THE EFFECTS OF COURSE DELIVERY MODALITY ON STUDENT SATISFACTION AND RETENTION AND GPA IN ON-SITE VS. HYBRID COURSES

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ABSTRACT

This research project examines the relationship between modality of course delivery and the level of student GPA, satisfaction and retention achieved for students attending either traditional On-site or Hybrid (partial Online and partial On-site) delivery modality university courses. The research project incorporates data from 110 courses and 164 students. The results, indicate that there is not a statistically significant difference, between the levels of student satisfaction, student retention or grade point average between students taking classes in the traditional on-site modality vs. those attending class via the hybrid modality.

Keywords: Hybrid courses, distance learning, online courses

INTRODUCTION

Online education has been gaining momentum in today's educational institutions. With recent technological advances in the worldwide web, a student is no longer required to reside in the same place as his or her college. These technological advances have sparked an increasing number of educational institutions to offer distant learning programs in both the U.S. and internationally. According to the National Center of Educational Statistics, 44% of higher education institutions in the U.S. now offer distant learning programs (Bartley & Golek, 2004).

Why has distance learning exploded so rapidly in the last decade across the U.S.? Increasing trends are showing that students are no longer allowing cultural, geographic, and socioeconomic boundaries to prevent them from pursuing higher education. Although online education is growing, many questions are surfacing around the effectiveness of this type of education. Arbaugh (2000) supports this position making the point that our knowledge of what makes online courses effective learning experiences is limited.

Purpose

There are a number of commonly employed measures of program success in education. Among these, student satisfaction, student retention and student grade point average (GPA) are among the more frequently employed. The purpose of this study was to determine the effect of the modality of course delivery, whether traditional on-site or hybrid, on student satisfaction, student retention and student grade point average. These three factors are among the major issues concerning higher education today as the environment becomes increasingly competitive. Central among these issues is student retention.

Modalities:

- **On-site: the traditional face-to-face classroom environment with student and faculty in the same room. Students meet on-site each week and engage in interactive instruction as well as possibly meeting weekly in smaller learning teams outside the university classroom to work on group projects.**
- **Hybrid: a combination of on traditional on-site campus and online instruction that is structured for students that require flexible schedules. A student who enrolls in a hybrid course attends the first 4 hours and last 4 hours of class in traditional face-to-face class sessions. The rest of the classroom sessions are held entirely online. It should be noted that other than the desire for a more flexible schedule the overall demographics of students taking hybrid courses is the same as those of students attending on-site classes at the university being studied. Prior studies at the university have established that there is no demographic difference between students electing to enroll in the different modalities in terms of average age, educational history, or family status . (Carmel, 2006)**

REVIEW OF LITERATURE

Student Satisfaction

In regard to student satisfaction, choice seems to play an important role in how individual students determine if they are satisfied. As adult learners, it is important for the university to treat its' students with respect and to acknowledge the accomplishments achieved in their current careers. Yatrakis (2002) makes the point that the more time students spend interacting with classmates, the higher the satisfaction level as well as the retention level of information. Yatrakis (2002) also observed that student dissatisfaction does not automatically mean drop-off or withdrawal from the program.

Haythornthwaite (2000), found that an on-site "boot camp" preceding online courses can help build a sense of community among distance learning students and enhance their satisfaction and learning outcomes. This is supported by Gold (2004) who found that increased levels of software mediated interaction in online classes resulted in higher final exam scores. The hybrid course delivery modality builds upon these findings by having the students meet first in a traditional on-site setting prior to moving to the online environment.

Arguably the end results of online education may be similar or even better than traditional on-site formats. This has been well established by research under the general category of "No Significant Difference", with the initial study published by Russell (2001). One study attempted to remove professor-bias by blind-scoring tests in a graduate-level online vs. traditional course environment. The results indicated, "...average score for the online class was 5 points (5%) higher than for the on campus class."(Fallah & Ubell, 2000). This is further supported by Gold (2004) who states that there is overwhelming evidence that instruction delivered using online technology is equivalent to conventional instruction when using student achievement as the outcome measure.

Retention

Retention is important for both the students and the University. The students can complete the degree that they were striving for and the University is able to complete the goal of retaining the student. However, "anecdotal evidence and studies by

individual institutions suggest that course-completion and program retention rates are generally lower for distance-education courses than in their on-site counterparts" (Carr, 2000, p. A39).

There is an abundance of literature on student retention for online courses, but as Yatrakis and Simon (2002) state, its main theme is comparisons between completely online and completely on-site modalities. Research related to the effect of the completely on-site modality vs. the hybrid modality combining on-site and online studies is limited because of the relatively new implementation of hybrid courses.

According to eLearn Magazine (n.d.), "keeping students enrolled in online courses can be a struggle. Some colleges offer proof that online retention lags behind brick-and-mortar retention. Washington Online - Washington State's online division for community college - claims a retention rate of 70% for online students versus 85% for the state's on-site community college students. Many researchers have found significant differences in retention between the two modalities of online and on-site. Some, have cited student concerns about instructional quality in online courses (Bloom 1998; Terry 2000), while others consider virtual courses an "inferior technology," particularly in the teaching of complex material (Farrington, 1999; Brown and Liedholm, 2002).

In contrast, the University of Central Florida (UCF) provides data showing that student retention in hybrid courses is better than retention in completely online courses and equivalent to that of completely on-site courses. (Dziuban, C. D. et al, 2001). According to Robertson (2003) the College of the Mainland proposal states that hybrid classes have the potential to improve retention in both online and on-site courses.

Grade Point Average (GPA)

Students who reported higher levels of satisfaction tended to have higher grades and were more likely to have completed their program than students who were less satisfied. That is, student satisfaction is positively associated with program completion rates and overall GPA. These findings are similar regardless of gender, age, program, or location of institution (BC College, 2002).

Methodology

Test Design

The study used a non-equivalent Group Design (NEGD) also known as a quasi-test design. "A quasi-experimental design is one that looks a bit like an experimental design but lacks the key ingredient -- random assignment... In the NEGD, we most often use intact groups that we think are similar as the treatment and control groups. In education, we might pick two comparable classrooms or schools" (Trochim, 2006). While an attempt is made to assure that the two groups are as similar as possible it is not possible for the researcher to control the assignment to the groups on a random basis. This makes the NEGD inherently subject to internal validity threats which need to be addressed.

The primary such threat is the threat of selection on internal validity creating a selection bias in the study. This bias is the risk that any factor other than the ones being analyzed may have lead to the result observed. There are a number of selection bias threats in a multiple group study the most relevant are Instrumentation and Selection History.

The key to addressing these validity issues is to assure that the groups are as equivalent as they can be made given the nature of the environment and that the methodology is applied in a consistent manner. The validity issues were mitigated as follows in this study. Random selection of survey participants (students) was made in each group so that there was no bias as to the prior history or accomplishments of the students. All students were students were dedicated members of a given group or course modality for the duration of their program so there is no issue related to a student being a member of both sample groups. Sampling a large number of students, spread across a wide variety of classes in each modality and using a single survey instrument for all students also mitigated the internal validity issues.

Survey

The sample in this study consisted of undergraduate and graduate students enrolled at two campuses of a regionally accredited university. The analysis studied the differences, if any, between hybrid course students and traditional on-site course students regarding their grade point average (GPA), satisfaction, and retention. In all cases, students were dedicated to a given modality for the duration of their program.

The sample data was collected by asking students to fill out a survey questionnaire. The respondents were informed of the purpose of the research, which was self-administered. In addition, they were informed that after filling out the questionnaire, they would be asked to not discuss their responses with other participants to avoid the risk of biased information. All non-specific survey questions were written so that the answers would fit appropriately into a standard (1-5 point scale) Likert Scale for analysis. The survey instrument was designed with a wide range of questions to allow for a variety of analyses. The questions listed below are those which were relevant to the study presented in this paper.

Satisfaction

The following questions were asked in the satisfaction portion of the administered survey questionnaire:

- **Are the class sizes adequate?**
- **Are student services staff helpful and courteous?**
- **Are your professors knowledgeable about the class subjects?**
- **Is the university Website easily navigated?**
- **How would you rate your overall educational experience at this university?**

Retention

Retention level was measured to answer the question of whether there was a statistically significant difference in retention between hybrid and on-site students. The following questions in the survey questionnaire were designed to address the retention issue:

- **Would you consider continuing your education at this university?**
- **Approximately how long have you been a student at this university?**
- **How many classes have you taken at this university?**
- **Do you feel that the quality of education at this university is high?**
- **Would you recommend that other students pursue their education at this university?**
- **Do you consider the university to be helpful in networking with peers that will assist in your future professional endeavors?**

GPA

The following questions were asked in the GPA portion of the administered survey questionnaire:

What is your overall GPA at this time?

It should be noted that the possiblity exists that some students did not provide a correct answer to this question. For purposes of this study it was assumed that the students were in fact providing accurate information, especially since they were assured of confidentiality and anonymity by the research team. In any event, the large sample size involved in calculating the mean value would tend to mitigate this issue.

Participants

In order to study these factors, responses from students were collected and tabulated from a sample of 164 students in 110 courses who chose to enroll in courses that were available either on-site or hybrid formats. The sample consisted of 95 female students (58%) and 69 male students (42%) with the following ethnicity breakdown: 65 African American students (40%), five Asian students (3%), 30 Caucasian/White students (18%), 61 Hispanic/Latino students (37%) and three Native Hawaiian/Pacific Islander students (2%). Out of 164 students, 95 were attending on-site classes and 69 students were attending hybrid courses. All students within the two groups answered the three sets of questions required to measure satisfaction, retention and GPA. The response rate was 100% for the satisfaction and retention measurements. Only two students did not answer the GPA question (98.7% response rate).

Students' GPAs were also tabulated for the two student groups. Analysis of Variance (ANOVA)and t-test for differences in the means were used as appropriate to determine whether the on-site and the hybrid groups differed significantly in satisfaction, retention, and GPA.

RESULTS

Table: 1.
Mean Satisfaction and Retention Scores of Hybrid and On-site student groups:

Groups	Satisfaction	Retention	GPA
Hybrid	3.91	3.67	3.74
On-site	3.75	3.79	3.77
Column Means	3.83	3.73	3.76

From Table 1, we find that on an initial visual examination, there appears to be no significant difference in satisfaction, retention or GPA between the two groups. The detailed statistical analysis to confirm this initial finding follows later in the paper.

Satisfaction

A test of hypothesis using a one-way ANOVA was conducted. That is, only the factors related to satisfaction were considered. Under this condition, the variation was either due to the treatments or it was random. The null hypothesis for comparing the mean levels of satisfaction was that the mean values were equal for both modalities.
Ho: $\mu 1 = \mu 2$
Ha: The mean satisfaction levels were not the same.

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*
Group of Students	0.024012367	1	0.0406667	3.60219	0.174512
Level of Satisfaction	0.0194	1	0.02455	0.77801	0.360921
Error	0.01234333	1	0.00		
Total	0.0392	3			

Retention

A test of hypothesis was conducted to determine whether the mean of the two student groups differ to a statistically significant degree.
Table 8 shows the scores of the means of the three levels of retention by the two students groups. The null and alternate hypotheses were stated:

1. **Ho: The mean retention levels were the same (μ1 = μ2 = μ3).**
   Ha: The mean retention levels were not the same.
2. **Ho: The mean of retention levels of the Hybrid and on-site student groups were the same (μ1 = μ2).**
   Ha: The mean of retention levels the Hybrid and on-site student groups were not the same.

Table: 2.
Levels of retention scores by the two groups of students:

	Level One -- Three Classes Completed	Level Two -- Ten Classes Completed	Level Three -- Completing Final Course
Hybrid	3.78	3.74	3.54
On-site	3.77	3.90	3.77

A two-factor ANOVA was calculated using a .05 significance level (Table 3). The null hypotheses of the mean values of the three retention levels and the two student groups was accepted.

Table: 3
Two-Way ANOVA results between the two groups of students and the three levels of retention:

ANOVA: Two-Factor Without Replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
Hybrid	3	11.06	3.68666667	0.01653333
On-site	3	11.44	3.81333333	0.00
Level One	2	7.55	3.775	5E-05
Level Two	2	7.64	3.82	0.0128
Level Three	2	7.31	3.655	0.02645

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Group of Students	0.0240666	1	0.02406667	3.15973742	0.0217451	18.51282
Levels of Retention	0.0291	2	0.01455	1.91028446	0.0343609	19
Error	0.0152333	2	0.00			
Total	0.0684	5				

It can be concluded, based on the sample results that there is no difference in the three levels of retention and the two groups of students. The F values for both variables were greater than the critical F values. The p-value for the null hypothesis regarding the groups of students was 0.217 and .343 for the levels of retention. These p-values confirm the hypothesis that the null hypotheses for the two groups of students and the three levels of retention should be retained.

GPA

The GPA scores are shown in Table 10 for the hybrid and on-site groups of students. Results indicate that 96% of the student sample had a GPA of 3.0 or above for both groups of students. This high score further supports the initial conclusion that there is no significant difference in the "GPA level" between the Hybrid and the on-site groups of students. The null hypothesis was that there was no statistically significant difference between the means of the groups.

Ho: The mean GPA levels were the same (μ1 = μ2).
Ha: The mean retention levels were not the same.

Results of a t-test to compare the mean GPA values fell within the 95% confidence level to support the null hypothesis. The t-score value was 0.452 therefore the null hypothesis could not be rejected.

Table: 4
GPA scores of Hybrid and On-site group of students.

	N	Average GPA
Hybrid	87	3.74
On Site	75	3.77

CONCLUSIONS

The results of this study suggest that students who choose to enroll in courses in an on-site format have the same rates of satisfaction and enrollment retention as do students that enroll in hybrid courses. This finding is consistent with that of earlier studies that reported different types of learning styles and characteristics of successful hybrid and on-site learners, and suggests that students enrolled in these courses by choice probably possess the attributes likely to make learning a satisfactory and constructive experience. Tabulation of the average GPA score achieved indicates that 90% of the sample population has a GPA of B- or higher. Given this uniformity of scores, it is safe to conclude that, to the degree that these are measured by grades, there seems to be no measurable difference between on-site and hybrid students GPA results. The individual student's choice of instruction mode made no difference in grade outcome. Students enrolled in both forms of instruction seem to do well academically and a decision with regard to persisting on their course of studies is not influenced by their GPA.

EXTENDED RESEARCH

Additional studies could be done focusing on the question of adult students' motivation to achieve high scores as well as professors' grading methods. Are adult students more motivated? Are professors fair or are they too lenient in their grading? In addition, further research on these issues might expand the analysis to other campuses within the university and other universities, employ narrower or broader measures of student learning, and perhaps focus on specific characteristics of different groups as mentioned above, namely nursing, MBA and undergraduate students. This could possibly contribute to the observed similarities in behavior between the surveyed groups and result.

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