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## The Efficacy of E-learning Technologies in Higher Education: Students' Perspective

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### Abstract

*This study is aimed at examining the usefulness of e-learning technologies i.e. television channels (VU TV), internet and video lectures on DVDs for the students of Virtual University of Pakistan (VU). This is hypothesized that the use of internet and lecture DVDs are more frequently used by the students than the television channels run by VU. The sampling technique used in this study was non-probability purposive sampling and a total of 535 students of VU from Lahore were included in the sample. The method used was a survey and a questionnaire as a measurement tool was adopted. The findings of the study revealed that VU TV channels are less frequently accessed due to the time difference in the availability of the required lectures for the VU students whereas the content on the Internet and DVDs is more preferred because it is readily available any time.*

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### Key words:

E-learning, Distance Learning, Virtual University of Pakistan (VU), Internet, Lecture DVDs, Virtual University Television (VU TV), Information and Communication Technologies (ICT)

## **Introduction**

Most of the developing countries around the globe are facing challenges in establishing infrastructure to provide higher education through traditional mode of education. There is a dearth of financial and qualified human resources as well. To cope with these challenges, distance learning and e-learning are the best options to meet the need for higher education. Hence, in 1974, Allama Iqbal Open University (AIOU) was founded in Pakistan to provide education across the country. The purpose of the university was to spread education to each and every corner of the country. It is one of the biggest universities in the world by its enrollment of 1.3 million students (AIOU website, 2017). In AIOU, the traditional postal way was adopted for communication and correspondence with the students. In the late 90s, with the emergence of communication technologies, the concept of AIOU was not compatible with the changing world in terms of communication and technologies. Therefore, the government of Pakistan established an e-learning institution named Virtual University of Pakistan (VU) in 2002 which provides education to the Pakistani students not only in Pakistan but also to the overseas Pakistanis settled in different countries. VU provides education to the students through modern information and communication technologies (ICT) including four dedicated television channels. Similarly, the university is equipped with internet infrastructure and video lectures are also available to the students on multimedia, DVDs, You Tube site and Virtual University Open Courseware (VU OCW).

E-learning is a mode of education in which education is provided through television, internet, radio, film, and DVDs/CDs. The word e-learning can be interchangeably used for distance education, online learning and distance learning.

VU is one of the largest contributing universities which provided more than 6000 video lectures to Open Education Resources. The statistics of the 6<sup>th</sup> convocation of VU revealed the following:

VU has now published all courses on its open courseware site (OCW), and thereby joined the ranks with top universities of the world. VU's open courseware site has been ranked as the best new open courseware site for the year 2012 by the international OCW Consortium. (VU 6<sup>th</sup> Convocation booklet, 2015)

In a very short span of time, the university reached over 100 cities of the country with more than 190 associated institutions which provide infrastructural support to VU students. VU sets the objectives to impart education at affordable cost to the length and breadth of the country without

demographic differences. The objectives further describe that uniform educational environment will be provided with better or equal quality in comparison to the other leading institutions in the country to help personal and intellectual growth of the students enrolled in this university. The total enrollment of the students in the university since 2002 till 2015 Spring semester is 1,76,953 including 1,35,278 male and 41,675 female students (Students Strength Report 2015) and the total graduated students till Fall 2014 are 28859 in all degree programs, diplomas and certificate programs.

The purpose of the research is to study the role of mass media including television, internet and multimedia DVDs in higher education in Pakistan with special reference to Virtual University of Pakistan. VU is the first and only university in Pakistan having its own four dedicated TV channels for providing education to the students across Pakistan. Similarly, the university is structured on internet based information & communication technologies. The queries by the students about any topic or term take place through an interface called LMS (Learning Management System) which can only be used through internet. All the quizzes, assignments, graded discussion boards are uploaded through LMS. The internet is also used to watch video lectures available on You Tube and VU website. The students of VU also watch their video lectures on DVDs available at the VU bookshops.

This study has also investigated the students' point of view about the usefulness of different mediums including television, internet, and multimedia DVDs. It also investigates the relationship between these three mediums of education.

E-learning through internet has the advantages of (i) time and space, (ii) the capability to reach the audience across the globe, (iii) development in less time, (iv) easy to update the content, (v) less development and operational costs if compared with broadcasting content (Sandra, 1996). As per Montana University System (2010), internet is very important in distance learning and the concerned institutions should meet the students' demand. A study conducted in the Montana University System in June 2009 says the students of distance learning have more interest in asynchronous delivery of course content via internet than the course content delivery synchronously. The study further revealed that females, especially belonging to upper middle class, show more interest in distance learning than males. However, VU delivers its course content to the students both synchronously and asynchronously.

For successful distance education through television, it is required that an educational institution should have its own TV channels and must telecast its transmission during week days also (Siraj, 2001). Considering these requirements, VU is the only university in Pakistan having its own dedicated television network of four TV channels for education. The VU television channels

also telecast its transmission on weekends with repeat transmission at night time. As per findings of Siraj (2001), the transmission of educational TV will be beneficial if it is between 4:00PM to 7:00PM which is again as per the broadcast schedule of VU TV because its transmission covers these timings too. The educational program is effective if it is re-telecast to benefit those students who missed the first broadcast (Siraj, 2008). Similarly, learning content and other information should be available online, so that students may be benefited if they missed the lectures due to illness (Voce, 2007).

As compared to television broadcasts, recorded videos are more suitable for the students because they can control the videos. They can pause the video and watch it again when they are willing to watch. Learners have less control over the study content being telecast on television, because they cannot interrupt or ask anything while the recorded video lectures provide some sort of control over the content.

Distance learning has advantages because it has no geographical limitations. It requires lower cost of buildings and less maintenance expenditures on the classrooms (Bataineh, 2001). Distance learners are generally job holders, housewives with children, disabled persons and persons living in the rural areas (Bataineh, 2001). In this context, VU claims affordability and access to the length and breadth of the country and education to all without the distinction of disability, race, gender, age or ethnic group.

In 1960s, multimedia was introduced in distance learning when the British Open University adopted audiotapes, videotapes, radio, television, telephone in 1969. In this period, the focus was on the design and production of learning materials and the teacher- learner interaction was the secondary option (Alcala, 2001). During this decade, the use of computers increased in higher education institutions.

### **Research Method**

The research was conducted through a survey and a questionnaire was used as a research instrument. The reliability of the tool was determined by calculating Cronbach's Alpha of different sections. Cronbach's Alpha values varied from 0.776 to 0.898 which indicate that each multi-item construct possess high reliability: VU TV (alpha = 0.830), DVD (alpha = 0.887) and internet (alpha = 0.898).

### **Population**

At the time of this study, the total enrolled active students in VU were 34,000 approximately which were the target population. These students were enrolled in the Private Virtual Campuses (PVCs) and Virtual University own campuses.

## Sampling

The sampling used in this study was convenience sampling. The students enrolled in VU campuses in Lahore were selected for collecting the data. To collect the data, questionnaires were distributed among the students who were willing to fill in the questionnaire in the presence of the researcher. A total of 535 students filled in the questionnaire completely.

## Data Collection Procedure

Questionnaires in the hard copy were distributed among the students. After filling in the questionnaire, the data was encoded in the SPSS software.

## Analysis and Results

**Table 1: Values of mean and standard deviation**

Main Theme of Question Statement	Mean	Standard Deviation
Virtual University TV channels as a source of learning	3.2126	0.86762
Using DVDs as a source of learning	3.5421	1.01911
Using internet as a source of learning	3.4077	0.86111

In Table 1, the values of mean and standard deviation have been shown. The mean 3.5421, which is the highest as compared to the mean of other factors, indicates that the respondents mostly use DVDs as a source of learning.

In the tables mentioned below, SA (strongly agree) and A (agree) are both considered as agreed while SD (strongly disagree) and D (disagree) are considered as disagreed.

**Table 2: VU Television as a Source of Learning**

Sr.#	Statements	SA	A	UD	DA	SDA
1	All of the four TV channels of VU are available on the cable network.	85	150	77	106	115
2	Not watching VU TV due to the unavailability of the desired lectures in which the students are interested.	103	163	110	76	80
3	Electricity load shedding is also a constraint for not watching VU TV for studies.	135	184	69	81	64
4	Watching VU TV is also difficult because the students cannot stop or rewind the lecture when it is required	177	173	52	64	61
5	VU TV is not preferred over the other means of education (DVDs and Internet) by the students.	136	139	84	107	67

Out of 535 participants, 235 (44%) participants agree that all the VU TV channels are available on the cable network in Pakistan while 221 (41%) disagree with the statement. 266 (50%) agree that they do not watch VU TV because of the unavailability of the lectures in which they are enrolled while 156 (29%) participants disagree. Similarly, 319 (60%) students agree that electricity load shedding is also a constraint for not watching VU TV while 145 (27%) disagree with the statement. 350 out of 535 (66%) agree that the inability to stop or rewind the lectures on TV is also one reason for not watching VU TV while 125 (24%) participants disagree with the statement. Furthermore, 275 (52%) of the VU students agree that VU TV is not preferred over the other means, i.e. DVDs and internet while 174 (33%) disagree with the statement.

**Table 3: DVDs as a Source of Learning**

Sr.#	Statements	SA	A	UD	DA	SDA
1	The DVDs are easy to use, as the content can be stopped and rewind when required.	184	161	68	59	58
2	The lectures on DVDs can be watched as and when the time is available to the students.	210	161	49	56	50
3	Watching lectures on DVDs saves time.	178	160	67	74	42
4	Majority of the VU students use DVDs to watch video lectures.	108	170	109	92	54
5	Lectures on DVDs are more preferred by the VU students.	123	157	113	63	68

Table 3 shows the results about the use of DVDs as a source of learning for the students of VU. In this table, 345 (65%) participants agree that DVDs are easy to use because they can be stopped or rewind when needed while 117 (22%) students disagree. Similarly, 371 (71%) agree that the lectures on DVDs can be watched as per time availability to the students while 106 (20%) disagree. Likewise, 338 (65%) participants agree that watching lectures on DVDs saves time while 116 (22%) participants disagree. A total of 278 (52%) students agree that the majority of the VU students use DVDs to watch video lectures while 146 (27%) participants disagree. Furthermore, 280 (53%) students agree that DVDs are more preferred by VU students and 131 (25%) are against the statement.

**Table 4: Internet as a Source of Learning**

Sr.#	Statements	SA	A	UD	DA	SDA
1	Majority of the students download VU lectures from You Tube.	97	121	128	107	72
2	Students also download VU lectures from VU LMS and OCW.	112	146	98	74	85
3	The main obstacle to use web as a source of VU lectures is the internet connectivity and slow speed.	91	199	120	69	43
4	Internet is the main source of learning while studying at Virtual University.	198	169	71	43	41
5	The absence of student- teacher face to face interaction is not an obstacle to learning at VU.	107	159	117	73	67
6	The course content is easily and 24/7 available on VU LMS.	92	193	102	87	50
7	Students are fully satisfied with teachers' response to the students' questions on LMS.	64	191	123	93	46
8	In online interaction with the teachers, the students are more comfortable than the face to face interaction.	89	130	149	115	46
9	VU students prefer to use internet to watch lectures of their interest.	102	187	111	68	48
10	Students use VULMS to download the course handouts instead of the printed handouts available on VU bookshop.	160	156	81	71	56

Table 4 shows that 218 (42%) participants agree that the majority of the students download VU lectures from You Tube while 179 (34%) disagree. 258 (50%) VU students agree that they also download VU lectures from VU LMS and OCW whereas 159 (31%) disagree. 290 (56%) agree that the main obstacle to use web as a source of VU lectures is the internet connectivity and slow speed while 112 (21%) participants disagree with the statement. Similarly, 367 (70%) participants agree that internet is the main source of learning while studying in VU whereas 84 (16%) participants disagree with the statement. 266 (51%) participants agree that the absence of student- teacher face to face interaction is not the obstacle to learning while 140 (27%) students disagree. Furthermore, 285 (54%) VU students agree that the course content is easily and 24/7 available on VU LMS while 137 (26%) participants disagree. Elaborating the table further, 255 (49%) students agree that the students are fully satisfied with teachers' response to the students' questions on LMS while 139 (27%) are against the statement. If we unfold the data further, 219 (41%) participants agree that in online interaction with the teachers, the students are more comfortable than the face to face

interaction while 161 (30%) participants disagree with the statement. Similarly, 289 (56%) participants agree that VU students prefer to use internet to watch lectures of their interest while 116 (22%) participants disagree. The last row of the table shows that 316 (60%) participants agree that VU students use VU LMS to download the course handouts instead of the printed handouts available from VU bookshop while 127 (24%) participants disagree.

## **Discussion**

The findings of the study show that most of the students think that all the VU TV channels are available on the cable network. Furthermore, the findings show that quality of the video and audio signals is good. However, the lectures are not telecast according to their needs. Similarly, the students have no control over the lectures on television as it is not possible to stop or rewind them. There is also lesser number of students who watch VU TV for their study. Electricity load shedding is also a barrier to watch video lectures on VU TV. Therefore, the majority of the students do not prefer to use VU TV as a source of learning.

The study results signify that the majority of the respondents find DVDs more useful as they can stop or rewind as per their requirements. Most respondents also agree that DVDs are available at low price and watching DVDs for lectures saves their time as compared to other sources. The majority of the respondents are also satisfied with the quality of lectures on DVDs. Hence, the students prefer DVDs as a source of learning as compared to other sources.

Internet is also one of the important sources of learning for the VU students. The respondents mention that they download video lectures from LMS (Learning Management System), OCW (Open course ware) and You Tube, but most of the students agree that internet connectivity and slow speed is the obstacle to download lectures. It is also revealed that internet is also a main source of learning for VU students as 70.3% of them responded in favor of the internet as a source of learning. The majority of the students also favor the availability of the course content on VU LMS. Internet is important because it is used to download the course content and communicate with their tutors. Due to the internet, the tutors respond to their queries in time and they are more comfortable when interacting with their respective tutors through internet as compared to face to face interaction. Therefore, internet plays the role of a bridge between the students and tutors.

## **Conclusion**

To analyze the use of VU TV and find out the importance of DVDs and internet as the sources of learning for VU students were the objectives of the study. It is concluded that VU television seems less important for the students as it does not fulfill their needs as compared to other sources; although they are satisfied with the audio and video quality of the VU television.



The lectures on DVDs are more important for the students as they are easily available at low price and the students can use them as per time available to them. Contrary to VU TV, the students can stop or rewind the lectures on DVDs if they want to take notes or watch it again in case they do not understand the lecture at first attempt. DVDs can be used anywhere and anytime where the laptop or computer is available to them which is not the case with television. So, lecture DVDs are the most important source of learning for the students.

The second most important source of learning for VU students is the internet. It is used to download video lectures and other reading materials from VU LMS and OCW. The students also interact with their teachers through internet by using Learning Management System (LMS) and take part in the discussion boards (graded and non-graded) and ask their queries from their teachers through LMS which is not possible without the internet.

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