

STUDENT PERCEPTIONS ABOUT ONLINE CLASSES AND ITS RELATIONSHIP WITH LEARNING, QUALITY AND MOTIVATION

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ABSTRACT

This study analyzes student perception about online classes and explores its relationship with learning and quality of online classes. Study further examines the impact of student perceptions on their motivation to take online classes. After analyzing the sample of 162 student respondents to the survey, a scale is developed to measure student perceptions. Results of regression analysis show significant relationship of *personal factor*, one of factors of developed scale, with learning, quality and motivation to take online classes.

Keywords: Student perceptions, Online classes, Learning, Quality and Motivation

INTRODUCTION

Online courses are becoming the integral part of curriculum in higher education [5]. With the development of information technologies and user friendly applications online courses are becoming popular. Many sources throughout last decade reported sharp increase in online course enrollment in United States [1] [12][13] [17]. Online enrollment has increased from 1.6 millions in fall 2002 to 4.6 millions in fall 2008. A recent survey by Allen and Seaman [1] reported 5.6 million students enrolling for at least one online course during fall 2009. This is an increase of nearly one million students over the number reported the in last year's survey [2].

Despite predictions of leveling of demand in online education it continues to rise [13]. Not just that online enrollment rates are increasing, it is growing at much higher rate. Compared to two percent overall growth in higher education, online education is growing at 20% that is almost 10 times higher [1]. In fall 2002, online enrollment was 9.6% of total

enrollment. In fall 2008 it is 25.3% [12]. More students are taking online courses now. Nearly thirty percent of higher education students are enrolled for at least one course online [1]. This proportion was one in four previous year [2].

This trend of increased demand in online education is observed globally. In fact there is more demand in the foreign countries than capacity [10]. According to Index of E-Learning Market Opportunity developed by Hazel Associates South Korea, Japan, and Germany are ranked as the top three markets in order followed by the UK and China [9]. According to Organization for Economic Cooperation and Development's *Trade in Educational Services* 2004 report U.S. is largest exporter of educational services among surveyed eleven countries. There is preference for American Institution degree worldwide and it is estimated that U.S. is educating one third of cross border students [10]. This provide educational institutes great opportunity as well as potential risk if they do not understand the perceptions of students about online classes and its impact on their motivation to enroll for online classes in future.

Our current study is a step forward in this direction. We conduct the survey taking sample of students enrolled in two universities. Goal of this study is twofold. First we study the perceptions of students about online education and then we explore its relationship to learning, quality and motivation of students to take online classes. This paper is structured as follows. In the next section relevant literature is reviewed which is followed by description of survey methodology. Results are described in the next section followed by conclusions and directions for future research.

LITURATURE REVIEW

Online learning is changing the higher education in Unites States. It is more viewed as strategic component. In addition to the universities with mission of distance learning, it is offered by many campus-based universities [6]. Based on survey from the Sloan Consortium and the Babson Survey Research Group, 63% of all reporting institutions said that online learning is a critical part of their institution's long term strategy [1].

Though more institutions are viewing online learning as strategic component there are concerns perceived by academic leaders in area of support/compensation available and quality and effectiveness of online education. Based on findings of study conducted by Association of Public and Land-Grant Universities and the Sloan National Commission, it was reported that faculties are dissatisfied with support services provided and the incentives offered by public universities [3]. Allen and Seaman [1] reported that 37% of academic leaders rated the learning outcomes in online education as the somewhat inferior or inferior to those in face-to-face. This percentage close to 25% at public institutions compared to 45.6% of private nonprofits and 33.0% of for-profits.

Like academic leaders students have different perceptions [6][16] or sometimes misconceptions about online education [14]. Conducting a longitudinal study, Mortagy and Boghikian-Whitby [15] evaluated student perception in online education in the areas of faculty-student relationship, satisfaction with course activities and student-to-student interaction. Their results show that students enrolling in online classes have high expectations and their perception change over time period. We believe these findings are important. First, it reinforces the importance of analyzing student perceptions and second, it demonstrates that perceptions can be changed if institution takes necessary steps towards improvement. Thus conducting a cross sectional study will help to validate earlier findings and potentially academic institution can use these results for improvements.

Another important reason why student perception should be analyzed is because it may be indicator of future enrollment. Endres et al. [7] found that student

satisfaction leads to their intention to recommend course, faculty and university to others. Satisfaction in their research is comprised of five factors, which are dependent on practices that shape students' experiences or perceptions about online classes. Carr [4] also notes that learning experiences in online classes influences their decision to continue with the course. As more and more students are learning online there is an increasing concern about quality and learning taking place in online classes [8]. In the recent news article in the New York Times front page there are concerns raised about no sufficient research indicating comparable quality of online versus face to faces classes at K-12 level [8]. What about higher education? Thus we believe it is necessary to measure what students think about quality and learning in online classes in addition to their motivation to take online classes and further investigate their relationship with student perceptions.

SURVEY

Survey instrument was designed using input from two focus groups and secondary research. Survey was posted online. A pre-notification was sent by email to 600 randomly selected students enrolled at two universities. A fresh email giving the website URL was sent. This process was repeated 5 times with clear instructions not to take the survey if they had previously responded. A further check was made using two criteria: 1) GPA and 2) Computer id. There was no survey found from the same computer id and the same GPA. Instrument consisted of three parts. Part I was demographic information such as gender, student classification, age and enrollment status. Part II consisted of perceptions of lecture versus online classes and type of classes suitable for various business disciplines. Part III addressed their perceptions of online classes with regard to various attributes such as convenience, ease, stress learning amongst others.

STATISTICAL ANALYSIS AND RESULTS

Total 162 students responded to the survey giving a response rate of 27%. This data is entered in SPSS data file to perform statistical analysis. First, demographic characteristics of respondents are analyzed to validate sample is representative of typical college student population. We perform the

validity check by measure the correlation between similar questions. Later factor analysis is performed on the 7 items of survey that measures student perception about online classes, to see scale can be developed for online class perception. Two factors are extracted and using summated scale we calculate the score for these factors. Finally regression is performed to see if student perception about online classes is linked to learning, quality and motivation to enroll for online classes in future. In the following subsections results are described in details.

Demographics

Demographic characteristics of individual who completed the survey are given in the Table 1. 54.32% of 162 respondents are male and 43.21% are

female. Four respondents have not mentioned gender. Majority of the respondents (83.33%) were between the ages of 18 and 25 years with peaks at 21 years (24.69%). This matches typical traditional college student profile. Further student classification revealed that 6.79% are freshman, 8.64% are sophomore, 22.22% are junior, 50.62% are senior and remaining 11.73% are graduate students. Since majority of students are senior, it explains peak of age profile at 21 years. Almost three quarters of the students were part time, with 17.28% part time and remaining 8.02% not responding to enrollment status. Students are evenly distributed between GPA 3.6 and 4.0, 3.1 and 3.6, and 2.6 and 3.0. There are 12.96% students having GPA 2.5 or less. We believe these sample respondents are representative of typical college student population.

TABLE 1: Demographic Characteristics

Demographic Variable		Frequency	Percentage
Gender	Male	88	54.32%
	Female	70	43.21%
	Missing	4	2.47%
	Total	162	100.00%
Age	18 or younger	3	1.85%
	19	9	5.56%
	20	17	10.49%
	21	40	24.69%
	22	33	20.37%
	23	15	9.26%
	24	9	5.56%
	25	9	5.56%
	26 to 35	19	11.73%
	36 to 45	4	2.47%
	45 or older	1	0.62%
	Missing	3	1.85%
Total	162	100.00%	
Enrollment Status	Part Time	28	17.28%
	Full Time	121	74.69%
	Missing	13	8.02%
	Total	162	100.00%
Classification	Freshman	11	6.79%

	Sophomore	14	8.64%
	Junior	36	22.22%
	Senior	82	50.62%
	Grad Student	19	11.73%
	Total	162	100.00%
GPA	2.5 or less	21	12.96%
	2.6 to 3.0	45	27.78%
	3.1 to 3.5	49	30.25%
	3.6 to 4.0	47	29.01%
	Total	162	100.00%

Validity Check

In order to perform validity check similar questions are included in survey and then correlation between them is calculated. For example, the respondents are asked to rate if they felt *online classes are less stressful than lecture classes* and later they are asked to rate level of agreement with sentence *online classes are stressful*. Results shows spearman's rho = -0.495 and correlation is significant at 0.01 significance level. Similarly spearman's rho is 0.292 (significant at level is 0.01) between survey items *online classes are convenient* and *one of the advantages of taking course online is the fact that class times were flexible*. Significant correlation validates

Scale Development: Student's perceptions about Online Classes

Student's perception about online classes is measured using 7 items in the survey. These items are on-line classes are: Stressful, Difficult, Useful, Complex,

Convenient, Suits my learning style and easy to complete. Students are asked to indicate their level of agreement or disagreement with the above statements on a five point scale. Factor analysis is performed to identify which of the 7 items would cluster together distinctively and to determine the number of dimensions or factors underlying the construct –*Student's perceptions about online classes*. The item easy to complete is dropped due to loadings on multiple factor. Factor analysis using varimax rotation on remaining 6 items extracted 2 factors with eigenvalues greater than 1.00. Both these factors accounted for 62.346% of the variance explained. The factor contents, rotated factor loadings, eigenvalues, variance explained and cumulative variance explained are given in Table 2. The first factor is named as *personal factor* which comprised of items online classes are useful, convenient and suits my learning style. Second factor is named as *complex factor* which consists of items online classes are stressful, difficult and complex. The score for the each factor is calculated by taking simple average of the underlying item scores.

TABLE 2: Factor Analysis for Student's Perception about Online Classes

Rotated Component Matrix	Factor 1 <i>Personal Factor</i>	Factor 2 <i>Complex Factor</i>
<i>Personal Factor</i>		
Online Classes are - Useful	0.821	
Online Classes are - Convenient	0.813	
Online Classes are - Suits my learning style	0.71	

Complex Factor		
Online Classes are - Stressful		0.762
Online Classes are - Difficult		0.847
Online Classes are - Complex		0.64
Eigenvalue	2.27	1.48
Proportion Variance Explained	32.73%	29.62%
Cumulative Variance Explained	32.73%	62.35%

Student’s Perceptions and Learning

Factor analysis results suggest that student’s perception about online classes consist of two factors—*personal factor* and *complex factor*. One of goal of the study is to find out if there is relationship between student’s perceptions about online classes and learning. Learning is measured by asking students *how much they have learned in online classes compared to face to face class*. Options given

are *more, same and less*. Regression is performed using *learning* as dependent variable and *personal factor* and *complex factor* as independent variables. Overall regression model is found to be significant but complex factor is not. Regression is performed eliminating *complex factor* variable and model is found to be significant (*p value 0.000*). *Personal factor* explains 12.9% of variance observed in the *learning*. Regression results are given in Table 3.

TABLE 3: Regression Results for Learning as Dependent Variable and Personal Factor as Predictor Variable

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	1.389	.184	7.563	.000
Personal Factor	.343	.076	4.504	.000

Model significance = 0.000; Adjusted R² = 0.129

Learning = B₀ + B₁ * Personal Factor

Learning is measured as 1 = more, 2 = equal and 3 = less

Student’s Perceptions and Quality

To find out if there is relationship between student’s perceptions about online classes and quality regression is performed using *quality* as dependent variable and *personal factor* and *complex factor* as independent variables. Quality is measured by asking respondents if *Quality of online classes compared to*

face to face is better or equal or worse. Regression result shows that *complex factor* is not a significant predictor of *quality*. After eliminating *complex factor* regression is performed and model is found to be significant (*p value 0.000*) with *personal factor* explaining 13.8% of variance observed in *quality*. Result of this regression is given in Table 4.

TABLE 4: Regression Results for Quality as Dependent Variable and Personal Factor as Predictor Variable

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	3.697	.222	16.680	.000
Personal Factor	.461	.089	5.182	.000

Model significance = 0.000; Adjusted R² = 0.138

$$\text{Quality} = B_0 + B_1 * \text{Personal Factor}$$

Quality is measured as 1 = better, 2 = equal and 3 = worse

Student's Perceptions and Motivation

To analyze impact of student's perceptions about online classes and their motivation to take online classes regression is performed using *motivation* as dependent variable and *personal factor* and *complex factor* as independent variables. Motivation is measured by asking respondents *When it comes to an online classes how motivated are you*. Options given

are *I would not take a course online, I would consider taking a course online and I would like to take a course online*. Like to above two cases *complex factor* is not found to be a significant predictor of *motivation*. After eliminating *complex factor* regression is performed and model is found to be significant (*p value 0.000*) with *personal factor* explaining 31.5% of variance observed in *motivation*. Result of this regression is given in Table 5.

TABLE 5: Regression Results for Motivation as Dependent Variable and Personal Factor as Predictor

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	3.296	.156	21.076	.000
Personal Factor	-.544	.063	-8.663	.000

Model significance = 0.000; Adjusted R² = 0.315

$$\text{Motivation} = B_0 + B_1 * \text{Personal Factor}$$

Motivation is measured as 1 = I would not take a course online, 2 = I would consider taking a course online and 3 = I would like to take a course online.

CONCLUSIONS AND FUTURE RESEARCH

This study investigates student's perception about online classes. From factor analysis results we found two dimensions of perception, *personal factor* and *complex factor*. *Personal factor* comprise of online classes are useful, convenient and suits my learning style where as *complex factor* comprise of online classes are difficult, complex and stressful. These perceptions, we believe, are based on their experience with online classes and will determine students' motivation to take online classes in future. Regression result showed significant relationship of only *personal factor* with motivation of students to take online classes with 31.5% of variance explained. These results are important and provide guidance to academic institutions that are seeking to increase online enrollment. Focus on personal factor is the key for institutions to improve online classes. This means, first, find what students expect and what makes

classes useful in their opinion. Second, what tools, features, technology and/or provisions in course makes it convenient. And lastly, investigating different learning styles and providing multiple options for students to learn. May be institution should encourage students to take test to determine their learning style and further guide them to choose classes and study accordingly. These results could also be used in the development of online courses. Institution should further look into using learning theory in designing the survey and outcome of the course. In addition they should also evaluate helpfulness of technology used for delivering online courses. As pervious research pointed out, technology can help us to eliminate barriers to learning [11]. Focusing on *personal factor* would not only help institution to increase enrollment but will further help to improve quality and learning that in the online classes as regression results show significant relationship with learning and quality.

This study also validates the finding of previous studies in online education related to learning, quality and motivation. Thus it makes important contribution to theory and practice.

This research opens new avenues for further research. As pointed out earlier, further research is warranted in the area of investigating different learning styles, what delivery methods are suitable for different learners and how technology will be useful in this matter.

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* Dates are in MM/DD/YYYY format