

## Utilization of Electronic Learning System in Swat Rural Areas

Nazir Ahmed Sangi<sup>1\*</sup>, Habib ur Rahman<sup>1</sup>

---

### Abstract:

As developments in electronic technologies i.e. personal computers, laptops, tablets, mobiles and wearable devices, the way of learning is also changing. Therefore, utilization of Information and Communication Technology (ICT) has great important role in schools and colleges. ICT is using by students, teachers and societies in District Swat, KP, Pakistan in the form of mobiles internet (for social contact and chat), computers internet (for knowledge exploration and entertainment) and multimedia (for teaching and learning). One of the difficulties involved in rural areas' students of District Swat is that they cannot join class rooms due to their poor livelihood condition and far away from schools and colleges. Especially most of the females of rural areas of Swat do not come to schools and colleges for their family tradition and culture. Various questions were examined in every aspect of educational technologies in this study. We surveyed 50 responded randomly at District Swat from different schools and colleges and discovered that the responded were generally positive and have great interest about e-learning in Swat. The use of proposed electronic system for the learning, the literacy rate will increase in rural areas and students will achieve their individual goals.

**Keywords:** *ICT, educational technology, electronic learning system.*

---

### 1. Introduction

E-learning means to use electronic technologies and methods to study or learn. According to Beal web-based learning, computer-based learning, virtual classrooms and digital collaboration [19] are processes and applications of e-learning. In Swat Valley the home usage of personal computers, laptops and internet is relatively very moderate. Due to recent growth in ICT, Internet and ICT in the form of educational technologies are having great roles in the improvement of education which are providing more opportunities and flexibility to the teachers and students [1]. Dekel defined e-learning or electronic learning as online learning, internet-based learning, web-based learning, distributed-learning, or computer-assisted instruction [2]. Due to electronically support education and training pedagogy for student hub and collective learning has turned into familiar. E-learning is a totally new learning platform for students and teachers, therefore, computer skills are involving for its

implementation. Due to evolutions in information communication technology, students study or learn without schools' places, therefore teachers' responsibilities and students' learning practices are also changing [3]. There are several definitions of e-learning offered such as using of ICT to help and facilitate students to learn or study [3]. A system which has abilities of teaching and learning methods [4]. The rest of the paper is organized as follows. In session 2 covers related literature review, session 3 covers survey objectives, session 4 shows the research questions, session 5 shows the survey sampling and population, session 6 describes survey results, session 7 is about the research conclusion and future work, session 8 discuss lesson learned and finally shows the related references.

### 2. Literature Review

According to E. Ross e-learning materials are delivered by means of the internet, intranet, audio and video clips i.e. it can be

---

<sup>1</sup> Department of Computer Science, Allama Iqbal Open University, Islamabad Pakistan

\* Corresponding Author: [nazir.sangi@gmail.com](mailto:nazir.sangi@gmail.com)

self-paced or tutor guided [5] and includes different sources in the form of text, image, computer graphics, video and audio. Education experts have the same opinion that to organize students for the e-learning, our traditional educational system requires use of ICT. Therefore, E. Ross described that it is essential for teachers to accept e-learning i.e. global learning environment to use information communication technology with their old-style of education [5]. Knowledge and skills are sources of success and needed in current education system (primary schools, high schools and higher secondary schools) all over the world. R. Sims stated in his paper that e-learning model is new practice of learning and activity which improved and transformed traditional style of learning in the form of well-organized, effective and attractive new technology models [6]. Learners can get opportunities and enhance their knowledge from blended learning which combines face-to-face and online mode of instruction [7]. Here, we will discuss ICT utilization effort in education and e-learning implementation and status in different countries and Pakistan...

### 2.1. United State America

The R. Abel observed 89% in The National Center for Education Statistics that United State public institutions offered both degree and certificate programs in online mode of instruction [8]. Acellus Academy has started e-learning program which is benefited more than one million students in every state of U.S. [9]. Rebecca extracted a report from Sloan Consortium Survey on Online Education in the U.S. in year 2011 and stated that online enrolments evaluation is ten times higher than traditional mode [10].

### 2.2. China

Y. Zhang detected that China introduced e-learning in 1998 and China government is assisting e-learning in the form of funding and policy, therefore Ministry of Education (MoE) permitted 68 online colleges in 2004, during this year 190,000 students have awarded graduate degrees from these online colleges in different courses like administration, medicine, arts, social sciences, physical

sciences, engineering and technologies etc. [11].

### 2.3. Thailand

Thailand Cyber University (TCU) initiated a web-based learning management system since 2004. TCU web based learning system registered 41 universities for their online curricula that's why now i.e. year 2016; 17 curricula, 635 lessons, 4040 lecturers and 107068 students registered online with TCU project [12].

### 2.4. Pakistan

Allama Iqbal Open University (AIOU) is the first Open University in Pakistan which started distance education from secondary school to postgraduate level courses and online learning system for the learning of bachelor level courses. Similarly, NUST, COMSAT and FAST universities are some of the prominent national level electronic programs to disseminate consciousness and education of ICTs. Now, there are many public and private universities which making contribution for the virtual learning facilities but the Virtual University (VU) started online learning support first time in Pakistan [16].

- Punjab province has initiated e-learning which only digitizes textbooks and adds some videos in between but e-learning awareness and understanding in students and teachers and government policy for the e-learning are still remaining issues in Punjab. Punjab government, along with PITB (Punjab Information Technology Board) are started combine efforts for the enhancement in education system using ICT specially in online textbooks, online syllabus, online tutorials and online activities [13].
- Taaleem Foundation [18] started virtual class rooms i.e. e-learning education in many districts of Sindh and Baluchistan provinces which utilize digital whiteboards, ICT components and online tutorial applications for the online instruction mode.
- The Khyber Pakhtunkhwa government initiated IT Labs [17] in province and laptop schemes, the KP pilot project

distributed 2800 tablets to teachers but e-learning concept, understanding and policy for the learning in KP are still remaining problems. Government only just focused on hardware rather than utilization of ICT for education.

- There is no such initiative like e-learning in schools and colleges of district Swat, KP Pakistan still started or ICT policy made for e-learning. Only traditional education system i.e. education or learning within class rooms exist in district Swat and it is great hurdle to increase literacy rate especially in females. Therefore, we arranged a survey and found a solution i.e. e-learning.

Naveed Ahmad asked from Government of Pakistan [14], it is clear that e-learning will be important for standard education but now the question is, why is the government not pursuing this 21<sup>st</sup> century movement seriously? Why doesn't the government integrate internet and computer-based technologies in its schools, colleges and universities?

E-learning gives equal and excellent education opportunities to urban and rural areas in the form of equal quality online learning contents, designs and pedagogy methods i.e. same education in everywhere [15].

After different literatures reviewed, we arranged a pilot survey in district Swat to find out the students' interest in e-learning because this is the modern education need and solution to increase literacy rate especially of females in rural areas.

### 3. Survey Objectives

The objectives of this pilot survey for the Swat, Pakistan students as under:

- To find out the usages of computers and internet for the learning.
- To find out problems faced by students from traditional learning system in Swat, Pakistan.
- To survey the District Swat, KP Pakistan students' willingness to adopt e-learning.

- In e-learning education, females can be capable to acquire benefits of these prospects and increase educational levels and increase literacy rate in rural areas of Swat.
- E-learning is learning anytime, anywhere i.e. personalize approach and highly attractive learning experience in rural areas of Swat.

We propose to make an e-learning system according to modern needs, government syllabus, and students' interest and to increase literacy rate especially in females. This model will help for the whole KP province, Pakistan country and for the whole universal.

### 4. Research Questions

A list of questions was used as the main tool for the research survey. The analysis included an assessment of the questions responses from which data were collected. This data from the quantitative questionnaires analyzed in Microsoft Excel statistically. The following some questions were proposed:

- Do you like to learn or study independently (self-study)?
- If you want to study or learn, then what kind of learning mode do you like to learn from home?
- Would you please identify the present learning system problems faced by you?
- What are learning needs that you are feeling flexible and easy for learning access?
- What kind of instruction mode do you like for learning?

### 5. Sampling and Population

A total of 66 questionnaires in hard copies were distributed across 14 education centres which were included 8 high schools (4 males and 4 females) and 6 higher secondary schools (4 males and 2 females).

The area of Swat is 5,337 km<sup>2</sup> and population is 2.2 million (rural 86% and urban 14%) (Source: Wikipedia 2015). Swat has a total of 1,530 public sector all levels schools i.e. from primary to and higher secondary level schools. The number of male high school is

16% i.e. 242 (government 77 and private 165) and female high school is 3% i.e. 52 (government 28 and private 24), male higher secondary school is 4% i.e. 64 (government 14 and private 50) and female higher secondary school is 1% i.e. 18 (government 8 and private 10) (Source: DEO Swat 2016). The literacy rate of Swat is 68% (53% males and 15% females) (UNICEF 2014).

### 6. Survey Result

The pilot survey was deployed during a period of two months (from April to May of 2016) in District Swat hilly areas. As far as the pilot survey sample was concerned, 76% (50 out of 66) respondents out of 60% (30 respondents) were males and 40% (20 respondents) were females responded to this question (see fig. 1). As fig.2. shows, the ratio of the respondents i.e. teachers 20% (10 out of 50) and students 80% (40 out of 50).

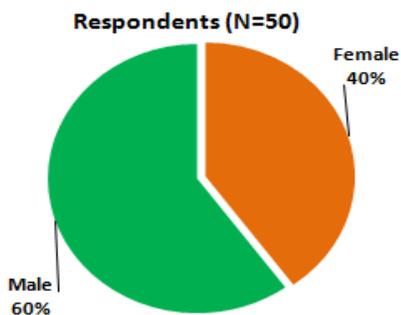


Figure 1: Gender base ratio

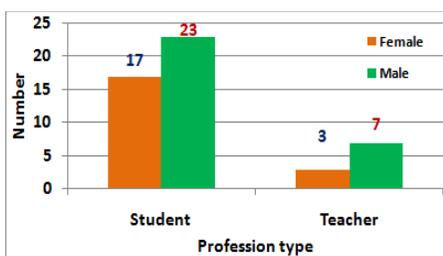


Figure 2: Profession type segregation

From the students' point of view, it is very important to know whether students at the time of taking survey, how many years they have been using computer. See the figure 3, the major respondents i.e. 74% have been used computers since 1 to 5 years. Similarly, 12%

used since 6 to 10 years' group, 2% used since 11 to 15 years' group and 12% was not using computer group.

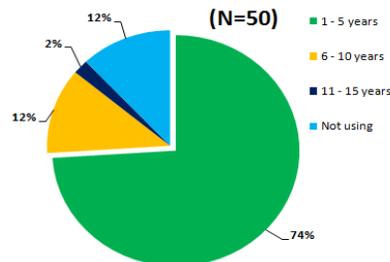


Figure 3: Usage of computer

In the survey respondents were asked some related valid questions about the utilization of e-learning in District Swat, KP Pakistan and found their response results.

#### 6.1. Respondents like learn independently (self-study)

As fig.4. demonstrates, 27 respondents (54%) were frequently like to learn by self-study. Moreover, 14 respondents (28%) were occasionally like to learn independently, 6 respondents (12%) were not like and only 3 (6%) had no know about self-study (independently).

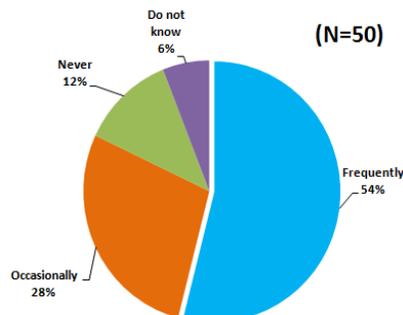


Figure 4: Like to learn independently

#### 6.2. Respondents like learn mode from home

When answering this question of multiple choice question type, respondents could tick more than one option. Therefore, 10 respondents (20%) reported that they like having the study in online form while the 10

respondents (20%) said that they would prefer to self-study in net. 9 respondents (18%) responded that they would desire to learn in the form of DVD or USB or Audio or Video materials. Similarly, 9 respondents (18%) through distance education, 8 respondents (15%) through web courses, and fewer respondents do not know learning mode from home (see fig.5).

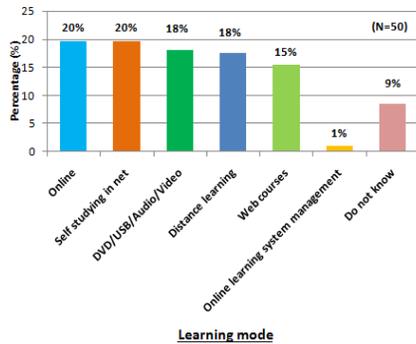


Figure 5: Respondents like learning mode from home

### 6.3. Present learning system (traditional system) problems

The survey respondents responded according to the present learning system i.e. traditional system problems faced by the different areas' respondents of Swat (see fig. 6). The majority respondents faced problem by distance i.e. 26% (13 respondents) followed by cost problem i.e. 24% (12 respondents). Similarly, instruction materials 18% (9 respondents), instruction mediums 8% (4 respondents) and 24% (12 respondents) have no time to learn in a class.

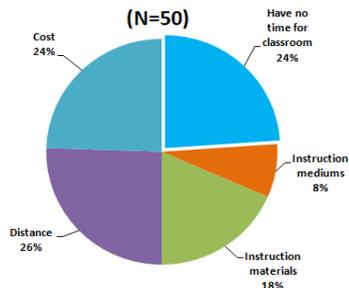


Figure 6: Present learning system's problems

### 6.4. Learning needs that respondents are feeling flexible and easy for learning access

The majority of respondents i.e. 10 (20%) having great interest that Online or Internet need is a flexible and easy for learning access. Similarly, respondents also like Video or Audio clips for easy learning access i.e. 9 respondents (19%) followed by 7 respondents (14%) shown interest for learning applications need, 8 respondents (17%) for handouts, 4 respondents (9%) for simulation tutorials, 4 respondents (8%) for distance education, 2 respondents (4%) for Blog/Wikis and 4 respondents (8%) do not know about learning need (see fig.7).

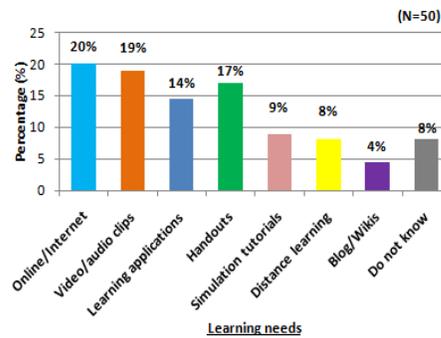


Figure 7: Learning needs for flexible and easy learning access

### 6.5. Respondents like instruction mode for learning

As fig.8. shows that the majority of respondents like Online/Internet instruction mode i.e. 21% (10 respondents), followed by Video/Audio clips instruction mode i.e. 19% (9 respondents), Learning application 17% (9 respondents), Simulation tutorials 12% (6 respondents) and Handouts instruction mode liked by respondents 12% (6 respondents). Similarly, Distance learning and Blog/Wiki instruction mode liked by respondents i.e. 6% (3 respondents) each respectively. 8% (4 respondents) do not know about instruction mode.

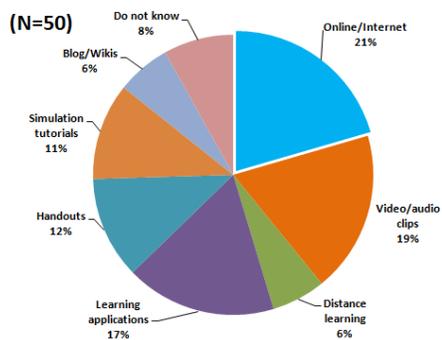


Figure 8: Respondents like instruction mode of learning

## 7. Conclusion and Future work

As this research of pilot survey showed, a majority of respondents welcomed and great interested a possibility of having their study or learn in e-learning mode i.e. 28 respondents: 57% (Online/Internet 10 respondents: 21%, Video/audio clips 9 respondents: 19% and Learning applications 9 respondents: 17%).

The most frequent reasons for the Swat rural area students' satisfaction with the e-learning study was as follows:

- Easy accessible anytime and anywhere.
- It saves time and cost.
- E-learning may be introduced in schools and colleges of district Swat to make the education sector much more efficient.
- E-learning is future and easy way of learning to increase literacy rate in rural areas and especially for females' education.

We will work on general formulation of interesting model for e-learning utilization in district Swat rural areas. This type will help for the whole KP province and Pakistan country and for the whole universal purpose.

## 8. Lesson Learned

This section describes about some lesson learned which we noticed during pilot survey for e-learning utilization.

**Policy:** Need strong and consistent support with a clear policy of e-learning acceptance. Policy will execute e-learning in schools and colleges for the education improvement.

**Technology:** There should be advance, friendly and good technological support for the online mode of instruction.

**Finance:** For the long term plan of education quality, improvement and education for all need a strong finance support i.e. e-learning system needs ICT utilization.

**Human Resources:** Human resources are important role in e-learning implementation because teachers should know about computer using, internet surfing and ICT using. Therefore, qualified staff will need for the e-learning utilization.

## ACKNOWLEDGMENT

This research was partially supported by Earn-to-Learn (E-to-L) scheme of Allama Iqbal Open University, Islamabad Pakistan.

## REFERENCES

- [1] Oh E and Russell RDR, "Pre-service Teachers Perceptions of an Introductory Instructional Technology Course," *Electronic Journal Integration of Technology Education*, Vol. 3(1), pp.10, 2007.
- [2] Wikipedia contributors, "Educational technology," Wikipedia, The Free Encyclopedia, [https://en.wikipedia.org/w/index.php?title=Educational\\_technology&oldid=755651857](https://en.wikipedia.org/w/index.php?title=Educational_technology&oldid=755651857) (accessed December 19, 2016).
- [3] JISC, "E-Learning Pedagogy Programme," e-learning pedagogy JISC, <https://www.jisc.ac.uk/rd/projects/e-learning-pedagogy>. (accessed June 20, 2016).
- [4] DFES Publication, "Towards a Unified E-Learning Strategy, July 2003," Department for Education and Skills, <http://dera.ioe.ac.uk/id/eprint/4748>. (accessed June 15, 2016).
- [5] E. Ross, "The praise and perils of e-learning," *Theory and Research in Social Education*, Vol. 28(4), pp. 482-492, 2000.
- [6] R. Sims, "Rethinking (e) learning: A manifesto for connected generations," *Distance Education*, Vol. 39(92), pp. 153-164, August 2008.
- [7] L. G. Muradkhanli, "Blended learning: The integration of traditional learning and eLearning," *2011 5th International Conference on Application of Information and Communication Technologies (AICT)*, Baku Azerbaijan, 2011, pp. 1-4.
- [8] A. Rob, "Implementing Best Practices in Online Learning," *EDUCAUSE Review* January 2005, <http://er.educause.edu/articles/2005/1/implementin-g-best-practices-in-online-learning>. (accessed June 29, 2016).
- [9] Acellus Academy, "A Program of the International Academic Science," About Acellus Academy, <https://www.acellus.com/about.php>. (access June 30, 2016).

- [10] Rebecca A. Clay, "What you should know about online education," American Psychological Association, Vol. 43(6), pp. 42, June 2012. (accessed Jun 30, 2016). <http://www.apa.org/monitor/2012/06/online-education.aspx>.
- [11] Y. Zhang, "Unavoidable Challenge: Investigation of and Thoughts on Distance Higher Education in China," Education Newspaper of China, November 15, 2004.
- [12] Thailand Cyber University, "Thailand Cyber University Project," 2004. <http://www.thaicyperu.go.th/>. (accessed June 27, 2016).
- [13] MORE DESK, "PITB's E-learning can become future of education in Pakistan," January 2015. <http://www.moremag.pk/2015/01/07/pitbs-e-learning-education-pakistan/>. (accessed June 30, 2016).
- [14] N. A. Wassan, "E-learning and Pakistan," May 2015. <http://tribune.com.pk/story/891608/e-learning-and-pakistan/>. (accessed 28, 2016).
- [15] Jozef Hvorecky, "Can E-learning break the Digital Divide?," *European Journal of Open, Distance and E-Learning*, 2004. <http://eurodl.org/?article=143>.
- [16] HEC, "Distance & E-learning Universities," Higher Education Commission. <http://www.hec.gov.pk/>. (accessed June 30, 2016).
- [17] KPESE, "IT Projects, Elementary & Secondary Schools," KPESE, <http://www.kpese.gov.pk/>. (accessed June 30, 2016).
- [18] Taleem Foundation, "Education through Technology," Taaleem Foundation, <http://educast.co.uk/taaleem-foundation/>. (accessed July 01, 2016).
- [19] Beal, Vangie, "e-learning," 2016. [http://www.webopedia.com/TERM/E/e\\_learning.html](http://www.webopedia.com/TERM/E/e_learning.html). (accessed June 28, 2016).