

# ASSESSING THE EFFECTIVENESS OF ONLINE EDUCATION FROM THE STUDENTS' PERSPECTIVE

By  
Afzaal Ali<sup>\*</sup>  
Muhammad I. Ramay<sup>\*\*</sup>  
Mudasar Shahzad<sup>\*\*\*</sup>

## **Abstract**

*In this paper the researchers have investigated students' perceptions about the effectiveness of their online education. The sample consisted of 180 participants of the Virtual University (VU) of Pakistan, and already developed instruments were used to measure dependent and independent variables. Through using correlation matrix and regression analysis, it was found that the following areas are important for students about the effectiveness of online education; Instructor competence, Course structure, and level of technology. The results of our research showed that faculty at VU is delivering online education that meets the students' needs in regard to course structure and instructor competence. Moreover, results also indicated that students think that course structure and instructor competence are more important for the effectiveness of online education than the current level of technology.*

## **Key words**

Instructor Competence, Online education, Course structure, Effectiveness

## **Introduction**

Online education is increasingly becoming common in higher education for supporting traditional education as well as emerging as an opportunity for delivering entire education online. In online education multimedia materials are used to support learning and the ability to adapt the course content to meet a wider range of learner's interests and abilities (Johnson, 2004). Moreover, the use of Web technology for the education purpose has changed the face of education, and now the WWW (World Wide Web) has become a valuable educational means and offer new educational experience for students which was not possible earlier (Sher, 2008). Particularly, in recent years, Online education has gained more popularity and the trend is expected to continue. The Sloan Center for Online Education reported more than 3.1 million students of U.S. enrolled in at least one credited Online course in fall 2005. The Sloan Center also reported that these enrollments increasing at an annual rate of approximately 35 percent a year. According to these figures, NASULGC's 215 member institutions currently enrolled approximately 3.6 million students in total (Sloan Consortium, 2007).

Due to different set of social order, online education attracts people differently. The reason for the attraction includes differing level of age, gender, income, education, location, and market size and employment status. Along this, Online education also shares some of the burden

---

<sup>\*</sup> The writer is working in the International Islamic University, Islamabad. E-mail: [Afzaal\\_ciit@yahoo.com](mailto:Afzaal_ciit@yahoo.com)

<sup>\*\*</sup> The writer is working in the International Islamic University, Islamabad. E-mail: [proframay@iiu.edu.pk](mailto:proframay@iiu.edu.pk)

<sup>\*\*\*</sup> The writer is working in the International Islamic University, Islamabad. E-mail: [mudasar\\_313@yahoo.com](mailto:mudasar_313@yahoo.com)

of traditional classrooms. As the colleges and universities has been experiencing as the size of the student body increases rapidly (Whittaker, 2007). Stewart (2004) argued that online education is also contributing its vital role in order to accomplish social responsibility. Because social realization demands that education should be made available for all the people like physical handicaps without the constraints of geographic, cultural, financial, and for gender divisions.

Online education also plays a significant role in Pakistan. Since in Pakistan a university drop-out rate in face-to-face Higher Education is very high. Especially because of outreach to the remote areas, rural population, and the cultural problems faced by the women in face-to-face education (Bhatti and Arif, 2006). Therefore, VU of Pakistan opened its virtual doors in 2002 for the students. The VU was the first University which completely based on modern information and communication technologies launched by the Government of Pakistan as a public sector university. It has a clear mission; to provide tremendously affordable world class education to aspiring students across the country. The VU use free-to-air satellite television broadcasts and Internet, which allows its students to follow its thorough programs apart from of their physical locations. As the VU holds federal charter, therefore, its degree is accepted and recognized in the country, even abroad. The VU started in 2002 and in a short period of time it has more than a hundred associated institutions which cover over sixty cities of the country, providing infrastructure support to the students. Pakistani students residing abroad are also enrolled in the University's programs. This article focuses on key issues affecting the effectiveness of online education, and ought to find students' perception about the effectiveness of their online education.

## **Literature Review**

Institutions with good image and having better structure for delivering courses Online, provides immense opportunities of interactions to their instructors and students in order to communicate with each others. This is one of the key factors that will increase the possibility of achieving expected goals and objectives (Bore, 2008). According to Banerjee and Brinckerhoff (2002), for getting good results from the Online education; the technology must be available to all the students, well-known hardware and software must be used, and students and faculty must have the required skills and expertise required to perform in a virtual environment. Along this, Online education requires the considerations of a number of factors. These are commitments from the administration and the faculty, the quality of lecture delivery, significant amount of time to develop the right course structure, communication among students and between students and the instructor, and the different role of the faculty members (Peltier, 2007). However, in order to make the students successful in an Online education, instructor should be devoted, motivated and must be equipped with enough computer knowledge (Killion, 2000).

## **Level of Technology and the Effectiveness of Online Education**

As soon as the online teaching and learning atmosphere spread out and matures, innovative and advanced ways of interactions are substituting the face-to-face education. New communication alternatives have been developed. These advanced communication systems and web-based conferencing have provided an opportunity to students and teachers a convenient way

of learning (Mcneil, Robin and Miller, 2000). As the use of information technology becomes well-known in education, a modernized way of communication came into being, which change the preference of students from face-to-face to online education. Now, students feel that upto date technology will improve their learning (Zaidel, 2007). Now, the Internet has become commonly available in the universities almost all over the world. And it's offering new ways of communication, collaboration and delivery methods to students and teachers. But, internet has to be used seriously and practically for the achievement of goals (Ngor, 2001). The speed of the internet and its connectivity has increased and improved day by day. Communication between students and teachers regarding class interactions, courses, projects, assignments and events will soon be so simple as to talk on a wireless phone (Lee, 2005). Now-a-days the students can get benefits from the latest technology in many ways. They can access and use the course material repeatedly. Students can use this course material conveniently due to its availability of online (Turney et al., 2009).

In Online education students by using an internet connection can collect instructions, compose and put forward assignments, and raise questions to the instructor and fellow students at any time and at any place (Sher, 2008). Internet is a major technological advancement which has changed our society and also our universities worldwide. So, the universities have to take benefit from this technology for the Online delivery methods. Better use of technology is a critical success factors in Online education (Volery and Lord, 2000). Dorrian and Wache (2008) argued that in online education most up-to-date technology is becoming commonly used according to the different needs of the student's and their satisfaction. But, some students have very little know-how about the latest technology. Therefore, technical support is important for student's to understand and better use of the technology. Granitz and Greene (2003) reported that mostly the dissatisfaction of the students occurred due to a lack of teacher training, technology problems, student inexperience with Online education, and a failure in communication with faculty and other students. In this study, the level of technology is like an independent variable. Level of technology includes convenient and up to date technology, which VU is using at this time.

H1: The effectiveness of Online education depends upon the level of technology, which an institution is currently using.

### **Instructor Competence and the Effectiveness of Online Education**

Instructors in Online education have experienced more workloads as compared to traditional education. These workloads include creating Online courses, providing technical help to students, and constantly improving their knowledge and skills about technology (Muirhead, 2000). Moreover, in Online education instructors are also less active as compared to face-to-face education and mostly the interaction takes place among the students than with instructor. That's why, often it is noted that Online students relied more on the course readings and each other, than the instructor, to fulfil their course learning objectives (Cragg et al., 2008). Therefore, teachers need to understand how students learn, how they perceive and process information. Students can have different learning styles. Instructor must understand and identify the different learning styles of the online students. Because this will help the instructor to plan proper teaching strategies to accommodate the differing level of students needs (Zapalska and Brozik, 2006). Moreover, it is very difficult for the instructor to access the performance of students individually.

Hence, the instructor must consider the different types of students in order to develop the evaluation criteria, assignments and projects (Banerjee and Brinckerhoff, 2002). For this purpose, the instructor, as a facilitator, must monitor the whole communication process and provide effective feedback, persuade group learning, mediate properly in Online discussions and encourage students to participate fully in the whole process (Conaway et al. 2005).

Marks (2005) argued that three types of interactions are more important for the quality of Online education than others which are interaction between student to student, instructor to student and student to its course content. In addition, Swan (2002) also found three important factors for the success of online education than others. These are a consistent course design, quality and timely interaction between student and instructor, and an effective and useful discussion during the semester. Thus, quality and quantity of interaction of a student with his instructor and class fellows play a vital role in student's satisfaction. So, there is a need to plan well structured instructional activities during the whole semester i.e. assigned the projects or assignments to students individually and in the groups (Yukselturk and Yildirim, 2008). In this study, the researchers also take the instructor competence as an independent variable. It includes timely and quality interaction, feedback, and instructor productiveness.

**H2: The more the instructor is competent the more will be the effectiveness of online education.**

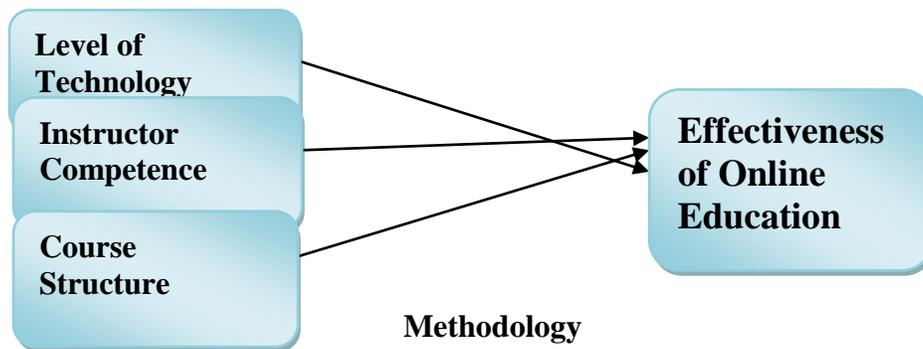
### **Course Structure and the Effectiveness of Online Education**

Just like the traditional education, in Online education the quality of course delivery is also important. Course structure, course content, and amount of interaction between the students and faculty members are the key component of effective course structure. In order to develop the effective course structure, enough time is needed (Peltier et al., 2007). Young and Norgard (2006) reported that mostly the students prefer consistent course design during the whole semester so that they can easily find the direction of courses. They also added that poorly designed courses during the semester will lead to student's frustration. This frustration with inconsistent course design may convert into a poor learning outcome for the students. According to Drago et al. (2005) management should develop a course in which students will involve more, interaction with faculty and other student's increases and hire the instructor that have the appropriate teaching style for online course delivery. This will finally lead to the effective Online education programme.

The Online students hold expectations similar to traditional students with reference to course outcomes and delivery method of the course. These expectations are: the instructor will be educated; well-prepared; organized; and to provide clear and concise explanations to answer questions. Therefore, instructor should treat the students on the equal basis and make unbiased evaluation on time (LaBay and Comm, 2003). Malley (1999) argued that Online education has significant advantages as compared to traditional education. These advantages include saving time, convenient schedule, and taking more courses at a time. But, there are many additional activities required for the delivery of Online courses. These activities are class management, summarizing content, observing and evaluation of student's performance, clarification of course, and finally the continuity of course (Conceição, 2006).

Instructor and designers should be able to understand and comprehend the unique learning environment of Online education. So that courses should be delivered successfully in order to meet the student’s expectations (Sahin, 2007). For the successful accomplishment of quality measurement and for improvement of online educational environment, need the same management commitment as traditional teaching and learning (Zhao, 2003). And finally researchers take the course structure also an independent variable. It includes Online course design, course interaction, and course content.

**H3: The more the quality of course structure is the more will be the Theoretical framework**



**Subject**

Survey was conducted at VU of Pakistan. The reason for selecting the VU was that it is the only University in Pakistan which offering hundred percent Online education. For this purpose two campuses of VU i.e., Wah and Islamabad were selected. Undergraduate and graduate students of these campuses were invited to take part in this survey in the spring of 2009. The sample consisted of 180 participants of VU of Pakistan and the total response rate was 81.7 percent. Table I provides a summary of the respondents’ demographics

**Table – I**

Respondents’ demographic profile	Frequency	%
<b>Gender</b>		
Male	69	46.9
Female	78	53.1
<b>Age</b>		
Under 25	113	76.8
25–30 years	22	15.0
Above 30	12	8.2
<b>Student’s type</b>		
Part time	63	42.9
Full time	84	57.1
<b>Academic program</b>		

Graduate	32	21.8
Master	115	78.2

### Procedure

Questionnaire was self administered. Firstly, it was decided to collect data through Online, i.e. to get e-mails of the students from the Faculties of these two campuses who were teaching Online in the spring 2009 semester. But at that time exams of the student's were held. The researchers felt that if we could e-mail this survey to the students. It may be possible that due to exams, the students were less concerned about this survey. Therefore, researchers personally visited these two campuses of Wah and Islamabad and collected data. Questionnaire is available at the end of this paper.

### Instrument

The researchers used all ready developed instruments to measure, dependent and independent variables. For measuring the effectiveness of the Online education, researchers used some items of Moore and Benbasat (1991) cited by Malley and McCraw (1999). While for measuring the instructor competencies, Arbaugh (2000) has developed items cited by Susan Y and McGorry (2003) and the researchers used these items. Moreover, in order to measure the relationship of the level of technology with effectiveness of Online education, researchers used the TAM (Technology Acceptance Model). This model had been used previously by Davis et al. (1989) cited by Susan Y and McGorry (2003). Some items of this model were used, which were more relevant to our study. Lastly, the Survey Monkey had developed items which were used for measuring the quality of course structure. These items have been developed by Young and Norgard, (2006) by using Survey Monkey (<http://www.survey.monkey.com>).

A questionnaire was developed. It has two parts. First part contained demographic information and the second part contained the variables and their items. In order to measure, the scale was adopted. The scale contains 22 items. Each was a measured on five-point Likert scale with response options ranging from strongly agree to strongly disagree.

### Data analysis

#### Reliability analysis

Each variable was assessed for reliability while using coefficient  $\alpha$ . Summary of the reliability of the scale, achieved during the study, is used to measure the dependent and independent variables, presented in Table II.

**Table – II**

Reliability analysis	No. of Items	Cronbach Alpha
Course structure	9	0.804
Effectiveness	4	0.643
Instructor competence	4	0.705
Technology	5	0.597

### Results

**Table – III**

<b>Effectiveness of Online Education</b>
--

Course structure	Pearson Correlation	.377**
	Sig. (2-tailed)	.001
	N	147
Instructor competence	Pearson Correlation	.394**
	Sig. (2-tailed)	.000
	N	147
Technology	Pearson Correlation	.161
	Sig. (2-tailed)	.159
	N	147

**Note:** \*\*. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix (Table III) indicates that course structure is positively and significantly correlated with effectiveness of Online education (0.377\*\*), \*\*.p<.001). Correlation analysis establishes that instructor competence have significant relationship with effectiveness of online education (0.394\*\*), \*\*.p<.000). There is no significant relationship between the technology and effectiveness of online education (0.159), p>.159)

**Table – IV**

Regression analysis	Beta	t-value	P-value
Constant		2.441	.017
Course structure	.523	3.963	.000
Instructor competence	.435	3.933	.000
Technology	-.402	-2.793	.007

n = 147 ; R Square = .304; Adjusted R Square = 0.276;  
 F = 10.770; Significance F = 0.00;  
 Dependent variable = Effectiveness of online education

Table IV presents the regression coefficient of independent variables on dependent variable, i.e. effectiveness of online education. Out of these three independent variables, Course structure and Instructor competence had a significant effect on the effectiveness of Online education while technology had no significant effect on the effectiveness of Online education

## Discussion

The purpose of current study was to examine relationship between the course structures, Instructor competence and level of technology with the effectiveness of Online education among the students of VU in Pakistan. As per hypothesis, course structure emerged as a determinant of effectiveness of online education. Course structure was consisted into three parts, i.e., course design, course interaction, and Online course content. The results of the survey indicated that majority of the students at these two campuses of VU preferred consistent course design across courses to support ease of navigation. It was reported that when courses were poorly designed then students became irritated with their courses. Students were also asked regarding assignments, lecture material, and evaluation criteria in their Online courses. And most of the students agreed that lecture material was valuable in their Online courses and that evaluation

criteria were satisfactory. In the section of Online course interaction it was found that quality of discussions in their courses were high.

As per second hypothesis, instructor competence also emerge as a determinant of effectiveness of Online education. The majority of students agreed that interaction between students and instructors is necessary for the effectiveness of Online education. Especially timely interaction is an important element of an instructor competence in online education. Along this the instructor should be able to understand the diversity of the students and make accurate assessment of assignments, projects and exams. It was also reported that students felt themselves isolated and uncertain, when instructors did not respond in a timely manner instead of their great efforts.

In the last hypothesis of this study, it is found that there is a relationship between the level of technology and the effectiveness of Online education, but not significant. Students think that course structure and instructor competence is more important for the effectiveness of Online education than current level of technology. The VU is using the modern information and communication technologies and provided basic training of using technologies to its students. Therefore, most students of VU have basic know-how about the use of latest technology like WWW, digital, electronic instruments and devices. Students also have the facility to interact with electronic resources, such as multimedia, audio and video resources, simulations and presentations. Now in Pakistan, internet is available almost in all of the big cities and universities. So why the students think that course structure and instructor competence is more valuable to them than level of technology, for the effectiveness of online education.

### **Recommendations**

As in online education there is no need to take notes due to the availability of materials in electronic format. Therefore, VU should design Online course, which should be brief, well defined, precise and concise in nature. So that the students can easily understand it. Secondly, there is a need for this; VU should increase the number of its campuses in those remote areas of Pakistan which are still inaccessible. As students of these areas also have the desire to get education but due to certain reasons they cannot get it. Therefore, VU can play its vital role in order to improve literacy rate in Pakistan. Another recommendation is that in order to consider more segments of students, VU can enhance the portfolio of its offered courses.

### **Limitations and future research direction**

There are certain limitations of this study. The small sample size may not completely represent the majority of students of VU. Additionally, two campuses of the VU of Pakistan, i.e. Islamabad and Wah were selected. This may not reflect the results of the whole VU campuses. In the future research point of view, one can compare the effectiveness of the Online education with the effectiveness of face-to-face education. Furthermore, the effectiveness can be measured on the basis of gender.

### **REFERENCES**

Banerjee, M. and Brinckerhoff, L.C. (2002). Assessing Student Performance in Distance Education Courses: Implications for Testing Accommodations for Students with Learning Disabilities. *Assessment for Effective Intervention*, 27(3), 25-35.

- Bhatti, M. A. and Arif, M. (2006). Library and information science distance education and continuing professional development in Pakistan. *Library Review*, 55(5), 307-313.
- Conaway, R. N., Easton, S. S. and Schmidt, V. S. (2005). Strategies for enhancing student interaction and Immediacy in online courses. *Business Communication Quarterly*, 68(1), 23-35.
- Conceição, S. C. O. (2006). Faculty lived experiences in the online environment. *Adult education quarterly*, 57(1), 26-45.
- Cragg, C. E. (Betty). Dunning, J. and Ellis, J. (2008). “Teacher and Student Behaviors in Face-to-Face and On-Line Courses: Dealing with Complex Concepts”, *Journal of Distance Education Review*, 22(3), 115-128.
- Dorrian, J. and Wache, D. (2008). Introduction of an online approach to flexible learning for on-campus and distance education students: Lessons learned and ways forward. *Nurse Education Today*, 29(2) 57-67.
- Drago, W., Peltier, J. W., Hay, A. and Hodgkinson, M. (2005). Dispelling the Myths of Online Education: Learning via the Information Superhighway. *Management Research News*, 28 (7), 1-17.
- Granitz, N. and Greene, C. S. (2003). Applying E-Marketing Strategies to Online Distance Learning. *Journal of Marketing Education*, 25(1), 16-30.
- Johnson, L. R. (2004). Research-based Online Course Development for Special Education Teacher Preparation. *Teacher Education and Special Education*, 27(3), 207–223.
- Killion, J. (2000). Online staff development: Promise or peril? *NASSP Bulletin*, 84(618), 38 – 45.
- Korir Bore, J.C. (2008). Perceptions of graduate students on the use of web-based instruction in special education personnel preparation. *Teacher Education and Special Education*, 31(1), 1-11.
- LaBay, D. C. and Comm, C. L. (2003). “A case study using gap analysis to access distance learning versus traditional course delivery”. *The International Journal of Educational Management*, 17 (7), 312-317.
- Lee, K. T. (2005). E-Learning: The Quest for Effectiveness. *Malaysian Online Journal of Instructional Technology*, 2(2), 61-71.
- Malley, J. O. and McCraw, H. (1999). Students Perceptions of Distance Learning, Online Learning and the Traditional Classroom. *Online Journal of Distance Learning Administration*, 2(4), 1-10.

- McGorry, S. Y. (2003). Measuring quality in online programs. *Internet and Higher Education*, 6, 159–177.
- McNeil, S. G., Robin, B. R. and Miller, R. M. (2000). Facilitating interaction, communication and collaboration in online courses. *Computers and Geosciences*, 26, 699-708.
- Moore, G. C. and Benbasat, I. (1991) .Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2 (3), 192-222.
- Muirhead, W. D. (2000). Online education in schools. *The International Journal of Educational Management*, 14(7), 315-324.
- Ngor, A. L. C. Y. (2001). The prospects for using the Internet in collaborative design education with China. *Higher Education*, 42(1), 47-60.
- Peltier, J. W., Schibrowsky, J. A and Drago, W. (2007). The interdependence of the factors influencing the perceived quality of the online learning experience: a causal model. *Journal of Marketing Education*, 29(2), 140-153.
- Sahin, I. (2007). Predicting student satisfaction distance education and learning environments. *Turkish Online Journal of Distance Education*, 8(2), 113–119.
- Sher, A. (2008). Assessing and comparing interaction dynamics, student learning, and satisfaction within Web-based online learning programs. *Merlot Journal of Online Learning and Teaching*, 4(4), 446-458.
- Stewart, B. L. (2004). “Online learning: a strategy for social responsibility in educational access”. *Internet and Higher Education*, 7, 299–310.
- Swan, K. (2002). Building communities in online courses: the importance of interaction. *Education, Communication and Information*, 2 (1), 23-49.
- The Sloan Consortium. (2007). Online learning as a Strategic Asset: A survey of Presidents and Chancellors, NASULGC, *A Public University Association*.
- Turney, C. M. S., Rosbinson, D., lee, M. and Soutar, A. (2009). Using technology to direct learning in higher education. *Active Learning in Higher Education*, 10(1), 71–83.
- Virtual University of Pakistan. <http://www.vu.edu.pk>.
- Volery, T. and Lord, D. (2000). Critical success factors in online education. *The International Journal of Educational Management*, 14(5), 216-223.
- Whittaker, R. (2007). Teaching online in the Bronx: Local distance education. *ON the horizon*, 15(3), 145-156.

- Young, A. and Norgard, C. (2006). "Assessing the quality of online courses from the students' perspective". *Internet and Higher Education*, 9, 107–115.
- Yukselturk, E., and Yildirim, Z. (2008). Investigation of Interaction, Online Support, Course Structure and Flexibility as the Contributing Factors to Students' Satisfaction in an Online Certificate Program. *Educational Technology and Society*, 11 (4), 51-65.
- Zaidel, M. (2007). Dynamic Evaluation of the Multimedia Interface in Computer Supported Learning. *Journal of College Teaching and Learning*, 4(5), 25-32.
- Zapalska, A. and Brozik, D. (2006). Learning styles and online education. *Campus-Wide Information Systems*, 23 (5), 325-335.
- Zhao, F. (2003). "Enhancing the quality of online higher education through measurement". *Quality Assurance in Education*, 11(4), 214-221.