

ADDING A NEW DIMENSION TO EDUCATION: STUDENTS' PERCEPTIONS TOWARD HYBRID/BLENDED COURSE DELIVERY

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ABSTRACT

Hybrid or blended learning combines face-to-face classroom instruction and distance learning techniques. Advantages include flexibility and increased interaction for students, and higher retention and decreased costs for educational institutions. This study surveyed a sample population of Information Systems upper division students to determine their satisfaction/acceptance with various attributes and aspects of the blended IT classes in which they were enrolled. In general, satisfaction/acceptance levels were high for all respondents, with all survey items scoring above 4 on a 1 to 5 Likert scale, with five being strongly agree. The responses were analyzed and no significant differences were found for student age and college status. However, significant differences were found for gender. Females significantly showed greater satisfaction/acceptance toward blended courses. Implications for the findings are discussed. Recommendations for further research are made

Keywords: Hybrid learning, blended learning, Information Technology (IT) courses, instructional methods

INTRODUCTION

Educators are continually seeking better and more effective means to facilitate and deliver quality learning experiences in higher education. One recent innovation is to combine delivery approaches, including face-to-face and Internet based class activities. We refer to this approach as hybrid or blended learning, and it is becoming increasingly popular in higher education settings [17]. The terms hybrid learning and blended learning are often used interchangeably, however most scholars prefer using the term blended learning for this type of instructional delivery system because different modes of instruction are mixed together [4, 11].

There are many definitions for hybrid/blended learning. Much of the literature [2, 5, 10, 12, 13, 14, 15 16, 17] refers to blended learning as the combination of face-to-face classroom instruction

and other distance learning techniques, including e-learning and self-paced learning. A more comprehensive definition describes blended learning as activities [1]:

1. To combine or mix modes of web-based technology such as the use of a live virtual classroom self-paced instruction, collaborative learning, and streaming video, audio, and text to accomplish an educational goal.
2. To combine various pedagogical approaches such as constructivism, behaviorism, and cognitivism to produce optimal learning outcomes.
3. To combine any form of instructional technology with face-to-face instructor-led training.
4. To mix or combine instructional technology with actual job tasks.

Oliver & Trigwell [10] categorized blended learning as:

1. Mixing E-learning with Traditional Learning
2. Mixing Online Learning with Face-to-Face
3. Mixing Media
4. Mixed Contexts
5. Mixing Theories of Learning
6. Mixed Learning Objectives
7. Mixed Pedagogics

A number of studies have reported several advantages of blended learning, including: convenience; increased interaction; flexibility; increased learning; higher retention; reduced seat time; and decreased costs [3, 17]. Elearnspace [2] states that blended learning takes the best of face-to-face learning and e-learning and creates an improved learning experience for the student.

Garnham and Kaleta [3] state hybrid courses move a significant portion of the learning activities online, and time traditionally spent in the classroom is reduced but not eliminated. The goal of hybrid courses is to join the best features of in-class teaching with the best features of online learning to promote

an active and independent learning experience for the student. To be successful, blended learning must be structured so there is a clear balance of activities between face-to-face and online learning [11]. Furthermore, blended learning must focus on a critical variable – the student [5].

THE RESEARCH STUDY

The purpose of this study is to examine students' perceptions toward blended courses offered in an IT program. All student respondents were enrolled in one or more blended learning courses. Three research questions are examined:

RQ1: Do students' perceptions toward the blended learning vary significantly based on age?

RQ2: Do students' perceptions toward the blended learning vary significantly based on gender?

RQ3: Do students' perceptions toward the blended learning vary significantly based on college status?

Significance of the Study

Higher institutions of learning are increasingly offering blended courses. As a result, it is imperative to investigate students' perceptions toward a blended learning environment. Students' perceptions may reveal important information about how to improve the quality of instruction in blended learning environments. Students' perceptions may also assist in improving the design of the blended learning. Revealing information about students' age, gender, and college status as they relate to their perception toward the blended learning may also assist in improving the quality of instruction and the design of blended learning. Previous studies in the area of e-learning in general agree with the above statements [5, 6, 7, 8, 9].

The Setting

This study took place in an urban university in the Midwest, USA. The participants of the study were enrolled in three different blended Information Technology/Information Systems courses taught by one instructor. All courses followed the same instructional delivery model for blended learning known as Learner-Centered Model for Blended Learning [4]. The model attempts to balance the activities between face-to-face and online learning and, meanwhile, securing the learning through constructivism learning theory. The model describes the development of collaborative learning activities

for a blended course as three functions: 1) the design of learning activities; 2) learning assessment; and 3) the role of the instructor.

The design of activities for both face-to-face and online learning includes presentation of real world examples using primary source of data; exploration; problem solving; self-reflection, inclusion of learners' own previous experiences in solving problems, and applying scaffolding that can be used to make learners think above and beyond what they normally know. Furthermore, collaboration among learners takes place by expression of ideas, viewpoints, and/or approaches based on learners' previous knowledge and experiences. New knowledge can be constructed and negotiated by multiple perspectives of ideas, viewpoints, and approaches.

Learning assessment is achieved through instructor assessment, collaborative assessment (learners in team), and self-assessment (individual learner). The graded assignments/activities for these blended courses were divided roughly equally between face-to-face and online learning. The face-to-face portion of each course met in the classroom once a week for 3 hours and 15 minutes. The rest of the course was conducted online using a course management system.

The role of the instructor is coaching, guiding, mentoring, acknowledging, providing feedback, communicating, organizing, and assessing student learning. The activities for the face-to-face portion of the blended learning generally included: 1) weekly min-lectures and discussion activities; 2) computer laboratory activities; 3) presentation activities (individual and team); and 4) assessment and feedback. The activities for the online portion of the blended learning generally included: 1) weekly individual and collaborative assignment/activities; 2) reports; and 3) assessment and feedback.

METHODOLOGY

Instrument

An eighteen-item, five-point Likert scale questionnaire was developed to measure students' perceptions toward the blended courses that incorporated the Learner-Centered Model for Blended Learning [4]. The scale's descriptors were: strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, and strongly disagree = 1. The items of the instrument represented the elements of the blended learning model. They are as follows:

1. I liked having part of the course online and part of it in the classroom
2. This blended/hybrid course allowed for more flexibility
3. I liked carrying the learning from the face-to-face into the online portion of the course
4. I liked the fact that the amount of seat time (in class face-to-face) was reduced
5. I liked the idea that the course outlook changes in a way that there is less lecture and more activities both face-to-face and online
6. I knew what was expected of me for both face-to-face and online portions of the course, i.e., participation, individual and group assignments/activities, etc.
7. I felt at ease when interacting with other colleagues both in class and online
8. This blended/hybrid course seems to go smoother
9. I liked the various individual and group assignments/activities for both the face-to-face and online portion of the course
10. I felt at ease expressing my thoughts
11. I liked the various presentations of ideas from all my fellow students
12. The multiple perspectives expressed by all students in each assignment/activity contributed to my learning
13. The assignments/activities in this blended/hybrid course enhanced my ability to understand and evaluate viewpoints
14. The assignments/activities in this blended/hybrid course encouraged me to enhance my skills as a team member
15. I liked the emphasis the course made on student interaction
16. The hybrid course made me feel more involved with the class
17. I liked when I was given the opportunity to relate my own experiences to the topics covered throughout the course
18. Overall this hybrid course contributed to my learning

The instrument's content validity was determined by a panel of experts consisting of 3 university professors. The reliability of the instrument ($\alpha = .97$) was obtained using 19 IT students from a blended learning course that incorporated the Learner-Centered Model for Blended Learning [4]. This sample was independent of the sample used for the present study.

Procedure

The instrument was administered to 81 students enrolled in three different blended courses. The courses were in the areas of IT research, human/computer interaction, and project management. Permission to administer the instrument to the subjects was sought and granted from the institution where this study took place. The subjects were informed that their participation in the study was voluntary. All participants were 18 years or older. The subjects were guaranteed anonymity with regard to the publication of the results. Of the 81 responses, five were eliminated because of incomplete or missing data. Therefore, the final total responses were from 76 subjects.

Data Analyses

Collected data were analyzed through a popular statistical analysis package. Descriptive analyses were used to analyze subjects' characteristics. ANOVA was conducted to answer the research questions. ANOVA uses the F statistic to test the statistical significance of the differences between/among the means. Alpha of .05 was chosen as the predetermined level of significance.

STUDY RESULTS

Table 1 shows the aggregate response means and standard deviation for each item on the questionnaire. As can be seen, all of the items had a mean above 4, indicating that respondents were generally favorable toward the blended learning approach.

The results of ANOVA for age ($F_{3, 72} = 1.497$, Sig. = .223) and college status ($F_{2, 73} = .327$, Sig. = .722) did not yield significant differences. The demographics for age were as follows: Below 20 (N = 23, 30%), 20 – 30 (N = 28, 37%), 31 – 40 (N = 11, 15%), and Above 40 (N = 14, 18%). The demographics for college status were: sophomore (N = 9, 12%), junior (N = 21, 28%), and senior (N = 76, N=60%).

Results of ANOVA for gender yielded a significant difference ($F_{1, 74} = 7.395$, Sig. = .008*). Female subjects generally reported higher satisfaction/acceptance toward the blended learning than male subjects did. The demographics for gender were male (N = 44, 58%, Mean = 4.2285, SD = .44464) and female (N = 32, 42%, Mean = 4.50, SD = .408).

A further ANOVA for gender was conducted for each item of the instrument separately to identify which items yielded significant differences. Of the

eighteen items, females significantly reported higher satisfaction/acceptance for 7 items - items # 2 (Sig. = 0.037), item #5 (Sig. = 0.028), item #7 (Sig. = 0.042), item #8 (Sig. = 0.000), item #9 (Sig. = 0.014), item #10 (Sig. = 0.003), and item #18 (Sig. = 0.001).

Table 1: Aggregate questionnaire responses

ITEMS	N	MIN	MAX	Mean	SD
#1	76	3	5	4.57	.550
#2	76	2	5	4.53	.577
#3	76	2	5	4.24	.814
#4	76	2	5	4.43	.772
#5	76	2	5	4.26	.700
#6	76	3	5	4.47	.621
#7	76	3	5	4.36	.647
#8	76	2	5	4.26	.789
#9	76	2	5	4.12	.783
#10	76	2	5	4.36	.687
#11	76	3	5	4.42	.595
#12	76	3	5	4.33	.681
#13	76	3	5	4.30	.693
#14	76	2	5	4.16	.834
#15	76	3	5	4.33	.719
#16	76	2	5	4.13	.854
#17	76	3	5	4.34	.722
#18	76	4	5	4.57	.499

DISCUSSION

Results of this study show that students agree that blended/hybrid courses provide a stimulating and satisfying learning environment. On a Likert scale of 1 to 5 (with five being strongly agree), all items' means were greater than four. This satisfaction/acceptance is encouraging to both instructors developing new blended courses and students deciding to try a blended course for the first time. One limitation in this study is that all students were registered in courses taught by the same instructor, which could enter a bias into the outcomes. The instructor may not present what could be thought of as an "average" experience for the students, either because of extraordinary commitment to developing and delivering blended courses or because of extraordinary teaching skills. Replication of the study with different instructor populations will help to mitigate this limitation.

Overall significant differences were found gender. Females reported higher satisfaction/acceptance toward the blended learning courses than males did. Furthermore, of the eighteen items, females significantly reported higher satisfaction/acceptance for 7 items:

- Item #2 - This blended/hybrid course allowed for more flexibility
- Item #5 - I liked the idea that the course outlook changes in a way that there is less lecture and more activities both face-to-face and online
- Item #7 - I felt at ease when interacting with other colleagues both in class and online
- Item #8 - This blended/hybrid course seems go smoother
- Item #9 - I liked the various individual and group assignments/activities for both the face-to-face and online portion of the course
- Item # 10 - I felt at ease expressing my thoughts
- Item #18 - Overall this hybrid course contributed to my learning

While these items showed to be statistically significant, it is difficult to make general observations from these differences. An overall observation could be that females feel slightly more comfortable in the blended environment. However, it should be noted that male students indicated a high level of satisfaction/acceptance with blended courses as well.

Because the study sample population was from Information Technology courses, an underlying finding could be that female students will feel successful in the blended class setting, and this could be used as a strategy to attract more female students into the IT professional courses. With the reduction of traditional lectures and emphasis on computer interactive team and individual assignments/activities, female students may feel more secure and comfortable in this environment.

It should be noted there are unique challenges in the development and delivery of blended courses, course quality, instructor commitment, and institutional support all contribute to a successful experience for the student. It is clear from the high satisfaction/acceptance levels for all respondents in this study that the course and program were well structured and delivered. As with most instructional activities, the better planned and delivered, the better the experience for students.

This study should be replicated with a larger and more diverse population to determine whether the findings are group and instructor specific, or if they represent a general student experience with blended learning programs.

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