Diving into the Blended Learning Pool: One University's Experience

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This is a study of the experiences of a private university in preparing their faculty for teaching blended and online courses. A three-day workshop was conducted in a blended format in January 2014 to train faculty to teach in these formats during the following summer semester. Participants completed a survey after the workshop and after teaching the courses. The purpose of the survey was to examine the effectiveness of the workshop components. The results are discussed in this paper, along with an examination of the university's other efforts to incorporate blended and online learning successfully into their curriculum.

INTRODUCTION

For over twenty years, the academy has been transitioning in part from face-to-face to blended education. Blended learning has been defined in many different ways at many different higher education institutions. One of the most encompassing definitions was created by Sharpe, Benfield, Robert, & Francis (2006) who stated that blended learning includes both online and onsite delivery modes, different types of technology, both practice-based and lecture-based learning and different directions (both instructor-directed and autonomous). The wide range of choices within blended learning is one of the reasons that attracted universities to this model. The current generation of students wants flexible, convenient and accessible learning. Students have many different learning styles and blended courses can incorporate many different types of pedagogies to satisfy those styles. They can learn online at any time of day or night and in any location (Graham, 2006). Students want to use technology in their educational process (DeGeorge-Walker & Keefe, 2010) and would even like it to be personalized to their individual learning needs (Roberts, 2005).

There are other reasons that universities have been attracted to blended learning. Blended learning does not require a huge financial investment and a major change in the institution (Liu & Tourtellott, 2011). If the university has online delivery capabilities and a physical presence, it has the main requirements necessary to add the blended learning format to its course offerings. Smaller colleges have even more incentives to use blended learning. These institutions have constrained resources and have been struggling to compete with for-profit and large public universities who have used on-line course offerings to erode the smaller schools' market share. The ability of smaller colleges to offer blended learning courses with on-site meetings and more flexibility for students can help to alleviate the loss (Liu & Tourtellott, 2011).

Most importantly, universities and colleges have adopted blended learning in order to improve the quality of the education they provide. Studies such as Glazer (2011), U.S. Department of Education (2009) and Zhao (2005) have shown that blended learning can significantly improve learning outcomes

compared to traditional face-to-face learning. Technology such as interactive quizzes and online simulations can increase learning engagement (Dziuban, Moskal and Hartman, 2005). Student morale can improve, as well as their satisfaction with the course (Byers, 2001) and students may improve their ability to acquire information (Kendall, 2001). Blended learning allows time for critical reflection during the learning process and meets student preferences for both onsite and online learning. It has the ability to create a learning community among learners in which communication, connection, and collaboration can flourish (Garrison & Vaughan, 2008).

Faculty can also benefit from engagement in blended learning. Membership in the learning community created in blended courses can result in a higher quality of interaction and teaching compared to traditional courses (Ho, et al., 2006; Vaughan, 2007). Blended learning faculty members have experienced efficiency in classroom communication and appreciated the convenience for students and ability to reach students with different learning styles. Faculty has also noted that blended learning offers them additional exciting teaching opportunities (Benson, Anderson & Ooms, 2011).

Despite the benefits of blended learning for all stakeholders, the transition to the blended format is not without its challenges for everyone concerned. Per Garrison and Kanuka (2004): "blended learning is both simple and complex" (p. 96). To develop an effective blended learning course, one does not just add online tools to an existing onsite course (Benson, et al., 2011). For faculty, decisions must be made about how much and what kind of technology should be added to courses in order to enhance student learning. It is important to strike the right balance between online and onsite learning. Also, there is more planning and resources needed before the course starts, as well as additional expertise required on how to blend the online and onsite parts of the course together to form a cohesive whole (Ocak, 2011). Clear learning objectives are essential in blended learning environments (Klemsen & Seong, 2013). Because there are more '"moving parts" to a blended course, students need to know what is to be done online and onsite and when each assignment is due. They need more direction on how to use the technology to complete their assignments and faculty must provide motivation to complete the autonomous learning required by online components of the course (Ocak, 2011). Faculty may have to change roles from "teaching" to "coaching and guiding" (Ocak, 2011) due to the fact that active learning fits well in the pedagogy used in blended learning. Active learning is a student-centered approach to pedagogy and it is important for faculty that use a more teacher-centered approach to accept the underlying principles upon which the student-centered approach is based (Owens, 2012).

Faculty must overcome any "technophobia" issues in order to learn new technical tools and figure out how to integrate them into their courses. Consequently, course preparation takes more time and effort (Ocak, 2011). They must be able to help students with these technologies and may have to model them and help students with technical problems, while at the same time keeping the course up-to-date with the latest software changes (Klein, Spector, Grabowski & Teja, 2004). If faculty are not sure about the value of using technology in education, their technical abilities, and how they may be able to use it in their teaching, they will worry about the quality of blended courses. They may also be concerned about whether students will see blended learning as an obstacle rather than an aid to achieving their educational goals (Oh & Park, 2009).

Institutions also have challenges in adopting blended learning. Administrative assistance is needed in terms of curriculum development and technological support. Faculty members need training and time to develop courses (Benson, et al., 2011). Part of course development includes time for faculty to experiment with new tools and methods (Edmondson, 2008). Faculty also need time to collaborate with other blended instructors, instructional designers, technology experts, and time to ask for help and share their successes (Toth, Foulger & Amrein-Beardsley, 2008). At least six months is suggested for blended learning integration (Charles and Anthony, 2007). In order for faculty to have the time needed for training and course development, they also need release from their current teaching workload. Consequently, institutions must fund extra teaching staff in order to do so (Davis & Fill, 2007).

Members of faculty also need motivation to incorporate technology into their courses. This is the biggest challenge for implementation of blended learning into the curriculum (Oh and Park, 2009). The software used for blended learning must be user-friendly and reliable (Ginns & Ellis, 2007). The learning

management system used as the basic software for blended learning must have the necessary capabilities and students and faculty need to be trained on its use. Hardware needs include a centralized streaming server and recording equipment for each faculty member (Carbonell, Dailey-Hebert & Gijselaers, 2013).

Due to the reasons cited above to adopt the blended learning format, and, despite the challenges, a small Midwest University decided in late 2012 to "dive into the blended learning pool." The Provost was charged by the President to promote and fund the initiative and the Center for Teaching and Learning was tasked with the implementation. At the time, the school had online program offerings, mostly in graduate education. The vast majority of undergraduate courses were onsite only. The faculty member who heads the Center for Teaching and Learning, the learning management system specialist, and one faculty member with online/blended learning development and teaching experience designed a week-long workshop held in January 2014 for faculty who were going to be developing and teaching blended and onsite courses in the summer of 2014. The workshop was created in a blended format: it contained online resources, discussions and quizzes and an onsite blended learning presentation and demonstration/practice of the learning management system (D2L) features to be used in the courses. A workshop D2L site was created for use by the participants.

Before the workshop began, the workshop faculty members were asked to review materials on the website authored by Tom Angelo, who spoke about blended learning at a Lilly Conference on College and University Teaching and Learning in late 2013. They were also asked to discuss their interest in blended/online learning. They also answered questions aimed at increasing their social interaction with workshop participants. The purpose of this was to model effective online discussion and get participants comfortable with the online mode of learning. Faculty was asked to complete a general online quiz before the workshop began, to become familiar with the online quiz capabilities of the learning management system (D2L).

In-class learning activities included a PowerPoint presentation conducted by one of the workshop instructors. It included the advantages and disadvantages of blended learning, the theories behind this learning format, examples of online learning tools, and practice/discussion of features of D2L software which would be used in blended/online learning. An example of an online discussion rubric for grading student participation was also presented and discussed in class. Participants were given a series of homework questions to be completed outside of the workshop to help them design their summer blended/online courses based on a backwards-learning design. One of the instructors gave faculty an example of completed homework questions and a syllabus for a blended course that the instructor had developed. The examples were to be used as participants completed the design and syllabus for their own blended/online course. At the end of the workshop, faculty were directed to the workshop website which contained resource material authored by Wohlfarth (from the Lilly Conference) regarding netiquette, an online honor code for students, Frequently Asked Questions (FAQs) about blended learning and a list of materials for further reference.

This study examines the effectiveness of the workshop in the eyes of its participants, both before and after the faculty taught the first round of blended/online courses at the university in the summer of 2014. It also is a case study of one university's efforts to implement blended learning in light of recommend-ations by experts in this area.

RESEARCH DESIGN/QUESTIONS

In June 2014, before the newly-developed blended and online courses were offered in the summer 2014 semester, workshop participants completed an online survey asking them to rate the effectiveness of various elements of the January blended learning workshop. They rated effectiveness based on a five-point scale: 1 being not effective at all, 2 being not very effective, 3, being neutral, 4 being somewhat effective and 5 being very effective. They were also asked to rate the overall effectiveness of the workshop on the same scale. Demographic information included the nature of the blended/online course taught (mathematical/scientific, verbal/creative and other) and faculty previous experience in teaching in these formats. The number of previous courses taught (1-5, 6-10, over 10) were also gathered from

participants. There was an open-ended question at the end of the survey which asked for comments on the effectiveness of the workshop.

Seventeen faculty members participated in the workshop (including the three instructors). All participants were either faculty or staff at the university. Most of the faculty participating had been teaching for the university for several years and were familiar with Desire2Learn (D2L) which is the university's learning management system. Participation was voluntary and faculty was given a $1,000 stipend to attend the workshop and $1,000 stipend to develop the course. When the survey was administered in June 2014, there were ten respondents. In August, after the blended/online courses were taught in the summer term, there were nine respondents. Six of the ten respondents taught mathematical/scientific courses, and four taught verbal/creative courses. Five had prior experience teaching online/blended courses and five did not. Of the five who had previously taught in these formats, four had taught between one and five courses and one person did not answer this question.

Because of the small number of respondents, the only quantitative analyses performed on the results were frequencies and t-tests comparing the results between the June and August surveys. Qualitative analysis was performed on the responses to the open-ended question. The survey comments were classified by their commonality. The frequency of comments in each classification was counted in June and in August, in an effort to identify the level of importance to the respondents.

LITERATURE REVIEW

The literature regarding implementation of blended learning in higher education advocates the creation of a strategy or systematic approach (Liu & Tourtellot, 2011). Higher education institutions should view the incorporation of blended learning into the curriculum from a top-level instead of a case-by-case basis (VanDerLinden, 2014). Blended courses should be added using a cohesive approach, making sure that this format makes sense for that part of the curriculum (Kezar, 2013). The goal of implementation should be to embed blended learning into the systems, structures, and practices of the institution (Crossan, Lane & White, 1999). It is also important for a university to decide on a specific, focused definition of blended learning to be used at their university (VanderLinden, 2014). As of 2004, Woods, Baker and Hopper found that a strategic approach to blended implementation was missing in terms of pedagogy. There was little consistency in how faculty used online technology to support onsite instruction, and a lack of guidelines as to size of course, year in school, and learning style which might be best for blended learning (Parker, 2000).

Best practices for implementation may have to be adjusted for smaller schools due to their lack of resources. It is also important for small colleges to make sure their technology and technology support is adequate before blended learning is adopted and that there is clear formal and informal communication channels (Liu & Tourtellot, 2011). Communication about best practices is especially important between those that are experienced in the effective use of blended learning and other faculty (Charles and Anthony, 2007).

It is critical that administration leads and supports this initiative in a sustainable and cost-effective manner. For example, a small college could adopt the "one course, many sections" model in which a standardized course is developed and populated into many course sections (Liu & Tourtellot, 2011). Unfortunately, not many higher education institutions provide full support for blended delivery. In a 2009 study by Park and Oh of 133 faculty members from 33 universities, 97% of respondents had a help desk for students, 88% provided help to deliver online courses and only 32% had incentive systems to encourage faculty to participate and only 24% required faculty to attend training sessions or workshops prior to teaching the course. One of the downsides to lack of support is the negative impact on faculty's motivation to implement new technologies (Ocak, 2011).

The process of implementing blended learning at a university is a process of change. According to change management research, top-down change is not successful in blended learning implementation because faculty have not been involved in the decision-making process (Kotter and Schlesinger, 2008) and because the process has not been effectively managed (Fishman, 2005). Another reason that the

bottom-up approach is more effective is that faculty must conduct several iterations of blended courses in order to find the best blend of onsite and online tools for learning (Carbonell, Dailey-Hebert & Gijselaers, 2013). In order to be successful at a bottoms-up implementation, faculty needs to identify with blended learning as their "new way of working". This implies a change in the culture of the institution (Edmonson, 2008). The change to blended learning should be an important part of the curriculum in order for blended learning to be established effectively (Davis & Fill, 2007). The goal of converting to blended learning should align with the university's philosophy is order to be successful (Carbonell, et al., 2013).

Studies have indicated that faculty has positive attitudes towards teaching in the blended learning format because they believe it will improve learning outcomes (Oh & Park, 2009). However, the adoption of blended learning is a change for the institution. Therefore, one of the first steps in a faculty-centered approach to implementation of blended learning is to make sure that the faculty involved has no resistance to the change. There is evidence that faculty can be reluctant to adopt the new technology which is part of blended course delivery. Some faculty can be skeptical of blended learning and not know what blended learning really is due to multiple definitions of this term (Ooms, et al., 2008). Studies indicated faculty concerns about the quality and effectiveness of blended education (Neuhauser, 2002; Russell, 1999). Other concerns among faculty are their perceptions that blended course development and teaching requires considerable time and effort (Tshabalala, Ndeya-Nderey & van der Merwe, 2014). Factors that influence faculty perceptions of blended learning include the features of the learning management system to be used for blended courses, the characteristics of the users of the system and specific situational constraints (Vishwanath & Goldhaber, 2003). The perceptions held by faculty toward blended learning lead to their attitudes about it which lead to their actual use in the classroom (Davis, 1993).

To overcome any faculty negative perceptions towards blended learning, a successful implementation project may begin by incorporating a phased-in approach. A pilot program consisting of a small group of faculty who develop and teach blended courses first can be a logical place to begin implementation. Before the pilot program begins, a vision of what the group would like to accomplish is essential, in order to set the direction of the work and keep the faculty team together (Edmonson, 2012). As the pilot faculty group becomes more experienced with the format, they become more appreciative of the quality of the online tools that they are using (Inside Higher Education, 2013). These faculty members can become leaders who create awareness, share their stories of success, and encourage other faculty to try this format (VanderLinden, 2014).

If pilot faculty members have a "safe" space in which to experiment with the blended format (Edmonson, 2008), can collaborate with other members of the team productively, and come from diverse areas of the university, the pilot team's work can be crucial to overall implementation. Collaboration with other members of the team should occur on a regular basis, every 6-8 weeks. When members meet, they can share their experiences and problems and come up with appropriate solutions (Carbonell, et al., 2013). During their work in the pilot program, the team can find bottlenecks in the process and overcome them before blended learning is rolled out to the entire university (Edmonson, 2008; Edmonson & Nembhard, 2009). A very important part of the pilot program is sharing the tangible outcomes of the implementation to the university community in order to keep the process moving forward (Carbonell, et al., 2013).

When considering the change involved in adapting blended and online learning, it is important to carefully select the members of the pilot team. Rogers, Sinhai and Quinlan (1999), adherents to the innovation diffusion theory, categorize adopters of innovation in the following categories: innovators (25%) who like to take risks and try new things; early adopters (13.5%) who are respected group leaders who encourage others to adopt the innovations; the early majority (34%) who are careful and do not like to take risks; late majority (34%) who are resistant to change and difficult to influence; and laggards (16%) who are adamantly opposed to change. The pilot project team is apt to be composed of innovators and early adopters, whose charge is to convince the early/late majority and laggards to take part in the adoption process.

According to Benson, et al. (2011), the adopters of blended learning can be placed in three categories: technology is all (faculty that use every new technology tool and are driven by technology rather than the

impact on student learning); bolts-on (technology is used to manage student groups or to add to their teaching repertoire but pedagogy is more important; purely pedagogic (pedagogy is developed first and in-class/online materials are chosen based on pedagogy and student learning). Most faculty members belong in the bolts-on category. The purely pedagogic category contains the smallest number (Benson, et al., 2011). Adherents of effective blended learning technology who view technology as a tool for learning and use tools after they have proven to improve learning outcomes are apt to be part of the purely pedagogic category.

The literature regarding blended learning implementation urges institutions to take a "whole curriculum" approach in which courses are evaluated together to determine where e-learning belongs and how much e-learning is appropriate. Other considerations are the availability of staff, schedule and facilities constraints (Davis and Fill, 2007). If an institution focuses on individual courses instead, they may have created a disjointed, unfocused and poor quality curriculum (Husmann & Miller, 2001). Consistency is also important in terms of procedures for blended learning courses, netiquette, the use of email and course announcements, technology snow days (Hitch, 2002) , technology assistance, the frequency and deadlines for discussion posts and how students submit their work online. Consistent procedures are recommended because students' confusion can be reduced if they are enrolled in multiple blended learning courses (Toth, Foulger & Amrein-Beardsley, 2008). Despite this recommendations, one study of 133 faculty members and 33 institutions found that faculty and departments made individual choices of format for their courses (blended, online, onsite) and there were no program or institution-wide requirements for instructional delivery (Oh & Park, 2009).

An important part of blended learning implementation is the assessment of this learning format in terms of actual student learning outcomes. Instructors of each blended learning course must engage in self-reflection after teaching the course in order to make any changes needed to improve learning outcomes. A qualitative study of the work of five blended learning professors in a large Midwestern university indicated that the revision process of blended courses is much more extensive partially due to the necessity to check web links and to keep up with changing technology (King & Arnold, 2012). The revision process may be affected by the attitude of professors towards blended learning. Some may be conservative when they redesign a course because they know that learning outcomes from blended learning courses are evaluated on the same basis as onsite courses (VanDerLinden, 2014).

Blended courses should be evaluated based on multiple methods and should include standards created by the institution to measure the impact of blended learning on administrators and faculty, as well as on students (Merisotis & Phipps, 2000). As of 2003 (Rovai), there was a lack of procedures to evaluate blended learning. Oh and Park's study in 2009 showed that the course evaluation procedures for 33 universities were not developed in an effective manner and results were not available for faculty and students use.

With regard to the specific content used by faculty in blended courses, the Oh and Park study in 2009 found that 64% of the institutions used mostly onsite instruction and placed supplementary instructional materials online. A study of 862 faculty members from 38 colleges and universities (Woods, Baker & Hopper, 2004) indicated that learning management systems were mainly used to post syllabi, send email and post grades. There was little use of interactive technology such as virtual office hours, collecting and returning assignments. Faculty liked the learning management system for organizing their content and to communicate course procedures and materials. However, they were neutral or undecided about the pedagogical and psycho-social benefits of learning management system. Possible reasons for these results may be that faculty were content with onsite instruction and viewed online as a way to support this method of instruction. Faculty did not see any reason to create an online community which may be because they believed it was easier to do so onsite.

However, there are reasons to believe that the use of online technology has been and will be increasing in blended instruction. It is likely that faculty's attitudes towards online assessment and instruction will change as institutions add more support for faculty development in blended learning (Woods, Baker & Hopper, 2004). Klemson & Seong (2013) found that after faculty had taught in the blended learning format for a time, they became less anxious about blended instruction and began to

appreciate the time savings created by online homework, grading, communication, and the ability to easily provide resources to students.

RESULTS AND DISCUSSION

Upon considering the recommendations in the literature for implementation of blended learning at colleges and universities, the process of initiating blended learning at the Midwestern University in this study could be judged as being somewhat effective. Although the implementation process did not follow a formal systematic approach and did not consider the curriculum as a whole, it did follow a certain logical sequence of events. There was a workshop for interested faculty to explain blended learning and its advantages and to give faculty a chance to practice on the features of the learning management system. This workshop was conducted a few months before the rollout of the courses. A month after the blended courses were taught for the first time, a few of the instructors presented an evaluation of their courses in terms of learning outcomes to the rest of the faculty at the institution. A curriculum designer was hired shortly after the presentations. The curriculum designer gives regular instruction of blended/online course design to any faculty who are interested. Also, workshops are offered on a periodic basis to help faculty use the learning management system. A meeting for blended learning faculty to share their experiences and online tools with other faculty and was held during the spring term (about nine months after the first rollout of courses).

However, the university did not decide on one definition of blended learning to follow when developing their courses and there are no guidelines about the courses and types of students who would benefit from blended learning. The Center for Teaching and Learning established formal communication channels to blended learning faculty members, but informal communication between faculty members did not occur on a regular basis during the first rollout of the courses. Success stories from teaching blended courses were not formally shared with other faculty after they were presented one month after the summer session. However, the Center for Teaching and Learning trained a new group of faculty after the pilot group. It is possible that stories of success were shared at that time.

There has been some standardization of blended learning courses because the initial course shell created by the pilot faculty has been copied for use by other faculty members. This follows the "one course, many sections" recommendation from the literature. However, faculty members at the university are free to create their own blended course shell, even if it has already been created by the pilot group.

In terms of support, the institution created many types of help for blended faculty and students. There is a help desk, periodic training sessions and workshops for backwards course design and blended learning instruction, as well as instruction in the features of the learning management system. Faculties were paid monetary incentives to develop blended course and to attend workshops.

The university has traditionally supported curriculum innovation in all of its colleges. This tradition is part of the culture which is necessary for a successful blended learning implementation. The institution followed the recommendations by experts to use a bottoms-up approach to successfully embed blended/online learning into its systems and structures. There was support for the initiative by the President and the Provost. However, the Center for Teaching and Learning was responsible for the implementation of blended and online learning on campus. A team of faculty and staff conducted the January 2014 workshop for a pilot group of faculty. There was no overall vision for the implementation, which may have been helpful for sustaining the initiative. However, the faculty is still in its early stages of incorporating blended learning at the school, so it is too soon to tell if the initiative will be sustained.

A pilot program of interested faculty was recruited for the first blended course offerings. This followed the recommendation from the literature. A pilot group can encourage the rest of the faculty to try the new format and can gradually make blended learning part of the institution's pedagogy. The faculty on the pilot team can be classified as innovators and early adopters per Rogers, Sinhai and Quinlan (1999), adherents to the innovation diffusion theory. They are not afraid to try new technologies and are willing to share their experiences with others. The January 2014 workshop was presented from the purely

pedagogic point of view espoused by Benson, et al., 2011). Technology is viewed as a tool for learning and tools should be used only after they have proven to improve learning outcomes.

The pilot group did not collaborate every 6-8 weeks after they received training and taught their blended courses as per the recommendations from the literature. A few of the group members made a presentation regarding the effectiveness of their blended courses in meeting course learning outcomes a month after the courses were taught. The pilot group met the following spring to share experiences and recommendations for improvement. There is no consistent policy regarding how faculty is to use online technology to support onsite instruction as recommended by Woods, et al. (2004). Additionally, there are no policies as to the course enrollment, student's year in school and learning style which might be the best fit for blended learning (recommend by Parker, 2000).

The university in this study is beginning to develop an assessment process and structure, so there has not been any assessment of the blended format in general. This paper is an attempt to begin the assessment process by using practice-based research to review the institution's efforts in establishing blended learning.

One place to investigate the effectiveness of blended learning implementation efforts is to examine the effectiveness of the workshop that began the initiative. The results of the survey of workshop participants regarding the overall effectiveness of the workshop and its components before blended/online courses were taught (June 2014) and after they taught the courses (August 2014) were compared (see Table 1). A paired samples t-test resulted in only two significant differences at the p=.05 level: pre-sample online quiz (p=.002, df=6, t=-2.121) and D2L competencies (p=.033, df=7, t=2.049). The mean for pre-sample online quiz increased from 3.7780 in June to 4.1429 in August. The mean for D2L competencies decreased from 4.6250 to 4.2500. There was one significant difference at the p=.10 level: D2L online groups (p=.059, df=5, t=1.581). The mean decreased from 4.500 in June to 4.1667 in August.

During the workshop, participants displayed interest in the online quiz capabilities of the learning management system. The sample online quiz completed before the workshop began gave respondents practice in different types of online quiz questions (multiple choice, matching, fill in the blank, etc.). It is possible the workshop participants used the same types of quizzes in their summer courses and realized the usefulness of this experience, which explains the increase in the mean. Only a few of the faculty had experience with tying assessment results with competencies in the learning management (D2L) system before the workshop began but the capability was illustrated and faculty mentioned that they would like to use this function during the workshop. However, the university had not started a formal assessment system at the time of the workshop and faculty was not required to use this capability. Also, it is a time-consuming process. It is probable that most faculty members did not use the D2L competencies in their summer courses, which may explain the decrease in the means from June to August. The mean for the D2L online group function also decreased from before to after the blended/online courses were taught. Faculty seemed interested in using online groups in their courses during the workshop, but possibly did not use them or if they did, the function might not have been easy to use or did not accomplish their objectives for group work.

TABLE 1
ANALYSIS OF MEANS-WORKSHOP EVALUATION
JUNE (BEFORE BLENDED COURSES TAUGHT) VS.
AUGUST (AFTER BLENDED COURSES TAUGHT)

1=Not at all effective, 2=Not effective, 3=Neutral, 4=Somewhat effective, 5=Very effective

Workshop Component	Classification	June Means n=10	August Means n=9	t
Pre Tom Angelo materials	Pre-workshop	3.555	4.166	- .522
Pre sample online quiz	Pre-workshop	3.778	4.000	-2.121[a]
Pre online discussions	Pre-workshop	4.100	4.000	-.261
D2L Online Discussions	D2L (In class)	4.600	4.285	.891
D2L Competencies	D2L (In class)	4.600	4.250	2.049[b]
D2L Rubrics	D2L (In class)	4.500	4.250	1.158
D2L Dropbox	D2L (In class)	4.600	4.285	.679
D2L Online Groups	D2L (In class)	4.600	4.166	1.581[c]
D2L Chat	D2L (In class)	4.500	4.250	.357
D2L Online Quizzes	D2L (In class)	4.500	3.714	1.508
D2L Widgets	D2L (In class)	4.444	4.285	1.000
Online Discussion Rubrics	In class activity	4.100	3.875	.228
PowerPoint Presentation	In class activity	4.500	4.375	-.314
Homework	Application	4.100	4.375	-1.080
Example Instructor Hmwk	Application	3.600	3.428	.000
Example Instructor Syllabus	Application	3.500	3.750	.664
Wohlfarth Netiquette	Resource	3.750	3.800	.000
Wohlfarth Honor Code	Resource	3.625	3.800	.000
Wohlfarth FAQs	Resource	3.750	3.800	.000
Wohlfarth References	Resource	3.750	3.800	.000
Workshop Effectiveness		4.222	4.428	-.548

[a] Significant variance exists ($p<.05$) between Financial Literacy Students and Former Students for this behavior, $p=.002$. [b] Significant variance exists ($p<.05$) between Former Students and Control Group for this behavior, $p=.033$. [c] Significant variance exists ($p<.10$) between Former Students and Control Group for this behavior, $p=.059$.

Table 2 displays the percentage change in the effectiveness means for workshop components and also the ranking of the means before and after the summer courses were taught. Besides the significant changes in the means discussed above, there were relatively large changes in the terms of percentages from June to August for the following workshop components: pre Tom Angelo materials (17.19% increase), the instructor example syllabus (7.14% increase) and faculty homework (6.71% increase). Faculty may have used the Tom Angelo backwards design material to help them design their summer courses, which might explain the large percentage increase in the mean. They may have realized the value of the homework questions in kick-starting the course design for their summer course and used the example instructor syllabus while designing their own syllabus. This may explain the percentage increases in the means.

In terms of ranking of the means, the highest means in June were for D2L items. However, the highest means for August was were for workshop effectiveness and the faculty homework assignment. The example items (instructor homework and syllabus had the lowest means in both June and August. It is entirely possible that the faculty homework assignment was the most important part of the workshop since it was the highest ranked after the summer courses were taught. This homework was part of the

work necessary for each faculty member to design their own summer course. Even though the example instructor syllabus showed one of the larger percentage increases from June to August, it (and the example instructor homework) was ranked last possibly because of the differences between the instructor's course and the courses that the faculty developed and taught.

The mean rating for workshop effectiveness increased 5% (4.222 to 4.4286) and its ranking changed from 4 to 1 from June (before the courses were taught) to August (afterwards). This may be an indication of the success of the workshop overall and also of the effectiveness of the blended design of the workshop itself. It is difficult to know how effective instruction is until it is used in practice.

TABLE 2
PERCENTAGE CHANGE AND RANKINGS OF MEANS-WORKSHOP EVALUATION
JUNE (BEFORE BLENDED COURSES TAUGHT) VS.
AUGUST (AFTER BLENDED COURSES TAUGHT)

Workshop Component	Percentage Change June to August	June Ranking	August Ranking
D2L Online Quizzes	-17.46%	2	10
Pre Tom Angelo materials	17.19%	10	5
D2L Online Groups	-9.42%	1	5
D2L Competencies	-7.61%	1	4
Example Instructor Syllabus	7.14%	11	9
D2L Online Discussions	-6.83%	1	3
D2L Dropbox	-6.83%	1	3
Homework	6.71%	5	2
Pre Sample Online Quiz	5.88%	6	6
D2L Rubrics	-5.56%	2	4
D2L Chat	-5.56%	2	4
Online Discussion Rubric	-5.49%	5	7
Workshop Effectiveness	4.89%	4	1
Wohlfarth Honor Code	4.83%	8	8
Example Instructor Homework	-4.76%	9	11
PPT Presentation	4.17%	4	2
D2L Widgets	-3.56%	3	3
Pre Online Discussions	-2.44%	5	6
Wohlfarth Netiquette	1.33%	7	8
Wohlfarth FAQs	1.33%	7	8
Wohlfarth References	1.33%	7	8

Because there were many components of the workshop and because it was designed in a blended format (some online and some onsite instruction), the components were grouped into five categories and their individual means were average for each category (see Tables 3 and 4). The classifications categories were: pre-workshop, in class activity, in class activity D2L, application and resources. In June, the category that had the highest average mean was inclass-activity-D2L. The average mean of both the in-class activity D2L and in class activity was 4.464, which placed in-class activities as the highest rated category. In August, the category that had the highest average means was in-class activity. The average mean of both in-class activity D2L and in-class activity was 4.174, which again placed the in-class activities category as the highest rated. The in-class activities included both presentation and practice and faculty had a chance to ask questions and receive immediate answers. Faculty was also more comfortable

with this format of instruction, considering that many of them had not taught in the blended/online format. It is possible that the D2L in-class activity was not as highly ranked after the summer courses were taught because the faculty had more experience with the learning management system and did not think the training was as important after the fact.

There were no other changes in the order of the category ratings between June and August. However, all categories had higher means in August compared to June except for the in-class activities (mean decreased from 4.464 to 4.174). Perhaps the application and online resource categories became more important to the participants of their experience in working with them in their blended/online courses.

TABLE 3
CLASSIFICATION OF WORKSHOP COMPONENTS-EVALUATION MEANS-JUNE 2014

1=Not at all effective, 2=Not effective, 3=Neutral, 4=Somewhat effective, 5=Very effective

Workshop Component	Pre-workshop	In-class Activity	In-class Activity D2L	Application	Resource
D2L Dropbox			4.600		
D2L Competencies			4.600		
D2L Online Discussions			4.600		
D2L Online Groups			4.600		
D2L Chat			4.500		
D2L Widgets			4.444		
D2L Online Quizzes			4.500		
D2L Rubrics			4.500		
Wohlfarth Netiquette					3.750
Wohlfarth FAQs					3.750
Wohlfarth References					3.750
Wohlfarth Honor Code					3.625
PPT Presentation		4.200			
Pre Online Discussions	4.100				
Online Discussion Rubric		4.100			
Homework				4.100	
Pre Sample Online Quiz	3.778				
Pre Tom Angelo Materials	3.556				
Example Instructor Homework				3.600	
Example Instructor Syllabus				3.500	
Classification Means	3.811	4.150	4.543	3.733	3.719
Mean of all in-Class activities			4.464		

TABLE 4
CLASSIFICATION OF WORKSHOP COMPONENTS-EVALUATION MEANS-AUGUST 2014

1=Not at all effective, 2=Not effective, 3=Neutral, 4=Somewhat effective, 5=Very effective

Workshop Component	Pre-workshop	In-class Activity	In-class Activity D2L	Application	Resource
D2L Dropbox			4.286		
D2L Competencies			4.250		
D2L Online Discussions			4.286		
D2L Online Groups			4.167		
D2L Chat			4.250		
D2L Widgets			4.286		
D2L Online Quizzes			3.714		
D2L Rubrics			4.250		
Wohlfarth Netiquette					3.800
Wohlfarth FAQs					3.800
Wohlfarth References					3.800
Wohlfarth Honor Code					3.800
PPT Presentation		4.375			
Pre Online Discussions	4.000				
Online Discussion Rubric		3.875			
Homework				4.375	
Pre Sample Online Quiz	4.000				
Pre Tom Angelo Materials	4.167				
Example Instructor Homework				3.429	
Example Instructor Syllabus				3.750	
Classification Means	4.056	4.125	4.186	3.851	3.800
Mean of all in class activities			4.174		

A qualitative analysis was performed of the responses to the open-ended question on the June and August surveys. The question related to the overall effectiveness of the workshop, its strengths and how it could be improved. The comments were analyzed for recurring themes and the number of comments per theme was counted to indicate the importance of the theme to the respondents. The themes include a) the need for hands on practice, b) the need for onsite discussion, c) the learning management system (D2) and technology, d) the need for individualized instruction and e) other comments.

The theme with the most comments in both June and August was D2L and technology. This reflects the faculty concern with technology in blended instruction expressed in the literature. Some faculty wanted to improve their knowledge and expertise in this area and others felt that too much time was spent on D2L because they were already familiar with the software. Faculty believed their efficiency in designing their courses were improved because of the training and support on D2L that they received in the workshop. They also wanted more training time on certain areas of D2L including the online quizzes.

The second most popular theme in both June and August was hands-on practice. Faculty expressed that they needed more time to practice on certain topics related to their courses, and wanted more practice with sample assignments and setup. They were concerned because they wanted to make sure that the quality of their blended/online course was equivalent to that of an on-site course. This was also expressed by the faculty who was quoted in the blended learning literature.

In August, the theme of individualized instruction had as many comments as D2L and technology. Faculty, after having taught a blended/online course during the summer, realized that they had need for

instruction and practice on specific topics which may or not have been emphasized enough in the one-size-fits-all instruction of the January 2014 workshop. The third most popular (June) and fourth most popular (August) theme was the need for more onsite discussion during the workshop. Faculty wanted an open discussion of best practices and wanted to hear ideas, concerns and planning strategies from all members of the workshop.

CONCLUSIONS AND RECOMMENDATIONS

The initiative to incorporate blended and online learning into the curriculum at the small Midwestern University in this study was established in order to compete with larger universities and improve student learning outcomes, as well as to satisfy faculty interest in developing new and improved ways of instruction. The initiative was fully supported by the President and Provost and a bottoms-up, faculty-led approach was used to establish this change (as recommended by the experts). The culture of the university supported innovation and there was a group of faculty members who were interested and involved with making changes to improve student learning outcomes and not afraid of using technology to do so. There was administrative support for these efforts including technical support, faculty incentives to learn and to develop blended/onsite courses, and a user-friendly learning management system.

The first educational effort of the initiative was for the faculty and staff from the Center for Teaching and Learning to conduct a blended/online workshop in January 2014. A pilot group of faculty who were interested in teaching blended and online courses during the first semester of the rollout (Summer 2014) enrolled in the workshop. These faculty were familiar with the learning management system and could be classified and innovators and early adopters per Rogers, Sinhai and Quinlan (1999). The workshop was prepared in a blended format and conducted using a purely pedagogic approach as developed by Benson, et al., 2011. Technology was seen by the workshop participants as a tool for teaching. Online components of the courses would be selected for use if they were proven to improve learning outcomes. Faculty were trained in all parts of the learning management system during the workshop, because many were interested in using the system to do more than posting resources and grades and sending students email.

Overall, the workshop was evaluated by the participants as between somewhat helpful/helpful both before and after the faculty taught the summer blended/online courses. This rating may have been due to the blended format of the workshop, but none of the faculty made this comment in the online surveys. There was no significant difference in the overall ratings before and after the courses were taught. There were significant differences in three of the workshop components in June and August. They were for the pre-sample online quiz (an increase in effectiveness) and the learning management system's competencies and online group functions (a decrease in effectiveness). Perhaps more of the faculty used online quizzes in their summer courses than they used D2L competencies and online groups.

When workshop components were placed in categories and the results examined, there was a difference in the effectiveness means per category from June to August. Faculty valued the applied and online resource categories more in August and the in-class activity categories less. This could signal less reliance by the faculty on instruction regarding how to use D2L online tools and more use of resources related to the content of blended learning courses-possible an increase in comfort with technology.

There are several areas for improvement going forward with the blended/online initiative at this University. An overall strategy and a cohesive approach to implementation of blended/online learning were not used in this initiative. The institution did not develop a blended/online learning vision statement that could unify the faculty using these modes of delivery and no specific definition of blended learning was identified to be used in practice. The decision as to which courses would be taught in blended and online learning modes was made by individual faculty and there is no consistency between the courses themselves in terms of online/onsite procedures, which could be very helpful for students taking more than one faculty's blended course during a semester. A more strategic approach to choosing which courses should be blended and online (such as types of courses, levels of students, and types of student learning styles) might lead to more beneficial learning outcomes.

Some of the pilot faculty endorsed a more individualized approach to learning about technology after the workshop, and future instruction in blended/online and the learning management system has followed that suggestion. Throughout each semester there are separate workshops for faculty covering different features of D2L and separate workshops covering different aspects of backwards curriculum course design (the approach used by the first workshop to design blended and online courses). A second set of faculty members have been trained and are developing and teaching blended and online courses. There was one meeting with the pilot faculty group members and one presentation to share successes and problems. However, there is an absence of regular communication between and among faculty who have taught (and/or are currently teaching) blended and online courses and those who have not yet taught them. As suggested by the experts, regular sharing of experiences and success stories in important to embedding these formats into university's practices and to sustain them going forward.

Future research as to the effectiveness of the effort to incorporate blended and online learning into the University's curriculum will be done as part of the school's assessment program, which is currently in process. The goal of the assessment process is to improve student learning outcomes and the use of blended and online learning has been established per the research as a way to achieve this goal.

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