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# Blended Instructional Practices in Higher Education Institutions

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The purpose of this study was to investigate current practices in blended instruction. In particular, the study explored (1) the types of instructional delivery methods, technologies, and instructional components, (2) the reasons why faculty apply blend instruction, and (3) the advantages and challenges in delivering blended instruction. This study focused on the practices in the Universities that have the extensive doctoral research programs classified by the Carnegie Foundations. The survey was performed with the sample of faculty from 30 universities and the survey data included 133 faculties out of the total 1,000 randomly selected faculty members. Of the 133 responses, 111 (77.7%) participants had certain degree of experience, while 17 faculty (or instructors) (13.3%) did not have any practice with blended instruction. The most common instructional delivery format in the participating universities was blended instruction that added supplementary online instructional components in the class. Online Course Management Systems (CMS) and multimedia presentation tools were common technology for course delivery, and "discussion" was the most general instructional activity for the class. The participating faculty often preferred the blended format since it provides students and faculty with convenience, flexibility, active engagement, efficiency in using resource materials, and a feeling of connection between/among students and instructor. Benefits to the class were availability of more authentic experience and diverse curricular materials, and the instructional format that meets the needs of remediation and enhancement of students. This study addressed not only advantages and challenges of blended instruction, but also suggestions based on the comments by the participating faculty.

*Keywords :* Blen*ded Instruction, Instructional Delivery Format, Online Instruction*

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# Introduction

The development of online instruction improves instructional environments in both education systems and business organizations. Online instruction expands options and possibilities in student learning by providing courses, resources, and performance support systems. However, in spite of many advanced features of the online instructional mode, issues such as low levels of interaction, lack of varied instructional strategies, and poor instructional design are often cited as shortcomings when discussing the effectiveness of online instruction. Responding to these issues, many studies such as Oh, Lim, and French, (2004) and Oh and Albright (2004) have discussed the advantages and disadvantages of the online instructional mode. Having acknowledged the disadvantages, advocates of online instruction have made efforts to overcome them in many ways.

Some have claimed that online instruction restricts active student engagement in learning events unless the student is a self-motivated, active learner. Rovai (2003) claims that online instruction is often found to be "impersonal, superficial, misdirected, and potentially dehumanizing and depressing", inhibiting the pedagogical values of instruction. In addition, other studies (Daniels and Moore, 2000; Ford and Chen, 2000) expressed that online learning environments require students to be strongly motivated and self-directed, and possess strong organizational skills in their learning habits since working in online learning environments is an isolating and independent job.

Considering the fact that sharing feelings, experiences, knowledge, and a sense of belonging (Valejs, 2003) is important in the learning process, online learning environments prevent both learners and instructors from experiencing those sharing opportunities in dynamic communication environments. Therefore, strategies have been suggested to improve online learning environments, and various instructional practices (e.g. blended instruction, hybrid instruction) have been attempted.

According to Murphy (2002, 2003), recently, blended instruction integrating online

and onsite instruction has been recommended as one of the best instructional approaches for use in higher education institutions since it may address the negative aspects of the distance learning environment by including human involvement. According to Marsh II, McFaden and Price (2004), blended instruction allows more options for students and instructors. Instructors can better manage the class by sharing ideas and activities with students. Students can organize their learning better with an instructor's direct guidance, immediate feedback, and direct communication with peers in class, while enjoying self-directed individualized learning environments, reflective discussions, and virtual collaborations in online instruction. Educators expect positive outcomes since pedagogical and methodological concerns about online instruction are addressed in this mode. However, the concept of blended instruction is new, and various definitions of and practices in blended instruction are possible.

Blended instruction is described in many different ways, focusing on instructional delivery formats, instructional tools, and architectures. Yet, the common major elements in the definitions are a combination of classroom and online instruction. According to the literatures (Khine and Lourdusamy, 2003; Marsh, McFadden, & Price, 2004; Rossett, Frazee & Douglis, 2003), blended instruction originally started from the concept of distance education, particularly online instruction; a small portion of classroom. However, in practice, it is commonly found that online instructional components are merged with classroom instruction as an integral part of the classroom instruction. Within the defined combination of classroom and online instruction, many different approaches are found in the use of instructional proportion, technology tools, and instructional strategies. Yet, definitions of blended instruction often focus on one aspect of blended instructional architectures and thus, do not sufficiently explain the phenomenon of blended instruction.

# Theoretical Background

Rovai and Jordan (2004) define blended instruction as "a hybrid of classroom and online learning that includes some of the conveniences of online courses without the complete loss of face-to-face contact." Colis and Moonen (2001) define blended instruction as a condition in which online instruction is incorporated with classroom instruction. In this learning mode, robust instructional components from the two instructional formats complement each learning environment. Online instructional components naturally become a part of classroom instruction in that students can enjoy classroom interaction, flexibility and convenience while taking fully online courses.

Taking the same approach, Singh and Reed (2001) define blended instruction as "a learning program in that more than one delivery mode is being used with the objective of optimizing the learning outcome and cost of program delivery." Blended learning is designed to apply appropriate technologies to classrooms with diverse situations and to create favorable conditions for students to better achieve their learning objectives in the improved learning environments.

Bieslawski and Metcalf (2003, p. 2) define blended instruction as "a blend of instructor-led training with some type of online learning activity" that combines on-site and off-site training. Similarly, Online Encyclopedia describes blended instruction as a combination of instructor-led training and eLearning or a combination of face-to-face and distance learning. The instructional architecture of this format consists of technology-based instructional materials and traditional print materials, and technology-based activities and classroom activities. Technology-based activities include online group/individual activities, structured learning modules, and self-study. Classroom activities include lecture, individual study, and face-to-face individual/ group activities.

While the above definitions focus on instructional delivery formats, others take a broader view, including delivery formats, technologies, teaching strategies, and

pedagogies. Valiathan (2002) defines blended instruction as a combination of different instructional media, designs, and strategies. In this definition, blended instruction can be a mixture of four different components; (a) instructional architectures (receptive instruction and explanatory instruction); (b) varied learning events (self-paced-individual and collaborative-group-based); (c) instructional delivery modes (classroom and online); and (d) instructional materials (non-technology-based and technology-based).

Similarly, Singh and Reed (2001) claim that blended instruction is a combination of different instructional strategies and components that are integrated into course delivery based on instructional needs. In this concept, various instructional attributes are associated with the instructional medium, allowing diverse learning activities and environments. The following combinations of instructional attributes and medium are the examples that can be incorporated in instruction: (a) offline and online learning; (b) self-paced and live collaborative learning; (c) structured and unstructured learning; (d) custom content and off-the shelf content; (e) work and learning; and (f) synchronous physical and online formats and self-paced asynchronous formats.

Furthermore, the Korean Sun Online Education Systems (2006) define blended instruction as a holistic approach that is designed to maximize learning outcomes by integrating online and offline curriculum into educational systems. In blended instruction, learning and teaching activities are more effectively pursued since learning environments are flexible and adjusted based on situations of students and instructors.

According to studies by Marsh II et al., (2004) and Rossett et al., (2003), blended instruction usually describes a combination of learning environments in which major components of the instruction are delivered online with the remainder being face-to-face instruction. Blended instruction includes both online and classroom instructional components, yet it is considered a format for online instruction. Blended instruction should be understood in relation to online instruction, classroom instruction, and interrelationships among these instructional modes.

According to Khine and Lourdusamy (2003), Marsh II et al., (2004), and Rossett et

al., (2003), in the blended instructional format, online instruction usually consists of well-organized learning modules with activities, project-based assessments, and virtual discussions, while classroom events are designed in either a formal or an informal way with topics that can be better handled in a classroom setting. However, as previously mentioned, blended instruction has been interpreted and practiced differently in different instructional settings, and it is unclear how many higher education institutions are defining this concept and using it in this way.

In some cases, blended instruction is composed of more than 50% classroom instruction with less than 50% online instruction ( RIT model), while in other cases, blended instruction is composed of more than 50% online instruction with the remainder being classroom instruction (San Diego State University; University of California, Los Angeles, etc). Yet, regardless of the portion of online and classroom instruction, an instructional practice in blended instruction is "combining online instructional delivery systems with classroom instruction (Osguthorpe and Graham, 2003). Thus, blended instruction has been recommended as one of the best solutions for the shortcomings of online learning environments because it includes human, face-to-face interaction. In particular, blended instruction solves problems such as a lack of human interaction and "procrastination tendency" in asynchronous online instruction. Thus, it can be "a promising approach to maximizing the merits of different delivery media" (Yoon and Lim, 2005).

Blended instruction is applied in different ways in other settings. In business organizations, the implementation of blended instruction emerges from the failure of traditional training. It has often appeared to companies that the training is not effective in improving performance in workplaces. Thus, blended instruction, combining e-learning components with traditional training, was suggested as a means of assisting trainees in attaining necessary skills and knowledge. E-learning components usually consist of EPSS (Electronic Performance Support Systems), KM (Knowledge Management), CBI (computer-based instruction), and synchronous or asynchronous online instruction. This blended approach provides a holistic process

of instructional design, integrating human and technological resources (Bielawski and Metcalf, 2003).

In particular, unique conditions within organizations make blended instruction more valuable. Generally, organizations must continuously and successfully produce items and services; yet they often fail to provide sufficient working conditions for employees; (i.e., conditions providing clear goals and necessary support for performance). It has been claimed by instructors that instructional goals are not accomplished by training only. In most cases, traditional training alone cannot be an effective approach to resolving performance problems. There must be an alternative to cover the defects in traditional training.

Many organizations now take advantage of technology by combining online training and traditional classroom training since the blended approach addresses learners' diverse needs. Parts of the learning process that require direct contact with instructors are handled in classroom situations while the rest is available in an Electronic Support System or e-Learning format (Rowley, Bunker & Cole, 2002).

According to Murphy (2002, 2003), recently, blended instruction integrating online and onsite instruction has been recommended as one of the best instructional approaches for use in higher education institutions since it may address the negative aspects of the distance learning environment by including human involvement. According to Marsh II, McFaden and Price (2004), blended instruction allows more options for students and instructors. Instructors can better manage the class by sharing ideas and activities with students. Students can organize their learning better with an instructor's direct guidance, immediate feedback, and direct communication with peers in class, while enjoying self-directed individualized learning environments, reflective discussions, and virtual collaborations in online instruction. Educators expect positive outcomes since pedagogical and methodological concerns about online instruction are addressed in this mode. However, the concept of blended instruction is new, and various definitions of and practices in blended instruction are possible.

# Research Method

The purpose of this study was to investigate current practices in blended instruction in higher education institutions, particularly focusing on the types, the reasons, and the advantages and challenges of the delivery method. Three research questions were formulated for the study as follows:

1. What types of instructional delivery methods, technologies, and instructional components are currently being used in blended instruction?
2. Why do faculties blend instruction?
3. What are the advantages and challenges in delivering blended instruction?

The target population of this study was a group of faculty members who worked for the doctoral research universities. 133 faculty members from 30 universities participated in this study. The extensive doctoral research universities were taken as a research population for this study since those universities are perceived to be pioneers in the research and practices of distance learning. An online survey questionnaire and informed consent form were developed by the investigator. Four experienced researchers in instructional technology examined the survey instruments to confirm the validity of the questions and reliability of the survey item. The survey instrument was uploaded on the Web for data collection along with the informed consent forms. Email messages describing the purposes and procedures of the study were sent out to about 1,000 faculty members from 30 participating universities to ask their participation in the study. Five (5) reminder messages were sent at 7 day intervals. Responses from the multiple choice questions were entered into SPSS and open-end questions were analyzed by the text analysis method. The results were summarized descriptively in tables and figures. In addition, inferential statistics were used to compare the data by variables such as gender, institutional type, and participants' teaching experience.

# Findings

## Demographic Information

Table 1. Demographic information by university type (n=133)

| University Type | University | | Faculty | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| Public | 22 | 73% | 107 | 80.5% |
| Private | 8 | 27% | 26 | 19.5% |
| Total | 30 | 100% | 133 | 100.0% |

Total 133 faculty members participated in this study. Of the total 133 faculty respondents, 107 respondents (80.5%) were from 22 public universities, and 26 faculty respondents (19.5%) were from eight private universities (see *Table 1*). More faculty members in the public universities participated in this study than faculty in the private universities did. When analyzing the participants' demographic information by gender and position, the returned surveys represented every academic rank and both genders; however, comparing the number of responses, more assistant and full professors than associate professors returned the survey instrument (see *Table 2*).

Of the total 133 respondents, three (3) respondents did not reveal their gender and rank on the returned survey instruments, but they provided university names and their email addresses. Of the total 130 respondents, 66 (50.7%) were male, and 64 (49.3%) were female; 48 (36.8%) were assistant professors; 29 (22.3%) were associate professors; 36 (35.5%) were full professors, and seven (5.4%) were adjunct professors. Of the 48 assistant professors, 20 (15.3%) respondents were male, and 28 (21.5%) were female. Of the 29 associate professors, 16 (12.3%) were male, and 13 (10.0%)

Table 2. Demographic information by gender and rank

| | Gender | | | | Total | |
|---|---|---|---|---|---|---|
| Rank | Male | | Female | | | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Assistant professor | 20 | 15.3% | 28 | 21.5% | 48 | 36.8% |
| Associate professor | 16 | 12.3% | 13 | 10.0% | 29 | 22.3% |
| Full professor | 29 | 22.3% | 17 | 13.2% | 36 | 35.5% |
| Adjunct professor | 1 | 0.8% | 6 | 4.6% | 7 | 5.4% |
| Total | 66 | 50.7% | 64 | 49.3% | 130 | 100% |

N=130 *There are three missing data in gender and rank.

were female. Of the 36 professors, 29 (22.3%) were male, and 17 (13.2%) were female; and of the seven adjunct professors, one (0.8%) was male, and six (4.6%) were female (see *Table 2*).

Even though the participants well represented different perspectives from a variety of universities, the findings and conclusions of this study will have to be limited to the participating universities and departments, since only a small number of email survey recipients participated in this study.

## Data Analysis

### Instructional Delivery Methods

***Instructional delivery formats*:** When examining the responses to question asking about the courses that they have taught or currently teach, the most commonly selected instructional delivery method used by faculty was "face-face-to instruction with supplementary online instructional components (64.4%). The second most commonly selected method was face-to-face instruction only (59.8%), and a combination of classroom instruction with online instruction (31.8%) was ranked

Table 3. Instructional delivery formats

| I currently teach one or more courses in the following formats. (Check all that apply.) (n=132) | Frequency | Percent |
|---|---|---|
| Completely synchronous online instruction | 6 | 4.5% |
| Completely asynchronous online instruction | 14 | 10.6% |
| Combination of synchronous and asynchronous online instruction | 12 | 9.1% |
| Blended instruction in which more than 50% of the instruction is delivered online with the remainder being face-to-face instruction | 16 | 12.1% |
| Blended instruction in which less than 50% of the instruction is delivered online with the remainder being face-to-face instruction. | 26 | 19.7% |
| Face-to-face instruction with supplementary online instructional components | 85 | 64.4% |
| Face-to-face instruction | 79 | 59.8% |
| Others | | |

third. Other instructional delivery methods, such as completely synchronous or asynchronous online were also reported to be used, however, a relatively small number of faculty reported use of these formats. *Table 3* presents a visual representation of responses.

Within the format that the participants perceived as blended instruction, a number of variations in practices were reported by the faculty participants; practices in blended instruction varied depending on the nature of courses and university policies. Following are some of the comments that were provided by the faculty respondents;

- We use face-to-face instruction with supplementary online instructional components. We are training teachers, who will work face to face with their students. It is essential that we serve as models for our students; thus, face to face instruction is considered necessary.

- I teach a course on statistics that is linked to a concurrent course in comparative politics. The lessons in stats class use the substance of comparative politics class, and the comparative politics class uses statistics (first graphs, later regression) as they are taught in stats. The comparative class is about half on-line instruction; the stats class uses computers for in-class instruction and the web for many home works.
- Although seminars and methods classes use online supplemental material, it is mostly assignments, either explained online or required to be submitted on line. On the other hand, when I have taught our technology class, about 90% was online. Yes, it depends on the course. Like I said above, my graduate seminar class is largely online. My other classes are mainly online supplements.
- One course was entirely on-line, but all participants were also enrolled in a course that was about 40% on-line; other courses were 80% face-to-face/20% on-line; another course used on-line instruction ONLY for make-up
- Course requirements include in class activities as well as on line activities. Students are expected to participate in on line work and communication.
- Hybrid courses at the University combine traditional classroom instruction with a significant amount (over 50%) of instruction delivered through educational technology. Hybrid courses meet approximately half of the time in a traditional face-to-face classroom environment with the remainder of the course presentation, interaction, activities and exercises delivered through various electronic means (online, WebCT, and/or video formats). Although the seat time requirements are less than a traditional class, students may expect to spend at least as much time engaged in course activities as in a traditional class.

**T*echnologies in Blended Instruction*:** In order to identify the technology tools that are currently being used for blended course delivery, responses to the items regarding the instructional tools. Based on the analysis of instructional tools used in online instruction, course management systems (CMS),

Table 4. Technology tools used in blended courses (N=128)

| Online Instructional Tool | Frequency | Percent | Classroom Tool | Frequency | Percent |
|---|---|---|---|---|---|
| Email | 117 | 91.4% | Multimedia presentation materials | 95 | 72.5% |
| Online course management systems | 96 | 75.% | TV/video tapes | 81 | 62.8% |
| Online resources (web resources) | 87 | 68% | CD-Rom based instructional materials | 37 | 28.2% |
| Multimedia presentation applications (PowerPoint) | 74 | 57.8% | Listserv | 22 | 16.8% |
| Online grade books | 59 | 46.1% | Electronic white board | 17 | 13.1% |
| Listserv | 50 | 39.1% | I do not use technology in my classroom. | 14 | 10.7% |
| Asynchronous discussion forums | 40 | 31.3% | | | |
| Streaming videos | 28 | 21.9% | | | |
| Streaming audios | 17 | 13.3% | | | |
| Synchronous conferencing tools | 16 | 12.5% | | | |
| Electronic white board | 11 | 8.6% | | | |
| Learning object libraries | 1 | 0.8% | | | |

* Q7. What tools and activities do you typically use in the online components of your instruction?

* Q8. What tools and activities do you typically use in the face-to-face components of your instruction?

presentation tools, and email were the most commonly used technology tools incorporated into online instruction; (a) 75.6% of the faculty respondents reported to use CMS; (b) 57.8% of the faculty respondents reported using online resources and multimedia presentation tools such as PowerPoint; and (c) 91.4% faculty respondents reported use of email to communicate with students. However, high-end technologies such as streaming videos or audios and synchronous communications tools were less frequently incorporated into online instruction (13.3%) (see Table 4).

For classroom instructional tools, multimedia presentation materials using PowerPoint (72.5%) were reported to be commonly incorporated into classroom instruction and online instruction. In addition, TV and video tapes (62.8%) were also widely integrated into the curriculum as popular classroom instructional media. While most faculties reported use of technology in their instruction in some way, 14 faculties (10.7%) reported that they never used technologies in their classroom at all. Detailed information regarding the use of technologies in online and classroom courses is presented in *Table 4*.

***Instructional Activities in Blended Instruction*:** In order to identify instructional components that are currently being used in blended instruction, responses to the instructional activities were analyzed. According to the data analysis (see *Table5)*, most respondents posted course syllabi, schedules, instructional materials (71.7%), announcements, and assignments (68.8%) to the course Website in CMS or personal websites so that the students could reach them at any time. In online learning environments, the faculty frequently adopted activities such as online discussions (61.7%), individual work (57.0%), and group work (49.7%) that could be handled online, while lecture (37.5%), students' presentations (36.7%) and assessments (26%) (e.g. quiz or test) were less frequently adopted as online instructional activities. Interestingly, self-paced learning modules (20.3%) were not applied as online instructional components even though the literature emphasizes the use of self-paced learning modules as an important instructional element.

Table 5. Instructional components in online and classroom instruction (N=128)

| Online Activities | | | Classroom Activities | | |
|---|---|---|---|---|---|
| | Frequency | Percent | | Frequency | Percent |
| CMS (uploading course syllabus, schedule, | 91 | 71.1% | Discussion | 117 | 69.3% |
| CMS (posting assignments, announcement ) | 88 | 68.8% | Lecture | 114 | 87.7% |
| Discussion | 79 | 61.7% | Student presentations | 102 | 77.9% |
| Individual work | 73 | 57.0% | Group Work | 95 | 72.5% |
| Group work | 63 | 49.6% | Individual work | 82 | 63.6% |
| Lecture | 48 | 37.5% | CMS(posting assignments, announcement) | 79 | 60.8% |
| Student presentations | 47 | 36.7% | CMS (uploading course syllabus, schedules, materials) | 75 | 57.3% |
| Test/assessment | 34 | 26.6% | Test/assessment | 70 | 53.4% |
| Simulations | 33 | 25.8% | Guest speaker | 68 | 52.3% |
| Self-paced learning modules | 26 | 20.3% | Simulations | 54 | 41.2% |
| Online review sessions | 15 | 11.0% | Review sessions | 48 | 36.6% |
| Online practice sessions (items) | 13 | 10.2% | Consultation sessions/office hours | 32 | 24.4% |
| Consultation sessions/virtual office hours | 1 | 0.8% | Practice session | 22 | 16.8% |
| | | | Field trip | 19 | 14.7% |
| | | | Self-paced learning modules | 15 | 11.5% |

* Q7 (B) What tools and activities do you typically use in the online components of your instruction?

* Q8 (B) What tools and activities do you typically use in the face-to-face components of your instruction?

**The Reasons Why Faculty Choose to Deliver Blended Instruction**

According to the data (see *Table 6*), the most common reasons for using blended instruction were;

(1) To improve course quality by employing the blended instructional format for

Table 6. Reasons of adopting a blended instructional format

| Item | Frequency (N=100) | Percentage |
|---|---|---|
| To improve course quality | 73 | 73% |
| To Include best features of both online and classroom instruction | 68 | 68% |
| Blended learning environments provide students with more flexibility and options in learning activities than online instruction alone. | 63 | 63% |
| To increase student learning outcomes | 61 | 61% |
| It is more effective than classroom instruction alone. | 61 | 61% |
| To accommodate students with diverse learning styles | 60 | 60% |
| It is more convenient for me to teach courses in a blended method since I can better manage my courses and my time. | 59 | 59% |
| To increase interaction with students and student engagement | 57 | 57% |
| Blended classes are more beneficial for students. | 51 | 51% |
| It is more effective than online instruction alone. | 49 | 49% |
| To cover topics that can not be covered in online learning environments | 28 | 28% |
| To keep up with current trends in higher education | 27 | 27% |
| To overcome limitations that I experienced from online instruction | 24 | 24% |
| I feel pressure from my university to participate in blended instruction. | 14 | 14% |

*Q13 (B): What are the main reasons that you teach blended courses?

their course delivery.

(2) To provide students with more flexibility and options in order to enhance student learning outcomes.
(3) To better accommodate students with diverse needs and learning styles.
(4) To include best features of both online and classroom instruction.
(5) Because faculty can better manage their courses and time in a blended format than they did in classroom instruction only.
(6) Because it is more effective than online instruction alone.
(7) Because it is more effective than classroom instruction alone.

Based on the extra comments by the faculty who had experience with blended instruction, this group often preferred the format since it provides students and faculty with convenience, flexibility, active engagement, efficiency in using resource materials, and a feeling of connection between/among students and instructor.

**Advantages and challenges in delivering blended courses**

***Advantages of Blended Instruction*:** Advantages of blended instruction were discussed by the faculty from three different perspectives, institution, learning, and instruction. From an institutional perspective, the university did not need to be concerned about constructing new buildings. They could maximize revenue from existing assets when increasing the number of blended courses. From a student perspective, the blended course format provided students with more options for their learning modalities. From an instructional perspective, (a) information related to the course is current and accessible so that student can have more flexibility and enjoy various teaching resources available on the course website; (b) instruction provides optional learning methods for students; (c) some shy students can participate in the class more readily; (d) students still feel like they have a "connection" to the professor because of the face-to-face instruction; (e) blended instruction provides students with opportunities to learn in a social learning environment but also with opportunities for

self-paced and student directed learning; (f) multiple methods are more effective than a single method; (g) students have convenient access to course materials and it is easy for them to see what was covered and when; and (h) more authentic experiences, civility, and better (deeper) communications are available for students.

In addition, the advantages can be more clearly explained by positions such as instructors, students, and instruction. For instructors, (1) blended instruction provides numerous tools to utilize in the instruction process and for students; (2) it is easier for instructors to administrate their courses, since better course building opportunities are provided; (3) instructors do not have to teach students everything, since the students are more responsible for their learning***;*** and (4) instructors can provide a better course with less effort.

Advantages to students were seen by faculty as (1) convenient access to

course material and course calendar to identify topics covered and when they are to be covered; (2) learning environments for better learning outcomes, better skill development, and ability to repeat the experience; (3) opportunities to keep up with the course when they are sick or have other face-to-face meeting conflicts; and (4) different learning methods.

Advantages to the instructional process were perceived by this respondent to be (1) availability of more authentic experience; (2) availability of much more diverse curricular materials; and (3) an instructional format that meets both remediation and enhancement needs of students.

***Challenges of Delivering Blended Instruction*****:** The respondents also expressed apprehension and disadvantages of the instructional format. They perceived that the effectiveness of using online instructional materials varies tremendously, depending on the faculty member's ability to use technology and students' attitudes; technology does not make a better teacher in any case. In particular, one of the faculty respondents expressed concerns that hybrid and fully online instruction would lower the quality of instruction, since teaching hours have to equate with contact hours

established by Carnegie standards for student credit hours.

Overall, the disadvantages revealed in this study were consistent with the problems that have often been addressed in the literature dealing with challenges for faculty when pursing new instructional methods that require adopting technology. The comments from the several participating faculty are categorized into four areas such as (1) faculty workload and a lack of time, (2) lack of technology skills and technical problems, (3) student knowledge of and access to technology, and (4) instructional problems. Detailed information regarding these areas is as follows;

✧ **Faculty Workload and a Lack of Time**

- When faculty learns a new system to use and the next semester there is another new one to learn.
- Online instruction adds workload in developing course websites, participating in online discussion forums, managing listserv, answering e-mails, etc.,
- For instructors, too much extra time is needed to handle/observe 'class dynamics. No matter what the instructor says (or includes in syllabus) to the students regarding the time the instructor will review and answer their questions, students expect that the instructor will answer all their online questions immediately.

✧ **Lack of Technology Skills and Technical Problems**

- Lack of expertise and technical difficulties for faculty dealing with online course management systems, computer problems, and a lack of sufficient instructions in the CMS, and/or constantly changing instruction were identified as problems.
- Those students who do not understand the technology or do not feel comfortable with the technology can get left behind, if these problems are not caught. Then, an extra teaching component comes into play- teaching the technology, which distracts from teaching course content.
- Students have different technology platforms at home which contribute to access problems. They also have differing technological capabilities.

- Serious problems in using library resources because of restrictive copyright laws that apply to digital copies and not print ones sometimes emerge.

✧ **Student Knowledge of and Access to Technology**

- Some faculty respondents indicated that students with differing technological access make interacting with and within the class difficult. For example, if students do not have a personal computer, they may have difficulty completing assignments, as easily as those who have a personal laptop.

✧ **Instructional Problems**

- It is hard to build a sense of community and to design learning activities that require students to collaborate.
- It can sometimes be distracting if the lesson is not well planned and structured; however, technological resources are not 100% reliable. Therefore, it takes longer to prepare a lesson and use these resources in class.
- Students don't always communicate well via email; if they miss the class meeting, they may not be informed about the course requirements.
- A faculty member commented that it would be disadvantageous to not have a balance because personal contact is also very important to students. He/she uses the online components to prepare them for asking the questions. The face to face sessions afford them personal interactions that are needed.
- Many students do not take online instruction as seriously as classroom instruction.
- It is more difficult to evaluate students when you don't really "get to know" them because of the limited face-to-face interactions.

## Discussions & Conclusions

Data indicate that blended instruction has been adopted by many of the

participating universities. The most common format for blended instruction in the universities surveyed was blended instruction that adds online instructional components to classroom instruction. Within this format, Online Course Management Systems (CMS) and multimedia presentation tools were the most common technology for course delivery, and "discussion" was the most common instructional activity.

However, within the participating universities, there appeared to be a great deal of experimentation in the use of mixed media and activities. Instructional approaches such as: proportion of each instructional modality; use of technology and teaching strategies based on course characteristics; instructional needs; instructors' individual choices; and, institutional participating institutions were diverse in both the extent to which online and classroom methodologies were employed and in what ways they were employed.

The most common reason given for use of blended instruction was convenience of the faculty member and students. The challenges to faculty who are involved in blended instruction are (1) the extra workloads, (2) lack of technology skills and technical problems, (3) students knowledge and access to technology, and (4) instructional problems. Current blended instructional practices found in this study can be depicted as below.

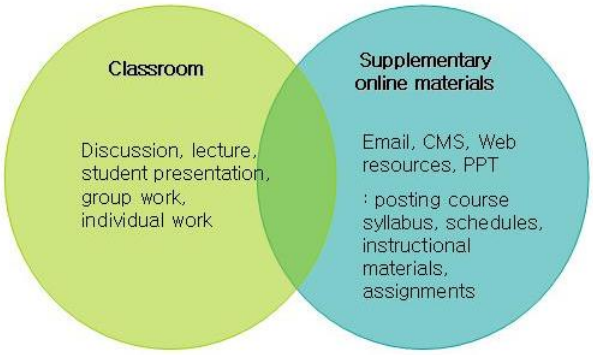


Figure 1. Components of blended instruction

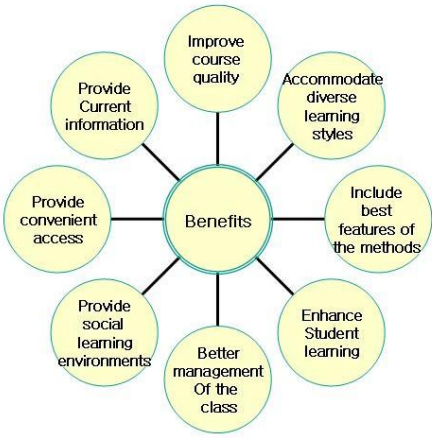


Figure 2. Benefits of blended instruction


Figure 3. Challenges of blended instruction

The practices in and effectiveness of blended instruction were different based on instructional situations and institutional policies. While certain institutions required faculty to employ online tools as a supplement to classroom instruction, other institutions were concerned about the quality of instruction when replacing classroom instruction with online instruction. In most cases, the decision to adopt different instructional formats was made by department or faculty rather than institution. However, institutional support in pursuing diverse instructional delivery formats was important in creating successful learning environments. One of the suggestions made by a participating respondent makes sense; he suggested using a course management system or technology provided by the university rather than using a personal website so that faculty can get help at any time. Many other faculty respondents also provided valuable suggestions to be considered when developing and delivering blended instructional methods;

- Seek out others who have used technology tools to their full advantage and learn from them. Most of them are willing to share their knowledge.
- Get a good mentor to walk you through your first course-or team teach your first

course.

- Online websites, videos, and PowerPoint make it much easier to teach a class and to have the most up-to-date information in class and available for students....if students miss class they can get info from the sites we used for the lecture.
- "It is necessary to achieve an appropriate balance between online and face-to-face instruction. Too much online instruction can make it difficult to cultivate positive and open relationships with students."
- Online chats work well when you have a topic that revolves around readings. I like using focus topics for online chats and then I have only so many participate in each chat. That way they and I can keep up. I break up my students into groups and have them work as a group before posting to the total course forum. I also develop the Blackboard site completely with all the materials etc., so that folks who have variable schedules can work ahead if needed.
- Try to get student feedback about the usefulness of an online component. Allow for student input in the process.
- Be prepared with alternatives, prepare students with proper conceptual frames and direction.
- Set it up well initially so you don't have to redo it later.
- Provide orientation to the technology at start of every course.
- Go slowly- try one thing at a time- get feedback from students.
- Make sure you have someone you can fall back on when you have difficulties with constructing websites and using technology; don't wait until you've exhausted every option including exhausting yourself!
- Know well the technological resources available, at least those that seem to be useful for the particular class. Plan the lesson considering the possible uses of the technology. Allow extra time for both class preparation and class presentation.

According to the faculty's comments, it appears that technical capabilities play a very important role in blended instruction. It would appear that students have to have

a fully equipped computer with necessary software and a high speed internet connection. A help desk or help line should be available to provide technical and administrative support as well. In order to increase students' access to necessary classroom technologies, universities have to actively operate facilities such as computer labs and instructional service organizations. The computer labs on campus should be equipped with necessary hardware and software and have hours of operation that accommodate on and off campus students. In some cases, the equipment used for classroom purposes probably needs to be available for students to check out as well.

Blended instruction is implemented in many diverse ways, but it is still in the early stages of adoption. At the present time, the emphasis of blended instruction is on instructional delivery format itself and therefore activities using a variety of instructional media within the format are minimal. Uploading syllabi, making lecture notes available online, and communicating with students are the most popular ways of using blended instruction. More sophisticated technologies are not yet fully utilized in blended instruction, yet, as concluded, there is currently a great deal of experimentation in the use of mixed media. Based on the findings of this study, in the future a combination of instructional activities utilizing multiple media within the delivery format is likely to be a common form of blended instruction and blended instruction will be an important component of higher education institutions.

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