Comparative study of Satisfaction and Problems of Face to Face and Online Mode of Learners

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Abstract

The technological advancements have great impact on teaching and learning. The modes of education have been modified in this era where course offerings, teaching and assessment are done through online resources such as Learning Management Systems (LMS). This paper is focused to explore and compare the satisfaction and problems of face to face and online mode of leaners regarding content, interaction with the instructor and other students, assessment and evaluation. Quantitative research design was used for this study, where survey method was used to collect data. A sample of 156 BS computer science students was selected through random sampling. The data was collected through questionnaire. Overall, majority of the students were satisfied with different features of online mode of learning like content, assessment and evaluation, modes of interaction and delivery but a lower percentage of student's satisfaction was found regarding their interaction with the instructor. It is recommended that more research should be conducted in order to explore other parameters like student's achievements and grades in online learning programs. Universities should offer more virtual and online programs for the enhancement of higher education.

Keywords: E learning, Virtual University, satisfaction, mode of learning, computer science

Introduction

In this era, the use of technology in the education sector is one of the fastest growing trends. E- learning has rooted up from the distance education which started about hundred years ago with the correspondence courses. Du, Xu &Fan (2015) cited Allen and Seaman (2010) that distance education through online coursework is the fastest growing trend in higher education. It has increased the learning opportunities for all students. Aslanian, (2001) considered it as most attractive to students who are employed or have family obligations to attend the traditional face to face classes. The main factors for the potential growth of online learning are choice of schools, degree programs and courses, flexibility in learning, lower stress, learning pace, and participation of learner at different forums, independence, and monetary savings.

Technological advancements have reduced the geographical barriers among students and instructors. It has reduced physical presence of both, the instructor and the learner at the same place (Ebner, Mitchell, Parlamis, & Lewicki, 2014). Ally (2008) revealed that time zones, distances and locations are not issues for students in online learning. Students can easily access the online material anywhere and anytime. Students can also access up to date and related learning material and can get help from the experts in their field of study through the Internet. Online courses can be completed by the learners at their own pace and convenient time. Properly designed online learning systems can determine the needs of the learning and their expertise level and offer them suitable material from which the learners can select in order to achieve their most wanted learning outcomes.

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Statement of the problem

In 2002, the Government of Pakistan has established the virtual university of Pakistan (VUP) as a Public Sector University. It provides education through internet and broadcast television (Ali, Ahmed, Shaikh & Bukhari, 2011). So, the current research study was focused to explore satisfaction and problems of online and face to face mode.

Objectives

The objectives of the study were:

- To find difference regarding satisfaction level of students of online and face to face mode of BS Computer Science programme.
- To find difference between problems faced by students of online and face to face mode of students of BS Computer Science programme.

Hypotheses

Ho1. There is no significant difference of satisfaction between students of online and face to face mode of online BS computer science program.

- H_{o1a}. There is no significant difference of satisfaction between students of online and face to face mode of online BS computer science program regarding content and material
- H_{o1b}. There is no significant difference of satisfaction between students of online and face to face mode of online BS computer science program regarding interaction
- H_{o1c}. There is no significant difference of satisfaction between students of online and face to face mode of online BS computer science program regarding instructor
- H_{o1d}. There is no significant difference of satisfaction between students of online and face to face mode of online BS computer science program regarding assessment and evaluation
- H_{o1e}. There is no significant difference of satisfaction between students of online and face to face mode of BS computer science program regarding content sharing.
- H_{o1f}. There is no significant difference of satisfaction between students of online and face to face mode of BS computer science program regarding different features of online system.

H_{02}: There is no significant difference in problems faced by students of online and face to face mode of online BS computer science program.

Significance of the Study

The study will be useful for the administrators and teachers to adopt latest technologies for teaching and learning science courses. It will also be helpful for the administrators to increase the satisfaction of students. The study will be beneficial for teachers to resolve the problems of learners in both modes of learning. The finding will also be useful for policy makers to emphasis on policy formulation and implementation regarding online mode of learning.

Operational Definition

Satisfaction: "Fulfillment of one's wishes, expectations, or needs, or the pleasure derived from this" (Oxford Dictionaries).

Review of Literature

Information and communication technology (ICT) has provided education at the door steps of students. A new era has been started with the e-learning concept and flexible opportunities of learning in education system (Anilkumar & Lihitkar, 2014). According to Livingston & Condie (2006), the role of introducing online learning program is just like a catalyst in transforming classroom practices, but it is only possible if teachers are self-confident about their technological skills and properly and continuously assisted throughout this process of change. Technology acts as a stimulus for teachers and students learning and provides such circumstances in which teaching and learning strategies can be explored.

Cheng (2013) considered online learning as an alternative option for learners. The number of online learners or distance learners has been growing rapidly. This rapid growth is due to competition and globalization in higher education as well as development of information and communication technologies (ICT) as it has brought a number of learning options particularly in Asian region .Livingston and Condie (2006) revealed that the framework or structure of student-centered education has been developed through the combination of online learning and class room learning. However, it is necessary for teachers to know that e-learning and traditional practices are different from each other, and they should also acknowledge the abilities of students to manage their own learning and help them by providing skills for their future leaning apart from school. It is necessary to provide trainings to teachers in order to make them skillful for the use of technology. A number of terminologies are being used for online mode of delivery of education. According to He (2013), online education is a new paradigm and is also known as virtual education, web-based education, an education via computer-mediated communication and Internet-based education. It is not as much important that which terminology to be used, the internet is the major component of this paradigm in teaching learning process. Today in distance education, internet is the essential component. As distance education has been carried out by distributing course material through postal services over the years. Now students are provided with fully online educational experience.

Belcher, Tucker,& Neely, (2012) cited (Allen & Seaman, 2011; Lytle, 2012; Waller, 2008) that from past ten years online education is growing very fast. During 2009, in the United States, about 5.6 million students were enrolled in at least one online course which is about one million more than the enrollment of previous year. Ni (2013) stated that the growth of online educational trend in modern educational settings highlighted a question of the satisfaction and effectiveness of online courses as compare to the face to face learning with reference to student's perceptions, needs and learning outcomes. As Online mode of learning is rapidly growing around the world, the trend of distance and online learning in Pakistan is not new one (Siddiqui, 2011).

Approaches to Online Learning

According to Feldman& Zucker, (2002) there are two main approaches to online learning i.e. synchronous learning and asynchronous learning. Synchronous learning is defined as, "Instruction and collaboration in "real time" via the Internet." In Synchronous online classes, learner and instructors need to be online at the same. A real time schedule must be followed by both learner and instructor. Lectures, presentations and discussions may occur according to the decided time. Asynchronous learning is defined as "Methods use the time-delayed capabilities of the Internet."Asynchronous online classes are the opposite of synchronous classes. Students can any time access lectures, materials, tests and assignments provided by the instructors. Students are provided a schedule or time frame in order to complete their assignments or task.

Online Learning vs Traditional Learning

US Department of Education (2009) concluded that online learning is more effective than traditional face to face learning (Kupczynski, Richardson, Ice & Challoo, 2011). Bolliger, Inan & Wasilik (2014) cited (Bourne & Moore, 2005) that in U.S. mostly higher educational institutions implemented such degree programs, certificates and courses that are delivered exclusively online. There is significant increase in enrollment every year and long term strategic plan of most higher education institution includes online offering of credit courses as their integral part.

Students' Satisfaction in Online Learning

With the rapid development of educational institutions, factors like development and tactics of delivering online content, satisfaction and effectiveness are considered as most significant by the scholars and course developers. MacKenzie, (2013) also noted Rodriguez (2008), Morgan (2007), and Lei and Gupta (2010) that effectiveness of online learning is correlated with behavioral intentions of e-learner, behavioral in tension and satisfaction are considered as variables of learner to found the effectiveness of online learning. Liaw (2008) revealed that interactive and cooperative activities of learning and system quality like multimedia instruction influence effective e-learning process. It also influences both satisfaction level and behavioral intentions of learners. Azeiteiro, Nicolaua, Caetanoa& Caeiroa (2015) found that "students attained a high level of motivation and satisfaction, and had reached an effective learning outcome of knowledge, competences, values, attitudes and behavior in sciences."

Effectiveness of Online Learning

Sun & Ganesh (2014) showed that students perceive online learning as more effective and important than face-to-face learning methods because E-learning system provides innovative and effectives methodologies for learning process (Osipov, Volinsky , Nikulchev & Prasikova, 2015). Williams (2016) also found online learning approaches very helpful in enhancing the knowledge of students. Whittington and McLean (2010) also indicated that online learning is beneficial due to its flexibility and its supports discourse among learners. E-learning has overcome the challenges of education. Sinclair, Kable , Jones &Booth (2016) reported that: "the benefits of e-learning have been reported in terms of increased accessibility to education, improved self-efficacy, knowledge generation, cost effectiveness, learner flexibility and interactivity (p.70)". Bolliger, Supanakorn & Boggs (2010) indicated that online learning environment motivates learners for learning.

Wang (2014) demonstrated that e-learning seems to be more effective even for those students who have limited prior knowledge. Walkington (2012) determined that the tactical design of online learning space significantly enhance the process of learning. In the views of Han, Wei& Zhang (2015), in online mode of education it is very easy to keep complete record of learner like behavior of student, classroom teaching videos. Teacher and student behavior data has been analyzed by learning analytics, it produces process of online learning, and so a clear complete picture of all the teaching aspects, substantial teaching and learning activities, complete detail of all the learners can easily be comprehend or grasp by the teacher. Azeiteiro, Nicolau, Caetano& Caeiro (2015) reported that an effective substitute to traditional face to face learning may be a formal online learning program as it permits students to continue their studies in a cooperative, flexible and interactive way along with their jobs. However Oliver and Conole (2003) identified many inferences for e-learning which includes problems faced by researchers practicing in a funded project and potential twisting e-learning policy effect on field of research. Sridharan, Deng and Corbitt (2010) also found that in higher education, technological and

learning management resources positively influence the effectiveness of e-learning. Ellis, Ginns and Piggot (2009) found that four fundamental factors as e-teaching, enterprise, capability and interactivity as significant contributors in the field of research and utmost powerful aspects of e-learning when it is used to assist learners in a face-to-face learning experience. Gonzalez (2012) also reported that e-learning is very helpful to support various groups of teachers in teaching at their campus units. Ho and Dzeng (2010) tested different modes of education to determine the effectiveness of the safety education and found the e-learning mode as most effective for learning.

Research Methodology

Research Design

This study was descriptive in nature. Quantitative approach was used in this study therefore survey method was used for the study.

Population

The population of the study consisted of all enrolled students of BS Computer science programme in public and private sector universities of Rawalpindi during 2017.

Sample and Sampling Technique

A sample of 152 students was randomly selected from public and private sector universities offering BS computer science through face to face and online mode of learning. There were 72 BS computer science students from face to face mode, out of which 36 students were male and 36 students were female. Similarly, there were 74 BS computer science students from online mode of learning, out of which the 50% were male and 50% were female.

Instrumentation

A questionnaire based upon Likert scale was developed. Initially, it consisted of 42 statements. It was validated by experts. The face, construct and content validity was sought out from the field experts. The experts pointed out few statements to delete. Thus the final version of questionnaire retained 35 statements. The reliability of the questionnaire was ensured through pilot testing. The coefficient of Cronbach Alpha for the questionnaire was found 0.87. The questionnaire consisted of five constructs like content and material, interaction with students, interaction with instructor, assessment and evaluation and problems faced by students.

Data Collection

The data was collected through online form from online learner enrolled in BS computer science programme. Whereas the data from students of face to face mode was collected personally through printed questionnaires. About 200 questionnaires were distributed among the students and 156 responses were collected. Mean, median and percentage were applied to explain the descriptive results while independent t-test was used to test the hypothesis.

Data Analysis and Interpretation

Table 1 *Difference of satisfaction between students of online and face to face mode of BS computer science program*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Satisfaction Level	Face to Face	72	3.715	.3698	.0435	144	.180	.858
	Online	74	3.704	.3405	.0395			

Table 1 shows that there was no significant difference found between satisfaction level of face to face mode (M=3.715, SD=0.369) and on line (M=3.70, SD = 0.340) students. *t* (144)= 0.180, *P= 0*.858. Hence first hypothesis is accepted.

Table 2 *Difference between satisfaction of students of online and face to face mode of BS computer science program regarding content and material*

	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Content and material	Face to face	72	3.9306	.68887	.08118	144	.824	.411
	Online	74	4.0142	.52925	.06152			

Table 2 shows that there was no significant difference found between satisfaction level of face to face (M=3.93, SD=..688) and online (M=4.01, SD= .539) students. *t* (144) = 0.824, *P= 0*.411. Results revealed that students of online and face to face mode of BS computer Science have no significant difference in their level of satisfaction regarding content and material. Hence failed to reject second hypothesis.

Table 3 *Difference between satisfaction level of students of online and face to face mode of BS computer science program regarding interaction*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig. 2-tailed
Interaction	Face to Face	72	3.1062	.51689	.06092	144	1.304	.194
	Online	74	3.0000	.46699	.05429			

Table 3 shows that no significant difference was found between satisfaction level of face to face (M=3.1, SD= .516) and online (M=3.00, SD = .466) students. *t* (144)= 1.304, *P=0*.194. Hence is third hypothesis is accepted.

Table 4 *Difference between satisfaction of students of online and face to face mode of BS computer science program regarding instructor*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Instructor	Face to Face	72	3.8380	.59760	.07043	144	.372	.711
	Online	74	3.8045	.48548	.05644			

Table 4 shows that there was no significant difference found between satisfaction level of face to face (M=3.83, SD= .597) and online (M=3.80, SD= .485) students. *t* (144) = 0.372, *P= 0.*711. Hence fourth hypothesis is accepted.

Table 5 *Difference between satisfaction of students of online and face to face mode of BS computer science program regarding assessment and evaluation*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Assessment and evaluation	Face to Face	72	3.7726	.47671	.05618	144	.618	.538
	Online	74	3.7227	.49704	.05778			

Table 5 shows that there was no significant difference found between satisfaction level of face to face(M=3.77, SD=.476) and online (M=3.72, SD= .497) students. *t* (144) = 0.618, *P= 0.*538. Hence fifth hypothesis is accepted.

Table 6 *Difference between satisfaction of students of online and face to face mode of BS computer science program regarding content sharing*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Online content Sharing	Face to Face	72	3.6607	.45809	.05399	144	.254	.800
	Online	74	3.6807	.49453	.05749			

Table 6 shows that students of online and face to face mode of BS computer science have no significant difference in their level of satisfaction regarding content sharing. Hence sixth null hypothesis not rejected.

Table 7 *Difference between satisfaction of students of online and face to face mode of BS computer science program regarding different features of online system.*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
Features of Online system	Face to Face	72	3.9819	.45430	.05354	144	.293	.770
	Online	74	4.0044	.47192	.05486			

Table 7 shows that there was no significant difference found between satisfaction level of face to face (M=3.98, SD=.454) and online (M=4.00, SD= .471) students. *t* (144)= 0.293, *P= 0.*770. Hence failed to reject seventh hypothesis.

Table 8 *Difference in problems faced by students of online and face to face mode of online BS computer science program*

Variable	Students	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig 2-tailed
problems	Face to Face	72	2.8553	.80126	.09443	144	1.273	.205
	Online	74	2.6948	.72060	.08377			

Table 8 shows there was no significant difference of problems faced by face to face (M=2.8553, SD=.08126) and online (M=2.6948, SD= .7206) students., *t* (144)= 1.223, *P=0.205*.Hence failed to reject eighth hypothesis.

Discussion and Conclusion

Since online learning is a fastest growing trend in education. The present study was carried out to find the satisfaction of students of face to face and online mode of learning of BS Computer Science program. Xu & Jaggars (2013) cited Allen and seaman (2010) that distance education through online coursework is the fastest growing trend in higher education. It has increased the learning opportunities for all students. The findings show no significance difference among satisfaction of students of online and face to face mode of BS Computer Science. It is in line with the findings of Kupczynski, Gibson, Ice, Richardson, & Challoo (2011) that in US, there is significant increase in enrollment every year and long term strategic plan of most higher education institution includes online offering of credit courses as their integral part. Similarly, no difference was found between opinion of students of face to face and online mode of rearing regarding content. It might be due to the reason that when learners feel comfortable with the technology, they engage themselves in more meaningful activities like discussions with their peers related to course contents and important concepts, in this way they achieve the deep conceptual understanding as well as higher level of retention (Pilati,2006).The findings of this study also showed no significant difference of opinion regarding interaction in e-learning. It might be due to the reason that communication is a form of interaction which is a basic tool for learning and it is necessary

for an online learning environment to build a community where learners interact with each other for learning purposes(Serdyukov & Serdyukova,2009).

As far as instructors are concerned, this study found no difference of opinion of the sample. This finding is in line with Wang (2010) that students consider online learning environment very important for their success. Similarly, no difference was found regarding opinion of students regarding assessment of online learning. It might be due to the reason as indicated by Zanjani, Edwards, Nykvist and Geva (2016) that LMS tool is very helpful to design suitable tasks like various teaching strategies and habits, participation of students in online activities and various procedures for assessments. Finally, there was no difference was found regarding problems of students of face to face and online mode of learning. All students had no overall difference regarding problems of online classes and had no disturbance in online classes due to slow internet speed, difficulty in handling technical issues, interruption in online class due to server problem, difficulty in use of computer and access online material. This finding is in coherence with Pilati (2006) that in online education interaction is the key factor for success, it enable learners to overcome their problems.

Conclusion

The conclusions were drawn on the basis of findings as follow:

1. Overall majority of the students were satisfied with different features of online mode of learning for BS Computer Science program like content, assessment and evaluation, modes of interaction and delivery.
2. Most of students faced no difficulty or problems regarding online mode of learning like use of technology or access to online learning material. Both face to face and online students were equally satisfied with different features of leaning and no difference was found regarding problems.

Recommendations

Based on the findings of the study following recommendations given are:

1. More researches should be conduct in order to explore other parameters like student's achievements and grades in online learning BS Computer Science program. Moreover, student's satisfaction and problems must also be explored in other BS programmes offered through online and face to face mode of learning.
2. As overall findings showed that students of online learning were as much satisfied as learners of face to face mode therefore more programmes must be offered through online mode in country.

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