

Comparison of E-Learning Satisfaction of Employed and Unemployed Students

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Abstract

The potential people for learning have been increased greatly with the advancements of technologies. In this era of information and communication technologies, teaching and learning process takes place through online, blended, and virtual modes. This paper is focused to explore the major factors of satisfaction of among students of BS Computer Science offered by the Virtual University of Pakistan (VUP). The factors included learner's interaction with the instructor and other students, satisfaction of the learners about content and material, assessment and evaluation, different features of online learning system. The study was quantitative in nature. Survey method was used to collect data. A sample of 152 BS Computer Science students was selected through stratified sampling from four campuses of VUP. The data was collected through a questionnaire developed using Likert scale. The questionnaire consisted of 35 statements. Overall, majority of the students was satisfied with different features of online mode of learning such as content and material, interaction, instructor, assessment and evaluation, content sharing, and different modes of interaction and delivery. However, a lesser percentage of full time and part time employed students were satisfied regarding their interaction with the instructor, content

sharing and different features of online learning. A significant difference was found in satisfaction of students with respect to their employment status.

Key points: Virtual University, satisfaction, mode of learning, computer science

Introduction

Teaching and learning process has been transformed with the advancements of latest technologies. Multiple educational resources are being offered through online learning mode. It is capable to provide real time as well as asynchronous communication to the learner or among the learners. Open and free learning resources were developed about two decades ago, when David Wiley introduced the concept of “open content” to easily construct educational material through learning objects development. In 2001, the Massachusetts Institute of Technology created “open course ware” with the purpose to provide free availability of the content developed by their faculty under an open license on the web (Haley, 2013). In 2002, UNESCO created the term ‘Open Educational Resources’ and now it is universally popular. With innovative learning opportunities, learning strategies have also been modified. . Continuous and constant access to knowledge through online resources has reduced time and cost for learners and faculty members. The online mode of education is providing learning opportunities to all age groups, employed and unemployed individuals.

Statement of the problem

Distance and online learning is not new in Pakistan (Siddiqui, 2011). Since 1974, Allama Iqbal Open University (AIOU) is providing distance education (Ali, Ahmed, Shaikh & Bukhari, 2011). The first step towards E-learning activities at AIOU was initiated by the Department of Computer Science in 1999. A number of other institutes such as Modern Institute of Informatics and Management (MIIM), Directorate of Distance Education Gomal University, Pakistan Institute Of Modern Studies (PIMS) , etc. are offering online and distance education.

Virtual University is providing education through online mode. The patent mission of the VPU is to provide high standard and affordable education with the use of modern and latest technologies to students. Therefore, this study explored satisfaction of students of different employment levels with respect to different features of online learning.

Objective

1. To explore the learning satisfaction of employed and unemployed on-line learning students

Research question

1. Is there any significant difference between the learning satisfaction among full time employed, part time employed and unemployed students of online BS computer science program?

Significance of the study

This study will help administrators and online course designers to improve the quality of programs and provide suggestion in order to overcome problems faced by learners in online mode of learning. It will motivate students to enhance their education who could not approach traditional education institutes. It will provide direction to the future researchers to conduct research in this area.

Review of literature

According to Hicks & Graber (2010) as quoted by Cheng 2013, “knowledge is now decentralized, accessible and co-constructed among a broad base of users through discussion and participation”. The concept to access information has been revolutionized due to Internet. According to Mackenzie (2013), e-learning has replaced the previous term distance education by modifying learning methods through internet distantly. E-learning is a broader term, since different technologies are used in designing process, delivering process and management of instructions on computers. The easy accessibility of the internet and large coverage of signals have facilitated the distance learner. The growing competencies of internet have enabled the course developers to promote meaningful and active learning by including multimedia components and more complex technologies.

The online learning has made learning environment very interactive and flexible. According to Seethamraju (2014) integration of e-learning technologies has brought a change in the process of education and enhanced the quality of teaching and learning. An online environment improves cognitive learning and enhances opportunities for learning. It provides profound understanding of content-based issues, appreciation of multiple opinions, and reproduction of learner’s own perceptions and learning. Web technologies play positive role in

online learning environment, as Simo, Montagut, Maldonado, & Amatller, (2015) described that in an online environments web interfaces show a significant role and has a positive influence upon performance and satisfaction level of learners and also encourage them to be more active in learning activities. Haley (2013) revealed that online learning permits more organized environments. Oncu, & Cakir (2011) considered online education as an essential need for future teaching and learning process and found that an online learning environments aims to (a) enhance engagement and collaboration of learner, (b) promote actual assistance, (c) development of techniques for assessment, and (d) to design development programs for faculty. Trust of learner on learning activities and learning environment is very important for successful learning. Wang (2014) found that student's trust in an online learning environment is very important for their success. Bridges (2015) stated that online resources support problem based learning curriculum design and knowledge building process of students. Tsai and Taylor (2012) also reported that the effects of online collaborative learning with initiation and self-regulated learning were positive and the instructors can make sure that online learning societies support learning through effective construction, strategy, and assistance of online environments.

Communication is the most important aspect of any learning environment either online learning environment or traditional classroom learning environment. In a virtual learning environment interaction among learners and instructors is different than that in traditional learning (Linfield College, 2010). Pilati (2006) revealed that in online education, interaction is the key factor for success as it enables learners to overcome their problems.

Huang, Lin and Huang (2012) revealed that learning performance in an online learning environment can be predicted through online participation. Ozkan and Koseler (2009) evaluated the satisfaction of learners about six dimensions of online learning carried out through LMS as system quality, content quality, service quality, instructor attitudes, learner perspective and supportive issues and found that all the dimensions have beneficial effect on higher level of perceived satisfaction of students. According to Haley (2013) it is one of the best and unique characteristic of technology that it provides equal opportunities to everybody, it is equally accessible anywhere at any time for every one without any discrimination. In education, technology diminishes the racial, social and gender discrimination. Neuhauser (2002) examined the factors as age, gender, learning preferences and styles, effectiveness of course, tasks effectiveness, test grades and final grades and

found no significant difference in participation grades, assignments grade, test and final scores, learning preferences and styles. About 96% of the online learners considered online course more effective than face to face learning.

Regardless of so many advantages of online learning, there are some problems for online learners as well. Online learners face problems in order to balance the work, family and educational tasks, time management, habits of study and have insufficient skills to use technology (Trujillo, 2015). Chawla (2015) highlighted the problems faced by online learners and found that online learners face difficulty in providing feedback, understanding the difficulties of learners by teachers.

Methodology

Research design

For this research, quantitative approach was used and descriptive research design had been applied. The population of the study consisted of online students of BS Computer Science program offered by the VUP. VUP offers BS Computer Science program twice a year as spring and fall semesters. The population of the study consisted of 250 enrolled students in the program from 2013 onward in its four campuses selected through convenient sampling. A sample of 152 students was selected through stratified random sampling.

Research instrument

Questionnaire was used to collect the data. The research tool of study comprised of structured question, using a five Point Likert Scale. Initially there were 38 items in the tool. The final questionnaire included 35 items after expert's review and pilot testing. The reliability of the tool was 0.902. The constructs/themes of the research instrument were about content and material, peer Interaction, instructor interaction, assignments and evaluation, content sharing, different features of online instruction (audio, presentation sharing, text chat, forums, assignment posting, quiz, notifications, desktop sharing, attendance system, student's feedback, file sharing) of online learning and problems (slow internet, technical issues, server problem, difficulty in use of computers, online material, etc) faced by students.

A. Demographic data

1. Semester of study

Out of total 152 students, 21 were from the first semester, 18 from the second semester, 19 from the third, 17 from the fourth, 22 from the fifth, 19 from the sixth, 20 from the seventh and 16 from the eighth semester.

2. Employment status

Sixty of the selected students were full time employed, 43 were doing part time job while 49 were unemployed.

Table 1
Satisfaction of distance learners by their employment levels

Variable		Sum of Squares	df	Mean Square	F	Sig.
Overall satisfaction	Between Groups	1.253	2	.626	5.293	.006
	Within Groups	16.566	150	.118		
	Total	17.819	152			
Content and material	Between Groups	1.852	2	.926	2.543	.082
	Within Groups	50.971	150	.364		
	Total	52.822	152			
Peer interaction	Between Groups	.349	2	.175	.756	.472
	Within Groups	32.323	150	.231		
	Total	32.672	152			
Instructor interaction	Between Groups	1.915	2	.957	3.295	.040

	Within Groups	40.675	150	.291		
	Total	42.590	152			
Assessment and evaluation	Between Groups	.455	2	.228	.970	.382
	Within Groups	32.846	150	.235		
	Total	33.301	152			
Content sharing	Between Groups	2.696	2	1.348	6.501	.002
	Within Groups	29.028	150	.207		
	Total	31.724	152			
Using different technical features of online learning	Between Groups	1.615	2	.807	3.877	.023
	Within Groups	29.153	150	.208		
	Total	30.767	152			
Problems faced	Between Groups	.102	2	.051	.085	.919
	Within Groups	84.175	150	.601		
	Total	84.277	152			

Results indicate that overall, there was significant difference in the satisfaction level among the three groups $F(2, 150) = 5.293, P = .006$. Moreover, results indicate that there was significant difference in the satisfaction among the three groups regarding instructor interaction $F(2, 150) = 3.295, P = .040$, content sharing $F(2, 150) = 6.501, P = .002$ and different features of online learning $F(2, 150) = 3.877, P = .023$.

As in the above table, One-way ANOVA showed significant difference in three variables, therefore LSD Post- hoc test was executed to find out in the detail of the difference among three groups with respect to their employment level.

Table 2

Post Hoc Test for Measuring Overall Satisfaction by their employment level

(I) Student's Employment Status	(J) Student's Employment Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					LB	UB
Full Time	Part Time	.02736	.06914	.693	-.1093	.1641
	Unemployed	-.19028*	.07002	.007	-.3287	-.0518
Part Time	Full Time	-.02736	.06914	.693	-.1641	.1093
	Unemployed	-.21764*	.07336	.004	-.3627	-.0726
Unemployed	Full Time	.19028*	.07002	.007	.0518	.3287
	Part Time	.21764*	.07336	.004	.0726	.3627

*. $P < 0.05$, LB=lower bound, UB=upper bound

Results indicate that there was significant difference in the satisfaction level of full time and unemployed learners ($P = .007$). Moreover, results also indicated that there was significant difference in the satisfaction level between unemployed and part time learners as mean difference shows that unemployed distance learners were more satisfied ($P = 0.004$) than the part time employed distance learners. It means that overall, unemployed BS students were more satisfied than the full time and part time BS computer science students.

Similarly significant difference was found regarding interaction among different employment levels.

Table 3
Post Hoc Test for measuring satisfaction regarding interaction with the instructor by employment level

(I) Student's Employment Status	(J) Student's Employment Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					LB	UB
Full Time	Part Time	-.07273	.10835	.503	-.2869	.1415
	Unemployed	-.27629*	.10972	.013	-.4932	-.0594
Part Time	Full Time	.07273	.10835	.503	-.1415	.2869
	Unemployed	-.20357	.11495	.079	-.4308	.0237
Unemployed	Full Time	.27629*	.10972	.013	.0594	.4932
	Part Time	.20357	.11495	.079	-.0237	.4308

*. $P < 0.05$, LB=lower bound, UB=upper bound

In table 3, multiple comparisons have been presented. This table indicates that there is a statistically significant difference in satisfaction regarding instructor interaction between the full time and unemployed ($p = 0.013$), while there is no significant difference between the part time and unemployed ($p = 0.07$) as well as between the part time and full time employed ($p = .503$). It means unemployed BS students were more satisfied regarding interaction with the instructor than the full time and part time BS computer science students.

As significant difference was also found among distance learners regarding content sharing aspect, the post hoc test was executed to find it according to employment level of learners.

Table 4
Post Hoc Test measuring satisfaction of distance learners regarding content sharing by employment level

(I) Student's Employment Status	(J) Student's Employment Status	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					LB	UB
Full Time	Part Time	.11251	.09153	.221	-.0684	.2935
	Unemployed	-.23086*	.09269	.014	-.4141	-.0476
Part Time	Full Time	-.11251	.09153	.221	-.2935	.0684
	Unemployed	-.34337*	.09711	.001	-.5354	-.1514
Unemployed	Full Time	.23086*	.09269	.014	.0476	.4141
	Part Time	.34337*	.09711	.001	.1514	.5354

*. $P < 0.05$, LB=lower bound, UB=upper bound

In Table 5, multiple comparisons have been presented. This table indicates that there is a statistically significant difference in satisfaction regarding content sharing between the full time and unemployed ($p = 0.014$) as well as between the part time and unemployed ($p = 0.001$). However, there was no difference between the part time and full time employed ($p = .221$). It means unemployed BS students were more satisfied regarding content sharing than full time and part time BS computer science students.

As a significant difference was also found among distance learners regarding different aspects of online learning, therefore, it was found statistically in the following table.

Table 5
Post Hoc Test measuring for Satisfaction regarding different features of online learning by employment level

(I) Student's Employment Status	(J) Student's Employment Status	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					LB	UB
Full Time	Part Time	.08582	.09173	.351	-.0955	.2672
	Unemployed	-.17962	.09289	.055	-.3633	.0040
Part Time	Full Time	-.08582	.09173	.351	-.2672	.0955
	Unemployed	-.26545*	.09731	.007	-.4578	-.0730
Unemployed	Full Time	.17962	.09289	.055	-.0040	.3633
	Part Time	.26545*	.09731	.007	.0730	.4578

*. $P < 0.05$, LB=lower bound, UB=upper bound

Results showed statistically significant differences between the groups as a whole. The multiple comparisons, showed which group differed from other group. The LSD post hoc test was conducted. This table indicates that there is a statistically significant difference in satisfaction regarding different features of online system between the part time and unemployed ($p = 0.007$), while there is no significant difference found between the full time and unemployed ($p = 0.055$) as well as between the unemployed and full time employed ($p = .351$). It means unemployed BS students were more satisfied regarding different features of online learning than full time and part time BS computer science students.

Discussion

The first objective was to explore satisfaction of employed and unemployed on-line learning students. Overall, unemployed BS students were more satisfied than the full time and part time BS computer science students. The unemployed BS students were more satisfied regarding all aspects of online learning, that is, interaction with the instructor, content sharing, and different features of online learning than the full time and part time employed BS computer

science students. It shows that full time and part time employed students were less satisfied. The finding is in contradiction to some findings in other countries. Such as Valle, (2006) reported Shi, Magjuka, & Li, (2005) and Tucker, (2003) that most of the learners who are taking online courses are part time learners. In online program of school of business at the University of Indiana, 98 percent enrolled students are fulltime employed. Likewise, at the Open universities about 79.7% of students are part-time employed learners with an average age of 25 years and more. Gardner (2016) emphasized that online education is very advantageous as it is flexible for full time employed as assignments could be completed in own convenience, degree can be obtained from any other state, less travelling costs.

Conclusion

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

Overall, the unemployed BS students are more satisfied than the full time and the part time employed BS computer science students. Unemployed BS students are more satisfied than the full time and the part time employed BS students about all aspects of online learning, that is there is no significant difference in the problems faced by students with respect to their employment status.

Recommendations

1. In online learning, students can study at their own pace and feasible time. They have less interaction with their instructors. Therefore, Virtual University should increase interaction time of instructors with the students. More interactive opportunities must be provided to students in real time so that full time and part time employed students can discuss their queries with their instructors of all courses.
2. Virtual university must provide tutorials regarding system usage such as how to use system while students listen a lecture, attempt quiz or assignment submission etc. to all new students.

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