (O)	34.67	80.45	24.48
Saginaw (S)	62.03	94.70	91.66
Cohort 2007	**70.80**	**191.27**	**164.63**
Battle Creek (B)	96.64	122.52	63.59
Gaylord (G)	85.92	150.51	141.61
Marquette (M)	66.89	460.66	460.66
Oakland (O)	49.01	102.65	37.29
Saginaw (S)	55.52	120.00	120.00
Cohort 2008	**66.71**	**239.94**	**220.54**
Gaylord (G)	67.39	201.44	194.78
Grand Rapids (R)	83.07	84.89	44.41
Marquette – 1 (M)	68.20	435.89	420.81
Marquette – 2 (M)	38.29	374.58	374.58
Saginaw (S)	76.58	102.92	68.14

Evaluation

The Blended MSW Program is committed to improving the program on a continuing basis, and thus all major features of the program are evaluated regularly. The data collection tools used for this purpose generally include both forced choice scales (to permit comparisons within cohorts over time and across cohorts) and open-ended questions to generate ideas for new features and suggestions for improvement in existing features. The subjects of evaluation efforts include the admissions process, the OAOP, the Summer Institute, all courses, and all field education placements. When a new technology tool is introduced into the system, an evaluation is completed as quickly as possible to aid faculty in deciding whether or not to incorporate the tool.

Comments from students, mentors, and faculty have provided a richly detailed picture of areas of strength and weakness in the program, and the data are summarized, annotated, and circulated among the faculty

and staff on the Blended Program Team for follow-up and action where feasible. Some things – such as issues related to content that is required by the accreditation standards – cannot be changed no matter how many students would prefer not to cover certain subject matter. Other aspects, such as the amount of unstructured time during the Summer Institute to permit more networking, can and have been addressed. Sample comments from students about various aspects of the program demonstrate the nature of the feedback we have received. Here are some student comments related to program components:

Online Assessment and Orientation Program

"Loved it. It really gave me a sense of what the actual program would be like. It was challenging, thought-provoking, and easy to understand."

"I thought it was a great way to get the potential students to see what being in the blended program would be like."

Summer Institute

"Coming to the Institute, I wasn't sure what to expect; however, the entire week has shown me how much the School of Social Work thinks about the students—they really put the students first and go out of their way to make us comfortable every step of the way! Thank you!"

"I really connected well with my group….I didn't think I would. I don't think this would have been possible without the team building."

"It was SO much more structured than I thought it would be. There wasn't as much free time as I thought; but this was good because my regional team REALLY bonded. Overall, it was a great experience and I'm looking forward to next year."

Teams and Mentors

"I believe that our regional group is very cohesive and easy to talk with…it was good to touch base with them again [f2f]."

"I thought my team came together very well as a group. It was nice to have the time in the schedule to work with them and have time to get to know them. I also think having time with our mentors was fantastic!"

"One thing I think should be passed along to future students: blended program are criticized for a lack of establishing bonds and relationships. I was quite active with my undergraduate class and developed many friendships. However, my relationship and bonds that have developed with my graduate classmates are much more significant and closer than my undergraduate classmates (in traditional, f2f setting)."

Plans for future evaluation activities include a set of exit interviews with students and mentors as the first cohort approaches graduation in May, 2009. These will be followed by a similar set of interviews with the students a year after graduation. Another effort will involve working closely with the School of Social Work as it finalizes a set of outcome instruments for measuring all of our MSW programs. Because the educational objectives and outcomes for the Blended MSW Program are the same as those of the on-campus program, we will and must utilize the same set of outcome measures. Finally, in the future we hope to make use of the 'rubrics' defined for online courses in the Sloan-C Quality Matters initiative as a starting point in developing a more complete set of rubrics for the Blended MSW Program (Kane, 2004).

Conclusion

When the FCG began planning the details of the Blended MSW Program, we had a sense that this would be a viable solution to a clearly identifiable need tied directly to issues of access. In order to complete their professional education and raise their skills better to serve their clients, students working in human service agencies throughout the state needed a program with both flexibility and fewer required in-person elements. Human service agencies throughout the state face the dilemma of retaining staff while trying to support their professional development. The accreditation standards in social work education mean that a limited number of MSW programs will be developed, and none of these will likely be entirely online, given the field education requirements. What this combination of factors means is that a blended learning approach which maximizes the best use of a variety of in-person, online, and interactive video components presents a viable answer to the access needs of these students.

Although the program was built upon solid principles, using lessons learned from our own experience and from the literature, there was no guarantee that such a relatively new type of program would find a market niche. During the marketing of the program in the first year we celebrated when we passed the 100 mark in students expressing interest, hoping that this would give us an adequate pool of completed applications. Since then, we have never had to look back. The program is well known in the state and well-established in the life of the School of Social Work. The first cohort will graduate in May, 2009. The concept has become a reality.

How well have we addressed the access issues of our potential students? Here are two fairly typical comments:

"The concept of being able to obtain an MSW while still living in the rural Upper Peninsula makes it especially enticing to me, as time and travel are large deterrents of further education. The hybrid online blended program appears to be a natural step in this technology-based world for both keeping a sense of community through limited face-to-face meetings as well as challenging students with the online atmosphere of greater learning. I welcome and look forward to the opportunity of being a part of this unique learning experience at MSU."

"For the past eight years I have waited for an opportunity such as this. I have thought of going back to college to obtain my Master's Degree in Social Work. With the need to maintain full time employment, raise a family and participate in my children's after school functions, I have left that thought tucked away in the back of my mind…. What excites me most about the Blended Program is that there is an opportunity to take courses and work around "my life"."

The program at MSU is not the only MSW program in the U.S. utilizing a 'blended' approach. An examination of web sites suggests that various combinations of face-to-face, online, interactive video, and other approaches have been combined into programs that can be considered 'blended' at the following universities:

- Valdosta State University (http://www.valdosta.edu/sowk/overview/options/options.shtml)
- Texas State University, San Marcos (http://www.socialwork.txstate.edu/On-Line-Masters-Program.html)
- Metropolitan State College of Denver (http://www.mscd.edu/~socwrk/)
- University of Missouri (http://ssw.missouri.edu/msw.shtml#ocp-rs)
- University of North Dakota (http://www.conted.und.edu/ddp/msw/earn_msw.html)
- University of Illinois, Urbana-Champaign (http://www.continuinged.uiuc.edu/oce-sites/outreach/profile_socialwork.cfm)
- University of Hawaii (http://www.hawaii.edu/sswork/de/index.html)

There are no doubt other blended social work programs already operating or in the planning stage. What this wide range of 'blended' programs suggests is that the need for programs – the access issues – can and have been addressed in social work by creating programs using a combination of elements that is seen as working for their target student populations in their unique environments.

The MSU Blended MSW Program will continue to adapt to changing needs of students, faculty and mentors, using continuous feedback to guide the direction of change. Other changes will result from developments in the technology tools available for use in the program. Dede (2005) points to the necessity of looking at continuing developments in technology and how it is used, with as yet unanswerable questions about what new learning styles may emerge from the use of this new technology. The Blended MSW Program will no doubt look different in a few years, but this is one of the advantages of a blended learning approach – adaptations can be made relatively easily to make the program better.

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Blended Program Development: Applying the Quality Matters and Community of Inquiry Frameworks to Ensure High Quality Design and Implementation

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Abstract

This paper describes how the *Quality Matters (QM)* and *Community of Inquiry (CoI)* frameworks can be applied at the program level to enhance curriculum development and maintain programmatic rigor when transforming traditional courses for the blended environment. The QM and CoI frameworks are summarized, and the application of these frameworks in the course design process is described. Explanations are provided of how the QM standards were applied to the design of individual courses to ensure the development of cognitive, social, and teaching presence in the transitioning of an entire master's of educational leadership (EDL) program from face-to-face to blended delivery. The paper concludes with practical advice for others desiring to move into the blended arena.

Introduction

In a time of economic shortfalls, K-12 practitioners who are completing master's degrees are making tough decisions concerning the continuation of their degree programs. Transitioning face-to-face courses to online and blended ones has helped students save money on gas and childcare, as well as saved travel time by requiring fewer trips to campus. In addition, universities that have made this transition through faculty development of quality blended/online courses and a service delivery orientation that supports more technological tool choices can meet the needs of both non-traditional and millennial students (Bonk & Zhang, 2006).

This paper will demonstrate how the Quality Matters (QM) and Community of Inquiry (CoI) frameworks can be applied at the program level to enhance curriculum development and maintain programmatic rigor when transforming traditional courses to the blended environment. It will describe how components of these frameworks were applied to the course design process in transitioning a master's of educational leadership (EDL) program from strictly face-to-face to blended delivery to meet the needs of working professionals. We first summarize the QM and CoI frameworks. We then describe how the QM standards were applied to the design of individual courses across the EDL program to ensure the development of cognitive, social, and teaching presence within them. We conclude with practical advice for others desiring to move into the blended arena.

Quality Matters

Quality Matters (QM) is a faculty-oriented, peer review process designed to assure quality in online and blended courses (see: http://www.qualitymatters.org/index.htm). The QM review process is centered on a rubric that was originally developed collaboratively by faculty and staff from University of Maryland institutions wanting to ensure the quality of shared online course offerings. The initial work on the Quality Matters framework was funded through a FIPSE grant, but the need for such a model was so widespread that it took on a life of its own. Today, it is a subscription-based service sponsored by MarylandOnline, Inc ., which also offers a variety of training and QM course reviews. Currently, over 300 colleges and universities in 44 states are QM subscribers, including 11 statewide systems and several large consortia.

In the QM framework, quality in online courses is assured through a peer-review process in which trained faculty review the design and organization of their colleagues' courses. QM assumes that this review is formative and that courses will undergo a process of continuous improvement through to certification (see Figure 1 below). It is important to note, however, that QM reviews focus on the design and organization of online courses, and not on their implementation.
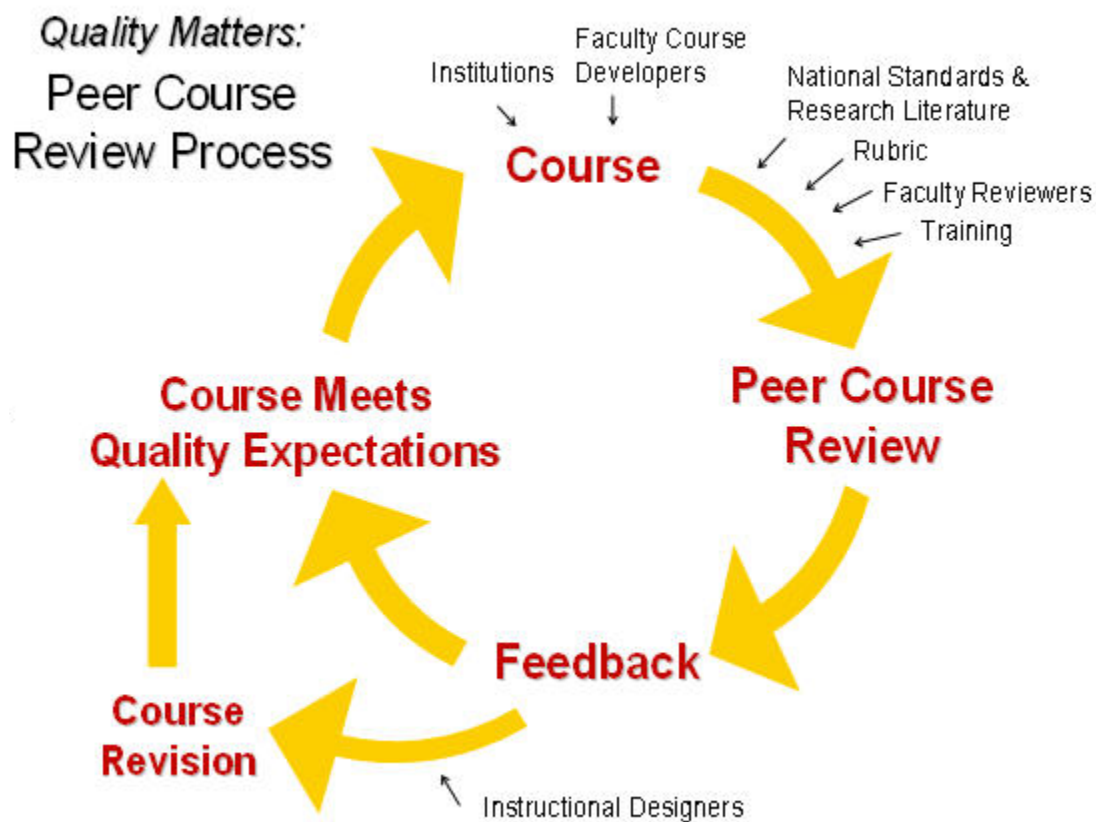
Figure 1: Quality Matters Continuous Improvement Course Review Model
(Shattuck, 2007; used with permission)

Quality Matters peer reviews are guided by a rubric designed to assess the quality of online courses. It consists of 40 items describing criteria to be met. Items are assigned point values of 1, 2, or 3, depending on their perceived importance. To meet QM review expectations, courses must meet all 3-point criteria and earn a total of 72 points or more on the entire evaluation measure (out of a possible 85). Items in the rubric are organized into eight categories – course overview and introduction, learning objectives, assessment and measurement, resources and materials, learner engagement, course technology, learner support, and accessibility. The categories are described below.

Course overview and introduction is the first category in the rubric. It consists of 7 criterion items totaling a possible 11 points, the first two of which must be met. Courses that meet QM expectations must contain clear instructions on how to get started in the course and a clear statement of course purposes. Blended courses must also contain a clear description of which course elements are online and which are face-to-face. Less important criteria in this category include netiquette expectations, personal introductions by the instructor and students, and prerequisite content knowledge and technology skills (1 point each).

Learner objectives, the second category in the QM rubric, consists of 5 items totaling a possible 14 points. All but one of these must be met, making it a critical category. Criteria that must be met focus on course and unit objectives that are measurable, consistent, clearly stated, and include adequate instructions on how students can meet them. Interestingly, the only criterion in this category which doesn't have to be met (but which still counts for 2 points) is that objectives are appropriate to the course level.

Assessment and measurement is the third category in the QM rubric. It also consists of 5 items, all but two of which must be met, making it an important category. Items in this category add up to a possible total of 13 points. Criteria that must be met include assessments that match objectives, a clearly stated grading policy, and specific evaluation criteria. Items that are not critical but still important (counting 2 points each) include the provision of self-check or other practice assignments, and "sequenced, varied and appropriate" assessments.

Resources and materials , the next category, consists of 4 items with a possible total of 9 points. Two of these criterion items must be met. They require instructional materials to support the achievement of course and unit objectives, and to be clearly explained. Criteria of lesser importance are that instructional materials have "sufficient breadth, depth, and currency for the student to learn the subject" (2 points) and that resources and materials are appropriately cited (1 point).

Learner engagement consists of 4 items, two of which must be met, for a possible total of 10 points. The two critical criteria are that learning activities promote the achievement of the course objectives, and that learning activities foster student/instructor, student/content, and, "if appropriate to the course," student/student interaction. Criteria of lesser importance include clear statements concerning instructor availability and feedback, and clearly articulated requirements for student interaction (2 points each).

Course technology is an important category in that it consists of 7 items with a possible total of 14 points. Three of the course technology criteria must be met. They focus on technology tools and media that contribute to the achievement of the course objectives and support active student engagement, as well as provide clear and transparent course navigation. Other criteria in this category include use of technologies that are readily accessible to students (2 points) and compatible with current delivery standards (1 point), that clear instructions on accessing resources at a distance are provided (1 point), and that the course design takes full advantage of available technologies (1 point).

Learner support is, interestingly, the only category of criteria in which no items must be met. It consists of 4 items with a possible total of 6 points. The two 2-point items are focused on clear descriptions of academic and technical support available. The two 1-point items are focused on clear explanations of basic research, writing, and technology expectations for the course.

Accessibility is the final category in the QM rubric. It consists of 4 items with a possible total of 8 points. Only one criterion item in this category must be met but it is an important one – conformance to ADA standards and institutional policies regarding accessibility. Other criteria in this category include screen readability (1 point), course pages and materials which provide equivalent auditory and visual content (2 points), and links that are self-descriptive (2 points).

Although the Quality Matters framework is relatively new, preliminary research on its effectiveness is promising. For example, Rick Aman (Legon, Runyon, & Aman, 2007) surveyed students enrolled in QM-

certified courses (62 responses), in non-certified courses at QM institutions (33 responses) and in courses at non-QM institutions (77 responses). He found that students enrolled in QM-certified courses and in non-certified courses at QM institutions were significantly more satisfied than students enrolled in courses at non-QM institutions.

Jean Runyon (Legon, Runyon, & Aman, 2007) explored the relationship between course design and learner interaction with course content in a large enrollment class at the College of Southern Maryland. As part of the Quality Matters review process (Figure 1), e ach learning module in this information technology course was revised in 3 ways: 1) creation of a Learning Guide (explicit roadmap), 2) reorganization of presentation and design, and 3) addition of classroom assessment techniques (CATs) in each course module. Runyon compared student grades before and after the QM redesign and found they were higher after the redesign (more "A"s, fewer "F"s). She also found greater learner interaction with course materials among students in the redesigned version of the course.

Although little research has been completed to date concerning the efficacy of the Quality Matters (QM) framework, it, and/or parts of it are very widely used to access online course design. The QM framework, however, only addresses course design. To assure high quality blended courses and programs, implementation, i.e. the processes of teaching and learning in a blended format, must also be addressed. The Community of Inquiry (CoI) framework does just that.

Community of Inquiry Framework

The Community of Inquiry (CoI) framework (Garrison, Anderson & Archer, 2000) is a process model of online learning (see: http://communitiesofinquiry.com/). It is grounded in a collaborative constructivist view of higher education and assumes that effective online learning requires the development of a course community (Rovai, 2002; Shea, 2006) that supports meaningful inquiry and deep learning. The CoI framework has been quite widely used to inform both research and practice, and an increasing body of research supports its efficacy for both describing and informing online learning (Arbaugh, et al., 2008; Swan, Garrison, & Richardson, in press).

Building from the notion of social presence in online discussion, the CoI framework represents the online learning experience as a function of the relationship between three presences: social presence, teaching presence, and cognitive presence (see Figure 2). The CoI framework suggests that online learning is located at the intersection of these three presences, that is, it views all three presences as working together to support deep and meaningful learning processes.
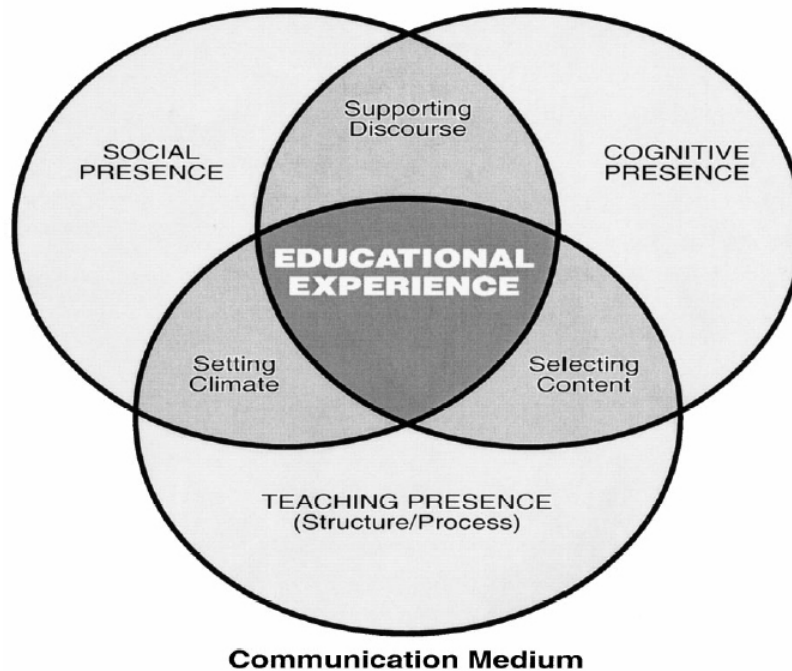
Figure 2: Community of Inquiry Framework (Garrison, Anderson & Archer, 2000; used with permission)

Social presence refers to the degree to which learners feel socially and emotionally connected with others in an online environment. A number of research studies have found that the perception of interpersonal connections with virtual others is an important factor in the success of online learning (Picciano, 2002; Richardson & Swan, 2003; Swan, 2002; Swan & Shih, 2005; Tu, 2000). Garrison and Anderson (2003) identified three elements that contribute to the development of social presence in online courses -- *affective expression, open communication*, and *group cohesion* -- which research suggests are affected by both instructor behaviors (Shea & Bidjeramo, 2008; Shea, Li, Swan, & Pickett, 2005) and course design (Swan & Shih, 2005).

Teaching presence is defined as the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001). Researchers have documented strong correlations between learner's perceived and actual interactions with instructors and their perceived learning (Jiang & Ting, 2000; Richardson & Swan, 2003; Swan, et al., 2000), and between teaching presence and student satisfaction, perceived learning, and development of a sense of community in online courses (Shea et al., 2005). In fact, the body of evidence attesting to the critical importance of teaching presence for successful online learning continues to grow (Garrison & Cleveland-Innes, 2005; Murphy, 2004; Swan & Shih, 2005; Vaughn & Garrison, 2006; Wu & Hiltz, 2004), with the most recent research suggesting it is the key to developing online communities of inquiry (Shea & Bidjeramo, 2008). Garrison and Anderson (2003) identified three elements that contribute to the development of teaching presence in online courses – *design and organization*, *facilitating discourse*, and *direct instruction* – all of which deserve careful attention.

Cognitive presence describes the extent to which learners are able to construct and confirm meaning through course activities, sustained reflection, and discourse (Garrison, Anderson, & Archer, 2001). In the CoI framework, cognitive presence is seen as consisting of four phases of practical inquiry, adapted from Dewey (1933), which begins with a *triggering event* and extends through *exploration* and *integration* to culminate in *resolution* (Figure 3).
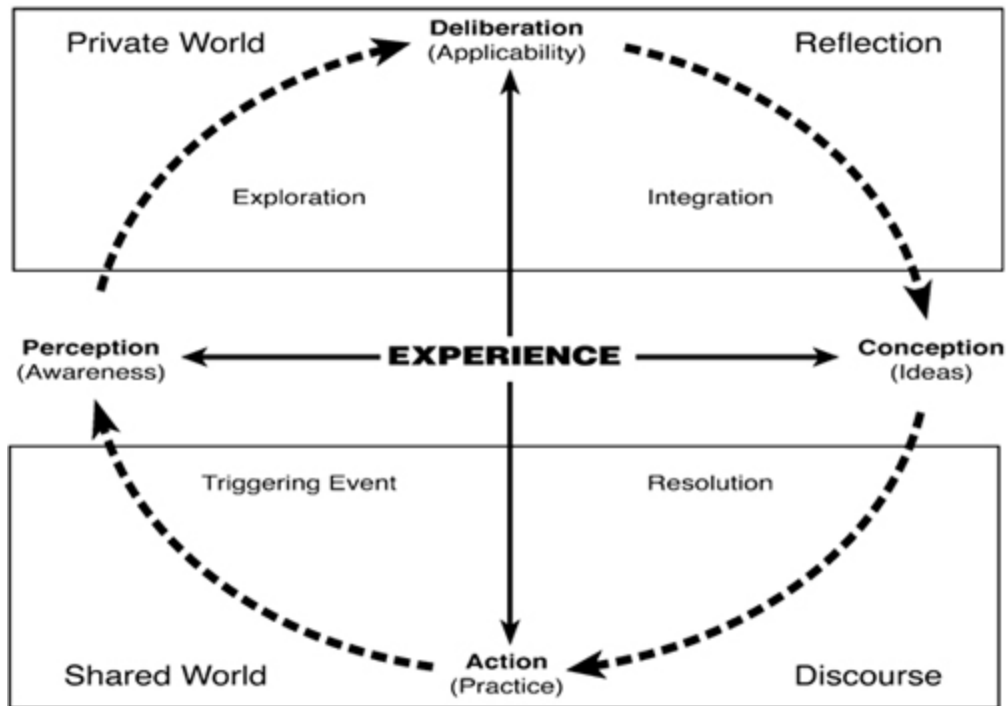
Figure 3: Practical Inquiry Model (Garrison, Anderson, & Archer, 2001; used with permission)

While researchers have been able to find evidence of practical inquiry in online discussion, several studies have found that online discussion rarely moves beyond the exploration phase where participants share information and brainstorm ideas (Garrison & Arbaugh, 2007; Kanuka & Anderson, 1998; Luebeck & Bice, 2005; Murphy, 2004). It is most likely that much of this has to do with the nature of the assignments and instructional direction (teaching presence) provided (Garrison & Arbaugh, 2007). In studies in which students were challenged to resolve a problem and explicit facilitation and direction were provided, students did progress to resolution (Akyol & Garrison, in press; Meyer, 2003; Murphy, 2004; Shea & Bidjermo, 2008; Wang & Chang, 2008).

Transitioning Administrative Leadership Courses to Blended Delivery

The Educational Leadership Program (EDL) at the University of Illinois Springfield (UIS) provides master's degrees for educational practitioners who desire to become school administrators or teacher leaders. The EDL department has grown from a full-time instructional staff of three professors who taught strictly face-to-face classes when it was formed in 1997 to an instructional staff of 12 full-time professors who teach face-to-face, blended, and fully online classes today. Its development from a small department to one of the largest on campus can be attributed to visionary leadership, faculty who regularly review and refine class offerings, and the development of a nationally recognized online program.

EDL's teacher leadership program is fully online. In 2008, EDL faculty decided to transition its other major program, administrative leadership, from traditional face-to-face to blended delivery to enhance student recruitment by providing courses that would reduce student travel time by half. The online experience of the faculty provided the background necessary for effective development of blended offerings. The QM rubric and the CoI framework were used to guide this process to assure that all courses in the blended program would be of the same high quality as the face-to-face courses they were replicating.

Understanding the QM framework and its relationship to the development and teaching of online lessons was essential for instructors as they created their blended offerings. The QM framework served as the overriding guide for the EDL program as courses were transformed into their blended versions. However,

as previously noted, the QM framework is merely a course design model. EDL faculty also wanted to make sure that the implementation of the blended courses would result in the same level of critical discourse and higher order thinking that had always been a hallmark of its face-to-face and online courses. Linking the QM rubric to the CoI framework helped EDL professors produce high quality blended courses that were designed to support the development of a community of inquiry. These links are made explicit in the sections which follow and organized around the three presences that define the CoI framework. A comparison of the eight broad standards of the [QM rubric](#), developed to evaluate the design of online and blended courses, with the social, cognitive and teaching presences described in the CoI model (Garrison et al., 2000) shows a strong relationship between the two.

Social Presence

In this section, links between three QM standards and social presence are explored. Developing social presence in online and blended courses is essential for fully engaging students and creating a sense of community. Social presence was accordingly an important focus during the development of EDL's blended administrative leadership courses. Social presence can be enhanced through the careful development of learning objectives, learning engagement, and learner support standards described in the QM rubric. Each of these identified standards, the manner in which they support the development of social presence, and how they were attended to in the course design and implementation process are addressed below.

QM Standard 2 - Learning Objectives

Courses in which the goals are clear and assignments that support these goals are a major part of any successful program, and, as noted above, a critical component of the QM rubric. Addressing the development of a blended class, Welker and Berardino (2005) state that a "course must be fully prepared at the beginning of the semester since building the course as the class progresses creates confusion for the students" (p. 47). If a course lacks this careful planning, they argue, the teacher runs the risk that students will sense there are two separate and disconnected courses. Aycock, Garnham, & Kaleta (2002) further note that students in blended courses need clear explanations and rationales for the blended format and relationships between online and face-to-face components since the concept is new to them. The development of social presence, and in particular its open communication element, will only take place when students are comfortable with their learning environment, hence, clear and consistent goals and objectives are likewise critical to its emergence.

However, many educators would argue that clarity and organization are not enough. While, learning is clearly social, too often educational structures are not. Too often the student becomes "a passive viewer of slides, listener of lectures, screen and mouse clicker or a quiet taker of evaluations" (Masie, 2006, p. 25). As administrative leadership courses within the EDL department evolved from a face-to-face to a blended format, a major focus was thus on the development of assignments designed not only to support clear results, but also to maintain student interactions, and therefore the development of social presence, within the both the online and face-to-face parts of the courses.

One such example is an assignment based on students' observations of another teacher in their building in which the student must present a narrative report in a specifically designed format. In face-to-face classes this lesson was introduced through a presentation of a sample paper by the instructor, a handout describing the most common mistakes found in the papers, and followed by student questions. In the blended format the lesson begins similarly, but social interaction was enhanced and the quality of submissions elevated when each student paper was placed online and assigned classmates responded to the submissions using a "Critical Friends Sheet" designed specifically for the assignment. Students took great care in helping each other correct mistakes and add missing sections, with the end result that resubmitted papers were exemplary. At the same time, the process also resulted in a stronger social structure and greater group cohesion as each student depended upon and helped others. It is important

to note that what made this activity work so well were the explicit instructions given for both the formatting of reports and the provision of feedback.

QM Standard 5 - Learner Engagement

Piaget (1952) believed that learning is a dynamic state, a philosophy that runs counter to the passive state created by the traditional lecture and text pedagogies. Active learning requires learner engagement as is reflected in the learner engagement standard of the QM rubric and the affective expression, open communication, and group cohesion categories described in the CoI model. Indeed, the development of a sense of community is critical to learner engagement, and, many believe, can be a natural outcome of blended learning done well. Rovai and Jordan (2004), for example, found that students in blended courses felt a stronger sense of community than students in traditional or fully online courses.

In EDL's blended courses, students were also engaged through the use of technology. Technology can enhance instruction by forcing students to engage with content and make sense of things (Duffy & Jonassen, 1992). This is true in any type of classroom, but it is essential for online and blended classes. Each class must be designed to assure that students are answering questions, completing projects, and communicating with the instructor and each other in a community effort to learn the material. This can be accomplished through online group projects, student critiques of their colleagues, and the design of lessons or explanations about the course material (Swan, 2004).

Some students thrive in the classroom setting and learn by listening to and speaking with other students, while other students respond better in the online environment because they are given the time to consider their responses and are less reluctant to respond (Young, 2002). Thus, the blended course development process permits the creation of an instructional environment that can be positive for both types of students. In the administrative leadership program, careful design and integration of online and face-to-face discussions assured student interaction across delivery modes, further supporting the development of social presence among course participants.

There are many tools and applications that can be used to increase student interaction with each other and with the instructor. Discussion boards, email, social networking, embedded audio feedback, podcasting (http://www.uis.edu/podcasting/subscribe/index.html), and dozens of other interactive and, in many cases, audio/video-enhanced presentations bring life to online activities. Each of these can be a tool for engagement and enhance student learning, but the need for proper support of these tools and adequate training in their educational uses is essential for their effective use. This is where learner support enters the discussion of social presence.

QM Standard 7 – Learner Support

With the myriad of hardware, software, and instructional applications available to instructors for the enhancement of instruction and engagement of students, it is essential to provide adequate training and support to assure student success. Chaney et al. (2007) found that students must be provided with clear information and orientation to the technology along with access to technical support. Learner support is a major strength of the online and blended programs at UIS. Information Technology Services (ITS, 2009) provide support, advice, and training activities for students including assistance with accounts/passwords, computer labs, student technical support, personal computer support, and web publishing and e-docs workshops. While the use of social technologies can enhance the development of social presence, this will clearly never take place unless students are comfortable with their use.

Teaching Presence

Garrison and Anderson (2003) noted three elements that contribute to the development of teaching presence in online courses. These elements include design and organization, facilitating discourse, and direct instruction. The University of Illinois Springfield focuses on teaching presence in the online courses offered in both the core and elective classes of the EDL program. Syllabi reflect the expectations that students may hold for faculty, as well as the expectations for students' commitment to the class, and include the elements needed to ensure teaching presence through an explicit summary of the organization of course work, an outline of discourse expectations, and the designation of content standards and objectives met through direct instruction. EDL faculty retained this focus on teaching presence when transitioning traditional administrative leadership courses to blended formats. The sections which follow explore how they kept this focus through use of the QM framework in relation to the three elements of teaching presence.

Design and Organization

Instructional design for EDL's administrative leadership blended courses was completed by faculty with recursive reference to the QM framework. Interactions with campus instructional designers provided support for faculty and a second-level QM checkpoint, as course objectives (QM 2), implementation of learning activities (QM 4), and pedagogically appropriate technologies (QM 6) were chosen for the delivery of instruction. As the courses took shape, checkpoints were also established to ensure that learning objectives were being met (QM 2). Assessments were constructed that demonstrated both formative and summative learning. Learning objectives and assessments were purposefully kept consistent between course sections to meet specific course measurements (QM 3). However, learning activities and technologies to support the identified objectives were allowed to vary depending on the teaching style of the faculty implementing individual class sections.

Through a series of faculty training sessions provided by Information Technology Services and the Office of Technology Enhanced Learning/Center for Online Learning and Research (2009), faculty were supported as they designed and delivered coursework in the blended format. Training sessions included a day-long, annual event that showcases a myriad of pedagogical technology instruction. The OTEL mission and its ability to assist with the development of pedagogically sound online and blended instruction has further been expanded with the creation of Center for Online Learning, Research, and Service (COLRS). COLRS (2009) is the UIS hub for all learning about online education.

Additionally, grassroots faculty support related to best practices in e-learning was provided through the Community of Practice for E-Learning (COPE-L). As a community of practice (Wenger, McDermott, & Snyder, 2002) COPE-L aspires to: 1) share knowledge and best practices related to e-learning; 2) develop informal networks and mutually helpful relationships among members; 3) identify problems and seek solutions to problems shared by members; and 4) provide opportunities for members to explore and innovate in the area of e-learning. COPE-L's main area of interest is e-learning and it is specifically involved with instructors who are engaged in the development and delivery of online and blended courses and programs and technology enhanced courses. All of the faculty involved in the administrative leadership program's transition to blended learning were founding members of COPE-L and remain active in its activities.

Facilitating Discourse

The second category identified by Garrison and Anderson (2003) in the CoI model is facilitating discourse. Fully online teacher leadership courses in the EDL program are strengthened through discussion boards that engage students and lead to higher order thinking as defined by Bloom, Englehart, Furst, Hill, & Krathwohl (1956). This lesson learned through many years of practice in the online Master Teacher Leader (MTL) program was carried into the blended course development for EDL administrative leadership courses. Faculty developing these courses participated in a series of professional

development offerings that assisted them with the deliberate and intentional construction of questioning methodology to most effectively engage students in the learning process (QM 5). Facilitating discussion also involves modeling. Modeling didactic discussion provides students with a structure that allows self-directed learning to occur in online forum. Faculty involved in the transition to blended learning were introduced to this concept and encouraged to engage in online modeling practices through a modeling workshop and ongoing support.

Direct Instruction

Direct instruction is the third element in teaching presence (Garrison & Anderson, 2003). Vygotsky (as cited in Wertsch, 1985) argued for the scaffolding of cognitive content by more expert others in a manner that supports learners' knowledge construction (QM 5). The potential for such scaffolding in online and blended courses is clearly related to the expertise that faculty members bring to them. The EDL program ensures direct instruction in this collaborative constructivist mold through employing professors and adjuncts who are highly qualified practitioners within the field, as well as researchers who are experts in the discipline area in which they are teaching. Thus, direct instruction within the EDL program allows students to connect with experts in the field of educational leadership who scaffold their learning through online and face-to-face discussions, feedback on assignments, and email and phone interactions (QM 7). One direct instructional method that has proven successful in engaging students is the use of podcasts. The Teacher Leadership Foundations course provides an example of how podcasts can be used to engage students through direct instruction. A sample of a typical week's podcast is available through iTunes U: Week 2 Reframing School Culture .

Teaching presence has been noted in multiple research studies (Anderson et al., 2001; Garrison & Cleveland-Innes, 2005; Jiang & Ting, 2000; Murphy, 2004; Richardson & Swan, 2003; Swan & Shih, 2005; Swan et al., 2000; Vaughn & Garrison, 2006; Wu & Hiltz, 2004) as critical to establishing quality online and blended instruction. EDL programs at UIS acknowledge the relationship between teaching presence and program quality through the use of highly qualified faculty who are given support in establishing strong teaching presence in their blended classrooms.

Cognitive Presence

In the CoI framework (Garrison et al., 2001) cognitive presence consists of the four phases of practical inquiry (Figure 3). As stated earlier, the concept was adapted from Dewey's (1933) early work in constructivist learning theory and inquiry-based learning. Practical inquiry has been standard practice in face-to-face courses in the EDL administrative leadership program for many years, and faculty felt it was imperative to retain this focus when moving the program to its new blended format.

The QM framework focuses on the design and organization of online courses, and not on processes, but m uch can be learned by utilizing the QM rubric to assess the quality of online courses. The QM rubric identifies the need for clear course expectations (QM 1) which, in the case of EDL's new blended courses, assured that the rigor of the face-to-face classes was maintained in their online portions. The QM rubric also requires blended courses to provide information on which course activities are face-to-face and which are online, a criterion which greatly enhanced student understanding of the ways in which problem-based learning in these courses was integrated across the face-to-face and online portions of classes.

Course overviews (QM 1), learner objectives (QM 2), and assessments (QM 3) in the QM model connect well with the development of cognitive presence. The connection between learner objectives and student engagement are critical when developing appropriate problem-based activities. EDL program developers previously mapped curricular objectives across courses in the traditional administrative leadership program. In order to connect course content and assessments within the blended format, faculty determined which activities would be enhanced with online delivery and which were best left face-to-face. This mindful integration of face-to-face and blended activities enhanced the inquiry process.

Course technology requirements in the QM framework (QM 6) encourage faculty to explore new technology tools and media that support student engagement and contribute to better mastery of course objectives. In the EDL administrative leadership transition, meeting this criterion resulted in the transformation of the clinical course requirement from a traditional portfolio to an e-portfolio. This new portfolio demonstrates candidates' experiences and proficiency in standards-based activities at their school sites over a two-semester time frame. Through the use of e-portfolio tools, students have been able to enhance their overall demonstration of goal attainment through use of video clips, pictures, and blog entries, reflections on problem solving, and website development, resulting in the storage and showcasing of very large files. The change to the blended format thus resulted in students' creation of substantial and comprehensive portfolios that they could share with professional colleagues and use for employment and advancement purposes. Moreover, student reflections on portfolio artifacts, a course requirement, enhanced their understanding of clinical practice.

Preparing non-traditional graduate students who teach full-time in K-12 classrooms using real-world problems common to building-level leaders lends itself well to the development of cognitive presence. By developing lessons that create the opportunity for student inquiry as described by Dewey (1933), EDL faculty provide triggering events that encourage group exploration. The use of blended activities enhances face-to-face interaction with online reflection and discourse, enhancing learner engagement (QM 5) and encouraging integration. Integration phase activities have the added benefit of better preparing prospective school leaders for more effective communication and interaction with teachers and parents. The final phase of resolution comes, then, not in a lock-step and linear fashion, but in a more flexible manner where previous stages may be revisited before the most viable solution is found.

While Garrison & Arbaugh (2007), Luebeck & Bice (2005), and Murphy (2004) found evidence of practical inquiry in online discussions, they also noted that online discussions rarely move past the stage of exploration. In the EDL administrative leadership program, clinical approaches to learning move students to resolution. For example, in the Supervision of Instructions course, students learn data collection techniques in order to provide meaningful feedback to help a real teacher improve his or her teaching performance. This clinical approach moves students beyond what they discuss in online forums and into designing practical and viable solutions through group problem solving. The EDL faculty developers devised a system which requires students to critique and evaluate their classmates' performance after the latter collect and post teacher observation data and feedback on a classroom observation. The face-to-face portion of the project includes an in-depth presentation of the cognitive inquiry phase, followed by an in-depth critique online. Knowing that online interactions typically decrease as students move through a problem from exploration to resolution, EDL professors intentionally promote further communication during all phases to help students connect course content with the daily tasks of school leadership. This process moves students to the integration and resolution phases of practical inquiry.

The development of cognitive presence in which integration and resolution occur can also be seen in the design of the EDL Organizational Dynamics class. Students study the four frames of leadership as described by Bolman and Deal (2006) through lectures, in-class and online activities, and ultimately, a group presentation. The group presentation requires the identification of a problem in one of the students' educational settings, an explanation of how the problem and the members of the identified educational community are related to the characters in *Who Moved My Cheese* (Johnson, 1999), and how the group would resolve the problem using the four frames of leadership. Project development is accomplished through ongoing negotiations across the course's face-to-face and online environments. Discussion boards and e-docs are used to track student activity and permit the instructor to observe a group's progress and make comments as necessary. The end result documents the integration and resolution phases of the Practical Inquiry Model (Garrison et al., 2001).

Conclusions

In this paper, we introduced the Quality Matters (QM) and Community of Inquiry (CoI) frameworks and discussed how they informed the transitioning of traditional face-to-face courses in administrative leadership to a blended learning format. Using the QM rubric as a guide for the development of courses and course activities with an eye toward the development of the CoI presences in course implementation provided the structure to insure that the high quality and inquiry focus of the original courses were preserved. Our EDL administrative leadership program is up and running in its blended format and student satisfaction is high. Perhaps more importantly, faculty believe that if anything, the transition has enhanced student learning. We conclude here with a few lessons we took from the development of our blended program which we hope will be of use to others considering a move into the blended arena.

Lessons Learned

Universities considering the blended format must first evaluate the level of support that will or can be provided by the university. Lack of quality support will limit the effectiveness of blended program development. Explicit guidelines for developing blended courses are an important aspect of support. In our experience, the QM rubric and the CoI framework provided excellent scaffolds for both the development and the implementation of blended courses. In our opinion, support should include some such explicit guidelines.

Following the provision of support, the next step in creating a blended program is the identification of classes and activities that can be adapted to online environments. All UIS professors who developed blended classes had previous experience as totally face-to-face and online instructors. This professional instructional background made the development of blended classes easier, as these professors had good insights into what works and what doesn't in either environment. It is thus important to make sure that instructors and course designers have some experience teaching face-to-face and online, and if they don't to provide them with it.

For students with only face-to-face experience, making the transition is a challenge that must be considered from the beginning of the course design process. In-depth, face to face explanations and demonstrations on how to access and use all areas of course websites must be planned and provided. Doing so assures that student knowledge of and comfort levels with the online portions of the blended offerings are at the highest possible level. In our experience, the importance of the development of students' comfort with and understanding of the blended format should not be underestimated. Unless students are comfortable in what may be a strange new learning environment, teaching, social, and cognitive presence cannot emerge.

Even the best efforts and plans require analysis and reflection in order to assess instructional effectiveness and student satisfaction. The EDL department distributes a survey for every blended course to obtain student feedback regarding the design and effectiveness of the blended class entitled *Blended Learning: Reconnecting with the Capital Region*. In addition, each professor has the option to develop a midterm online survey specifically designed for his or her course to provide guidance on student perceptions of the course and, if necessary, make adjustments as the course progresses. While there is no quantifiable evidence of the effectiveness of these measures at this point, the initial surveys begin the data collection process that will lead to course refinement and improved student satisfaction in accordance with the QM continuous improvement model. We highly recommend including such evaluation mechanisms in any program development process.

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Comparing Online Learning with Blended Learning in a Teacher Training Program

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Abstract

This paper describes the establishment and delivery of a Blended Learning Higher Diploma in Education, being a professional qualification for Primary School teachers in Ireland. This innovative course represents a major departure from the traditional mode of delivery of teacher training in Ireland. A careful analysis of student feedback and examination scores is therefore of crucial importance to inform further development of the course and to contribute to innovation in teacher training both in Ireland and internationally.

The two primary modes of course delivery, that is an Entirely Online mode and a Blended Learning mode, were compared in terms of qualitative feedback from the students themselves and quantitative results from the formal assessment procedures. Across a range of questions that covered learning outcomes and learner outcome satisfaction, balance of delivery, tutor and peer engagement, workload, technology and perceived career benefit, student satisfaction was shown to be good across both modes of delivery. Some differences were noted in workload and student support; workload was perceived higher, but student support was more satisfactory in the purely online elements. There was a small but significant grade improvement for Blended Learning courses over Entirely Online courses. However, alternative hypotheses make it difficult to attribute this grade increase to the mode of course delivery.

The mode of delivery of course content does not affect student satisfaction or the ability of students to perform well in formal assessment. It is therefore concluded that a blended learning educational system that includes online education is a highly appropriate mode for the training of primary school teachers.

Introduction

Hibernia College

Hibernia College is an online College, based in Dublin, offering online and blended learning degrees to students in Ireland, the UK, and internationally. The College currently serves over 2,500 students in 26 different countries and employs over 60 full time and 300 part time staff and faculty. Hibernia College is accredited by the Higher Education and Training Awards Council (HETAC), the Irish government's agency for accrediting higher education outside of the university sector.

Prior to 2003, all primary school teachers in Ireland were trained by established Colleges of Education in full-time, onsite undergraduate and postgraduate programs. However, these Colleges were unable to provide sufficient teachers and by 2003 a shortfall of up to 2,000 qualified teachers had been identified. Hibernia College designed and developed a Blended Learning solution to help address this shortfall. This innovative new program represents the first time that online education has been the cornerstone of professional teacher training in Ireland.

Hibernia College adheres to approved Quality Assurance Standards awarded by HETAC, following scrutiny by an international review board of distinguished academics and education administrators. HETAC awards are recognised internationally and are accompanied by the EU Diploma Supplement. The Higher Diploma in Primary Education (HDPE) is a HETAC accredited qualification and recognised by the Irish Department of Education & Science for the purposes of becoming a primary school teacher in Ireland.

As can be seen in Figure 1, both applications and student numbers have risen for the program since its inception in October 2003. The program addressed a pent up demand in the initial teacher education market in Ireland which resulted in an overwhelming number of applications when it was first offered. To date almost 2,000 students have graduated from the program, which now produces more qualified primary school teachers each year than any other program in the country.
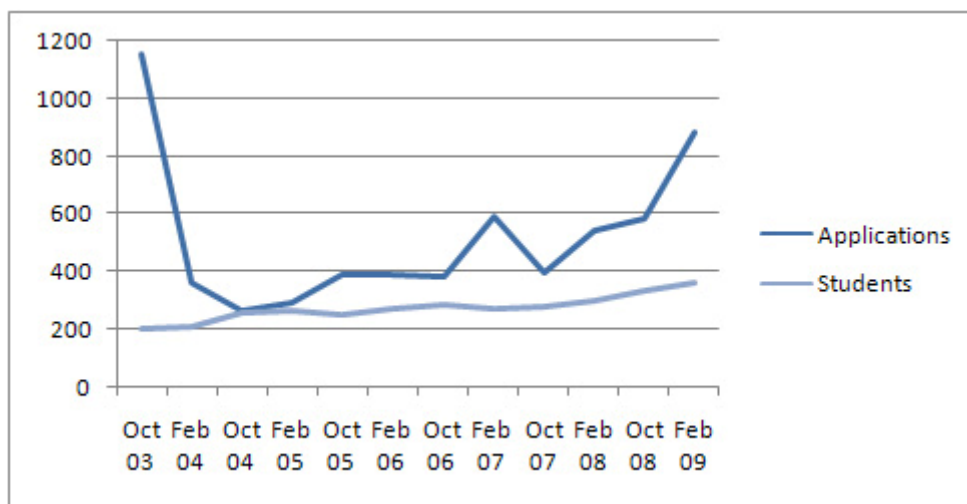
Figure 1: Student Applications and Cohort Numbers per Intake

Program Structure

In all, approximately 45% of the program is delivered online. The online elements of courses are delivered through a combination of downloadable lectures and resources, synchronous online tutorials, forums, and blogs. However, as teaching is so practical by nature, it was felt that a face-to-face element was essential to the success and quality of the program. To facilitate this, the College collaborated with the Department of Education & Science's existing network of regional education centers, ensuring that students could keep travel (and travel expenses) to a minimum.

Other essential onsite elements of the program include induction, graduation, final onsite exams, the mandatory 14 weeks of classroom teaching practice and 3 weeks spent immersed in the Gaelteacht (one of the Irish speaking regions of the country).

It is now recognised that this blended model of delivery provides a greater level of flexibility to the student in terms of managing their time and also their location (Garrison & Kanuka, 2004). It also allows for self-

paced learning in a structured environment, while student engagement and a sense of community are managed through a blend of Web 2.0 technologies implemented in the learning environment.

Lessons are released to students on a weekly basis; various learning styles are catered for through the variety of formats provided; interactive flash lessons, podcasts, and transcripts, all of which are downloadable to the student's workstation.

For an example of an online lesson click here

A corresponding synchronous tutorial usually takes place the following week.

To view a recorded tutorial click here

Students are encouraged to reflect on their learning experiences through posts in the forum based on a question posed at the end of each lesson. The tutor then leads discussions through the forums, encouraging collaboration between peers. This type of tutoring is essential to problem-based, self-directed learning, allowing the students to develop reasoning skills and become independent learners (Rovai, 2004).

Students are also provided with social networking tools such as groups, file sharing, and instant messaging that allows them to remain engaged with fellow students while not in the face-to-face environment. This helps to alleviate some of the sense of isolation that may be felt in a purely online course. "These interactions should result in increased socialization, a stronger sense of being connected to each other, and increased construction of knowledge through discourse, thus providing stronger feelings that educational goals [are] being satisfied by community membership" (Rovai & Jordan, 2004, p. 4).

Methodology

As blended learning is a relatively new approach, little study has been done to assess its effectiveness. There is a great deal of cynicism surrounding online learning and its ability to support students (Ladyshewsky, 2004). Good analysis of learner satisfaction and learner outcomes is crucial for enabling eLearning professionals to continue advances in development and implementation of blended courses (Johnson, Aragon, & Shaik, 2000).

In our study we analysed outcome data obtained from two cohorts of students (N = 441) enrolled in our Primary School Teacher Training program. Using a repeated measures design, entirely online modules of the course were compared with those that were blended. Therefore, all students partook in both conditions. Areas that were assessed were learning outcomes and learner outcome satisfaction, balance of delivery, tutor engagement, workload and technology.

Delivery Modes

The HDPE consists of 13 modules taught through a range of delivery modes as described in Table 1. In total, students spend 55% of their contact hours online and 45% in a face-to-face environment.

Table 1: Delivery Modes

	Asynchronous Multimedia Content	Live Online Tutorials in the Virtual Classroom	On-Site Face to Face Tutorials/ Workshops	Asynchronous Discussion Forum	Example Module
Entirely Online	X	X		X	Psychology of Education
Blended Learning	X		X	X	Teaching Methodologies
Entirely On-Site			X		Teachers and the Law

For the purposes of this study the following courses are classified as Entirely Online:

- Psychology of Education
- Philosophy of Education
- Sociology of Education

The following courses are classified as Blended Learning:

- Teaching Methodologies English
- Teaching Methodologies Math
- Teaching Methodologies Irish
- Teaching Methodologies Geography
- Teaching Methodologies History
- Teaching Methodologies Science
- Religion
- Physical Exercise

Independent Variable

Mode of Delivery, i.e. Blended vs. Online

Dependent Variables

In this preliminary paper, we report data derived from a sample of the questions answered by students on feedback forms. Responses were averaged across feedback returned for the three entirely online courses and, similarly, across the eight blended learning courses. Feedback was collected at the end of each semester and surveys were presented to all 441 enrolled students.

Student appraisals, assessment, and examination performance in Entirely Online courses and Blended Learning courses were compared under the following headings:

A) Clarity of Goals

B) Convenience and Workload

C) Student Support

D) Benefit as a Teacher

E) Final Grade

Results

Feedback from a total of 441 students was collected on a standardised questionnaire presented to all students at the end of each semester on 4 separate occasions, for a possible total of 1,764 surveys. Questions consisted of 5 point Likert scale items (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree and Strongly Disagree) with space for open-ended feedback available (not reported in this paper) at the end of each section. Questionnaires were presented either in a paper-and-pencil format during workshops or via an online survey. The mean response rate was 28.14%, with a generally higher response rate for blended modules (34.74%) when compared with entirely online courses (21.55%)

Formal assessment data was collected for continuous assessments and for terminal examinations by the Office of Academic Affairs. This paper presents mean overall grade score in percentages for each of the dependent variables.

A) Clarity of Goals

Students were asked if the aims and objectives of the module were clearly stated at the outset and if the module content enabled them to achieve the stated learning outcomes. In each case the modal response for Blended Learning and Entirely Online courses was "Agree". Chi-squared analysis showed that students felt that the online courses laid out course objectives more clearly, c^2 (4, N = 492) = 22.53, p <0.01; met learning outcomes more effectively, c^2 (4, N = 488) = 23.18, p <0.01; and that the methods of delivery were more appropriate, c^2 (4, N = 488) = 43.13, p <0.01 respectively. Students were also asked if the module began at an appropriate level. The modal response for both groups was "Agree"; however the level at which online courses were pitched was favoured, with a greater frequency of people responding "Disagree" for the commencement level of the blended courses, c^2 (4, N = 492, p <0.01) = 20.67.

B) Convenience and Workload

Students were asked if the workload was acceptable and, in a separate question, if the timetable was appropriate. The modal responses for both the Blended Learning courses and the Entirely Online courses were "Disagree" for workload and "Agree" for timetable. Chi-squared analysis showed workload was deemed to be higher for the purely online elements, c^2 (4, N = 488, p <0.01) = 24.30. However, despite this increased workload, students found timetabling more convenient, c^2 (4, N = 489, p <0.01) = 22.50.

C) Student Support

Students were asked if they were adequately supported by academic and administrative staff. There was a significant difference between responses in Online and Blended learning Courses c^2 (4, N = 488, p <0.01) = 31.49, with responses for online courses tending to be more favourable. Students were also asked if problems were resolved satisfactorily and if they felt supported by peers studying the course. In both cases, the modal response was "Agree" and there was no significant difference between groups, c^2 (4, N = 420, p = 0.07) = 8.56 and c^2 (4, N = 486, p = 0.29) = 4.94 respectively.

D) Benefit to Career as a Teacher

Students were asked if they felt the course would benefit them in their forthcoming career as a teacher. The modal response for courses taught through Blended Learning was "Strongly Agree", while the modal response for courses taught Entirely Online was "Agree". This difference was statistically significant, c^2 (4, N = 486, p <0.01) = 58.74.

E) Final Grade

196 students' final grades, representing all students in a single cohort, were analysed. Grades were compared across course modules taught through a Blended Learning mode and those taught Entirely Online. Students consistently scored higher in course modules taught through Blended Learning. The modal increase in students' grades achieved in these Blended Learning modules was +2 percentage points higher than grades achieved in Entirely Online courses (Figure 2). Only 15 of the 196 students obtained a lower mean score in the Blended courses. Mean score for Blended Learning courses was 59 (out of 100) ± 0.43, compared to 58 (out of 100) ± 0.45 for Entirely Online courses.
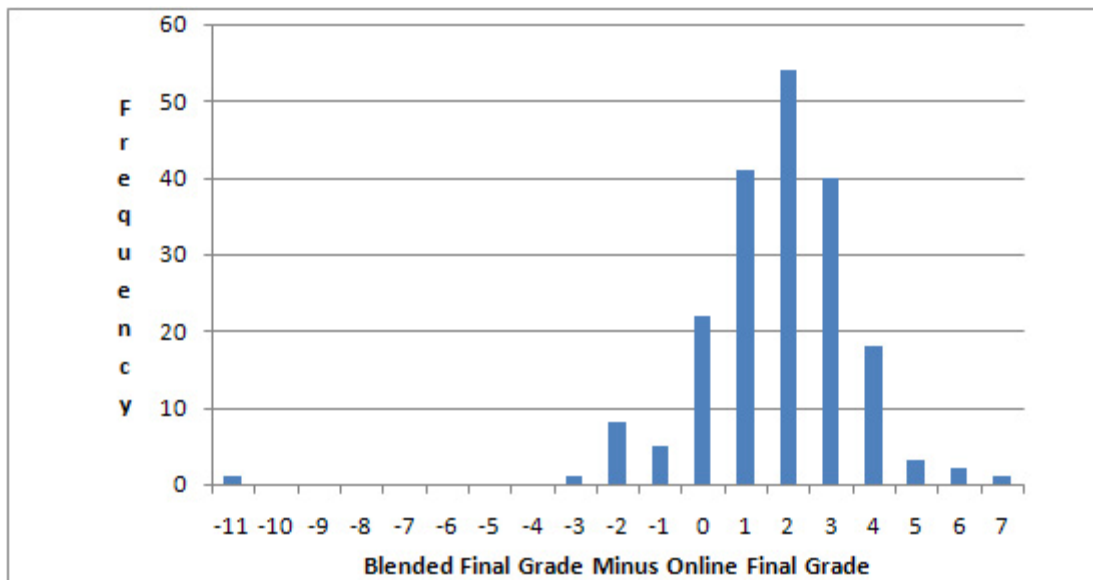
Figure 2: Frequency of Differences between Blended and Online Final Grades

Discussion

We assessed qualitative feedback and recorded final grades from students enrolled in a Higher Diploma in Primary Education. The purpose of this paper is to compare these results in course modules delivered in one of two ways; blended learning and online learning, with the hypothesis that any differences can be attributed to the mode of delivery.

There are a number of limitations that may affect the findings as reported here. A different tutor presenting each module may have had an impact on student performance and feedback as well as affecting grades through individual marking styles. However, any such effect is likely to be controlled for by the fact that a number of course modules were combined in each of the two modes of delivery, i.e. multiple tutors were involved (see Methodology). A second potential confounding factor is that the nature of the courses taught through online learning might be sufficiently different from the nature of those that are blended. For example, the online courses tended to be more theoretical in nature and less focussed on the practice of teaching.

The first dependent variable we measured concerned course goals. Students believed that aims and objectives were more clearly laid out and more effectively met by the purely online elements of their courses. This could be explained by the 24-7 availability of the online courses, meaning that students had better access to course material as and when required, thus removing reliance on the instructor. This structure allows the student to assume more responsibility for their learning, promoting self-reliance and self-directed, regulated learning (Garrison, 2003). This is also borne out by the results showing that the students believed the online courses to be pitched at a more appropriate level. The flexibility of the online model means that content can be tailored and moderated by students themselves, empowering them to learn in a manner that suits their own level of knowledge and learning pace.

Students found the online courses to be more convenient to study, reiterating the answers in previous questions, and showing that the self-led approach best suits learners. It allows them to fit their learning around their lifestyles and needs. However, it was found that the learners found this method of learning to be more time-consuming than those courses with a blended delivery. This may indicate a greater need for support in time and self-management practices for the students – useful tools when self-directing learning online (Song, Singleton, Hill, & Koh, 2004). Self-regulatory skills are paramount given the autonomy that online learning provides; students must have self-accountability to achieve learning outcomes when they have ultimate control over how and when they study (Barnard, Lan, To, Osland Paton, & Lai, 2009).

Reaction to support was more positive for the online courses. During office hours students have access to a technical support helpline, academic and administrative staff, i.e. a wider base than simply relying on a tutor. This level of support, combined with the "always-on" Virtual Learning Environment could explain student satisfaction with support provided. Out of hours the online community is a valuable source of information. Lesson content, peer collaboration in forums, online chats, blogs, online FAQs, and email all mean that students have adequate support while studying 24-7. Learner-generated content consistently grows the knowledge base of the system, as information is saved and can then be referenced by other students. Formal support from staff and informal support from peers provides comfort and encouragement while commonalities encourage participation, creating a shared educational purpose and support framework online (Moller, 1998).

Students felt that blended courses were of more benefit to them in their proposed career as a teacher. It is likely that the nature of the courses taught through the blended mode of delivery explains this difference as these courses tended to be focused on the methodologies of teaching, that is, how to teach in the classroom. In contrast, the purely online courses tended to be more theoretical in nature.

We also analysed final examination grades of 196 students in Blended Learning course modules and Entirely Online course modules. Although small (+1 percentage point), there was a statistically significant increase in final grades for Blended Learning courses as compared to Entirely Online courses. An important factor that may explain this difference is the fact that blended courses tended to be assessed via a combination of continuous assessment and final examinations, whereas online courses were assessed by final examination only. Historically, students have tended to score higher in continuous assessment elements in this program. Consequently we are not confident in concluding that the grade difference between blended and online courses can be attributed to the mode of delivery of those courses.

Conclusion

Hibernia College has designed a mixed delivery education system conforming to international best practice and accredited by Ireland's qualifications awarding body for third-level educational and training institutions outside the university sector. Its diploma is recognised by the Department of Education for the purposes of becoming a primary school teacher. This innovative course is a departure from the traditional mode of delivery for teacher training in Ireland, that is full time, on-campus delivery. Individual course modules are delivered primarily via Blended Learning or Entirely Online.

In brief, students reported a good level of satisfaction with the learning outcomes of both types of courses, support provided, delivery, workload involved, and benefit to their future careers. These findings strongly suggest that the mode of delivery of academic content in a Higher Diploma in Primary Education does not affect students' reported satisfaction with the individual course modules. However, students did favour purely online delivery for laying out course goals, study schedules, and support. Blended delivery was perceived to be better for student workload, usefulness for future careers, and final grades.

In general, then, this paper demonstrates that both online and blended delivery of course content had positive effects on student satisfaction generally and did not affect the ability of students to perform well on formal assessments. In some cases students felt better facilitated by one mode of delivery over the other. However, it is safe to conclude that a blended learning educational system that includes online education is a highly appropriate mode for the training of primary school teachers.

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Access Strategy for Blended E-learning: An AIOU Case Study

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Abstract

The use of Information and Communication Technologies (ICT) is growing in Distance Education Institutions (DEI). ICT has contributed to effective learning for rural/urban, male/female, ethnic, and remote student groups. In Pakistan, tertiary education is generally restricted to those who can afford it in urban areas. In addition, recent accessibility studies in Pakistan have identified that most students do have access to a range of ICT devices, but with limited Internet access due to problems related to the national ICT infrastructure. An ICT equipped DEI can, however, deliver tertiary education with high levels of interaction to females and underprivileged ethnic groups living in rural and remote areas. Therefore, DEIs need to uncover suitable education delivery models. Blended learning models with multiple access methods for content development and presentation, teacher student interaction, and e-assessment are needed. Blended e-learning is relatively cost effective, and can provide quality education to distant students.

Allama Iqbal Open University (AIOU) initiated e-learning in Pakistan about a decade ago, and the program has been continuously evaluated. Owing to its success and cost effectiveness, AIOU planned a major organizational change to incorporate ICT-based blended learning. In the present paper, these ICT-based access models for blended learning are described with multiple accessibility options to provide content delivery over TV, radio, Internet, and video conference-based communications. Progress to date is also highlighted.

Introduction

In many education programs, e-learning components are added to supplement student learning (Naidu, 2006). Similarly, in e-learning programs some face-to-face components are added to provide synchronous student and teacher interactions (Swan, 2002). Such blending for the purpose of better teaching and learning combines the benefits of traditional and online methods of education delivery and, therefore, it has often been considered a flexible, low cost, and effective method of learning (Alonso et al., 2005).

Distance Learning Institutions (DLI) with high student enrollments especially benefit from blended learning, because it facilitates the sharing of limited resources such as available classrooms, Internet, laboratories, libraries, and teachers. However, the accessibility of distant users (teachers and students) to such facilities sometimes is a common hurdle that may affect the quality of teaching and learning (Gill, 2005; Wikramanayake, Jamtsho, & Sangi, 2008). Student and faculty satisfaction may decline as a result, and many operational difficulties may be experienced.

Since DLIs traditionally offer open (anytime, anywhere, and flexible) education delivery, they often provide instruction (content and guidance) in multiple formats, including print, audio, video, and/or computer media. Similarly, different courses may be designed with an assortment of pedagogical methods and

delivery modes, both synchronous and asynchronous. Such combinations of input from teachers and students may be implemented using multiple ICT channels of communication, e.g. e-mail, video conferences, forums, Internet, TV, radio, or telephone). In certain cases, part of the instruction is also delivered through face-to-face tutorial sessions or workshops. These blended methods of education are increasingly being used by a majority of institutions (Allen & Seaman, 2007). Therefore, effective, reliable, flexible, and timely access to instructors, instructional content, and other information are considered key requirements for the design of successful blended e-learning systems.

Allama Iqbal Open University (AIOU) has historically offered distance, face-to-face, and online education. AIOU recently joined the club of mega-universities in the world with enrollment in excess of one million students. With a growth rate of 12-14% per year, AIOU was experiencing operational and quality problems. On one side, delays in operational logistics and academic delivery were significant in the areas of student services, instructional delivery, and student assessment. To combat these problems, AIOU implemented blended education using a combination of Internet (asynchronous and synchronous) and face-to-face laboratory sessions.

An analysis of this initial blended program was conducted. Additionally, a countrywide ICT accessibility and acceptance survey was conducted in schools, technical colleges, and universities during same period. Both surveys provided positive feedback concerning student accessibility to ICT devices, services, and the Internet. Therefore, blended learning was considered as a future requirement for AIOU with a flexible and open access model, allowing for blended teaching and learning using a variety of access methods, including TV, radio, computer & Internet, video conferencing, study centers, and mobile learning. In this paper, selected survey results are described. The results of these surveys are then used as the basis for outlining an access strategy for blended learning at AIOU for mass education. Typical ICT interventions and progress made are also described.

Literature Review

Distance education is a special mode of education in which the learner and tutor are separated by distance and time. Written instructional materials (and/or guide books) and interactions methods are mostly used to support the learning needs of distant students (Gill, 2005; Neal, 1999; Taylor, 1999). Terms such as e-learning, web-based learning, computer-based training, computer-assisted learning, mobile learning, tele-conferencing, and video-conferencing describe various levels of ICT recently introduced into traditional distance education pedagogy (Gyambrah, 2007; Whitelock, 2005). To meet the demand for e-learning, particularly in Asia, a sizable number of higher education institutions are now using ICT tools to provide modern electronic learning facilities for the benefit of their off-campus and geographically dispersed students (Allen & Seaman, 2007; Baggaley & Belawati, 2007; Gyambrah, 2007), including collaborative e-learning programs (Sangi & Karamat, 2007). Many traditional distance education universities are converting to e-learning (Baggaley & Belawati, 2007; Daniel, 1996).

The exponential growth of e-learning has been made possible by the comparative ease and availability of low cost ICT devices and services. Security problems related to traveling and increased global acceptance of distance education will also help sustain such growth. However, there are problems, especially in Asia, with student accessibility to learning resources, teaching and learning processes, student services, and evaluation methods (Sangi, 2008; Wikramanayake et. al., 2008). Addressing these accessibility issues may also necessitate pedagogical changes.

Access to Learning Resources

Access to learning resources is a key requirement in all online education programs. In a recent survey, student access was rated as either important or very important by 92% of institutions that responded (Allen & Seaman, 2007). Automation of educational delivery has also been considered as very important for student interaction with online resources and instructors (Mariana, Shea, & Pennington, 2003). Strong accessibility mechanisms could provide a richer and more engaging educational experience than is

possible within the confines of the classroom (Mariana et al., 2003). However, less disciplined access could cause dissatisfaction among students or teachers. This may require creativity and innovation in the presentation of study materials and their associated delivery technologies (Gill, 2005).

Internet-based access to online learning is either synchronous or asynchronous. In synchronous access, the student and teacher are both online at the same time, and students have an opportunity to watch presentations, ask questions, respond to instructor questions, or give live presentations themselves. This is usually facilitated through shared presentations via electronic whiteboards, interactive chat sessions, live tele-conferencing, or video conferencing. In the asynchronous mode of instruction, students and teachers access the web at their convenience and respond to each other's communications and work through e-mail messages, discussion forums, posting of assignments, and web-based reading materials.

Electronic accessibility methods depend upon common ICT devices used by students. Many different technologies are used by DLI. Each has its advantages and drawbacks. Low-cost, traditional postal technology is considered slow and requires considerable effort in outreach (Schramm, 1973), especially in communicating with remote students. Broadcast technologies have wide access to rural and remote areas, but do not provide any active participation of listeners/viewers, who cannot stop the flow of transmission to ask questions (Schramm, 1973). Often there is a competition at the user end between educational and entertainment uses of radio and TV sets. Multimedia course CDs are advanced forms of computer-based instruction which can be played and re-played as often as required to support learning. They are also cost effective and commonly used in distance education, but one of the limitations of such multimedia instruction is that it needs frequent upgrading. Mobile technologies are also emerging in education; however, they call for a re-conceptualization of teaching and instructional design (Swan, Kratcoski, & van 't Hooft, 2007). A pilot e-learning survey conducted by AIOU (Sangi & Khattak, 2009) indicated that the use of mobile devices is growing among AIOU students, generating a demand for mobile devices to be used for interaction or instruction. Video conferencing can bring teachers and students together in virtual face-to-face communications; however they require high bandwidth and a group presence at the remote end. The role of learning objects and the electronic repositories are also emerging as important components in e-learning (Hardono et al., 2007), but all new technologies require student-end equipment, software, Internet connections, and training of students and instructors (Naidu, 2006).

Blended Learning

The success of both traditional distance and e-learning programs depends upon interaction (Swan, 2002) and social presence (Kehrwald, 2008) of the teacher. The needs and expectations of online learners constantly grow with the availability of new ICT services. This often requires the redesign of both instruction and access interfaces (Armstrong, 2004; Kenny et al., 2005; Power 2007). The application of innovative pedagogical methods used by face-to-face teachers, laboratory/fieldwork, or learning of physical or technical skills also requires the adoption of blended learning components in many online courses. Blended learning is the integration of face-to-face and online instruction in a planned and pedagogically sound manner.

Blended learning was practiced at about half of the US institutions that responded to the Allen & Seaman (2007) survey on blended learning. A study in Pakistan also indicated that online students preferred to interact with their teachers either in synchronous or in face-to-face workshop sessions (Shamaila, 2007). Indeed, acknowledging such preference, AIOU has made face-to-face workshops or weekly tutorial sessions a compulsory requirement in almost all distance education programs.

AIOU's Blended Learning Program

E-learning education was started at AIOU in 2000 with the initialization of the Open Learning Institute of Virtual Education (OLIVE) Project. Progressively, capacity for digital content development, instructional delivery, Internet access, and e-assessment services was developed (Sangi, 2008; Sangi & Ahmed, 2007). AIOU launched a one-year diploma program in Computer Science in 2005. The program consisted of 10 courses (out of 11 being offered) that were to be completed in one year. Three courses were completely laboratory based, three courses were completely theoretical (lecture based), and the remaining courses were mixed. Course credits were accordingly accrued in a blended manner through asynchronous multimedia instruction, synchronous online sessions, and face-to-face workshops.

A survey of this pilot blended learning program was conducted. Out of the 476 students enrolled in the program, 127 responded to the survey, resulting in a response rate of 26.7%. As was envisaged, once exposed to ICT-based education, students clearly favored both online and blended education delivery. A clear majority (77%) of students favored online education, while 71% of students favored blended online education (Figure 1).
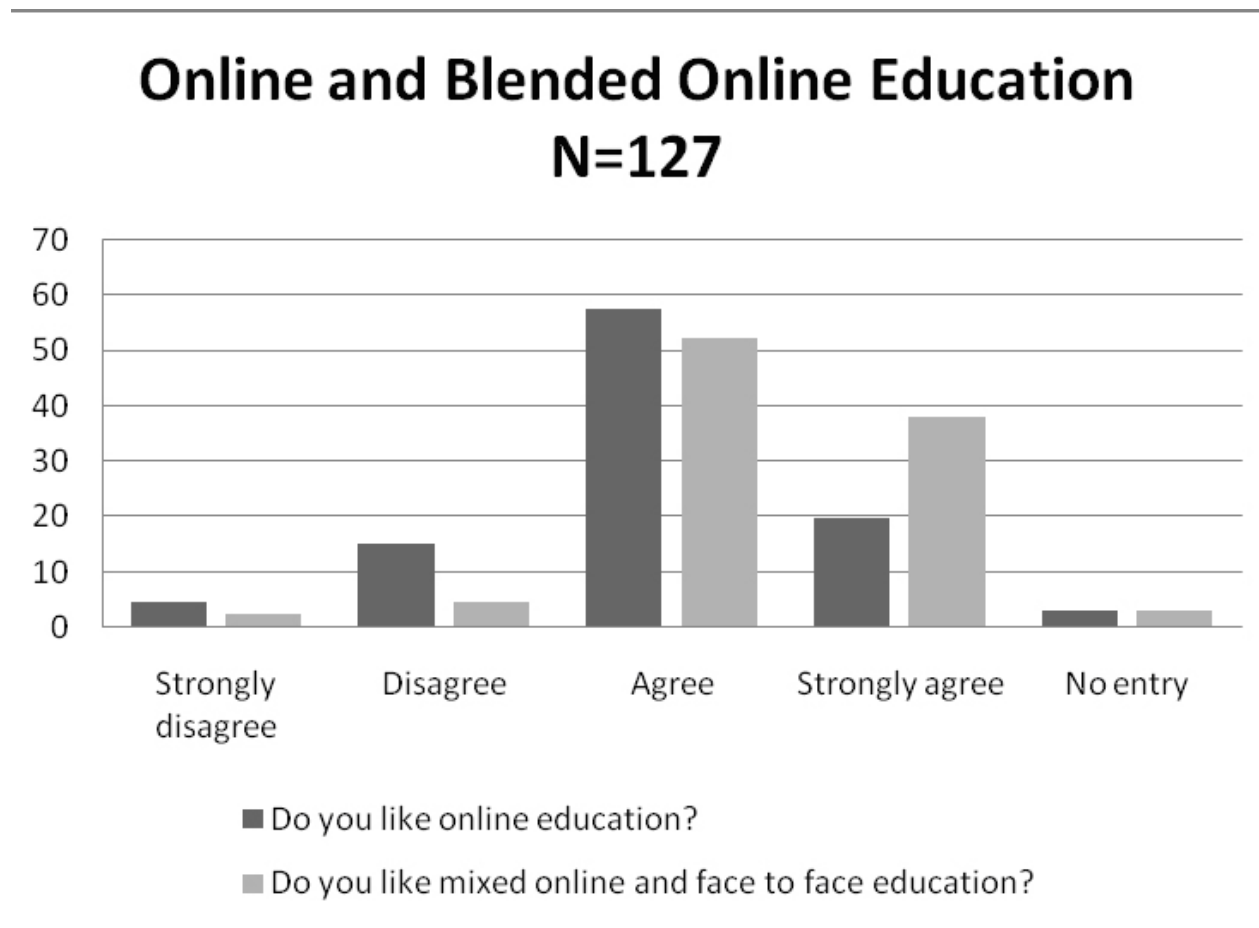
Figure 1: Student Satisfaction with Online and Blended Online Education (AIOU E-learning Program 2006-2007)

The survey also revealed that only about 7% of students did not own a computer and a little less than 40% of students were using Internet connections at public Internet cafes. Fifty eight percent of students

were accessing the Internet from their office or home, but only 8.66% student had Digital Subscriber Line (DSL) connectivity with adequate bandwidth. In addition, 55% of the students had nearby easy Internet access, but about 33% of the respondents stated they had to travel 2-5 kilometers to get Internet access. The most frequent problems reported by students were associated with frequent disconnection, power breakdowns, or low bandwidth. Despite the reported obstacles, AIOU website accessibility was rated high (Figure 2). The quality of learning materials was rated very high (with 80% of the responses in the "good" and "excellent" categories) and so was program implementation (75% of the responses rating it as "good" or "excellent"). The respondents also found specially developed multimedia instruction CDs, face-to-face workshops, and books quite helpful in their learning.

Website Access is:
N=127
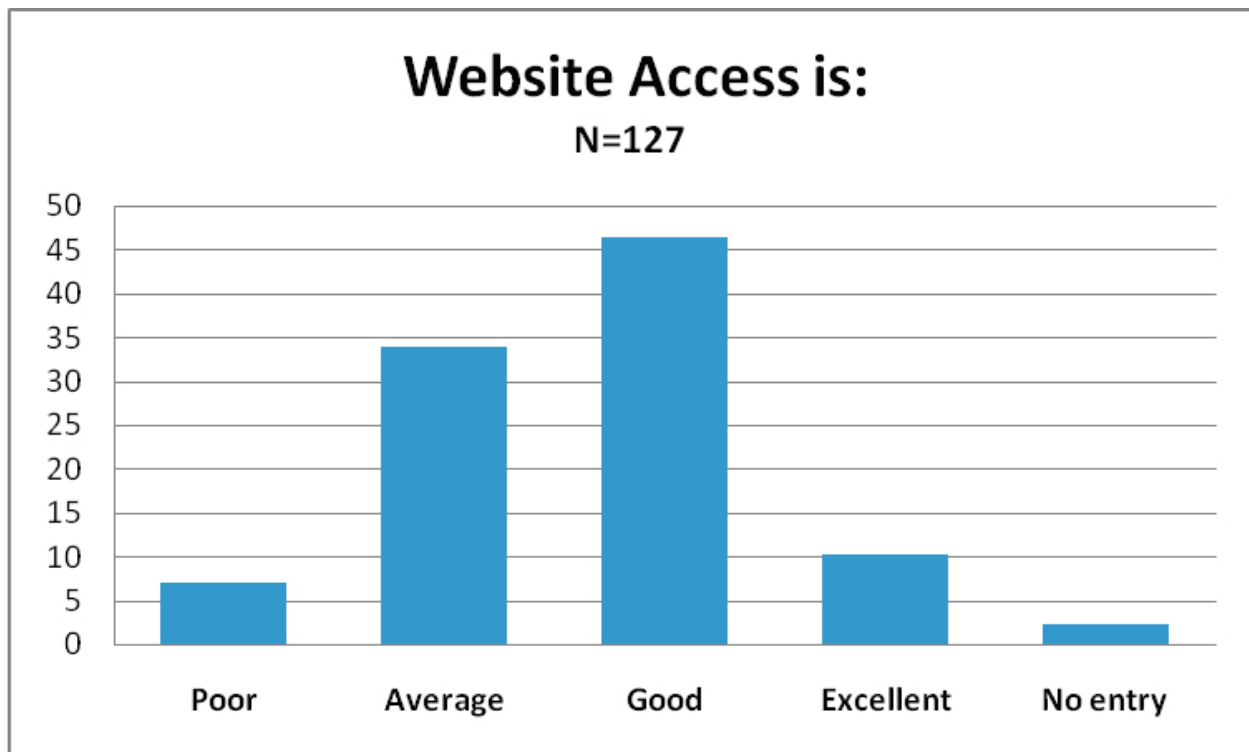
Figure 2: AIOU Online Education Website Access (AIOU E-learning Program 2006-2007)

Accessibility Survey in Pakistan

After analyzing the initial responses of students in the pilot program, work on the development of access strategies for blended learning was initiated. Further studies were also conducted to get additional input from students in other institutions. A survey by Wikramanayake et al. (2008) provided additional feedback on the use of computers, TV, radio, and Internet in education by a sample of 1,527 students enrolled in schools, technical colleges, and universities all over Pakistan. This recent accessibility survey indicated that despite low average family incomes, about 81% students in Pakistan were using some sort of ICT devices in their education (Figure 3), while 50% were using computers without Internet access. Web based training was used by 12% of the respondents, whereas TV and radio were used by 21% and 29% of the responding students respectively.

Identify Use of ICT in Current Study Program

N=1269

(Bar chart showing: "No at all" ≈ 19%, "Partly used" ≈ 71%, "Only ICT" ≈ 10%)
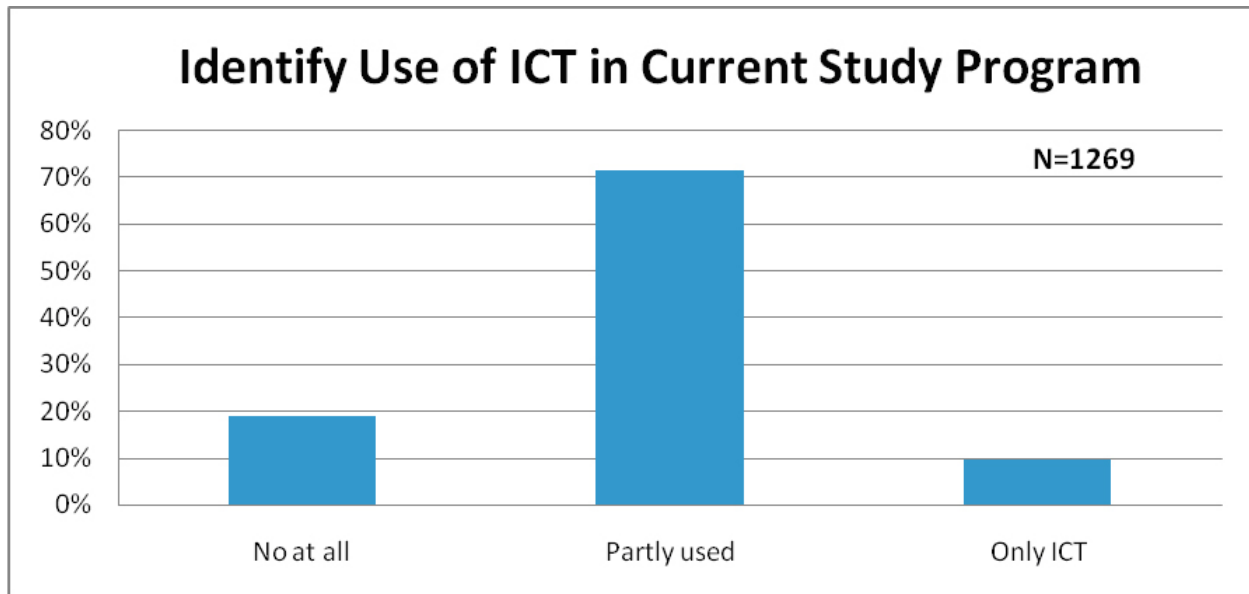
Figure 3: ICT Use in Education by Pakistani Students (from Wikramanayake et al., 2008)

The authors also concluded:

"*The study has shown that students are motivated to use ICT in pedagogical and other activities, but due to availability, affordability and accessibility issues, they are unable to enter into the ICT age and to gain maximum benefit from it. Several major initiatives exist in the region to promote ICT-based DE, which are creating a vast range of new possibilities for teachers and learners. A paradigm shift is beginning to be observed in the region from teaching to learning, giving the student greater control over the learning process.*

Most students find ICT-based learning a significant advantage for them, saving time, helping them to learn more efficiently, to understand concepts/theories, to find relevant information easily, and to make the educational process more interesting." Wikramanayake et al. (2008).

Wikramanayake et al.'s survey also identified student difficulties in accessing learning materials and interaction with instructors. Since the majority of the rural population in Pakistan is poor, they need locally available, reliable, and shared Internet and computing facilities. Female students need to use such facilities in a culturally acceptable environment. Therefore, the need for local ICT facilities was, and still is, considered important in education delivery.

Context

It is evident from the above discussion that a range of ICT devices, technologies, services, and e-learning tools are available for use in Pakistan. AIOU students, in particular, have been using a variety of such devices. There is also an implicit need for blended learning, as some live interactions with teachers were preferred by the majority of students surveyed. Many questions remain, however, such as which access methods and technologies should be standardized, in which parts of the country, in which courses, and to which student groups? It would be difficult to find a single answer to such questions as many other factors such as instructional materials, pedagogy, course requirements, costs and benefits, etc. need to be considered. However, the need for appropriate access methodologies is clearly a common and perhaps the most important requirement.

Considering its socially and geographically heterogeneous distant student populations, the specific teaching requirements of its various courses, and the use of a range of access devices among its student populations, AIOU needed to devise a multi-method access strategy for course and program delivery utilizing a range of available technologies. This access strategy is discussed in the remainder of this article.

Case Study of AIOU

AIOU History and Students Statistics

Allama Iqbal Open University (AIOU) was chartered in 1974 as the first open university in Pakistan. The university has flourished and today is a very successful mega-university with an enrollment exceeding one million students. The university is financially sound and most of the operational expenses of the university are met directly from its tuition. The outreach of AIOU is nationwide, with 36 regional campuses or offices in large cities and 86 coordinating contact officials in smaller cities. AIOU provides educational services to a variety of students. Present statistics show that 51% of AIOU students are female, 58% are employed, and 55-60% of the total student population lives in rural areas. AIOU students are geographically distributed all over Pakistan, including the most remote areas of the country. The university offers more than 93 programs and over 1200 courses. Trends at AIOU reflect the futuristic national focus on the "Education for All (EFA)" low-cost education model.

Learning Models

AIOU is providing three basic models of education delivery: traditional distance learning, traditional face-to-face learning, and blended learning.

Traditional Distance Learning

In the traditional distance learning mode, students are sent specially written course books (or media cassettes where applicable), assignments, and learning instructions via the postal services. Depending upon course needs, tutorial sessions or workshops are conducted nationwide. Some face-to-face components are added to technical and postgraduate courses in the form of workshops or supervised laboratory sessions. Students' assignments are evaluated by tutors and final summative assessments are conducted by the university. In a few courses, a limited number of radio and TV broadcasts are released through national television. This mode is the dominant form of delivery at AIOU, with more than 90% of its students learning in this manner.

Traditional Face-to-Face Learning

AIOU also initiated many science programs requiring laboratory based activities. In such cases, arrangements were made for regular classes and laboratory sessions at its main campus and in selected cities. Employed students were offered evening classes or weekend classes to complete required course credits. These courses are limited to only science faculty or students at institutions where laboratory facilities were arranged through collaborative efforts.

Blended Learning

E-learning work at AIOU was initiated about a decade ago. The computer science department developed a conceptual online education framework called OLIVE (Open Learning Institute of Virtual Education). OLIVE focused on integrating online teaching, research, and student support activities. It also included the development of the infrastructure needed for supporting blended activities. Three access models for instructional delivery (depending upon local Internet access availability) were originally considered (Sangi, 2005). As illustrated in Figure 4, Arrangement A represents a local collaborating institution where

laboratories and classes were made available. In Arrangement A, the Internet was used to provide digital multimedia instruction while a local instructor was used to assist students during lecture and laboratory sessions.
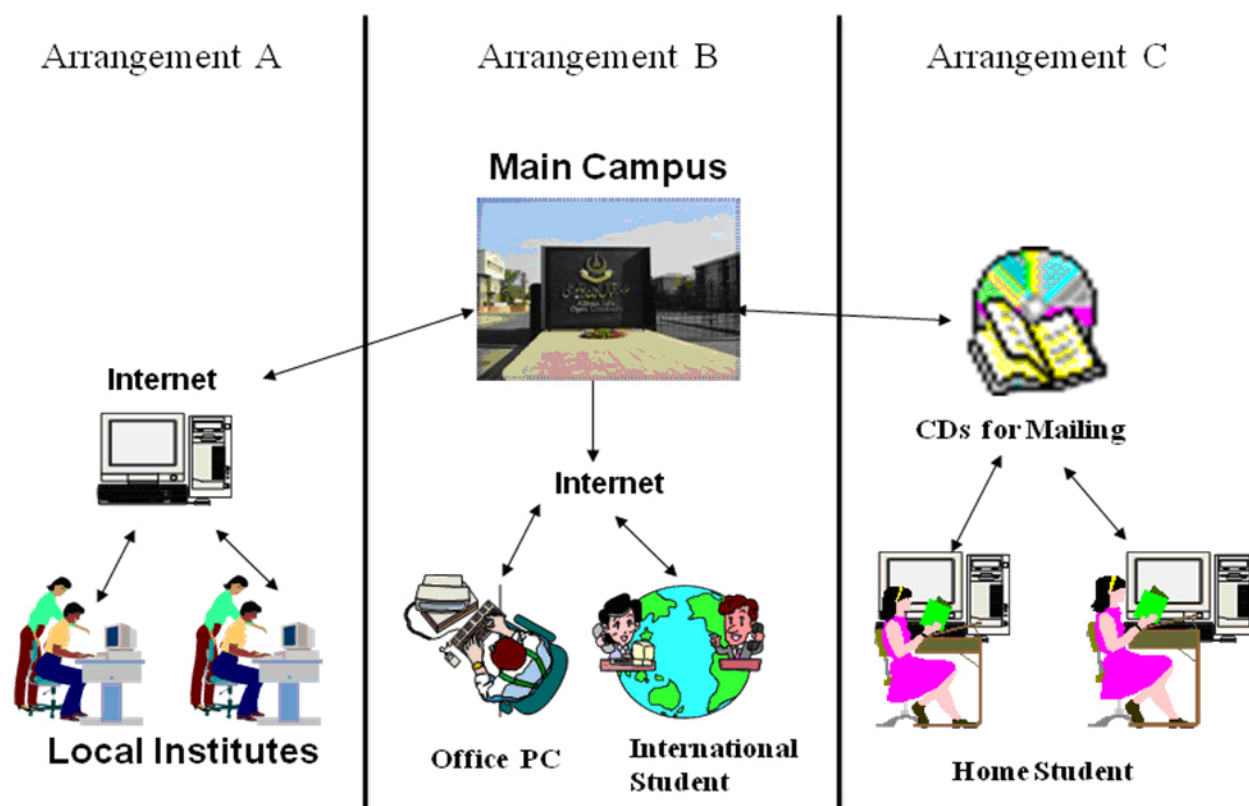
Figure 4: Original OLIVE Education Delivery Models (from Sangi, 2005)

In Arrangement B students take full advantage of a typical learning management system (LMS) with digital content access, teacher interaction sessions, e-mails, forums etc. However, students in Arrangement B still attended weekly synchronous Internet sessions with local teachers. Additionally, a one-week, face-to-face workshop was also organized for laboratory sessions and performance assessments. The third arrangement, C, suited to a typical "girl-at-home" type of student, where Internet service was not always accessible. Students in Arrangement C were provided specially developed flash-based multimedia instructional materials by mail and were encouraged to use their home computers. However, workshop components were also compulsory for such students to perform laboratory activities.

In Arrangement A, a full, four-year, high quality bachelor's degree program was offered (Sangi, 2006), whereas in Arrangements B and C only a one-year diploma program was offered. Incidentally, Arrangements B and C were typically utilized by ICT-based and underprivileged traditional distance students typical of the AIOU student population. The success of these blended programs was mainly attributed to the blended mode of education where multimedia instruction was supported by online sessions and face-to-face workshops. These helped to resolve students' learning difficulties, especially during laboratory sessions.

Strategy for Institutional Development

Initial ICT Capacity Building

Parallel to its pilot blended learning program, AIOU also initiated other technology transformation programs to build the university's ICT capacity and spread the benefits of ICT across the university. A brief outline of initial capacity development initiatives are provided in Table 1.

Table 1: Initial ICT Capacity Development Initiatives

No	Initial Initiative	Outcome
	Phase I 2000-2003	
1	Personal computers and printers were liberally provided to employees on simple requests. They were trained and were encouraged to develop digital information	Most employees learned to use a computer. A number of employees made progressive use of additional software in their work.
2	Multimedia instruction design capacity was developed with support from the Higher Education Commission. The Multimedia Courseware Design Centre was established.	Digital instruction was prepared in a number of CS courses. This flash-based instruction helped initiate blended learning. The design won many awards. Additional grants were easy to obtain.
3	The university started its website and students were provided with web-based information. The university also acquired an Internet Service Provider (ISP) license.	Students, teachers, and staff started using the Internet and web-based content. The university developed the capacity to effectively use and serve other Internet users.
4	First e-learning activity was initiated using a customized learning management system named "OLIVE".	Students and faculty started experimenting with online educational activities. Two courses were offered.
	Phase II 2003-2005	
5	University campus was networked with fiber optics. This network was also extended to five urban and four rural regions.	University staff was now able to get benefits of electronic communication. Internet, e-mail and other web services were used by staff.
6	Website was enhanced with more information on programs and courses. Students were provided some documents such as date sheets and roll number slips through regional office computers and the university website.	Demand for new web services increased. More computers were acquired and more employees required training. Digital content development work also started in other academic departments.
7	The Higher Education Commission sponsored Internet and inter-university networks became operational. Digital Library services were made available on campus	Better Internet bandwidth and academic resources such as digital library, electronic freeware, and other tools were available to students and faculty.
8	First complete blended program was launched in computer science.	Outreach to students was increased. Economic group size at study center was eliminated. The program was 33% cheaper than the one at the study center; especially girls and rural students were happy to communicate with highly qualified faculty members from urban areas.

AIOU's Access Model for E-learning

The Pakistani government has de-regularized its TV, radio, mobile, wireless, telephone, and data communication businesses, and its national ICT infrastructure and services are rapidly growing. AIOU can now either establish or acquire the necessary communication services in various localities for educational delivery services. The university therefore planned a major transformation strategy from traditional distance education to ICT-enabled blended learning. After a wide discussion, a multiple channel ICT-based accessibility option was initiated as a continuation of the evolutionary practices already in place. This decision was based on large-scale implementation, heterogeneous student populations, and the nature of courses offered (technical and non technical). Additionally, faculty members could benefit from a wide range of ICT-based communication options for their courses and could design most suitable methods for students, communities, and courses. An intensive training program was also designed to assist new faculty members in the conversion process. A flexible and open access model, as shown in Figure 5, was envisioned, which includes a variety of access modes (e.g. TV, radio, Internet, video conference, and mobile) for the very remote students in blended learning model C, as mentioned in Figure 4.
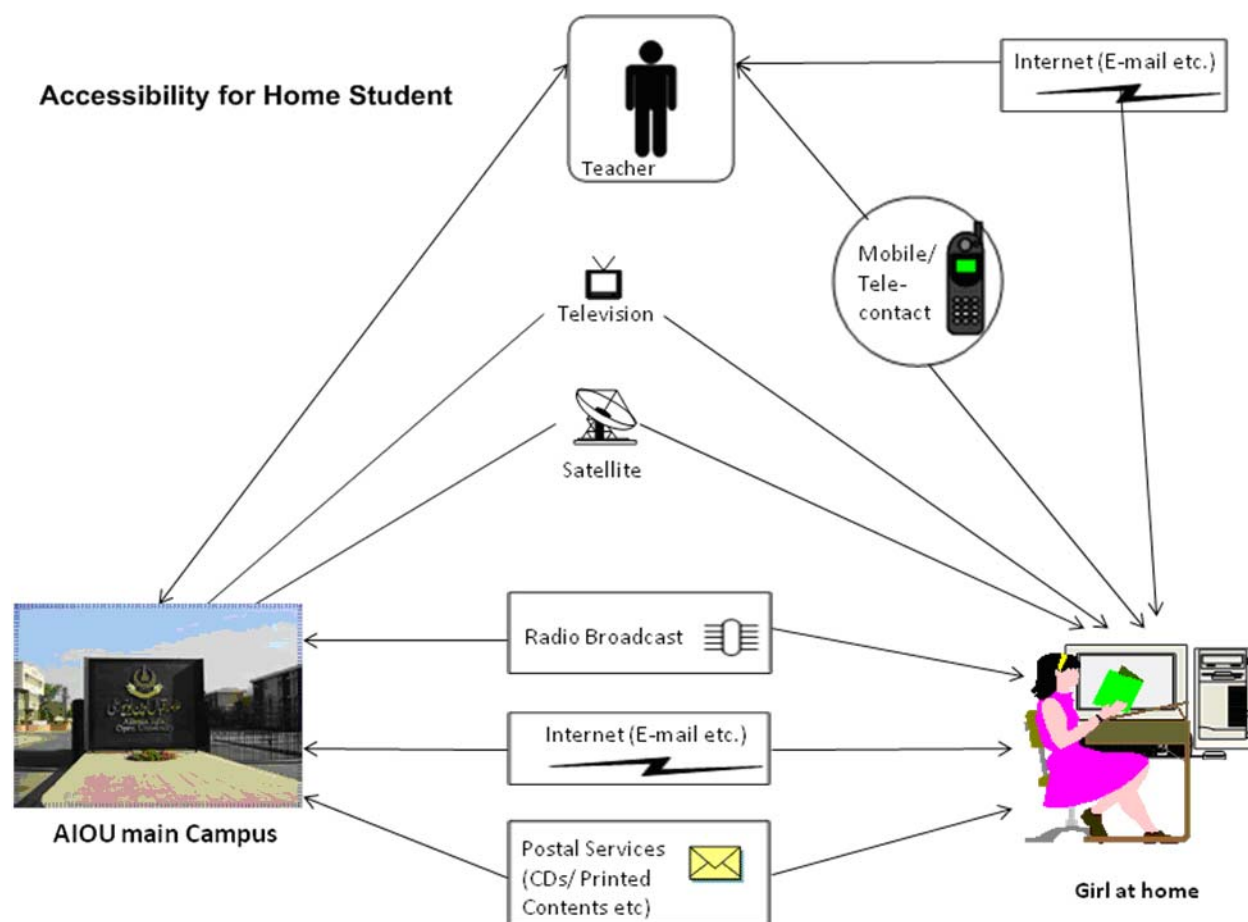
Figure 5: Typical Access Channels Offered to "Girl-at-Home Student"

All the aforementioned initial development activities enabled AIOU to provide students access to educational materials and instruction in multiple delivery modes. To facilitate students, a "cheap laptop (or desktop)" initiative has been announced, through which students can purchase PCs on installments. However, there remain a number of students who may not have computer or Internet access, or still prefer learning using printed media. These services will continue for such student groups for the time being.

The evolutionary approach in ICT capacity enhancement helped overcome many operational and academic problems, and built management's confidence. AIOU therefore decided to initiate a major shift towards technology-based education in all its traditional distance education programs. Many simultaneous decisions were made and some of the ones related to accessibility and ICT infrastructure are outlined in Table 2.

Table 2: AIOU Access Infrastructure Development

No	ICT Infrastructure	Expected Outcomes
	Phase III 2006-2008	
1	Video conference equipment was installed and Internet-based communication tools were acquired.	Live video conference lectures are being delivered by distant faculty members. Teleconferencing and presentation sharing methods are being used to improve quality of education.
2	The AIOU FM radio station was established and the Institute of Educational Technology was enhanced with digital media development and broadcasting facilities.	AIOU FM radio programs are broadcast with some live radio discussion in many professional courses. Recorded CD/DVDs are available to students as offline media.
3	The university website was converted into a web portal.	Staff, students, and teachers can effectively access admissions, employment, and examination records. Visitors can print or download forms and submit online forms.
4	OLIVE e-learning was extended to new programs. Digital instructional content was developed.	Collaborative online courses in English and Business are now being offered in a blended learning mode. More programs have been identified for conversion to dual mode delivery.
	Phase IV 2009-2012	
5	AIOU will establish VSAT-based television and live communication channels. Its network will be extended to all AIOU regional buildings, selected community schools, and Interactive Learning Student Centers (ILSC). Current telephone and mobile service will be integrated with the AIOU network.	Video lectures and video conference facilities will be extended to regions local teacher training colleges, ILSC and selected schools. Thus, increased access to all students and teachers will be provided. Voice and Internet tools will support multiple methods of communication.
6	E-learning software and content will be acquired and delivered in a digital form and, where needed, in a local language. New learning technologies and tools will be continuously added.	U-OLIVE, an Urdu-language-based learning management system, is in the testing stage. It will enable e-learning in Urdu. This will extend ICT use to students who learn in their native language Urdu (Sangi & Sabir, 2009).
7	Electronic assessment facilities will be provided	An initial version of e-assessment software called Generalized E-assessment Model (GEM) is in the testing stage. This software will help perform e-assessments in a variety of assessment situations (Sangi, 2008).

No	ICT Infrastructure	Expected Outcomes
8	Establish an ICT Directorate	This new department will develop, guide, and provide technical support for the AIOU ICT infrastructure and will also train staff, faculty, and students in use of modern ICT devices.
9	Extend both communication network and content delivery services to students in all localities.	VSAT and radio programs will be extended to about 2,000 community locations through public and private networks. Mobile and Internet services already available will be enhanced and integrated for use in education.

Planned ICT Services to Students

AIOU's new ICT models are expected to provide many e-learning services. However, all services will still require some supplementary face-to-face components for laboratory or project-based learning. These services have been planned through workshops and live video conference sessions at selected AIOU buildings and ILSCs. Some details of these services are outlined below.

Communication System

The communication system is planned to provide equal opportunities for students all over Pakistan. This would include the establishment of a multi-technology-based modern communication network using interactive, IP-based Digital Video Broadcasting (DVB) technology using a satellite. It will be integrated with the present education and research networks such as the Pakistan Education and Research Network (PERN-II), the Virtual University (VU) network, and the IT Services Network at AIOU. It will provide support for academic and service departments such as admissions, examinations, regional services, and student welfare.

Interactive Learning Student Centers (ILSC)

ILSC centers will be established at all AIOU offices where it has its own buildings. Each ILSC center will have computer laboratories for computer-based training, digital teaching rooms for TV broadcasting or live video conference sessions, and open e-learning labs for individual learners to access multimedia or web content, or to interact with teachers in synchronous sessions. The labs will also be used by those students who do not have computing facilities of their own. The ILSC centers at AIOU campuses will have the capacity to provide video/audio and PowerPoint presentations and interactive sessions. A typical high-end ILSC, as proposed at ten different locations in the country, is shown in Figure 6.
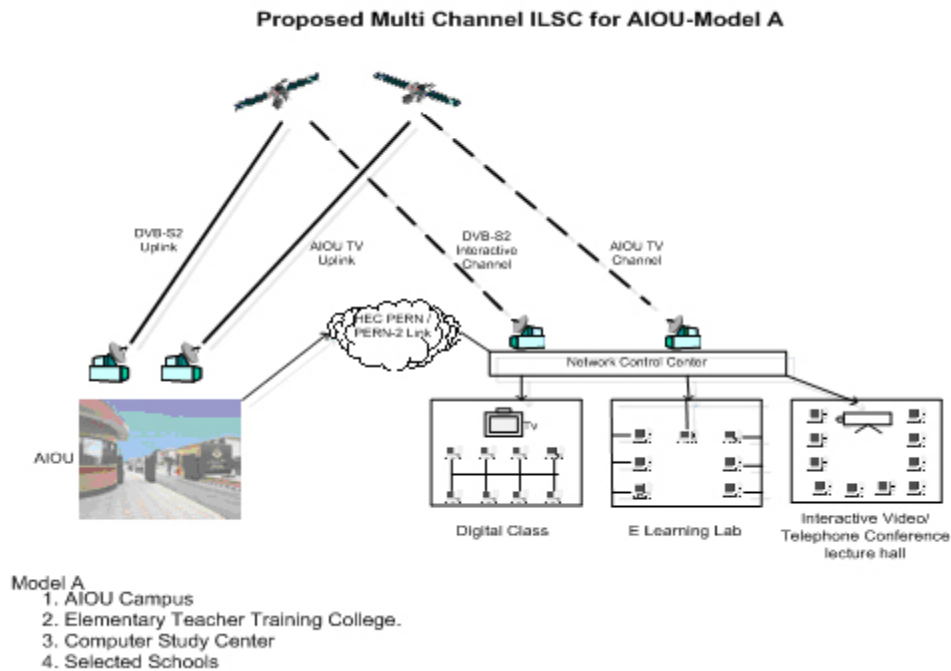
Figure 6: Typical Campus Based ILSC (Source: AIOU Project 2007)

In other areas, local community centers, teacher training colleges, and facilities at some private local institutions will be acquired through public-private partnerships to establish additional but smaller ILSCs. In all, about 2,000 such centers are being proposed to facilitate about 400,000 students on an average basis of two hours per day, per student. The AIOU ISP will also support additional dial up connection users accessing the AIOU website from their home connections or local Internet cafÉs. Therefore, even small community or home-based students will benefit from this connectivity to the campus e-learning and support services.

Content Delivery

The networks established above will be used for sending electronic course materials, multimedia computer instruction, study guides, and audio/video content to students. TV-based content will be delivered via the AIOU-VU joint video link. Other multimedia and HTML/Flash/Director-based media will be available through the OLIVE LMS via the Internet. In addition, CD/DVD copies may be sent to places where satellite or other delivery mechanisms are not available for direct electronic delivery. Until these changes are fully implemented, print-based content will also be supplied where needed.

ICT-Based Electronic Education Delivery

The abovementioned communication system will be mainly used for course delivery. Participating students will receive electronic materials and instructions from AIOU, listen to lectures and presentations via satellite, participate in video conferences, discussion sessions, and expert lectures, and communicate with instructors. Student groups nationwide will be interacting with instructors in scheduled, Internet-based, live lectures, Q &A sessions or remote workshop presentations. Digital libraries and Internet access will also be provided. An example of one such remote workshop organized between Kent State University, USA and AIOU is shown in Figure 7. A similar online presentation by students to a remote faculty at North Carolina University (USA) is shown in Figure 8.

Figure 7: A Typical Video Conference Session between AIOU and Kent State University.

Figure 8: An AIOU Student Sharing Presentation with Remotely Located Faculty at the University of North Carolina

Conclusions and Future Work

In this paper, we discussed scenarios of blended learning and similar developments in Pakistan. Common problems related to the national ICT infrastructure and e-learning in Pakistan were highlighted. Opening doors for education for all ethnic, religious, and social communities of both genders on an equal basis is needed. This can be achieved through the adoption of suitable blended learning models for appropriate groups of students. Tertiary education is restricted to urban areas due to a lack of facilities and other resources in rural areas; ICT could help resolve many of these problems. Blended learning is relatively cost effective as compared to formal education at urban university centers. It also provides a better quality of education to students in remote areas. Blended learning does not require any printing or traveling costs. In sum, it provides educational opportunities to a greater number of people, especially females who have less mobility. A blended mode of education is now accepted and practiced by pilot AIOU students. Its extension to other communities is needed.

Such an extension should be feasible, as recent studies in Pakistan have found that most students do have access to a range of ICT devices, the most common being computers, TV, CD players, and mobile phones. However, a sizable number of students are without Internet access, while one-sixth of potential students do not even have access to a computer. These students also require more interaction on a regular basis. Therefore, a blended model will provide access to educational services for most student groups, regardless of their level of ICT access.

Owing to common problems in ICT-based access, AIOU has developed multiple accessibility methods to facilitate faculty members and different groups of students living in different geographical areas. AIOU has initiated work on the development of alternate ICT infrastructures to provide multiple level accesses to students. Such ICT infrastructure is expected to provide content delivery via TV, radio, Internet, and video conference-based communications. Additional ICT facilities have been planned through public and private partnerships, especially in small towns and rural areas. Both synchronous and asynchronous activities will be supported. Additionally, for those who do not have ICT access, traditional printed content and postal service delivery will also be continued. An ICT Directorate had been established and significant training will be provided to instructors, students, and university staff for smooth change management. It is envisaged that AIOU will progressively extend ICT access even to its rural students. The current series of AIOU initiatives will further enhance ICT-based education delivery in Pakistan. However, this alternate model has to be enhanced with a reliable, open-ended, low-cost, and uniformly distributed national ICT infrastructure.

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Using Cognitive Apprenticeship to Provide Faculty Development in the Use of Blended Learning

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Abstract

This paper deals with one approach to increasing the use of blended education through faculty development based on the principles of cognitive apprenticeship. The first section reviews the current state of blended education, describes modes of faculty development, and enumerates the principles of cognitive apprenticeship. Next, it details one institution's efforts to provide faculty development on the use of blended education using a cognitive apprenticeship approach. Finally, this paper presents research examining faculty participation in this effort in an attempt to provide guidance for future hybrid offerings that add blended instruction to the teaching repertoire of faculty.

Introduction

Blended learning may become the educational delivery method of choice in higher education (Bonk, Kim, & Zeng, 2006). It is increasingly the focus of the news about higher education and the larger body of academic literature on learning and instruction (as illustrated by this special issue). Although the trend toward incorporating blended learning into higher education is evident, its use is as of yet fairly limited. A survey of members of MERLOT, an association of those in higher education sharing and evaluating Web resources and materials, indicated that 93% of respondents used some form of blended learning, but even in this tech-savvy group, members used blended learning in less than 20% of their courses. However, a majority of respondents projected that they would use a blended learning format in almost half of their courses by 2013 (Bonk et al., 2006).

The use of blended learning constitutes a significant change in course structure and instruction in higher education. Faculty development plays a vital role in supporting this change and is critical to ensuring instructional quality as increasing numbers of faculty members incorporate blended learning into their instruction. It is important that this faculty development is well-designed and based on appropriate pedagogy to effectively support the use of blended learning; yet, many of the professional development opportunities offered to faculty still employ traditional didactic instruction not well suited for affecting change in instructors' practice.

This paper deals with one approach to increasing the use of blended education through faculty development based on the principles of cognitive apprenticeship. The first section reviews the current

state of blended education, describes modes of faculty development, and enumerates the principles of cognitive apprenticeship. Next, it details one institution's efforts to provide faculty development on the use of blended education using a cognitive apprenticeship approach. Finally, this paper presents research examining faculty participation in this effort in an attempt to provide guidance for future hybrid offerings that add blended instruction to the teaching repertoire of faculty.

Review of Literature

Widely cited reports from the National Center for Education Statistics have tracked and projected the growth of online education in higher education and have fueled a wealth of discussion about a host of issues (NCES, 1999). While many explicated, examined, and debated these issues, the use of hybrid courses (or "blended education") has outpaced their fully online counterparts (Hijazi, Crowley, Smith, & Shaffer, 2006). In a survey of 300 colleges and universities, EDUCAUSE found hybrid instruction used more widely (by 80% of institutions surveyed, as opposed to the 71% reporting offering online courses) and more often (constituting 11% of total course offerings, as compared with the 5% of total course offerings reported for online courses) (Arabasz, Pirani, & Fawcett, 2003). The growing popularity of course formats that blend on-campus with online instruction has reached the mainstream, with colleges and universities touting their use of blended instruction as part of their marketing campaigns (see for example this BlendED advertisment).

What is "Blended Education" and How Do You Know If Your Course Is a "Hybrid?"

The frequent use of "hybrid" as an appositive of "blended education" (or the reverse, as we do above) is an indication of the degree to which a standard definition of the combined use of on-campus and online instructional tools remains elusive. The Sloan Consortium has defined degrees of Internet integration into instruction, with "traditional education" describing courses delivered entirely face-to-face; "Web-facilitated education" employing the Internet to deliver 1%-29% of course content; "blended/hybrid education" describing courses in which 30%-79% of course content is delivered online; and "online education" describing those courses with 80% or more of the course content delivered online (Allen & Seaman, 2005). Yet, within this broad framework, competing definitions and distinctions are numerous. Some institutions use more refined distinctions in the percentages of on-campus and online instruction to distinguish between terms used synonymously by others (cjenning, 2007, January 23). Other institutions may make distinctions based on the ways in which Internet tools are integrated into the course, not just the posting of lecture notes, readings, and links. Dzuiban, Hartman, & Moskal (2004) reframe this issue, suggesting that the integration of Internet tools in education requires a "reconceptualization of the learning paradigm" (p. 2). Following this lead, it may be most appropriate to consider blended learning as less about adhering to a predetermined structure, ratio of class time to online activities, or limiting instructors to the use of particular instructional tools. Instead, it is more about employing the in-class and online tools to best serve students' learning needs. This student-orientation makes blended learning or hybrid instruction less about a definition of instructional inputs and more about learning outcomes.

Beyond merely marrying the use of on-campus and online instructional tools, instructors teaching hybrid courses aim to combine the best practices of the traditional classroom with the best features of the online environment to "promote active independent learning and reduce class seat time" (Garnham & Kaleta, 2002, para. 1). Reduction of seat time is becoming a frequently noted characteristic of blended education. As instructors shift their focus from filling a required number of face-to-face "contact hours" to providing students opportunities to reach particular learning outcomes, they likely find some kinds of learning better facilitated by online instructional tools. Replacing in-class meetings with online activities becomes a natural outgrowth of this process. Consequently, reduction of seat time is emerging as definitional shorthand for a course in which the instructor uses in-class and online activities for desired learning rather than required meetings.

Reasons for Adopting a Blended Approach to Learning

Adopting a hybrid instructional approach can net a host of benefits. A number of studies indicate that students in hybrid courses report high levels of learning and satisfaction (Campos & Harasim, 1999; Dziuban & Moskal, 2001; Rivera, McAlister, & Rice, 2002; Wu & Hiltz, 2004). These findings may be the result of more effective instruction, as developing hybrid courses may lead instructors to reflect on their practice, hone learning outcomes, and select more effective learning activities and instructional tools than they might otherwise (Garnham & Kaleta, 2002; Hijazi, et al., 2006). Instructors may also employ additional instructional tools to increase and improve communication with students, provide more timely feedback, assess student learning, and more effectively diagnose and remedy student misunderstandings and difficulties (Dziuban & Msokal, 2001; Hijazi et al., 2006). These student learning and satisfaction findings may also be the result of more effective student efforts as they may have more opportunities for class participation, for collaboration, and to access course materials (Hijazi et al., 2006). Students may also benefit from the writing-intensiveness of most online learning environments, improving the overall quality of their work, and leading to greater engagement in both the online and in-class elements of courses (Aycock et al., 2002; Brown, 2001). Further, students may be better able to direct their own learning, answer their own questions and complete course requirements amid other responsibilities (Bhatti, Tubaisahat, & El-Quawasmeh, 2005; Garnham & Kaleta, 2002; Hijazi et al., 2006; Spika, 2002).

In addition to the benefits of blending online and on-campus education in terms of learning and instruction, many colleges and universities recognize a host of other advantages in offering hybrid courses. Using blended instruction can net a number of institutional benefits. Classroom space demands are reduced, while access to educational offerings is increased. Bleed (2001) suggests that this may be the only way postsecondary schools are able to accommodate population growth and the increasing demand for lifelong learning. The use of blended learning can result in cost reduction either through reducing instructional costs while maintaining enrollment levels, or increasing enrollment while maintaining instructional costs (Twigg, 2003). Also reduced are campus traffic and the need for parking (Dziuban, et al., 2004), not insignificant factors as the National Clearinghouse for Commuter Programs in the United States reports that only 13 % of postsecondary students live in institution-owned housing, leaving the remaining 87% with some kind of commute. The use of blended instruction can also mitigate some of the criticisms and counter the high attrition rates associated with fully online instruction by maintaining periodic face-to-face class meetings with the use of online instructional tools (Young, 2002).

The Challenges of Implementing the Use of Blended Education

Implementing the use of blended instruction is not without challenges for students, for institutions, and for faculty. Students may not be familiar with online instructional tools or they may face technical issues in using instructional technology. That 63% of students report using technology to prepare for class, yet only 24% of students surveyed use technology as a part of class indicates that, despite their use of technology outside of instruction, students have limited experiences with technology incorporated into instruction. Although use of technology outside of class may give students some foundational skills and comfort with its use, they may be unfamiliar with instructional technology tools or uncomfortable with the kind of student-centered learning often associated with their use. They may also lack the kind of self-regulation necessary to use student-centered instructional tools effectively (Schunk & Zimmerman, 1998). While these issues may negatively affect students' motivation, their perceptions of learning, and their satisfaction with their courses and instructors, the associated negative effects do not only have potential repercussions for students, but also for institutions and faculty.

Institutional change in postsecondary education has often been likened to "turning the Titanic" (Vaughan, 2007). It can take considerable institutional commitment, appropriate internal structure, cooperation and partnerships, and effective decision-making processes to successfully implement blended learning, and even with these in place institutional inertia may still win out. In particular, over time, colleges and universities have developed mechanisms to assess the effectiveness of their faculty. Central to these is

the use of end-of-course evaluations, eliciting data from students about their perceptions of learning and/or satisfaction with the course and instructor. If institutions fail to appropriately account for negative student perceptions associated with students' technology use rather than instructional issues, an opportunity to improve the learning experience is lost. Further, it may be difficult for institutions to reap some benefits of implementing blended education. For instance, scheduling complexities, such as the almost infinite number of ways instructors may choose to blend online and classroom instruction, may make it difficult for institutions to optimize unused classroom space. Finally, instructors of hybrid courses are more likely to require multimedia classrooms, and as the number of hybrid courses at an institution increases, the demand for these classrooms may outpace their availability (Dzuiban et al., 2004).

As the primary agents of implementing the use of blended education, faculty face challenges that are perhaps particularly noteworthy. Dzuiban and Moskal (2001) characterize the increased time-intensity of the development and delivery of hybrid courses as instructors' foremost concern. However, all faculty involved in a hybrid initiative at the University of Wisconsin, Milwaukee, found this additional time investment worthwhile as it improved the learning environment; all indicated they would teach a hybrid course again (Garnham & Kaleta, 2002). Faculty have also raised concerns about the risks they take in adopting blended education in terms of potential negative effects on course evaluations, and the ways in which this instructional approach jibes with their overall responsibilities for teaching, research, and service (Dzuiban & Moskal, 2001; Voss, 2003). These risks may be greatest in terms of the potential for lower student evaluations when using new instructional tools, as illustrated by Stenhoff, Menlove, Davey, & Alexander's (2001) findings that students in online courses consistently rated instructors with the most online experience higher than those with less in end-of-course evaluations. Fearing negative consequences from their attempts to employ new instructional approaches and expecting not to be able to find their footing with blended education are powerful disincentives for its use. Faculty also have notable anxiety about technology use, and are concerned about having appropriate support for learning new technology and teaching skills, both for course redesign and for teaching the hybrid courses they develop (Aycock et al., 2002; Voss, 2003). The potential for addressing many of these concerns through faculty development was the impetus for this project.

The Role of Faculty Development in Higher Education

Until very recently, many faculty told similar stories about their induction to teaching. Fresh from doctoral studies (or perhaps during their studies if they were a teaching assistant), they were given a textbook and directions to a classroom and simply told to teach a given topic. Some also recount that they were given instructions about using the photocopier and an introduction to the department secretary. In the really supportive versions, faculty say that they were given an old syllabus to get them started (van Note Chism, Lees, & Evenbeck, 2002, p. 34).

Faculty development, defined as "some form of organized support to help faculty members develop as teachers, scholars, and citizens of the campuses, professions, and broader communities" (Sorcinelli, Austen, Eddy, & Beach, 2006, p. xiii) is now considered a critical component in the strategic plans of most institutions. In response to the challenges colleges and universities are facing - accountability, multiple and often conflicting missions, competition for both faculty and students, increasing demand for instructional technologies, diversification of faculty and students, and a shift to interdisciplinary programs - faculty development opportunities "have become essential to both the individual faculty member and the higher education institution as a whole" (Sorcinelli et al., 2006, p. xvii).

The models of professional development postsecondary institutions employ vary, but a recent survey indicates that a growing number of colleges and universities are supporting a centralized unit, often called a teaching and learning center, with a dedicated staff prepared to work with faculty either one-on-one or in small or large groups. Other models include an individual or committee structure where a limited number of professional activities are coordinated by a few people (more frequently found in community colleges or small liberal arts colleges); or a clearinghouse approach where assistance for faculty is

provided by off-campus resources but coordinated on campus (Sorcinelli et al., 2006).

Despite the recognition of the importance of providing a wide range of professional development opportunities to help faculty grow in all dimensions of their profession, significant challenges still exist. The need to balance multiple faculty roles in the sometimes isolating environment of higher education, costs to support faculty development, and frequent changes in administration are often cited as reasons faculty fail to fully engage in campus-based development opportunities (Cox, 2003). More importantly, when faculty development is specifically focused on improving teaching and learning, professional development is further complicated by faculty's reluctance to embrace new technologies, a lack of understanding of student-centered learning, and unrealistic expectations as to the length of time needed to realize substantive change in student behavior (Schifter, 2002).

Another challenge facing those providing faculty development in postsecondary institutions is a shifting focus from offerings "focused on transmission of knowledge and information" to practitioner engagement in sustained knowledge construction and collaboration involving meaningful questions" (Kerka, 2003). Many of the postsecondary instructors whose initial teaching experiences mirror those described by van Note Chism et al. (2002) earlier in this paper teach as they were taught (Gallant, 2000). With little to no formal training in teaching, they have learned to teach in a traditional manner, having observed their own professors who themselves learned to teach by observing the professors who taught them (Alley, 1999).

The traditional instructional methods (particularly lecture), social roles, and use of physical space that have been the institutionalized "pedagogical ecology" of postsecondary education extend to professional development (Jaffee, 2003). This traditional "ecosystem" has been a comfortable and expected norm for instructors and students in postsecondary institutions, with the typical development faculty receive for teaching in these institutions until recently concentrating on traditional presentational methods (Travis, 1995-6). In such an environment, instructors – be they faculty or those providing professional development – regard themselves as experts responsible for content delivery, a self-perception difficult to set aside in order to expand their teaching repertoire (Conrad, 2004).

Without professional development, faculty may be even less likely to incorporate technology into their instruction than to make other changes to their practice as they may face a number of additional barriers. Instructors may not have many avenues for self-instruction, and they may lack the time, patience, and motivation for self-instruction should opportunities arise. Even with faculty development, instructors will not likely use instructional technology in their teaching unless they have the opportunity to "play" with it first. The CDW (2008) "21st-Centery Campus Study" found that 85% of faculty say their schools provide technology training, but 44% of respondents said that their biggest challenge to using instructional technology is that they do not know how (a sentiment echoed by 55% of IT staff supporting university technology use). This is despite 91% of faculty indicating that they encourage students to use technology or say it is essential to success in their classes, and 88% responding that they are encouraged to use technology as a teaching tool (CDW, 2008). Students note the lack of instructional technology use in their classes, with 91% reporting they don't use videoconferencing, 88% reporting they don't use Web conferencing, 88% reporting they don't listen to podcasts, and 73% reporting they don't use wikis (CDW, 2008).

The work facing faculty development experts in addressing the need for effective faculty development in the use of instructional technology tools is further complicated by an overall shift in education from traditional pedagogical methods to those that are more student-oriented and learning-focused. The challenge is two-fold. Faculty development providers must shift the pedagogical foundations on which they base their own instruction while also working to guide and support faculty in a similar transition, amid a backdrop of competing pressures to embrace new pedagogical approaches (and their benefits) and having to work effectively in a traditional environment resistant to change.

The Midwestern doctoral research university at which this study was conducted provides one example of a postsecondary institution working to provide effective professional development while negotiating the

tensions of the wider pedagogical shift facing educators. The model for faculty development employed at this university reflects a combination of those described above. The Center for Teaching and Learning (CTL) is primarily responsible for providing professional development opportunities related to improving teaching and learning with a special emphasis on the integration of technology. The Department of Human Resources, alternatively, provides an ongoing selection of personal development opportunities (financial advice, health education, and administrative uses of technology such as Microsoft Office products, web-based advising tools or a new telephone system) which fall outside the mission of the CTL.

In addition to offering sessions on topics such as active learning, student-centered instruction, and assessing learning, the CTL, along with the university's experienced instructional media staff (who provide services and support in the production of a vast array of multimedia instructional tools), offers many technology-focused classes, including training sessions in the use of the university's course management system, opportunities to learn to use specific technology tools (PowerPoint, Skype, Second Life), and a series of classes that lead to online teaching certification. As part of these efforts and to address the emerging interest in blended learning, in 2008 the CTL offered an eight-month course entitled "Designing and Teaching a Hybrid Course."

Given the need to provide participants in the course learning experiences in which they learn how to use technology tools for instruction rather than learning about the use of technology tools, great consideration was given to the pedagogy upon which the course was to be designed and taught. It was important that it reflect the larger pedagogical shift from the presentation of content to the facilitation of learning, and vital that it focus on instructors' use of technology in their own practice. The CTL and education faculty teaching the course have a depth of experience with many flavors of learner-centered instruction upon which to draw. As the central focus of the course was blended learning, designing the course itself as a blended learning experience seemed an obvious choice. The decision to use "Designing and Teaching a Hybrid Course" as a model for the knowledge and skills being taught in the course inspired the adoption of a cognitive apprenticeship framework to guide the design and instruction of the course.

What is Cognitive Apprenticeship?

An examination of traditional apprenticeship provides a familiar foundation on which to build our discussion of cognitive apprenticeship. Numerous and disparate professions have for centuries educated the next generation of the workforce through apprenticeship, and many continue to do so. In their situated learning monograph, Lave and Wenger (1991) describe the evolution of Liberian tailoring apprenticeships. What once consisted of parents passing down subsistence skills to children in this West African country has developed into learning a specialized occupation from a master. Lave and Wenger's (1991) characteristics of traditional apprenticeships - observation, coaching, and practice - map easily to processes in cognitive apprenticeship: modeling, coaching, and fading (Collins, Brown, & Newman, 1989). That is, the apprentice observes the master performing (modeling) a task, and then attempts the task him/herself under the watchful eye and with the skillful advice of the master (coaching), until s/he assumes full responsibility for performing the task as the master relinquishes the reins (fading). When this three-step process is complete, the apprentice has likely integrated both the hands-on skills and the conceptual knowledge necessary to transition from novice to expert (Collins et al., 1989).

Two elements of the traditional apprenticeship model are integral to its success. First, the apprentice needs to develop an understanding of the big picture of the process as the learner's education is facilitated by his/her understanding of it all (Collins, 1991). The Liberian tailor apprentices, for example, learn to cut and sew only after first observing the finishing stages of garment production (Lave & Wenger 1991). Second, the relationship between master and apprentice is situated within and connected to the greater professional community. Not only might an apprentice have access to several masters, but it would also not be uncommon for a variety of learners to contribute to each others' progress by sharing insights (Lave & Wenger, 1991). Essentially, this second characteristic entails an apprentice immersing him/herself in the culture of the profession (Collins, 1991).

The primary objective of cognitive apprenticeship is developing cognitive abilities, rather than the manual skills usually associated with traditional apprenticeship (Newstetter, 2005). In particular, cognitive apprenticeships are designed to teach learners how experts *process* information (Collins, 1991). The contemporary classroom too often falls short of effectively educating students about how experts complete complex tasks across a variety of contexts. To net the benefits of cognitive apprenticeship, instructors need to expose students to problems in multiple situated contexts while having students externalize their problem solving thought processes (Collins et al., 1989; Wilson & Cole, 1991). The effectiveness of cognitive apprenticeship is predicated on *situated* learning lest the learner merely gather the tools of the trade without being able to apply them effectively. Gaining a rich understanding of how to use those tools only comes from unambiguous knowledge of the culture in which those tools play a vital role (Brown, 1989). In the current study, a professional development offering on hybrid course development includes both masters revealing how they process information (the masters are the professors of the course who have considerable experience using hybrid instructional tools), and a situated environment (the hybrid course itself) as a platform for delivering the course.

Cognitive apprenticeship involves six processes: modeling, coaching, scaffolding, articulation, reflection, and exploration. Collins et al., (1989) describe the first three of these as the core of cognitive apprenticeship. *Modeling* consists of an expert externalizing the strategies they are employing as they perform a particular task so that students can observe and build on the conceptual model conveyed by *Coaching* involves the instructor providing feedback to the student.. *Scaffolding* consists of any type of support an instructor provides to help a student complete a particular task, such as Scardamalia and Bereiter's (in Collins, Brown, & Newman, 1989) use of cue cards to help students generate writing ideas. Building upon the first three foundational processes of cognitive apprenticeship, the final three processes (articulation, reflection, and exploration) then help students apply the skills they are developing and transfer their learning to new situations.

One Institution's Blended Education Faculty Development Program

Designing and Teaching a Hybrid Course included six hour-and-a-half, face-to-face meetings alternating with six online modules, during which participants were to develop and ultimately teach a hybrid "module" in one of their courses. The online modules of Designing and Teaching a Hybrid Course were developed in the university's courseware, Desire2Learn, and included an instructor-led, topic-focused asynchronous discussion forum, an assignment, an activity, and resources with which to complete the module's work.

Figure 1: Example of an asynchronous discussion forum

Figure 2: Example of an assignment

Figure 3: Example of an activity

Figure 4: Example of course resources

Online discussions generally asked participants to compare their previous experiences (both as instructors and learners) with their work on or plans for the hybrid module they were to develop, and then scrutinize each other's postings for additional insights and understanding. Assignments walked them through the process of designing their hybrid modules, from considering which course to hybridize to developing the online components and instruction materials for their module. Activities usually required participants to seek and share resources specific to their disciplines or to the instructional tools they planned to use in their modules.

Face-to-face-sessions of the course were initially designed to include relatively equal parts presentation, hands-on demonstration, and small and whole group discussion. As the course progressed, however,

participants shared, both implicitly and explicitly, their need for greater in-class discussion time. As a result, in-class instructor presentation time was decreased in favor of posting additional materials in the online courseware. The in-class discussions were initially designed as part of the bridge between online and in-class activities in which, in small groups, participants were to share the highlights, challenges, and remaining questions emanating from their online work. In addition to serving this purpose, participants used these in-class discussions for what one instructor called "group therapy", as they provided each other wide-ranging support – sometimes theoretical, sometimes hands-on, instructional, administrative, and technical - in the development of their hybrid modules.

As participants in the course came from a broad range of disciplines, and teaching different types and levels of courses, the requirements for the hybridized modules they were to develop were purposefully general: they needed to incorporate online learning tools to replace some number of class meetings for at least one "topic" of their course. When designing the course, the instructors initially attempted to make the requirements prescriptive, but in doing so, found that a number of exceptions were necessary. By incorporating broader requirements, participants were permitted to focus on which online and in-person instructional tools best met their needs rather than on fulfilling potentially inapplicable requirements.

Designing and Teaching a Hybrid Module was open to all university faculty and received more interest than there was space in the course. The course was limited to 30 participants with a belief that attrition would reduce the number of participants completing the course. The course began with 30 faculty, was then reduced to 26 when four did not attend the first session, and ended up with 19 completing all course requirements. Emails from those not completing the course indicated that attrition was due to a number of factors. Most significantly, participants wrote that they felt overwhelmed by the length and requirements of the course. The course spanned two semesters and required frequent participation, alternating between online and face-to-face sessions. A few faculty revealed that they found the course materials and activities didn't meet their needs, one expressed an expectation that the hybrid module was going to be developed for her, and others noted that changes in their teaching schedules either limited or ended their participation, though some did continue despite not being able to make the face-to-face sessions.

Of the 19 participants, the majority (13) were senior faculty, four were assistant professors, and two were adjunct professors. Senior faculty were purposefully selected from those expressing an interest in the course for a number of reasons. First, they were more likely than junior faculty to have sufficient control of and flexibility in their schedules to complete the course. Second, they were more likely to have previously taught a number of face-to-face courses from which they could develop a hybrid module. Finally, as leaders in their departments, they were more likely to transfer what they learned in the course to other faculty.

Eleven disciplines were represented with three participants each from Education, Business, and Nursing, with the remaining participants coming from Law, Sociology, Professional Studies, Theatre, Communication, Spanish, and Math. The cross-disciplinary nature of the course created an unanticipated richness in both the online and face-to-face discussions. Early on it became evident that the challenges of hybridizing a course transcended disciplines, and shared solutions were easily refined for discipline-specific activities.

The course was designed and taught by a panel of instructors rather than a single instructor to provide participants with a rich educational experience and a wealth of resources to support their learning. The lead instructor was a recent graduate of the College of Education's doctoral program, having completed her doctoral research in the area of online learning. She was well qualified and eager to guide the face-to-face discussions, demonstrate technology-based learning activities appropriate for a hybridized course, and respond to the online discussions and assignments. Her co-instructor, a senior faculty member in the College of Education, also interested in online learning environments, frequently contributed to both small

and large group face-to-face discussions as well as online exchanges. The Director of the Center for Teaching and Learning, former Vice President for Academic Affairs and faculty member in Sociology, served as the course "coordinator," sending emails to participants to remind them when online assignments were due, introducing presenters at face-to-face meetings, as well as contributing frequently to the online and face-to-face instruction. A fourth member of the team, a recently appointed e-learning librarian, provided both online and face-to-face support for participants interested in integrating library resources into their hybridized courses. Finally, a team of three instructional media specialists, including the Vice Provost for Instructional Media Services, offered expertise in specific technology tools such as Desire2Learn, Second Life, Communicator, Google Documents, as well as issues related to copyright and fair use. The instructors worked as a team, meeting after each of the face-to-face sessions to review each session's formative evaluations and revise plans accordingly for the next session. The team teaching approach helped spread the responsibilities associated with teaching a professional development effort of this magnitude while at the same time creating a diverse and deep pool of resources readily available to participants on a "just-in-time" basis.

The principles of cognitive apprenticeship guided the selection of course material, activities, assignments, and discussion prompts and were integral to creating both the online and face-to-face learning environments as a living and growing learning community. Additionally, with cognitive apprenticeship in mind, instructors developed the course with specific tasks that built upon each other and culminated in participants developing their own hybrid module. In particular, the principles of cognitive apprenticeship were reflected in the design and instruction of the course in several ways.
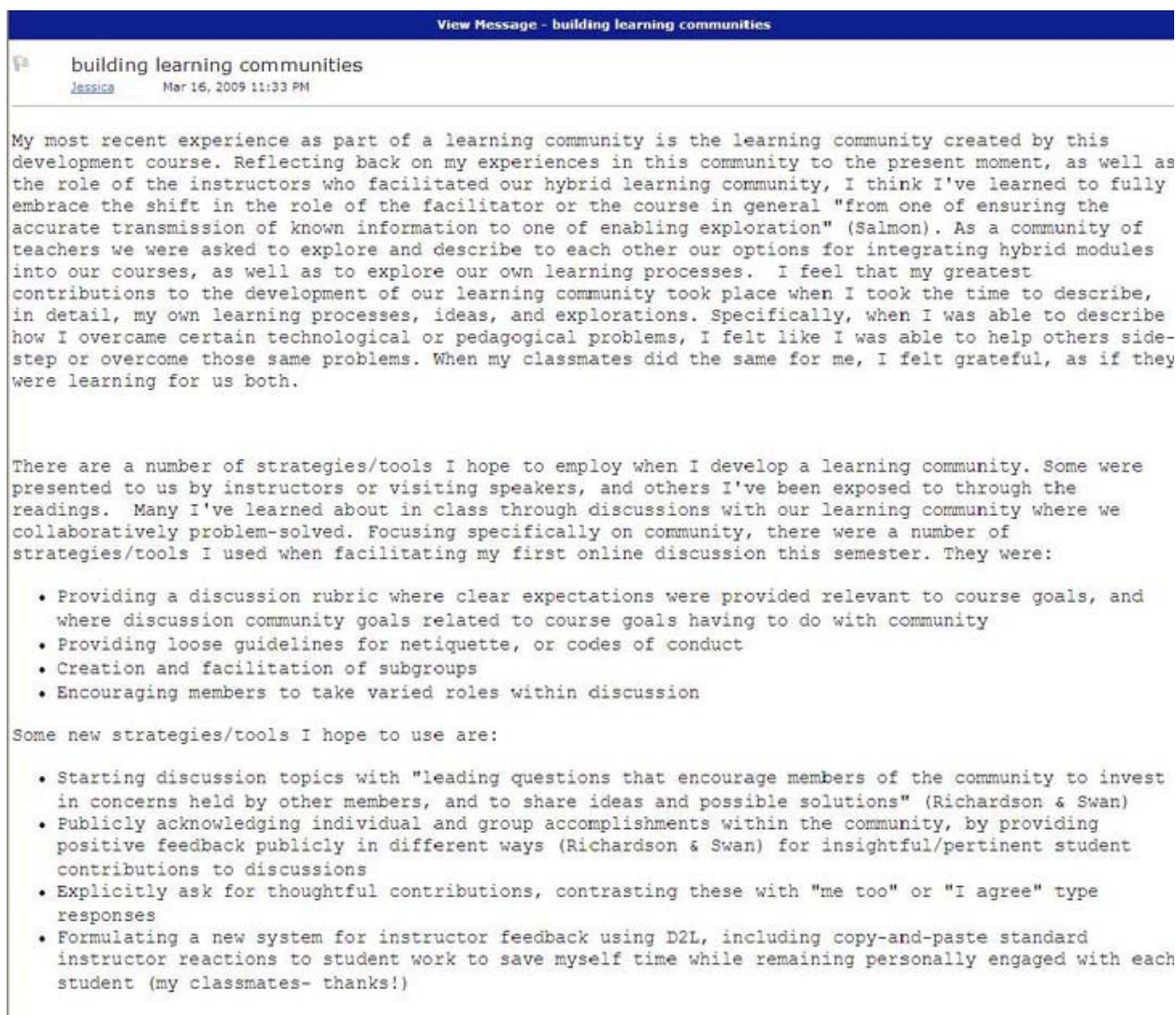
Modeling. Designing and Teaching a Hybrid Course was itself a model for designing and teaching a hybrid course, as well as a model for designing student-centered learning. In particular, both the face-to-face and online discussions allowed participants to gain first-hand experience with the kinds of learning opportunities they might provide their students. This also provided a front row seat for observing techniques for and challenges in facilitating an asynchronous online discussion. Initially, specific attention was paid to modeling how to form a bridge between the online and face-to-face components of the course; however, as the course progressed, less emphasis was placed on modeling this aspect of the hybrid course as fewer and fewer participants joined the online discussions. The drop off in the participation in online discussions provided course members a unique perspective on the role of requiring student participation in the online discussions rather than permitted voluntary participation. The inclusion of a number of student support materials (grading rubrics, course calendar, discussion guidelines, etc.) modeled examples of course information resources students may find helpful as they learn to navigate an online or hybrid course. Finally, the use of the course management system, Desire2Learn, was modeled, in addition to other kinds of instructional tools such as wikis, blogs, ePortfolios, streaming video, and video-conferencing.

Coaching. Particularly because most participants were senior faculty, coaching was framed as a job for both course instructors as well as a peer-to-peer activity. In general, participants shared and instructors commented on the progress of their module development. However, participants often served as coaches for each other, drawing from their own experiences to provide feedback. Participants were asked to act as peer evaluators by reviewing each others' modules to capitalize on the expertise they brought to the class. Throughout the course, instructors were available by email, phone, and in person to guide and support participants' work outside of class time and the online course space. These interactions served a number of purposes, including "just-in-time" coaching so that participants knew they did not have to wait for the next face-to-face session to get their questions answered.

Scaffolding. The full team of instructors was on hand for each face-to-face meeting, serving as presenters and/or facilitating large- and small-group discussions, and either actively participated in or monitored and participated as needed in the online portion of the course. Instructor availability outside of the class provided both instrumental and palliative support. Though not all participants contacted instructors outside of class time, instructor contact information (including email addresses, office phone numbers and, in some cases home and cell phone numbers) was communicated often to remind participants of the

support available to them. Additional university resources were discussed and listed in the course's online space.

Articulation. Recognizing the wealth of teaching experience and the ways in which participants had already used technology tools in their professional and personal lives provided a platform for the kind of reciprocal teaching that elicits an articulation of ideas. Instructors worked to develop a risk-free environment in which participants' questions were not just welcomed, but elicited and praised. This environment encouraged participants to explore new teaching strategies, often "thinking aloud" (in both in class and online discussions) as they worked through the potential challenges and benefits they encountered in the process of developing their hybrid modules.

Figure 5: Example of thinking aloud

Reflection. Participants had multiple opportunities to reflect on their own practice in relation to the experiences shared by instructors and other participants. For example, online discussion prompts consistently asked participants to evaluate the decisions they had made in each step in the development of their hybrid module.

Figure 6: Example of discussion prompt

They were encouraged to read and respond to their peers' reflections as well as openly share their thoughts in the face-to-face sessions. On a few occasions, participants privately emailed an instructor with a particular concern, reflecting on why an activity didn't work or how it could have been done differently. Finally, participants were also provided opportunities to observe instructors reflect on their own practice as they participated in both online and face-to-face discussions.

Exploration. In the months of guiding participants through the design of their hybrid modules and the development of instruction tools and approaches to teach them, the roles instructors played gradually changed. As the course progressed, class meetings and online discussions became less about instructors imparting knowledge or guiding participants through course concepts and more about participants pursuing their own goals and meeting their own learning needs within the framework the course provided. The fading of instructors as "directors" of class meetings and "facilitators" of online discussion coincided with participants' indications that they needed and preferred to be more in control of the content and kind of discussions they were having.

Questions Arising from this Program

As blended education becomes an increasingly popular instructional method, it is important that colleges and universities provide effective faculty development so that their instructors have appropriate knowledge and skills to employ it in their practice. Too often, without faculty development, instructors teach as they were taught, unwilling or unable to try new instructional methods. The weight of the responsibility to develop a useful learning experience for participants in Designing and Teaching a Hybrid Course led us to employ cognitive apprenticeship as the guiding pedagogy in our design and instruction of the course. It also compelled us to investigate the kinds of learning experiences students had in Designing and Teaching a Hybrid Course and their relationship to our use of cognitive apprenticeship. In particular, we asked:

- What aspects of the course do participants describe as facilitating their learning and to what extent do they report a change in practice based on their experience in the course?
- In what ways were their needs not met by the course?

In answering these questions, we considered how we might reframe the course to better meet participants' needs and the extent to which those changes jibed with the principles of cognitive apprenticeship; would the approach hold up or would we need to modify the pedagogical underpinnings of the course for future offerings?

Methods

Given the nature of our questions and our underlying interest in understanding participants' perspectives about the course, we decided to conduct semi-structured interviews with selected participants. Bryman (2001) describes semi-structured interviews as a method of focusing interviewees' responses on particular topics or concepts to provide data for qualitative analysis, as opposed to structured interviews that ask specific questions to provide data for coding according to a priori categories for quantitative analysis. Kvale (1996) described qualitative interviews as "attempts to understand the world from the subjects' point of view" (p. 1). The open responses of interviews provide researchers with data that "reveal the respondents' levels of emotion, the way in which they have organized the world, their thoughts about what is happening, their experiences, and their basic perceptions" (Patton, 1987, p. 78).

The interviews were conducted by a member of the research team not associated with the development and instruction of Developing and Teaching a Hybrid Course. Four participants were interviewed: two who were highly participative, one who demonstrated more moderate participation, and one with intermittent participation. We expected this combination of informants to help give us a picture of the perceptions of those highly committed to the course as they would have the greatest amount of experience in it and the apparent motivation to do well, while also providing an opportunity to get insights from those less participative. One highly participating interviewee, Sally (all names used are pseudonyms), a business and management instructor, attended all face-to-face meetings and participated in all online modules. In addition to contacting course instructors outside of class for guidance and support, while still in the early stages of developing her hybrid module she experimented with a wiki assignment with one of the classes she was teaching at the time. She then presented her experiences with the assignment at a class meeting. She mentioned having previous experience using educational technology, and often discussed her student-centered instructional approach and use of rubrics. The other highly participative interviewee, Jennifer, a Spanish instructor, also attended all face-to-face meetings and participated in all online modules. She contacted course instructors outside of class meetings and mentioned seeking additional support from an IT specialist friend. She mentioned her experience in using Skype with her classes and a preference for student-centered instruction. The moderately participative interviewee, John, is a professional studies faculty member with a background in urban studies and leadership. He attended all face-to-face meetings and participated in many online modules. He mentioned having some experience with educational technology and described the student-centered approaches presented in the course as significantly changing his instructional approach. The interviewee with periodic participation, Dave, a member of the education faculty, attended most face-to-face meetings and rarely participated in the online modules. He has taught classes online and is quite familiar with theories of learning, including student-centered approaches.

In addition to collecting interview data, at the end of each face-to-face meeting we collected end-of-session evaluations from all class participants that included open-ended questions asking participants to share their perspectives about the class. We also administered an online course evaluation with 43-items, using a four-point Likert scale on which participants were asked to share their perspectives on a number of issues, from their overall rating of the course to their feedback on specific aspects of its design and instruction. The response rate to the anonymous survey was almost 50%. Though we would have liked a higher response rate, we are reminded by Anderson, Cain, & Bird's (2005) review of studies reporting

relatively low response rates on online course evaluations to help explain the response to our survey. Finally, we examined participants' online postings and submissions for evidence that they were using or responding to cognitive apprenticeship principles. We expected these additional data sources to help confirm the interview data and our analysis of them, and provide additional insights.

The interviews were analyzed by four members of the research team. Prior to analysis these members met to discuss analytical methodology and to identify potential areas of misinterpretation or bias. Between analyzing the first two interviews, the members of the research team again clarified the analytic approach and any interpretive threats. The four analyses of each interview were compared and areas of dissimilarity were examined as to whether they represented a misinterpretation on the part of the researcher or a unique insight missed by the other researchers. This process, as well as the use of additional data sources, is in keeping with Lincoln and Guba's (1985) suggestion that these kinds of triangulation are a mean's of establishing a study's credibility and Wolcott's (1988) description of triangulation as a means "for cross-checking, or for ferreting out varying perspectives on complex issues and events" (p. 192).

Discussion

Participants' Perceptions of the Course

Participants in Designing and Teaching a Hybrid Course generally rated the course high on a number of criteria. In terms of the course and its instruction overall, more than half of the respondents gave it a rating of "superior" while the remainder rated it as "average." All participants found the course assignments useful learning tools, and all participants would recommend the course to others (almost 90% highly). As much as these responses gave us the sense that participants had been satisfied with their learning in the course, CDW's (2008) findings show that 71% of faculty they surveyed were satisfied with the training they received, but 44% were challenged by not knowing how to use technology in their courses. We expected to get more detailed and contextualized data from our interviews.

What Worked

The first question we were interested in answering involved understanding which aspects of the course participants thought facilitated their learning, with an eye on the principles of cognitive apprenticeship. Our analysis led us to consider how the learning environment, the learning community that developed in the course, active learning, and students' sense of agency worked to facilitate learning.

Course structure. As we had hoped in developing the course in a hybrid format, the course structure itself proved to be a useful model for students. All of the respondents to the online course evaluation agreed (more than 60% strongly) that having the course taught in a hybrid format was helpful for them in envisioning how their hybrid course might be structured, and 90% of respondents agreed that the components of the course provided models for their own course development. In the end-of-session evaluation from the first face-to-face meeting, one participant expressed appreciation that the whole course was "organized and spelled out" perhaps as it allowed for prior planning and using the course as a model for his/her own course development. That the course served as a model for some was obvious. John, for instance, in talking about how Designing and Teaching a Hybrid Course compared with other professional development opportunities in which he'd participated, mentioned that he liked, "learning hybrid by doing hybrid" and thought it worthwhile to be having the same kind of experiences a student in a hybrid course would have. Thinking of parallels between his own learning experiences in the course and what he was asking his students to do seemed to open new possibilities for him "to do less of what [he] thought of as teaching and encourage the students to do more learning." Similarly, Jennifer indicated the "overall similarity between their (the instructor's) modules facilitated my learning of how to create similar modules." Dave noted that how he was developing his own course "paralleled" the design of Designing and Teaching a Hybrid Course, though he did not call it a model.

We were surprised that Sally initially reported not finding anything in the hybrid class that provided a model for her own efforts to develop a hybrid module, especially since course instructors had worked with her outside of class time to help her implement a wiki assignment (one of the ideas from Designing and Teaching a Hybrid Course) in her course – an effort she later presented to the rest of the class. She subsequently talked about how the wiki discussed in the face-to-face class and posted in the online courseware changed her opinion about the usefulness of wikis and inspired her to use wikis with her own classes. She went on to discuss her use of asynchronous discussion as had been used in Designing and Teaching a Hybrid Course and that she was developing videos with the university's instructional media center to embed in her hybrid module as she had seen done in Designing and Teaching a Hybrid Course. We realized in considering Sally's comments that without having explicitly called Designing and Teaching a Hybrid Course and its component parts models for hybridizing their own classes, participants may not have noticed this potential. This insight was further confirmed by Sally's comment that "she didn't have enough in [her] head" to really think about aspects of blended education, because in the early weeks of the course she did not have a view of what blended education entailed.

Despite not having directed students to consider Designing and Teaching a Hybrid Course a model for their own courses, participants noted in their discussion and assignment postings ways in which they were using or intended to use elements of the course in their own instruction. One participant, for instance, noted in one online discussion that "adapting [the instructor's] handy dandy discussion rubric [used in the course] will be a start" to assessing online discussions in her own course. In another discussion focusing on the use of graphics and multimedia tools, a participant said, "I do like the short video segments you have used [in this course] and would like to do the same." Yet another participant shared, "The biggest challenge was having the foresight to be able to organize my 'Content' so that my course page was usable for students. Puting new materials on D2L made me rethink how I shared information online in general. I started thinking about functionality, navigation, and task flow, and I decided to use our development class's page as a model for how I organized my online materials."

We noted among people's work for the course a concentration in the instructional technology they employed for their hybrid modules that paralleled the tools most central in Designing and Teaching a Hybrid Course, with most people employing asynchronous discussion, embedded video, and wikis. A few participants included the use of blogs, social network tools, and online databases in the hybridization of their courses, indicating participants were not necessarily limiting themselves in the tools they employed. However, it remains unclear whether the prevalence of online discussion, video, and wiki use in the hybrid modules participants designed was a result of how widely applicable these tools are to instructors, previous experiences participants may have had with these tools, or a participant's greater familiarity with these tools because of their prominence in Designing and Teaching a Hybrid Course.

Another aspect of the learning environment with which participants were generally satisfied was the course content. Jennifer said she found the content "absolutely relevant" to learning to develop and teach a hybrid course, with the range of materials, tools, and assignments making the class "feel cutting edge." She particularly appreciated that participants contributed to the content of the course, which made it all the more relevant to her and helped her feel as though she did not have to "think of all the questions" herself as other participants were seeking similar information and sharing it with the class. John described the content as "very practical to develop hybrid modules" and explained that exploring things he is not likely to use (such as Skype and Second Life) triggered ideas for him of things that he might do using other online tools. Dave allowed that teaching a class with participants with widely varying skill and knowledge sets can make developing sufficiently broad content difficult and he appreciated that the content provided for a range of individual goals. However, he would have liked content that "pushed him into thinking in new ways about things," which was not particularly surprising to us given that he came into the course well-grounded in the student-centered instruction and online instructional tools unfamiliar to many other participants. Our interviewees' responses were in keeping with our survey results in which almost 90% of respondents agreed that "course resources provided adequate and appropriate information."

Perhaps the aspect of the learning environment for which we got the most positive feedback was the degree to which participants felt supported in their learning. Respondents indicated their agreement with a number of survey items regarding support, including the availability of the instructors, feedback, hints and suggestions provided by instructors, the technical support they received, and the degree to which the course activities themselves provided an opportunity for support. Our interviewees echoed these sentiments. Sally described the instructors as "supportive no matter what" and mentioned some instructors providing home and cell phone numbers to participants. She described instances in which she had email exchanges with instructors about issues she was trying to resolve and that one instructor even came to her office as she was working on her module. She referred to the degree of support in the class as one of the factors that made her feel as if she could "take risks" in the module she was developing and teaching. John described the instructors as supportive in every way, noting that "no idea was rejected out of hand, no question was too elementary." Jennifer said that instructors were always open to questions and were timely and thorough in their responses. She indicated that instructors "listened and worked with us on solutions." Dave particularly noted instructors' responsiveness by email.

Learning Community. Not only did participants find support from instructors, they found other participants supportive as well. On the online course evaluation, all respondents agreed that they felt they were part of a learning community. We also see evidence of a sense of learning and developing ideas together in online discussions. One way in which this was particularly evident was the degree to which participants shared resources, ideas, concerns, and general musings in the course's Cyber Cafe. Our interviews provided further evidence of this. For instance, Sally indicated that she got positive feedback from other participants and felt support in the interest others took in her work. She said that she came to the class feeling like an outsider, knowing only few people in the class and only two of those well, but that she got the sense that the group as a whole was struggling through issues together, that they were "all in the same boat" as they were learning, and that provided her with a sense of community as well. When speaking of other participants, John called the environment "very supportive," and brought up the ice-breaker used during the first face-to-face meeting saying, "we did this insane exercise with a big ball of yarn where we had to use things from our autobiographies (as they held onto the strand of thread and tossed the ball of yarn to another participant)…it got us thinking of things that connect us rather than separate us." Jennifer noted participants wanting to listen to each other, give each other input, and support each other. She described seeing each others' progress and that they would see each others' light bulbs come on. Dave described the atmosphere of the class as "collegial" and that participants supported each others ideas. He said that while he felt he was learning in a community, he "did not draw upon it as much as (he) could," choosing to contact others primarily "due to his own needs."

The four interviewees stated that they used the learning community they formed to their benefit, sharing ideas and troubleshooting problems. Jennifer mentioned having used an online assignment with her students without realizing that the way she had developed it resulted in 200 "reaction" postings from students across each of the sections she was teaching. She brought up in class that she was interested in providing feedback to each student, but concerned about the time-intensity of that process. She noted that one participant suggested creating a set of "standard" comments to use for the bulk of her feedback to students and another participant described how he used online tools to develop "group" responses. Jennifer described how the class gave participants a chance to share ideas and "rub off on each other." John mentioned that instructors may have provided ideas, but as other participants shared their experiences and ideas he was inspired to develop student-centered activities as he considered how to integrate online tool use in his class. He likened his experience to the saying "standing on the shoulders of giants," because of the degree to which he felt other participants had contributed to the strides he had made in transforming his practice. Dave described the ways in which others gave him ideas to consider as he worked to integrate wiki and video use into his course. Sally mentioned having "I hadn't thought of that" moments in class discussions. These comments were confirmed by the online course evaluation in which all respondents agreed that others in the course had contributed to their learning in the course. However, perhaps the clearest evidence that the class had formed a learning community was the participants' interest in continuing to meet with each other after the course ended. John, Sally, and Jennifer all mentioned their personal desire for such meetings and relayed the conversations they had with other participants who shared their sentiments.

We see the learning community that developed in this course as an important role in supporting participants in the cognitive apprenticeship process. As participants came to class with relevant skills and knowledge, working as a learning community provided a means for the whole class to tap into those skills and that knowledge in a way not possible without rich peer interactions. Participants described and modeled the use of various ways to approach blended education, providing each other a network of inspiration far richer, and a wealth of ideas perhaps more individually applicable, than the instructors alone could provide. Learning within the context of a learning community also provided participants substantial scaffolding and opportunity for peer coaching as they saw themselves as learning with each other. Participants clearly felt safe in this joint endeavor, freely sharing their ideas and challenges and providing an opportunity for the kind of articulation that helps those engaged in cognitive apprenticeship clarify and refine their ideas.

Active Learning. In deciding which pedagogical approach to take in developing Designing and Teaching a Hybrid Course, one of the features of cognitive apprenticeship we found attractive was its focus on active learning. Respondents to the online course evaluation all agreed that the process of developing a hybrid module as a course requirement made the process of developing a hybrid course more understandable to them and helped them feel more competent and confident in hybridizing other courses in the future than if they had only heard or read about it. Our interviewees confirmed the survey results. John, in particular, repeatedly mentioned how beneficial the use of active learning in the course was with comments such as, "doing the actual technology is more useful than just hearing about it," "computers really demand experiential learning," and "you can watch others do it but you haven't really learned until you do it." In addition to the overall hands-on nature of the course, Sally reported finding the video demonstrations posted in the online section of the course helped her actually use some new technologies. Jennifer mentioned being "asked to do technology" in this course differed from the other professional development experiences she had.

"Doing the work of a blended educator," to paraphrase one of John's comments, was central to this class. This draws from the heart of cognitive apprenticeship in which learners develop skills and knowledge by doing the work associated with the assistance of more experienced guides. It is clear participants not only felt engaged in active learning, but that they found this approach to learning beneficial not only for themselves but also for their students. As one participant noted in a response to another in an online discussion, "I like the idea of students generating their own "text" for the course. I think the work of finding, posting, and refining the wiki will generate a lot of retention for these students that reading alone would never accomplish."

Agency. In adopting cognitive apprenticeship as the central pedagogy of Designing and Teaching a Hybrid Course we were purposely designing a student-centered course. Students developed a sense of agency as they determined their own learning goals and worked individually and cooperatively to achieve them. This is evident in the online evaluation as all respondents agreed that they felt more confident and competent in developing a hybrid course themselves. Sally voiced this in saying that she "never thought she could pull off this kind of technology use" with her classes, and that the course had changed her mind about what she can try when she teaches. John noted that the course helped him get "past that you have to be teaching everything or they won't learn anything. Going through this class has given me the freedom to do less of what I thought was teaching and encourage students to do more learning".

The natural outcome of using a cognitive apprenticeship approach is that the learner becomes the master to the extent possible within the bounds of the course. As a result, it is vital that participants develop a sense of agency – the feeling that they can do the work being asked of them. Rather than focusing on how much participants know about blended education, our goal for this course was that participants feel that they can use a blended approach and that when they are making instructional decisions hybridization

is one of the choices in their teaching repertoire. Participants in Designing and Teaching a Hybrid Course appear to have developed a degree of confidence in their ability to use blended education and we think this feeling of competence undergirds their learning in the course. One student's online discussion comment about her experience developing and using a hybrid module with her class provides a sense that for her our goal was realized, "Now I am beginning to think about what others topic areas might benefit from the same hands-on learning (I hate lecturing so this is so cool!)."

What Didn't Work

Analyzing the way in which the course worked for participants is helpful to determine what to do again the next time the course is offered, but an analysis of the ways in which the course did not meet participants' needs is vital to our efforts to provide effective professional development.

Length of course and workload. We agree with Beaty (1998) that professional development that is longer in duration is more effective than a single class, as does Dave, who found the long-term structure of the course more beneficial than "one-shot," "transfer of idea" types of professional development. However, to try to accommodate a number of schedules, Designing and Teaching a Hybrid Course straddled semesters, and when the semesters changed toward the end of the course we lost participants whose teaching schedules changed, some of whom had been very active in the course to that point. To their credit, some of the participants affected by the semester change completed Designing and Teaching a Hybrid Course despite not being able to meet for the final face-to-face sessions. We still want to provide participants the rich learning over time we believe is more likely to result in positive changes in their teaching, but need to consider how to do so within the structure of the academic calendar.

As we look to consider modifying the length of time over which the course is scheduled, we also need to ensure that we do not make the course more intensive. Those we interviewed all noted in one way or another the time commitment needed to complete the course. Sally most directly noted feeling "overwhelmed" by the amount of work. John shared the same sentiment, saying he felt "humbled" by the due dates of assignments. Jennifer mentioned that sometimes she "just didn't have enough time to dig in" to some of the assignments in the course. Though Dave did not explicitly mention having an issue with the intensity of the course, he apparently let his feet do the talking. He described participating only in the parts of the course he felt served his needs.

In developing this course based on cognitive apprenticeship, we knew that we were necessarily engaged in a long-term process. Rather than having one or two sessions in which we laid out the benefits of blended education and described some of the tools that can be used to hybridize a course, we chose to immerse students in going through the process with enough time to struggle through the steps in making (in some cases) both a pedagogical and an instructional shift. We think that in focusing on our goals for the course we did not sufficiently consider the larger contexts in which participants work, underestimating both the amount of work we were asking of them and the weight of their other responsibilities. Though we want to have a course in which they "live" the hybridization process, we do not want to have its intensity undermine participants' learning. It looks like we may not have found that balance yet.

Limited reward and accountability. Perhaps one of the things that made the workload in the class even more onerous was that the course did not have the kind of tangible reward system with which participants were familiar. Participants developing a hybrid module for one of their courses received a stipend of $300, but John saw additional need to "build in some kind of incentive" or "grade" into the course. This comment was similar to Jennifer's suggestion that the course culminate in a certificate or some kind of grant or "opportunity," such as "the top ten participants get to work with an instructional design person."

Dave's comments about his department chair wondering why he was doing anything other than something that would add to his tenure and promotion file was a reminder that there are things more motivating than money. Dave's sentiment that this kind of faculty development should "count for something" spoke to an issue larger than the design and instruction of this course. Perhaps

administrators might find it useful to discuss Dave's contention that if professional development in the effective use of instructional technology is important to an institution it should be "rewarded in review of faculty and integrated into your reviews if it's valuable."

Participation in the course was voluntary and the stipend offered participants was tied to successfully developing and teaching a hybrid module rather than to their level of attendance or engagement in the course. Although we had developed course activities with specified requirements and due dates, as the course progressed we saw the effects on participants' voluntary participation as their initial enthusiasm gave way to the realities of juggling multiple commitments. The result was diminishing attendance at the face-to-face sessions and decreasing participation in the online modules over time.

In a traditional apprenticeship, the reward of working one's way to journeyman is status and the host of benefits (including financial ones) that come with it. In cognitive apprenticeship, the rewards may not be so tangible. We see that in this case. As much as participants may have been motivated to improve their practice and work to develop as instructors, within the larger structure of the university, and the responsibilities participants in the course have in it, these motivations have limited value. We neglected to consider the relationship between this course and those structures and failed to tap into the system of rewards provided to faculty for their work. Perhaps in a vacuum learning is its own reward, but in the institutional structures in which we work the systems of valuation are important frameworks for guiding people's efforts. By overlooking that here, we made it difficult for participants to maintain consistent engagement in the course when their initial intrinsic motivation conflicted with the demands of other, extrinsically rewarded responsibilities.

How the Course Affected Participants' Teaching

Despite these challenges, participants reported seeing a change in their present and future practice. John, perhaps, evidenced the most transformation in his practice, describing how his experience in the course had completely reframed his notion of what his job was as an instructor. He made several comments about shifting his focus from how he presented material to how he facilitated learning, having students "doing the work themselves instead of just examining the work of 'experts.'" He was also quite enthusiastic about the ways in which the use of online instructional tools gave him the means to help his students "learn by doing the work of the field," or "do the work of an urbanist (his field of study)." He described one of his hybrid activities in which he had students go to the Web site of the local police department and compare a low-crime and a high-crime neighborhood, then post their analysis on a D2L discussion board. He then had students discuss their findings in a face-to-face class meeting, having had the benefit of reading each others' analyses beforehand. He mentioned how impressed he was with the discussion in this activity, adding that "students were better informed for the classroom discussion and the discussion started from a more informed point." John's interest in applying his learning from the class to his future practice was not limited to pedagogy as one of his requests was to take a follow up class in which he could "take next step to doing fully online courses."

Sally came into the class already practicing student-centered instruction and with some background in the use of technology, having posted content in Desire2Learn. She had, however, apparent reservations about the use of technology for instruction, mentioning a concern about how to handle the situation if the technology did not work correctly, and a great enough distrust of Wikipedia to ban her students from using it for their work in her courses. When asked if she saw herself using anything from the course in the future she said, "Absolutely." She described the course as changing her perception about what she can try since she had "tried some things [because of her work in Designing and Teaching a Hybrid Course] and they worked." She mentioned that she still preferred face-to-face to online instruction, but that she felt like she could "take risks in the future" and try things with technology. She mentioned that she had been taking notes about the technology in the course to come back to in order to try some new ideas in the future.

Jennifer agreed that she would use the skills and knowledge from the class in the future. She specifically mentioned an interest in using wikis, as well as many of the features of the Desire2Learn courseware, including threaded discussions and the grading and feedback tools. She also mentioned an interest in working on ways to promote student interaction online. Finally, she summed up her sentiments saying, "I see more how I can make learning another language more useful to my students."

Since Dave came into the class with experience as an online instructor and well grounded in methods of student-centered instruction, it was likely the class did not have as much to offer him as his less experienced peers. And indeed, Dave lamented that the class did not push him far enough and was not the transformative experience others had reported. However, he did indicate that, in addition to reinforcing his beliefs about effective use of instructional technology, he did learn different instructional techniques in the class.

Our interviewees' comments were in keeping with the online course evaluation in which all respondents agreed (90% strongly) that they are now more likely to use blended instruction than before they took the class and that they see ways to use blended learning in at least some of the courses they teach. It appears that beyond just being satisfied with the course, participants could conceive of ways to use what they had learned in their classes, in part because they were already doing so and in part because they transfer that experience to the use of other instructional tools and envision new ways to employ online technologies to serve their students' learning needs. Our analysis of participant perceptions leads us to believe that designing and teaching a hybrid course to provide faculty development in the use of blended education was effective, but not without room for improvement. A further consideration is whether cognitive apprenticeship will remain the prevailing pedagogy as we contemplated ways to address the shortcomings identified in our analysis.

Potential Changes

Although we could see that it was likely that participants came away from Designing and Teaching a Hybrid Course with something useful despite several challenges, it is clearly important we address the ways in which the course fell short of its potential and consider what changes we might make to improve future offerings of it.

Include more technology tools in the instruction of the course. Though we are concerned about creating professional development that is too intensive for people to complete successfully, we think providing for an even wider range of learning might make the course more useful. Given the high concentration of the use of asynchronous discussion, embedded video, and wikis, we are considering expanding the number of online tools we include in the course. The challenge is to provide students exposure to a wide variety of online instructional tools while managing the time- and labor-intensity of the course. To do so, we need to consider the possibility of reframing some of the course assignments to employ the use of additional tools, such as having participants post updates on the hybridization of their course on a blog, or perhaps giving students the opportunity to select which tools they would like to use in submitting selected assignments.

Provide more support. We understand the power of student-centered instruction. Therefore, doing things to facilitate learning, such as providing our home and/or cell phone numbers to students, is something most, if not all, of us have done with our graduate and undergraduate classes pretty regularly. It was second nature to continue this practice as instructors of Designing and Teaching a Hybrid Course. We were surprised to hear Sally, in particular, marvel that we had even given out personal contact information. We were left wondering if other participants, in the role of student in Designing and Teaching a Hybrid Course, perceived a power differential or other barrier that we did not. Although we note that supporting students is something we seem to have gotten right in the design and instruction of this course, we are also aware of the important role that support played in facilitating learning in the course. By extending support significantly outside the classroom walls and beyond the online course space, we are in effect broadening the opportunities for the interactions central to cognitive apprenticeship to take

place. To ensure that these opportunities are available, we need to emphasize our availability with Designing and Teaching a Hybrid Course participants as we do with our graduate and undergraduate students.

Despite the learning community formed by the class and the interactions that took place within it, we think it is important to do more to connect participants outside of class. This struck us in particular in reflecting on the requests to continue to have meetings for participants after the end of the course. Participants had made connections in class, but they appeared to end at the classroom door. Apparently, it did not occur to participants that they could contact each other and get together on their own accord; that they needed the structure of a class meeting to see each other. In addition to having participants post profiles in the course and complete introductory "ice breaker" assignments, we need to do a better job of helping them contact and connect with each other while in the class. The most obvious way of doing this is to employ the use of online social networking tools, either setting up a class Ning; requiring participants to create Web pages using MySpace, Facebook, or a similar service; teaching them to "tweet" on Twitter; or some combination thereof. Although participants might not continue to use these tools after the course ends, their use during the course may serve the dual purpose of helping students get to know each other while in the course and giving students hands-on experience with additional technology tools.

Some structural changes. A lot of the "supportiveness" participants perceived from their classmates was the largely the result of the small group discussions that took an increasing amount of face-to-face class time as the course progressed. That participants found these discussions beneficial and requested even more opportunity for them is an indication of their importance to the class; however, taking face-to-face class time for them came with a price. The trade off was that we had to be more strategic in our use of demonstrations and topic-focused face-to-face discussions.

One way to provide for students' apparent need for small-group discussion time that does not happen at the expense of other face-to-face activities is to add more face-to-face meeting time, by making the meetings more frequent and/or making them longer, but this would make the course even more time intensive. Another approach might be to schedule small group discussions at the end of class meetings and invite those who would like to continue talking to stay. We might also hold special "troubleshooting" sessions to give people who wish to attend an additional avenue for sharing the challenges they are facing. Another option might be to emphasize the place of online discussion in serving some of the students' needs. Designing and Teaching a Hybrid Course had a "Cyber CafÉ" for general questions and discussion that some participants used, but the use of this forum was inconsistent and not all participants availed themselves of it. Perhaps requiring the use of the Cyber Cafe in the initial weeks of the course or creating small group discussion spaces might help participants to move their discussions online.

In order to meet the needs of such a broad range of participants, we are also considering ways to "repackage" the course. One obvious means of meeting the needs of participants with a wide variety of skill levels and learning experiences is to split the course into "introductory" and "advanced" sections. There was more interest in the course than there were spaces available for this initial offering, even with our inflation of the number of seats available to account for the attrition we expected, so providing two sections of the course would likely be supported by enrollment. We also took note of comments Sally made about finding the class size too large, even after attrition. Perhaps having a smaller class size, rather than having students meet in small groups within the class, as we did in this offering of Designing and Teaching a Hybrid Course, would help us better meet the needs of diverse participants.

Activities (assignments, discussions, face-to-face meetings) within the courses were organized into a number of categories with participants selecting to complete or participate in a predetermined number of activities from each category to complete the course. This structure was created in such a way as to control the intensity of the course and help participants better manage its workload in relation to other commitments. The approach may also better meet the needs of participants with a wide range of skills,

abilities, and instructional preferences as they can select those activities they consider most relevant, and in controlling the intensity of the course and helping participants better manage their participation in the course in relation to their other commitments. This strikes us as particularly fitting since this approach provides a marriage between having students meet particular requirements while also being able to pursue their own learning goals in a way reminiscent of the combination of face-to-face and online instruction in blended learning.

Yet another means of meeting participants' disparate needs may be to develop the class as a series of online and face-to-face modules that can be taken individually or sequentially. The Center for Teaching and Learning uses this structure when it offers its Certificate in Electronic Teaching series. Participants may attend individual classes if particular topics pique their interests or suit their needs, but to receive the certificate participants must attend all classes and complete a capstone project. Modifying Designing and Teaching a Hybrid Course to parallel the structure of the Certificate in Electronic Teaching Series would include providing a certificate at the completion, which would help address participants' concerns that there is currently insufficient reward for completing the course or accountability for completing the work in it.

Conclusion

Our underlying goal in offering Designing and Teaching a Hybrid Course was to affect change in faculty's instructional practice, and it appears that goal was largely met. Our purpose in conducting this research was to consider how the course's design and instruction and its cognitive-apprenticeship underpinnings did or did not work to meet that goal. In particular, we found that

- having the course taught in a hybrid format was helpful for student's conceptualizing the design of their own hybrid course;
- designing the course as an active learning experience increased course engagement and satisfaction;
- providing a high level of support and individual attention, coupled with creating an interactive learning community where participants actively shared resources and experiences was critical to the success of the professional development experience;
- creating an environment in which participants felt empowered to use a blended approach increased their confidence that they could use blended learning effectively in their future practice and count hybridization as one of the choices in their teaching repertoire;
- shortening the length of the course to one semester and adjusting the workload to a more realistic level for busy faculty would likely decrease attrition and better pace participants' efforts throughout the course; and
- providing extrinsic rewards for course completion such as a certificate or a letter that could be included in a promotion and tenure dossier in support of the faculty member's effort to improve his/her teaching might decrease attrition and help connect participants' work to develop blended teaching skills connects to wider institutional structures and goals.

A further consideration was whether it was necessary to abandon cognitive apprenticeship as the pedagogical guide for the course to address the aspects that were not effective. Based on our examination of those issues, it appears that cognitive apprenticeship provides a strong framework for teaching faculty to use blended education, and that it may provide similar benefits for other kinds of faculty development.

We have an ongoing interest in whether this course in fact results in participants using blended education in the future and how participants' experiences in this course affect their future instructional practice regardless of instructional mode. We see evidence of participants using what they learned in the class in their practice, particularly because implementing the use of a hybrid module was a requirement of the course. However, we remain interested in the degree to and ways in which any changes in practice arising from participation in Developing and Teaching a Hybrid Course persist over time. We are also

keen to apply the insights developed through this research to the next offering of this course to further our understanding of the use of cognitive apprenticeship in faculty and professional development.

Clearly, this course represents only one offering bounded by a host of particular contexts: the culture and resources of the institution at which it was taught, its instructors and participants, its schedule and timing, etc. It is up to the readers to determine the extent to which our findings might be applicable to other settings. We hope that others will implement and examine the use of this faculty development model in a variety of settings to develop a fuller picture of the ways in which it is useful for promoting the use of blended professional development opportunities.

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