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Contact Address:
Prof. Dr. Aytekin İŞMAN
TOJDEL, Editor in Chief
Sakarya-Turkey

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Message from the Editor-in-Chief

Dear Colleagues,

TOJDEL welcomes you. TOJDEL would like to thank you for your online journal interest. The online journal system has been diffused very fast for last 4 years. TOJDEL has continued to diffuse new trends in distance education to all over the world for four years. We hope that the volume 4, issue 3 will also successfully accomplish our global distance education goal. TOJDEL is confident that readers will learn and get different aspects on distance education. Any views expressed in this publication are the views of the authors and are not the views of the Editor and TOJDEL.

TOJDEL thanks and appreciate all reviewers who have acted as reviewers for one or more submissions of this issue for their valuable contributions.

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July 01, 2016
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Editor-in-chief

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DISTANCE EDUCATION IN WORK LIFE:THE CASE OF TURKEY

Prof. Dr. Elif YUKSEL OKTAY
Yalova University, Turkey
elifsel@gmail.com

Abstract: The developments in information and communication technologies have led to copious changes in human life, which in effect initiated a full-scale transformation in traditional work life. In the new-age of information there is higher demand for educated and intellectual employees; hence to ensure that new generation can manage to keep up with rapidly-transforming technological environment, national educational systems have also governments must modify their national education systems. Distance education is among such education methods that can be applied to adapt to the information age. That is due to the fact that via distance education individuals can, without facing the time and space limitations of the traditional educational method, benefit from information technologies and renew themselves in work life or acquire new skills and competencies in a completely distinctive subject. Distance education can be used not only for university students but it can also be offered to the use of employed individuals. It is thus the aim of this study to analyze the state of distance education in the work life in Turkey.

INTRODUCTION

Information and communication technologies have led to copious changes in human life, which in effect initiated a full-scale transformation in traditional work life. As regards its global dimension technology management necessitates monitoring the entire set of technological developments in the world and by selecting the one most advantageous for any given organization, it calls for putting the selected option into practice via the best method. That is related to the fact that globalization has now turned all global companies into competitors. Hence organizations are, including each one of their employees, required to be open to developments and continuously support their employees who are willing to display their innovations to ensure the future success of the company. It is an undeniable truth that at the heart of scientific and technological advancement lies innovation. In the bolstering of innovation, work life trainings provided to the employee are equally vital as the formal education offered during school years.

Education and development for organizations is a concept introduced in the 1920s, but its practice as a professional domain dates to the 1940s. In the 1940s particular emphasis was rendered to select the applicable educational context and the methods to apply in the assessment of education (Turhan et al., 2012:8). In parallel with the developments in technology, traditional in-class face-to-face education has been superseded by distance education practices. Being the greatest invention of the 20th century the Internet turned into a commercial practice once Pentagon-stationed network at the end of 1970s became accessible to educational institutions in 1986 and research institutions and to commercial enterprises in 1990. Low cost of the computer and modem in the USA gave rise to the higher frequency of Internet use.

Education is decisively a critical element of all organizations but it is true that classical educational activities have led to serious losses of time and resources. Nowadays a large number of organizations that resort to information and communication technologies for their educational activities hugely benefit from the practices of distance education which also advanced parallel to the development in technology and gained a further-effective role. Through the Internet

employees are supplied with interactive education and learning means a.k.a “Online Education”, “Education via Web”, “Electronic Education”, “Virtual Education” and “E-learning” that all eliminate the requirement to be physically available in any workplace environment. Via distance education practices organization gain an advantage in terms of time, space and cost and employees can practice any subject, any time, anywhere which in effect enables a deeper learning experience spread over time. It is thus the aim of this study to analyze the state of distance education in the work life in Turkey.

1. CONCEPT OF DISTANCE EDUCATION

Distance education can be defined as, “any official learning process in which the educator and the learner are physically distant from one another”. Unlike traditional education it offers the learners a self-learning opportunity and is adaptable to the conditions of more flexible individuals. In distance education the objective is, by completely or partially removing the limits in providing educational service to individuals, to reach education opportunities for the use of wider masses (İsman, 2011:14). In another saying the goal in distance education is to enable mass education by benefiting from technology and to personalize learning-teaching activities, which translates to an opportunity for self-learning.

In distance education there is no requirement to be at a certain age or educational level; there is time flexibility; freedom of environment and space; communication and interaction is offered customized; production and practicing of high-standard educational tools is coordinated from the Center; learner and educator are physically separated; a vast number of individuals can receive information from their locations; self-learning educational method is systemically arranged; electronic media and personal learning tools are utilized; and lastly an educational company that involves assessment process is provided. Advantages offered via distance education system can be listed such (Yurdakul, 2011:276-277):

-Via distance education new opportunities, aside from formal and informal education means, can be provided. More comprehensive and effective educational means that can complete the defects of traditional educational practices can be devised. The transformation from selective-eliminative system to diagnostic-productive structure; from non-optional and fixed processes to flexible and optional processes becomes easier.

-Distance education can offer flexibility to the learners with respect to the learning environment and time. Learners can learn at any time or day of the week; at any date or even at holiday time; thus they are no longer required to learn within the imposed or mandated deadlines. From the viewpoint of learners the problem to catch faster learners or getting tedious due to slower learners is no longer an issue to tackle with.

-For some learners it might even offer a cure to isolation within school environment or peer groups. In a different saying, it might eliminate the risk of social isolation for some individuals.

-Via distance education practices personal autonomy and critical thinking skills can be further boosted through learning how to acquire and question effective information from various resources.

- Distance education proves to be an effective tool in the democratization of education; reaching education to wider masses; allowing the citizens to benefit from the right of education in the same degree; removing the inequalities faced in educational opportunities which collectively relate to providing the individuals a fair, egalitarian, full- scale and optional, extensive and effective service.

-It may thus become feasible to transmit to a teaching system based on the needs of society-individual rather than merely considering the needs of society.

-By applying a variety of program types the multiple interests, desires, needs and expectations of learners can be met.

-For the ones who, despite being endowed with proper skills, missed normal education due to several reasons or due to existing education models and fell behind learning-teaching processes, distance education can offer the chance for aspired learning experience during any-given period of their life.

-It can offer cost-effective solutions to the problems connected to providing education service. Per person educational cost is, by many measures, comparatively lower than formal education costs.

-Being aimed but not very effectively-actualized objectives of traditional system; such as decision making, taking full responsibility for learning, problem solution, entrepreneurship and learning how to learn, can be polished. Since it is a system based on self-learning, learners may acquire higher skills of systematic study; selecting appropriate methods; self- check and self - correction.

On the other hand distance education has certain limitations which can be listed as below (Sarıabdullahoglu, Ersoy, 2008:32):

- Since the student is alone and in a distant place, s/he cannot enjoy the supportive atmosphere of classroom environment,

- Since there is no other student to compare what is learnt, the learner has no interaction with other students,

- Educational contexts or web pages must be periodically updated,

- In this form of teaching there is no face-to-face interaction or eye contact,

- If the courses not appropriate for distance education are presented via distance education, the course fails to be effective,

- Teachers cannot control students in the way it is feasible via classical education,
- The high costs that might accrue depending on the technologies to use,

- The need for greater time and effort to prepare course contexts,

- Complexity and challenge of planning and coordination,

- Due to misinterpretation of the capabilities of distance education the possibility of decreased teaching and learning motivation of the students and teachers alike,

- In order to make preparations for any course, teachers need longer length of time.

2. DISTANCE EDUCATION PRACTICES IN THE WORLD AND TURKEY

Distance education practices were initially in written form (education via letter). In due course radio, television, telephone and computer took the front stage (Kaya, 2002:20). Distance education practices have a long list of methods that can essentially be categorized as one-way communication and two-way communication:

1) One-way communication
a) One-way teaching via letters,
b) One-way teaching via radio,
c) One-way teaching via television,
d) One-way teaching via computer (Internet).

2) Two-way communication
a) Two-way teaching via letters,
b) Two-way teaching via radio,
c) Two-way teaching via television,
d) Two-way teaching via computer (Internet).

One-way communication: It relates to the distribution model in which the communication in the environment where learning-teaching activities take place between teacher-student and student-student groups is one-way. In this distribution model, students and teacher cannot ask questions among one another and cannot receive immediate responses to their questions. Teaching via letters, one-way distribution, distribution model via radio or television and lastly one-way Internet model are in this group. In this model, teachers prepare web pages related to their courses and direct questions to their students on the Internet. Students are free to retrieve and study the information. To benefit from this model the only requirement for the users is to have Internet access.

Two-way communication: In this model communication between student and teacher in learning-teaching activities is two-way. In this method there are three models; two-way teleconference model, two-way television and two-way Internet-based conference models. In this system students and teachers can set a teleconference platform with one another on the Internet (Sarıabdullahoglu, Ersoy, 2008:29). In this system distance education can be performed in two ways: synchronous or asynchronous (time independent/not synchronous). In classroom environment in a synchronous presentation by making live connection (Internet, satellite), users and presenters (students and educator) get engaged in a practice through synchronous interaction. In such practice students can direct questions, discuss with one another or solve tests. Asynchronous presentation however is a WEB-based education. In such presentation, students

can access WEB courses from anywhere or anytime, receive tests and partake in activities. They can practice later any course they want (Toker Gokçe, 2008:2).

These methods can be used singly or collectively with other models. For instance teaching via letters method can be used in tandem with Internet or computerized teaching method. Thanks to Communication Technologies, two-way communication system applied in classical education can be used very comfortably. To achieve that, as was indicated hereby, technologies viz. Internet, television and satellite can be utilized very comfortably (İşman, Karslı, Gündüz, 2002, http://aof20.anadolu.edu.tr/program.htm).

2.1. HISTORY OF DISTANCE EDUCATION IN THE GLOBE

Distance education is not a novel concept. Its first introduction on global scale coincides with teaching via letters in 1728 in Sweden. In 20 March 1728 dated-issue of Boston Newspaper there was an ad about the opening of "Steno Courses". In a Sweden- based advertisement in 1833 there was an explicit reference to teaching via letters on the agenda. The primary objective of teaching via letters at that time was to offer equal educational opportunities for each citizen (Usun, 2006:210).

Table 1: Chronological Progress of Distance Education

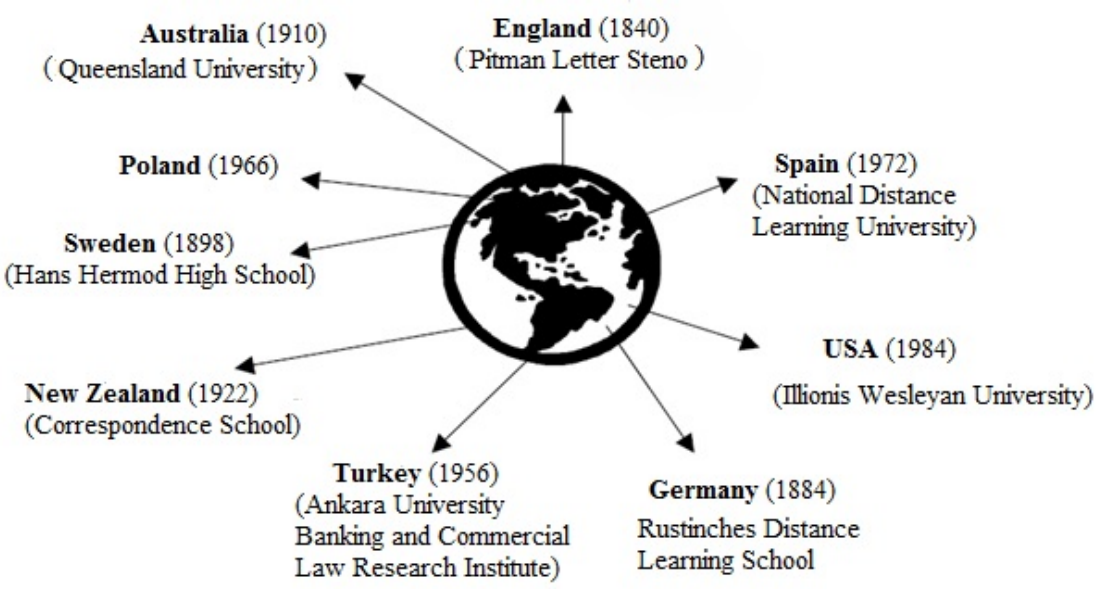
1700-1900	1900-1990	1990-1996	1996-…….
-Teaching via letters -Printed Materials	-Radio -Television -Audio Cassettes	-Video Conference -Satellite Technologies -Video Cassettes -Computer (CD, Internet)	-Web-Based Education -Information Technologies (Video phone, digital TV, virtual platforms, fiber optic cables etc.)

Resource: Aykanat, Seyda (2006), "**İnsan Kaynakları Yönetiminde Elektronik Ortamda Öğrenme ve Örnek Bir Uygulama",** Marmara University Institute of Social Sciences, Department of Management, Management of Human Resources Unpublished Master's Thesis, p. 5

Teaching via letters emerged in the mids of 19th century and spread rapidly to England, France, the USA and Germany. Among the main reasons behind the spread of distance education can be listed as geographical distance, social inequality and personal problems. People can be forced to live away from each other due to physical distance, geographical barriers or inadequate communication systems. Likewise at the end of 19th century in Chicago University (the USA) teaching via letters was kicked off when students and teachers were in different spaces (Gunawardena, McIsaac, 1996, 356). In 1856 Berlin (Germany) Charles Toussaint and Gustav Langenscheidt resorted to teaching via letters method of distance education to practice foreign language education. Due to the physical distance among Australian citizens "Teaching via letters System" was set in 1914 in this continent. Institutions practicing teaching via letters method managed to meet educational needs of people living in scarcely-populated countries such as

Canada and Australia. In Diagram 1, the very first distance education practices on institution base in the whole world has been depicted.

Diagram-1 First Distance Education Practices in the World



Resource: Kaya, Zeki (2002). **Uzaktan Eğitim**, Pegem A Publication, Ankara, p. 30.

Reading & writing holds substantial significance in modern education. In addition audio-based radio programs and visual films as well as television courses have critical importance for education. Although several tests were conducted in distinctive countries, the first radio program in the world was broadcasted on 2 November 1920 in the USA. In the corresponding period a number of universities commenced radio broadcasts. In 1923 educational radio programs were circulated for US schools. In 1922 in England, in 1923 in France and the Soviet Union and in the interval until 1927 Argentina, Australia, Italy, Japan, Norway, New Zealand, Czechoslovakia, South Africa and a long list of countries broadcasted radio programs. In the same years educational-radio programs were released and in these programs children were instructed about farming, communication, science and several other subjects. Educational radio programs for children managed to survive by integrating music, humor, tales and news. In the subsequent years, aside from local radio station programs, “Disney” and “Sesame Street” programs were broadcasted day and night (Uşun, 2006:212-214).

The first roll film was invented in 1888 by George Eastman. A few years later Thomas Edison’s assistant William Dickson used roll films in creating 30-second animated movies. Educative power of animated films was immediately realized. In US-printed Educational Films Catalogue of year 1910, over one thousand films were listed as for rent. In 1916 Ford Motor Company released copious films on the subjects of agriculture, history, geography and life skills. Films on American History were shot in 1923 in Yale University. In 1926 Eastman Kodak Company films were shot on geography and physical sciences. Films prepared by this company were presented to

over 10.000 students for testing. The results of this test were so impressive for Kodak that in the subsequent two decades the Company produced 300 films for school use.

In the 1920s educative films were primarily used in schools offering religious education. Researchers identify that in 1933 US elementary school teachers applied educative films in their courses. A study dated to 1954 demonstrated that three-quarter of elementary school teachers utilized films in their courses. The first periodical television program was started in England in 1936, and in the USA and the Soviet Union in 1939. In Turkey on the other hand television programs were broadcasted for the first time in 1968. The most noticeable TV program was, as mentioned above, Sesame Street that first started in 1969. In Sesame Street it was aimed to teach children friendship relations via symbolic presentations such as letters, numbers, or geometrical shapes (Kaya, 2002:141-142).

In the 1950s in the USA paper-based communication platform was applied for distance education which was particularly related to military use. Thanks to the new technological advancements discs, video cassettes, CD-ROMs, satellite broadcasting, video conferences and Internet have now grabbed vital position in distance education practices. In 1985 Phoenix University performed via Internet the first distance education practice. Distance education practices via Internet is currently the latest and most state-of-the-art distance education application but noting the fact that technological advancements progress in the blink of an eye, it is very much likely that even more advanced practices are to arise in the near future. Nowadays, spread of distance education practices via Internet enabled the unveiling of various uses of the system. Web-based education, Internet-based education and e-learning are just a few of such distance education practices via Internet (Yilmaz, Horzum, Fall 2005:113).

2.2. HISTORY OF DISTANCE EDUCATION IN TURKEY

In Turkey the idea of distance education was first put on the agenda in a meeting in 1927 when educational issues were negotiated. In this particular meeting it was underlined that distance education was a benefit to raise an educated population. A distance education practice as teaching via letters was suggested but failed to be put into practice. The primary reason behind the failure to implement this suggestion was that for a nation with more than 90% illiteracy ratio then, it was against common sense, as they believed, to teach how to read without a teacher. The period between 1927-1955 corresponded to a time when in Turkey, distance education was discussed as an idea. The first distance education practices in Turkey were started by Ankara University Faculty of Law Bank and Trade Law Research Institute. Within the body of Ministry of National Education distance education practices in the form of “Teaching via letters” was pilot tested on November 7th, 1960 (Kaya, 2002:30).

In 1970 Eskişehir Academy of Administrative and Commercial Sciences commenced distance education practices. In the same date, next to Armed Forces, a number of universities such as Middle East Technical University, Istanbul Technical University and Yildiz University initiated cooperative distance education practices (İsman, 2011:111). In 1974 to meet the labor force demand required by new developments; to remove student accumulation in higher education platform; to offer education-teaching services to wider masses by making use of mass communication platforms; to climb the effectiveness of teaching Higher Education Center via Letters was founded. In this center teacher-training programs were organized (Demiray, 2010:82). In 1974-1975 academic year, 50 thousand students enrolled in this Center. In 1974

Pilot Higher Teacher School also started distance education and in 1975 with the establishment of Informal Higher Teaching Institute (YAYKUR) , students who were first introduced with distance teaching in Pilot Higher Teacher School were transferred to this institution. YAYKUR was deactivated in 1979 (İsman, 2011:111-112).

In Turkish universities the first legal arrangement for open education aside from formal education was specified in article "c" item 43 of 04.11.1981 dated no. 2547 Higher Education Law. As stipulated under this article; "Higher education institutes are licensed to perform all forms of teaching and education activities via formal, informal and open education methods (http://www.mevzuat.adalet.gov.tr/html/565.html). The task to conduct distance education was assigned to Anadolu University that was opened pursuant to no. 41 Decree Law related to the Structuring of Higher Education Institutions issued on 20 July 1982 dated and 17760 no. Official Gazette. In 1982, Anadolu University put into practice its distance education model via Open Education Faculty (Kaya, 2002:33).

Between 1982-1993 the demand for Open Education that was affiliated to Anadolu University climbed rapidly. In this period Undergraduate Program in Management and Economics was not the only option. Pursuant to the official protocol co-signed with Ministry of National Education, associate and bachelor degree education was provided to circa 200 thousand teachers. Furthermore student enrolments from TRNC (KKTC) to distance education programs were accepted. As per the protocol co-signed with the Ministry of Health two-year Nursing, Midwifery and Health Technician Associate-Degree Programs; and pursuant to the protocol co-signed with the Ministry of Agriculture and Rural Affairs two-year Agriculture and Veterinary Associate Programs were opened. In 1987, named as Western Europe Project, associate and undergraduate programs were implemented for Turkish citizens residing in several European states. In 1993 Open and Distance Education System was restructured as per no. 496 Decree Law to answer the needs of modern education. Management and Economics programs were transformed to four-year Faculties of Management and Economics. As stipulated under this Decree Law, Open Education Faculty was commissioned with offering all kinds of services relevant of books, radio-TV programs, computer, academic counseling, organization, exams and all student affairs on Distance Education System. Open Education Faculty was also in charge of executing associate, four-year completion, undergraduate and all forms of certificate programs.

In the period between 1993-1997 within the body of Open Education Faculty 17 associate degree programs were opened in the departments of Social Sciences, Home Economics, Bureau Management, Public Relations. Previously organized by OSYM(Student Selection and Placement Center) Open Education exams were, as of 1996, conducted by Anadolu University. At the onset of 1998 as demanded by new technological conditions and proliferation in the needs of education system at most, there had been a further rise in the use of Internet accompanied with all the relevant communication technologies and structuring that moved distance education far beyond its classical functions and thus a new era was heralded. Open and Distance Education System bearing in its body vital features for the New Turkish Higher Education System started to be moved beyond its classical objectives as of 1998 and the system was then endowed with an effective administrative body necessitated by such transformation. Accordingly all academic, technical and administrative units of Anadolu University were modified to effectively contribute to Open and Distance Education System. On the other hand communication and coordination among the faculties operating in this system were structured with a further effective and

productive state of operation. The formed project groups defined new education domains to open via Distance Education System in Turkey thus an opportunity was spared for lifelong learning. In that way intensive and widespread emphasis could be rendered to modern information and communication technologies and via devising new education programs, the new system was initiated for implementation.

As of 1998 academic programs of Faculties of Management and Economics offering service through distance education method were restructured. Repetitive subjects in associate and undergraduate degree courses were corrected and contexts were revised. All books were redesigned, reprinted and republished in line with the modern developments in distance education. In parallel with the book contents, TV education programs were modernized and CD-ROMs were produced. Student quotas for Open and Distance Education System were annulled. As of 1998 academic year on Channel TRT 4, "News from our University" news show to educate and motivate students was aired during the academic term in parallel with the operational academic calendar. Under the academic commissioning of Ankara University, Faculty of Theology, Theology Associate Program was opened in 1998 (http://w2.anadolu.edu.tr/aos/aos_tanitim/aos.aspx). On Channel TRT4 courses were broadcasted at certain hours and course materials were also freighted to supplement these courses. Anadolu University is among the first 10 open universities in the world.

Fırat University stationed in city of Elazig founded in its body on 2 October 1992 a local TV (FIRAT TV) to broadcast in and out of university platform the symposiums, conventions, courses and similar activities organized within the campus. In Ankara-stationed METU (Middle East Technical University-ODTÜ) IDEA (Internet-Based Asynchronous Education) launched in 1998 continued its e-learning activities on the Internet platform and asynchronously. Presently there is an E-MBA[1] program, numerous in-campus courses, foreign language education and certificate programs are actively operated. The system broadcasts via IP Multicast technique on a 24MHz-capacity DVB (Digital Video Broadcasting) transmitter positioned on Dexar, Türksat 1B satellite. Via a project titled as Unidersite, university-preparation courses are sold to the entire nation-scale within the distance of 1.2Mbps-3Mbps.

In İstanbul Technical University, students are required to come to computer labs inside the campus for the test of compulsory Information Course for 1800 students in sum and in a virtual test platform students take a test of randomly-selected questions from a question bank of 10.000 data.

İstanbul Bilgi University is the first university to start YOK-(Council of Higher-education) approved electronic organizational program titled as Bilgi E-MBA. This is an interactive program that provides competency in subjects ranging from marketing, entrepreneurship, finance to human resources. Available to watch via Internet from all over the globe, an official MBA diploma is granted once the program is completed successfully (Calli, Bayam, Karacadag, 2002: http://aof20.anadolu.edu.tr/program.htm).

Sakarya University first started its Internet-assisted teaching activities via an education interface developed in 1997 by academicians in department of informatics. Internet- assisted teaching

[1] E-MBA program is a one-hundred percent internet-based online education program to offer a master's degree.

activities first commenced in 2000-2001 academic year fall term as a pilot study among 150 students and a sum of 3 courses. Subsequent to the pilot study, the university offered Internet-assisted teaching to 1200 students in 10 different departments and in a short time the entire university courses were started to be shared via the Internet in this academic year (Tasbası, Aydın, May, 23-25, 2002, Eskişehir, http://aof20.anadolu.edu.tr/program.htm).

Parallel to a vast number of Turkish Universities, Yalova University likewise started to offer at the onset of 2012-2013 academic year Ataturk's Principles and History of Turkish Revolution, Foreign Language, Basic Science Technologies and Turkish Language courses via distance education method.

3. DISTANCE EDUCATION PRACTICES IN THE WORK LIFE IN TURKEY

3.1. SIGNIFICANCE OF EDUCATION FOR ORGANIZATIONS

Because education in organizations is an adult-based education, particular importance must be attached to the learning traits of adults. Adult education is the focal point of andragogy. Compared to children, adults possess different learning traits that can be outlined as below (Turhan et al., 2012:8):

- Adults are mature and experienced individuals. In learning process they can resort to their positive and negative past experiences. Consequently it is observed that they may occasionally disagree with certain mindscapes and learning opportunities.
- It is conceived that adults can personally identify their learning needs, but it is also true that since adults are under the effect of their past experiences they may face challenges in identifying their needs. They would not seek to receive education on subjects they find futile. Contents of education must be adequate to answer their questions. Educational contents must be set to solve the problems they face.
- Adults seek to shoulder more responsibilities. As demanded by this responsibility they favor to partake more in design of education and demand the education to be on the same page with their personal objectives and wills.
- Adults must be given an opportunity to share their experiences with peers. While learning, adults desire to interact with other learners through practices. Adults also render help to others to learn inasmuch as they also must play the role of a rich resource for learning experience.
- Adults' learning rate decreases as they age, their focus of interest shifts and they usually lose their once-higher self confidence. In both work life and other phases of life where they compete with youngsters they are expected to learn under the same conditions and same rate with the younger ones. Adults would decisively not want to feel themselves petty and humiliated.
- There may emerge instances in which adults' achievements may be constrained. If it is realized that they are challenged, this instance must be corrected.
- Building new subjects on the topics earlier internalized by adults can facilitate their learning rate. Should learning message is transmitted without connecting to previously-learnt subjects or remain at quite a high level for the learners' capacity, adults may cope with extreme difficulty. Education designer must be cautious to present the education in smaller particles to facilitate adults' learning.

- Adults entertain a good number of rigid traits and viewpoints, thus they may hold prejudices regarding the subjects they can or cannot learn.

For adults connecting and enriching their life experiences with the new concepts, generalizations and explanations play vital role in their learning experience. Therefore it is essential that organizations pay heeds to different traits of adults in their educational activities.

Table 2: The Ways Organizations Meet Educational Needs

Traineeship	Conferences
Coaching	Television
Working under Supervision	Co-working Based Education
In-service Education Centers	Intrinsic Learning
Courses	University Programs
Distance Education	Management Development Programs
Internship	Orientation for New Tasks or Roles
Work Definitions	Employment Handbooks

Resource: Ozen, Ustun & Karaman, Selcuk "İşletmeler İçin bir E-Learning Sistemi Geliştirme Modeli", **ab.org.tr/ab03/tammetin/98.doc**

In modern age every single organization regardless of being small or large recognizes the value of education and its contribution to performance and attempt to identify the best solutions for their employees' education. Table 2 displays the ways organizations meet educational needs of their employees. As acknowledged organizations that value education and invest for the education of their employees are better at keeping up with changes and even more than that, they can, by leading the change itself, gain significant competitive advantages due to the fact that education is no longer treated on micro-level as education of the individuals only, but regarded as more comprehensive learning approach that treats the organization holistically. As reported, organizations that are filled with pride because of their huge size or market advantages and thus fail to invest in human capital can be shaken when confronted with winds of change and in due course they may lose their market advantage, reputation, profits and competitive advantages (Cınar, www.ikyworld.com/egitim/isletmelerde_egit_ihyiyac_analizi.pdf).

Laborforce education corresponds to quite a comprehensive group of activities that aim to change the personnel with respect to various aspects. Such activities can be planned by organizations or the personnel can individually take part in such activities. Education is geared towards improving the skills of the personnel to perform their tasks better which would in effect elevate both the personnel and the organization to a better status. Therefore education can be treated with respect to all employees or as interpreted specifically, for the prospective managers of different organizations in the future, it is a process that is commonly executed in and outside the organizations and instilling numerous competencies to the personnel.

Education offered in any given organization gains the kind of knowledge and skills essential to boost employees' performance. In sum, education aims to transform the participants of education program. The individual adapts the newly-grasped information and skills to his/her environment. In the event that the employee is newly hired, adaptation to the workplace is facilitated and learning rate is quickened. Education offered in any given organization gains the kind of knowledge and skills essential to boost employees' performance. In modern age mind-blowing transformation of technology and complexities of management-function pose the need for training employees (Aydinli, Halis, February 2004, http://www.mevzuatdergisi.com/2004/02a/02.htm).

3.2. DISTANCE EDUCATION AND WORK LIFE IN TURKEY

3.2.1. DISTANCE EDUCATION AND WORK LIFE

Practicing of "personal and organizational learning" approach in almost all platforms has given rise to "life-long continuous learning" approach that gained increased popularity and encompassed personal and professional fields likewise. As mandated by this approach increased use of technological practices in education and teaching environments introduced with itself "e-learning" concept. E-learning concept, from this perspective, ranks the first among the subjects rapidly transformed and grasping wider domains for practice each new day. Work process and activities of modern work life is dominated by a nascent, flexible and interactive approach supported via full-time electronic solutions and computer-integrated. The most common distance learning method utilized in work life is e-learning that translates to a self-learning method performed in an electronic platform, basically computer based (Erdal, www.meslekiyeterlilik.com/insanKaynaklari/2.E-ogrenme.pdf).

E-learning has no altering effect on the personal learning styles but rather, by presenting a resourceful and interactive platform for learning, it complements classical methods. Studies conducted within this framework indicate that e-learning methods are widely preferred, due to the scope of concept and flexible learning platform offered to users, among organizations to instill Information Technologies (IT) competency. The relevant studies also underline that e-learning methods are harnessed in providing and promoting administrative skills such as management, leadership, teammate spirit, communication, customer services, quality management alongside with gaining certain competencies related to work and interpersonal relations (Sarac, Ciftcioglu, 2010:33).

E-learning processes practiced in work life can be detailed as online and offline.

- E-learning within the scope of online learning translates to learning via using corporate network body (intranet) or the Internet and this condition is defined as Web-based training/learning (Web Based Training / Learning: WBT / WBL).
- E-learning within the scope of offline learning translates to e-learning via using CD-ROM and computer and this condition is defined as computer-based training/learning (Computer Based Training / Learning: CBT / CBL).
- Blended learning is defined as inclusion of multi-method learning and hybrid learning descriptions next to e-learning. In blended learning students are not dependent on one platform and are free to choose the best and most effective method for their learning. If, via E-learning, classical education methods and platforms are used in tandem to structure

an effective and practical education program, blended learning concept is then put into practice.

Organizations can put into action their e-learning projects under two methods a.k.a solutions generated within the organization and outside the organization. In solutions generated within the organization the primary task is born by Department of Information Processing and this Department provides the technical substructure mandated by the very nature of projects. On the other hand as regards solutions generated outside the organization, partnership is built with an expert company. Both alternatives have their advantages and disadvantages. For the organizations with not any given Department of Information Processing establishing and furnishing a new department with personnel and software and relevant costs of investment are the key issue to pay heeds to. Additionally in certain instances some organizations may be in need of outsourcing only to actualize their e-learning projects (Erdal, www.meslekiyeterlilik.com/insanKaynaklari/2.E-ogrenme.pdf).

Both public and private sector companies, even in traditional methods, receive support from an outsider training-consultancy company for training their company personnel. In the kind of solutions that demand technical knowledge and relevant background, as in e-learning, it is rather hard to be self-sufficient. At this point providers take the stage in order to assist the demanding organizations. E-learning Providers are commercial enterprises that generate and practice e-learning solutions; assess and analyze the needs in addition to providing consultancy services. In the training of personnel, e-learning service is primarily catered by providers. The number of such companies, also termed as e-learning sellers, has increased tremendously for the last few years parallel to the rising share of market in this segment.

Providers basically hire the personnel specialized in teaching design; these companies closely track technological advancements and remain updated about the new trends, specifically in e-learning segment. Providers with excelled communication skills, capable of coaching the companies, talented enough to assess performance capabilities of current practices are adequate to compute investment/return rates. Providers are specialized in group works and project management practices and rendering assistance. In addition to such features, providers as commercial enterprises after all, required to possess all the other characteristics essential to survive in any competitive market.

E-learning providers can be categorized under three headings as content providers, technology providers and service providers. Content providers are the conventional in-class education companies and course content publishers. Technology providers are specialized establishments on e-learning tools, management systems and equipments. Service providers offer a variety of online features and tools, consultancy options, testing and certification services and services to develop special contents. Both public and private sector companies can receive only consultancy, platform structuring, content development and several other services from providers or they could purchase a complete set of e-learning solutions. In addition, in any stage of passing to learning practice, it is also feasible to receive assistance from providers (Ozen, Karaman ab.org.tr/ab03/tammetin/98.doc).

E-learning may not be necessarily applicable for each employee. Employees are required to be ready for e-learning from two aspects: From technical aspect and from the aspect of self-guided

learning. As the first step, employees' basic skill deficiencies in the use of Information Technologies must be corrected to position them as basic-level users. E-learning is employee and learning focused. Educator plays a supporter and guidance role. Employee unveils the knowledge during the process of self-learning which could occasionally be a challenging approach for adults familiar with traditional teaching methods. In self-learning, employees' motivation and motivational factors hold significant role. It has been argued that the most effective motivating factors involve self-respect, life-satisfaction, job-satisfaction and several other intrinsic factors. On the other hand learner-centered educational approach argues that employees are given significant cognitive responsibilities such as analysis, synthesis, problem-solving and creativity. Due to a variety of socio-cultural and psychological impedances, employees may not yet be fully ready to assume such responsibility. Internalizing e-learning, kicked off as a corporate strategy, by the employees holds vital importance. During this internalization process, employee shall assume new roles such as learner individual, learner as group member and learner as an organization member. In the prevention of resistance against change that might be seen among employees, employees' "voluntary" participation to e-learning activities plays critical role. During e-learning process employees' must be supplied with adequate quantity and type of assistance. Such assistance systems emerge in two forms; pedagogical structuring of e-learning platform and online-assistance throughout the entire learning process. The Management can structure a general unit for assistance services. To offer assistance e-mail, chat, voice calls or phone calls are the potential tools to use or as another option, a comprehensive catalogue could be concocted and integrated to the system via Web. This has been used as a popular option in a wide range of public institutions and private sector companies (Acar Gurel, 26-28 May 2006:358,359, 361,362).

3.2.2. DISTANCE EDUCATION PRACTICES IN TURKEY

In Turkey distance education has been widely popular for in-service trainings in public institutions and private sector companies alike. In-service training refers to the kind of training conducted so as to gain task-relevant knowledge, skills and attitudes to the employees within private and legal-entity corporations to the employees hired in return for certain wages or salaries. In-service training encompasses all kinds of learning-teaching activities that meet employed labor force's adaptation to the job, and also the emerging needs for professional development and progress. All that said, “in-service training can reasonably categorized as a sub-process of life-long learning” (Orucu et al., July 2007 http://www.mevzuatdergisi.com/2007/07a/02.htm).

Headed by the Ministry of National Education the system is popularly used in a long list of public institutions. It is also a favorite choice among multi-branch and agency sectors viz. automotive, transportation, and banking both in private and public sectors. Next to these sectors insurance, telecommunication, software, retail and pharmaceutical sectors also opt for distance education practices. A number of companies in Turkey have set within their body an education portal whilst some purchase this outsourcing service though enterprises such as Enocta to apply e-learning practices. A range of organizations choose to implement blended method. Arcelik, Koc Holding, Tofas, Turkcell and Petkim have founded their corporate portals. A range of large-scale enterprises such as Marshall and Pfizer have launched their e-learning practices (http://www.capital.com.tr/elearningde-super-buyume-haberler/16746.aspx). Below is a list of private and public sector organizations and enterprises in Turkey that apply distance education practices.

3.2.2.1. DISTANCE EDUCATION IN CERTAIN PUBLIC INSTITUTIONS

Ministry Of National Education: As has been stated above, this public institution is one of the establishments that most frequently apply distance education in their corporate in-service training activities. Employees are occasionally provided face-to-face education or at times distance education alone and at other times, distance education is blended with face-to-face education. For the organized distance in-service training activities "http://e-hizmetici.meb.gov.tr" portal is used. Participants enroll in relevant distance education courses by entering their passwords to MEBBİS In-service Training Module. Year-2015 distance education activities can be listed as Fatih Project Network Substructure Seminars, Introduction to Media Literacy Course, Coaching Course, Fatih Project, and Teacher Training Course (http://oyegm.meb.gov.tr/d/j3/index.php). Aside from in-service trainings, professional trainings can also be rendered via distance education. In MEB-affiliated Professional and Technical Open Education School opportunities are provided to gain professional skills to unemployed youngsters and certify their previous educational experiences (http://www.memurlar.net/haber/460188/).

Universities: The facilities of data transmission and communication offered in different formats via computer and Internet technologies have popularized education via Internet in the domain of higher education. In order to keep up with the changing demands of students, universities utilize Internet primarily to offer educational services through several programs which have increased in due time (Akdemir, August 2011:71). Distance education activities at universities are performed via distance education centers. These centers are officially founded as Distance Education Research and Practice Center and commonly used as abbreviated UZEM (Distance Education Center) next to the official name of the university such as Yalova University, Distance Education Practice and Research Center: YUZEM. Above is a list of distance education practices of some universities in Turkey. In Suleyman Demirel University there is one Distance Education Vocational School of Higher Education in which courses in the departments of Computer Use, Computer Technologies, Bureau Management and Executive Assistantship and Medical Services and Techniques are offered via distance education (http://ue.sdu.edu.tr/).

As noted hereinabove courses are practiced in virtual classroom environment in distance education system. Academicians and students are free to connect to the system from any Internet service provider and partake in virtual classroom platform. In synchronous courses offered within virtual classroom platform, academicians present the courses visually and orally; use blackboards and even share the saved tests on their computer. Students can connect the course via video or computer-call; ask questions during the course, or share files. Synchronously-performed courses can be saved for further use of all students who would like to practice the saved items any time convenient (http://areluzem.arel.edu.tr/index.php?option=com_content&view=article&id=237&Itemid=330, 01.08.2015).

Ministry Of Family And Social Policies: There is a distance education center within the body of the ministry. Probationary employee basic training and interactive courses developed within the scope of Family Education Program and titled as Family Education and Communication, Finance, Media, Health and Pre-Marriage Education are presented via distance education. Through live education module, presentations can be shared as in audio and video format to offer an interactive platform for courses and meetings. Assistance is provided to 500 users (http://aspbuzem.gov.tr/).

Turkish Armed Forces (TSK): In trainings offered within the body of TSK as well, it is feasible to come across distance education practices. Within the entity of Turkish Air Force, the first attempts to set a Distance Education Center (UZEM) were initiated in year 2000. The aim of this center is to manage the trainings given/to be given to employed officers, NCOs, specialized-sergeants and civil servants via distance education method to complement continuous education; to ensure that such trainings are provided via information technology-based systems and to manage the projected distance education information systems; to concoct complementary and information technologies-based educational materials supportive of formal education activities organized within the body of Air Force Technical Schools Command (http://www.tekok.edu.tr/sinif_uzem-2.asp). The first attempts to form a body of Distance Education Center Command were launched in January 2003 and was approved by Air Force Command on 26 October 2004. Within the scope of approved entity, UZEM Command comprising of Computer Assisted Education Production Center Command, On-the-Job Training Documentation Branch Directorate and Distance Education Directorship started to actively operate on 1 September 2005. The new structuring of UZEM Command was, to implement revised HKT 379-13 (HKT 1-3) Air Force Command Education Doctrine with regards to October 2005-launched Continuous Education Model (SEM) Project, set on 11 November 2005 to execute the tasks assigned to the Center for the aim of rendering the projected training via distance education method. Proposed entity was approved and effectuated on 9 March 2006. UZEM Command structuring was, in the light of experiences gained from one-year practice, revised and submitted to Air Force Command. New structuring was approved and effectuated on 29 June 2007 (http://www.tekok.edu.tr/sinif_uzem-1.asp).

Within 47 different units of Air Force Command via distance education provider (to access the contents of education); in 51 different units via 690 computers installed in computer-assisted education classrooms it is feasible for the trainees to access distance education documents. In addition via Learning Management System (ÖYS); trainees, trainers, officers and other users can, access all relevant activities from the onset of distance education to the completion, by reaching through a TSK-net connected computer and clicking ÖYS link under electronic information page of UZEM Command (http://www.hvkk.tsk.tr/TR/IcerikDetay.aspx?ID=207).

Pursuant to the amendment on the Article 12 of 25 May 1989 dated no 3563 Law on War Colleges on 26 June 2012, distance education practices were integrated (http://www.mevzuat.gov.tr/MevzuatMetin/1.5.3563.pdf). Commander and staff officer course (KOMKARSU) training is provided within the body of War Colleges to train captains and majors in parallel with the dynamic education form of modern-age and current military, political and financial developments; to improve the officers' in-service training levels and to boost their professional motivation. The education is a 40-week program. 20 weeks are distance education and 20 weeks are face- to-face education. NCO Senior Headquarter Services Education executed by Land Forces Education and Doctrine Command in the name of all forces to specifically train the NCOs to be assigned for the major headquarters in order to develop their qualifications for employment in headquarters; to gain the culture of unity and to boost professional motivation, a total of 34-week education program is offered. 16 weeks are distance and 18 weeks are face-to-face education (http://www.hurriyet.com.tr/genelkurmaydan-ders-aciklamasi-21923644).

Police Department: Via E-learning system set within the body of Directorate of Education Office and effectuated on 25/08/2011 dated no 28036 Official Gazette, as per Regulation of

Branches on Police Department Class, Branch courses and tests; police department relevant training; office program trainings are offered and surveys can be applied to the personnel and via the structured digital library, it is feasible to share e-books (pdf, word) and course videos (http://www.egitim.pol.tr/Ttknoloji dstksb/Sayfalar/uzaktan egitim.aspx).

3.2.2.2. DISTANCE EDUCATION PRACTICES IN PRIVATE SECTOR

A number of major companies in private sector have established academies to transform their corporate experience/accumulation, organizational culture and values to education and information management. In some of the courses offered in the academies, distance education practices have been used. Below is explained some specimen companies.

Turkcell: Turkcell, a Technology and Communication Company in Turkey, launched its very first e-learning practices in 1999 and among all corporate companies in Turkey it became one of the first companies that offered to its employee's e-learning solutions. Next to e-learning, the company opened a virtual classroom platform in 2005, a mobile education platform in 2008, a self-learning platform in 2009 for the use of its employees and provided richer distance education solutions. Structured in 2006, Turkcell Academy has now turned into an information and development center adding further value to business world by providing development solutions to mobile-connected employees, agencies, business partners, suppliers, clients and students in addition to all interested parties. Having reached over 50.000 people, Turkcell Academy now offers opportunities for education and development. By means of distance education practices, the system removes space and time limits and enables continuous development for the personnel. Furthermore, by saving money and time, efficiency in development activities can be pushed to higher levels.

Via Turkcell Academy Virtual Classroom Application, which is another distance education tool, employees stationed in different spaces can partake in educational activities or conferences on the web. The presentations in which interaction is promoted are offered in virtual classroom platform to the access of wide masses and thereby information-share becomes further effective. In that way it becomes feasible for the employees located in different geographical regions of Turkey to take part in the education from their computers. Aside from all these educational channels Academy Portal offers a number of self-learning tools to the employees to meet their personal needs and aspirations for personal development. In line with the advancements in the Internet and social media, the Academy presents to its employees Web-based personal development tools (self-learning tools) that they can access to reach the best practices, reports, videos etc. relevant of the subjects they need. The use of platforms such as Virtual Library (Getabstract), video portal, Harvard Custom Portal and Harvard Manage Mentor is also on the rise (Turhan et al., 2012:193).

KOC Group: Despite the analogies between the education and development processes practiced within the body of affiliated companies of the Group, there are still minor divergences among some companies. Nonetheless, the majority of group companies use KocAkademi to substructure their education and planning works. KocAkademi is an education, development, learning and sharing platform in which activities that can improve the development Koç Group employees are planned and practiced on the basis of group-company-employee needs. It is in itself a technology-based substructure. KocAkademi is a self-learning and performance-assistance system in addition to being a learning-platform that entails in its body rich self-learning resources. Among these

learning resources are e-trainings, articles and OPAL. OPAL is one form of learning and information-assistance platform. Employees can access these learning resources anywhere, anytime. In order to develop themselves in the long term and to overcome work-life problems they are free to resort to these resources. Thousands of articles and hundreds of electronic trainings and identical learning packages in KocAkademi can easily be accessed from anywhere in the world. E-learning options in specific topics in particular can be put into use very fast and can be practiced successfully (Turhan et al., 2012:193).

Yapi Kredi Bank: Yapı Kredi Banking Academy was set for the aim of training the best bankers of the sector. The focal points of the Academy can be listed as personal development, leadership, banking, finance and social responsibility. Distance education is one of the most commonly-applied methods in the trainings. Via distance education it is much easier to offer trainings to the employees from the branches in different regions of Turkey, and it is aimed to warrant the continuity of a system that can standardize individuals' continuous knowledge and skill levels and integrate development as a major component of life (Onen, June 2009).

Yapi Kredi Insurance Company: IRIS Project as another distance education practice of Yapı Kredi Insurance Company merged with (https://www.allianzsigorta.com.tr/tr/duyurular/haber-arsivi/allianz-sigorta-ve-yapi-kredi-sigorta-guclerini-birlestirdi) Allianz Insurance Company on 30 September 2014 is also a vital practice. The corporate software (IRIS) that was put into use to ensure that substructure of information technologies is compatible with ever-changing technologies was then communicated to the employees, agencies and brokers via e-learning system. Through contributions of software developers, process managers and employees from the departments of Fire, Transport, Auto-Accident, Non-auto Accident, Engineering, Damages and Financing an efficient team work was formed and e-learning education designs were set in which a simulated and audio instruction of 2400 steps to explain the application of live system was placed. E-learning modules were customized as per user profiles (agency, broker, personnel) to offer within distinctive educational packs.

Subsequent to completing the designs, pilot practice was conducted among agencies selected for agency classroom trainings and by considering the agencies that missed the classroom trainings due to compelling reasons and also for the use of newly-hired agencies, essential complementary planning was organized. Before commencing agency trainings, IRIS Practice screen training was offered for General Directorate technical personnel and all regional personnel. To ensure that Regional Personnel employed in distinctive branches are competent enough to use application screens, training programs that include all branches were designed. Next, for each branch a synchronous screen practice training was presented on a daily base. For the personnel employed in elementary insurance branch in departments such as Sales Management and Call Center, a distinctive e-learning module was designed and offered to the use of relevant employees. Prior to the application stage, brief information on the program that simultaneously executed classroom education and e-learning model is as displayed in the table below. The saved amount of classroom education time in the first stage with the implementation of this project has been computed as 21.120 person/hour.

Table 3: Yapı Kredi Insurance Company IRIS Project, E-learning Classroom Education Data with respect to Participant Types (2012)

Participant Type	Number of Participants	Education Type
Agent	743	11.188
Broker	27	301
Personnel	301	1.652.9
Total	1071	13.041.9

Resource: Tecimen, Cem (10.08.2012), "E-öğrenme Hayata Değer Katmaktadır ve eğitim ve gelişim Uygulamalarının Tamamlayıcı Bir Parçası Haline Gelmiştir", Information Age Journal (**Bilgi Cağı Dergisi),** www.bilgicagi.com

This particular distance education practice enabled the company to gain the benefits hereinafter (Tecimen, 10.08.2012, www.bilgicagi.com):

-Access to a substantially-large participant group in a short time,
-Educating substantially-large masses in a short time,
-A functional measurement and evaluation system and ability to monitor participants' activities,
-The opportunities of the users to receive education anytime and anywhere with no working-hour limitations,
-Continuous access to the trainers and field-specialists through e-mails and forums,
- Repeated accessibility to knowledge,
-Savings on educational costs,
-Thanks to the provided means, sustainability of distance education,
-Rapid transfer of technological developments,
-Enabling the equal educational opportunities to all participants.

ING Bank: ING Bank is owned by Dutch ING Group operating in finance sector. It is headquartered in the Netherlands and the bank is Turkey-branch of the Group. Possessing a wide network of branches and employees in different cities, ING Bank presents to its employees a comprehensive e-learning catalogue to meet their educational needs quickly, timely and properly related to professional and also personal development domains. Online education is the platform that offers trainings on newly-launched products and campaigns.

Within the body of ING Bank-a multinational organization- there is an exclusive e-education platform designed by ING Global specifically for the use of all countries. Via this platform employees can select the e-trainings they want and by gaining a global perspective in this way, they have a chance to improve themselves in professional and personal development domains. Company directors report that the benefits of e-learning systems for their company are; "time and cost saving", "accessing global trainings independent of time and space" and "transferring to the employees the right information in the right time" (http://www.ingbank.com.tr/ingbank-basinbultenleri_15_09_2010.asp).

Ulker Company Group: The Group employing 41.000 workers (http://www.yildizkariyer.com/InsanKaynaklari.aspx) applies distance education practices in corporate in-service trainings. For the employees demanding an approved-education option, Directorate of Education provides the name of web site address and user name –password information to enter the system. During the time intervals that the personnel participate in approved and informed trainings, s/he is counted as on official absence of leave. If the personnel, despite receiving an invitation letter for any training, miss courses without informing the instructors or not having a valid excuse for absence and fail to notify the Directorate of Education minimum 1 week earlier, this employee is counted as "unexcused absentee", but for serious personal problems or certifiable health problems (Sahin, Guclu, 2010:256-257).

Turkish Airlines (THY): THY signed a contract in 2008 with *enokta* to the end of minimizing the high costs related to trainings and to increase quality level. With this practice employees can now receive audio and visual education in any place distant from their workplaces. These trainings briefly include courses on entrepreneurship, aviation, communication on the phone, computer skills, leadership, first aid etc. After these trainings the personnel is tested and the successful ones are rewarded with certificates of achievement. In line with year- 2010 activity report of THY, the contributions of distance education to the companies were taken into account and procurement and preparation processes of 125 e-learning training were completed and 345.000 training activities were thus opened. By means of this opportunity, each year approximately 15 thousand employees benefit from e-learning education service(www.turkishairlines.com/tr-TR/şirket /faaliyet.../tr-thy2010.pdf). Within the body of Turkish Airlines Aviation Academy founded as an affiliation of Turkish Airlines, Turkish Airlines A.O. being in the first place, trainings are provided to domestic and foreign aviation companies, maintenance centers, courier companies, travel agents, universities, employees from other airline companies, airport companies, civil aviation sector companies and several other legal entities, foundations and establishments (https://akademi.thy.com/hakkimizda.aspx). Distance education is offered on Turkish Airlines Aviation Academy Distance Education Portal. Turkish Airlines personnel can access the portal by entering http://lms.thy.com/ website whilst visitors outside Turkish Airlines can access the portal by entering http://lms.thy.com/external/ website.

CONCLUSION

Chinese proverb; "Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime" is a well-worded message summarizing the importance of education in human life. Education is an irreplaceable need in all moments of human life, and the same need is equally perceived by organizations. To elevate the organizational performances of employees, help them keep up with the new developments, solving organizational problems, career planning are the targets of the education offered in the organizations.

Nonetheless since speed has become an imperative issue in the increasingly-loaded business world, organizations that manage to access information in the shortest time and without failing work processes and put into use before their competitors will rise as leaders. On that account organizations put greater investments to educate their employees continuously. That is the way learner organizations are formed and on the basis of this formation lies self-learning. Target masses of the Education and Development activities held in the organizations are widely

populated. These activities are not merely designed for employees; all directors, employees, agencies, suppliers, family members, solution partners, clients, university students and concerned parties can also benefit from the services offered. Information and Communication Technologies are also utilized while offering education services. In addition to face-to-face education, distance education practices are also applied. As distance education options; e-learning, virtual classroom practices, discussion forums, blogs, mobile education and social media are some of applied technological systems (Turhan et al., 2012:202).

Modern technologies are effective in providing distance education, but the world is still in a preparation phase to become full-ready for this practice. The reason of not being full-ready yet is related to both sub-structural and educational defects. Defects in the substructure of distance education can be listed as gaps in the legislation, absence of promotions in this domain, insufficient R&D investments, failure to form a public opinion and failure to raise awareness on the issue among decision makers.

Distance education provides several advantages to both organizations and organization personnel being educated. Employees can, compared to the ones receiving traditional classroom education, be more flexible in terms of time and space. Since they will not be forced to leave home to receive education they will neither feel pressure because of workload nor will fail to self improve due to the pressure to complete assigned tasks. As they will have the opportunity to access knowledge without time or space limitations, they can rehearse whichever subject they prefer on their own terms. As employees will be aware of the fact each employee is granted with the same opportunities they will be further committed to their organization. Distance education indeed offers time and space flexibility which in fact enables the employees to resume their work-tasks and organizational costs would fall in turn.

In education institutions educators conducting employee and distance education activities would no longer lose time in classroom environment which would spare them sufficient amount of time to continue academic activities or the kind of activities they are expected to finish. One point to take notice in distance education is that whether it is required to conduct practical studies in the aftermath of theoretical education. It is demanded from organizations to project that possibility beforehand. Provided that employees have a busy work schedule they may be unwilling to partake in distance education activities. To prevent the emergence of this conflict during e-education periods all barriers including heavy workloads to block the educational process must be eliminated so that employees would be more than willing to participate in the trainings. The main reason is that any forced participation would simply fall too short to achieve the objective targets.

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ENHANCEMENT OF SKILLS THROUGH E-LEARNING: PROSPECTS AND PROBLEMS

Senthil K Nathan
Department of Management, J.J. College of Engineering and Technology, Tiruchirappalli 620 009, India
senknat@yahoo.com

Sw. Rajamanoharane
Department of Management, J.J. College of Engineering and Technology, Tiruchirappalli 620 009, India
swrksr@gmail.com

Abstract: Of late, the landscape of education of students has been reportedly progressive and remarkably competitive. The knowledge they have gained is enormous with the help of various sources of information. Plenty of information is available at their fingertips. . But one of the most important factors the students need to concentrate is their employability skills. Many students struggle a lot to get job, not because of their lack of knowledge, but paucity of Employability Skills. Soft Skills are the part and parcel of employability skills. Nowadays, enhancing the employability skills with the help of e-learning is not only an absolute possibility but also a definite necessity. Almost every student accesses his/her study materials at the touch of the screen (smart phone). An analysis was done with the help of 500 students of a private engineering college on the importance of e-learning to develop their employability skills. This paper describes the ways and means of enhancing the employability skills such as Job skills, Aptitude skills, Soft skills and Technical skills (JAST) through e-learning, which in turn increases the opportunity of getting employed or become the most sought after in the job market.
Keywords: E-learning, Employability skills, Online, Soft skills, Student

Introduction

Education is very important for an individual's success in life. Education instills in pupils skills necessary to realise their full potential in all aspects of life and prepare them to step into the world of career development. The main purpose of education is to educate individuals within the society, to prepare and qualify them for work in economy. (Rusk, 1919) Barring the top tier and other major educational institutions, the current curriculum in management excludes the very aspect of facing various challenges in business environment. How to manage uncertainty and complexity is the most important question still remains unaddressed by many business schools. They merely teach the management concepts with case studies. They don't focus on the challenges arising out of rapid growing technology and the challenges involved in running an enterprise. (Rao MS, 2010). The concept of e-learning has started emerging among the students. Students had been accessing internet for references, but now they have also started studying and getting certified thro' e-learning.

India has the second largest educational system in the world after China (Cheney et al., 2006). Although the Indian education system is the world's largest, the country also has the maximum number of illiterates (Mujumdar, 2013). The Gross Enrolment Ratio (GER) in Higher Education, which was 11% in 2005-06, almost got doubled to 19.4% in the year 2010-11. The GER for women in Higher Education increased from 9.4 to 17.9% during the same period (Singh, M., 2013).

Men and Women student growth in higher education from 1950-51 to 2012-13

Year	Men ('000)	Women ('000)	Total Enrolment ('000)	Women as percent of all Students
1950-51	157	17	174	9.77
1955-56	252	43	295	14.58
1960-61	468	89	557	15.98
1965-66	849	218	1067	20.43
1970-71	1563	391	1954	20.01
1975-76	2131	595	2726	21.83
1980-81	2003	749	2752	27.22
1985-86	2512	1059	3571	29.66
1990-91	2986	1439	4425	32.52
1995-96	4235	2191	6426	34.10
2000-01	4988	3012	8000	37.65
2005-06	6562	4466	11028	40.50
2012-13*	13468	10687	24155	44.24

*Source: Enrolment of women in higher education (Selected Educational Statistics 2005-06; UGC, Annual report) *Statistical Report – registrar.uoregon.edu/statistics/reports*

Table: 1

E-learning

Technology plays a very important role in reforming education from conventional to technology-based learning. The significant growth of technology in education has replaced the traditional learning such as using the blackboard and chalk in explaining the subject by technology-based learning such as doing homework on the laptop, internet, or tablet (Evans, 2011). Living in the current digital age enables everyone to easily access the learning materials anytime and everywhere using technology tools (Fu, 2013). Therefore, it has facilitated intensive communication among learners as well as between learners and the instructor whether in the classroom or outside. Adam and Nel (2009) stated that in establishing two way communications between teachers and learners, some technology tools have been applied and adapted in education. Blended learning is a general scope of teaching-learning model. To name a few, one of the strongest market leaders in Enterprise Resource Planning (ERP) named Systematic Application Product in Data Processing (SAP) has introduced the concept of sap-learninghub to students through cronos in India. Coursera is one of the key players in providing online courses.

A few arguments on e-learning

This visual problem has also been mentioned by other authors (Blummer, 2006; Hernon et.al, 2007; Levine-Clark, 2007). They argued that most e-book readers only read short sections of e-books rather than reading the whole text online. This finding is in tandem with Vernon (2006) which revealed that online reading was physically more strenuous for students as opposed to reading a traditional textbook and prior studies which have shown that level of content assimilation for online reading is lower (Dillon & Gabbard, 1998; Bellaver & Gillette, 2004; Landoni & Hanlon, 2006; Kang, Wang & Ling, 2009) and level of cognitive load is higher

(Wästlund, Reinikka, Norlander, & Archer, 2005). The authors such as Clyde (2005) were concerned about students facing difficulties in understanding the digital content.. The study by Letchumanan & Tarmizi (2011) revealed that the participants found that reading through screen affects their retention of subject conten

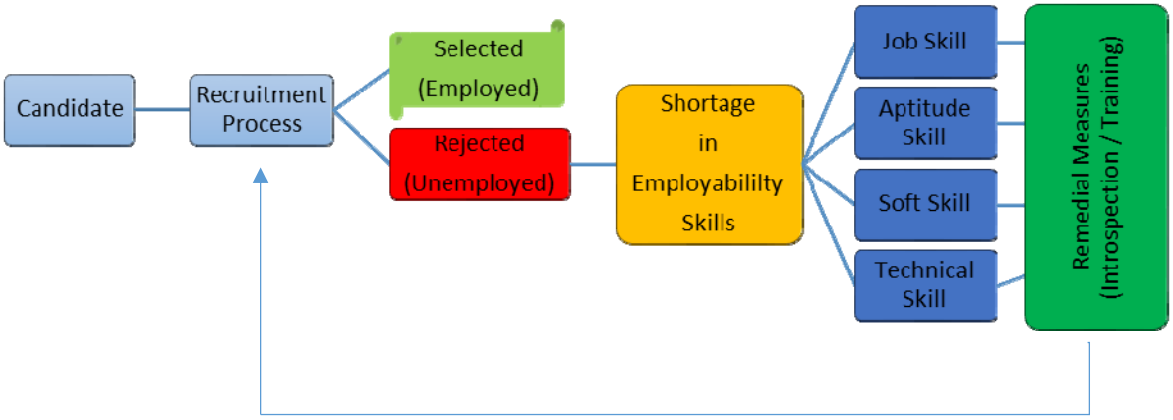
CONCEPTUAL THEORETICAL FRAMEWORK

Education and employment are to be conceptually linked with the construct 'employability'. Employability has been defined as the 'ability to secure and sustain employment' (Berntson, Naswall & Sverke, 2008; Bhagwan & Selvaraj, 2010; Curtis & Mckenzie, 2001; Fugate & Ashforth, 2004; Hillage & Pollard, 1998) Employability is viewed as 'a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy' (Yorke, 2004).

Many graduates pass out from colleges with good grades but do not make it to the top owing to lack of personality and soft skills. Hence, it is imperative that organisations must have excellent people management process to retain managers (Showry, 2012). There are many different terms, often used interchangeably or in a vague sense (Binkley et al., 2005) to describe similar concepts, including enabling skills , generic skills , core skills , key competencies , essential skills , and necessary skills . Through the earlier research with the help of Mann-Whitney test, it was understood that the job skills are more important for service industry sector than manufacturing sector as far as both top and bottom level of employees. (Nathan, 2015). The learning process will take place not only in the class but also outside it; students will take responsibility for their own learning and learn at their own pace.

The conceptual framework of this study is derived with the help of various sources of literature and research as shown in Fig.1.

Fig.1 *Conceptual framework of the shortage of employability skills*



METHODOLOGY ADOPTED FOR THIS RESEARCH

This study was chosen to understand the skills possessed by students during college days with special reference to employability skills and the ways and means of fulfilling the gap by equipping the various skills through e-learning.

Research Objectives

1. To know the major skills required for the graduates to get employment
2. To evaluate various skills acquired through e-learning
3. To know the remedial measures for filling the gap between the skills possessed and skills through e-learning

Operational Definitions

Employability skills

Employability is the acquisition of attributes (knowledge, skills and attitudes) that make graduates more likely to be successful in their chosen occupations.

Aptitude skills

Covers the analytical, critical and lateral thinking

Job skills

Covers the immediate need for a student to get placed and to sustain in the company such as dress code, computer operations, group discussion, etc.

Soft skills

Covers the behavioural and interpersonal skills such as delegating skill, listening skills, learning skill, etc.

Technical skills

Covers the subject knowledge and core area.

Research design

Researchers have chosen exploratory research design for this research study. This exploratory research is defined as the initial research into a hypothetical or theoretical idea. An exploratory research is an attempt to lay the groundwork that will lead to future studies, or to determine if what is being observed might be explained by a currently existing theory. New perspectives can emerge from new ways of looking at things, either from a theoretical standpoint or a new way of measuring something.

Sampling Technique

The sample size represents 500 students from various branches of a private engineering institution in Tamil Nadu, India. Stratified convenient random sampling technique is adopted. The research samples were categorised into five categories. The students were from Computer Science Engineering (CSE), Electronic and Communication Engineering (ECE), Electrical and Electronic Engineering (ECE), Electrical and Instrumental Engineering (EIE), Information Technology (IT), Aeronautical Engineering (AE), Mechanical Engineering (ME) and Production

Engineering (PE). The objective of choosing students from various branches is to observe how important the employability skills are different to these different branches of students.

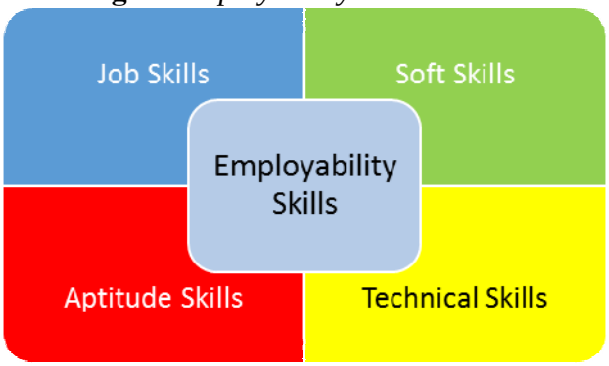
Data Collection method

This research study is divided into two major divisions. The first purpose is to find the main problems (skill gap), faced by the students. The second division deals with the remedial measures to fill the skill gaps, with the help of the data collected through the questionnaires. The questionnaire was designed with due care and evaluated for non-ambiguity, transparency, general validity and relevance. Data were collected through questionnaire in person and online.

Instrument used

The questionnaire was divided into three major divisions. Demography of the respondents, graduates lacking employability skills and graduates possessing employability. This research study is based on the literature and empirical study. The items in the questionnaire include most of the elements of employability skills expected by the employers.

Fig.2 *Employability Skills – JAST*



The questionnaire contains four constructs namely: (i) Job skills, (ii) Aptitude skills, (iii) Soft skills and (iv) Technical skills. Based on the various literature and research studies, researchers have created their own list of 36 sub criteria skills which are covered under four major skills such as – Job, Aptitude, Soft and Technical skills (JAST) as shown in Fig.2.

The researchers tried to adopt the standardized tools to evaluate the employability skills required for the students, they were able to find HKA agencies Appraisal form with different skills. It had ten major skills and 45 sub criteria. The researchers have not opted for that tool, as it is not so much relevant to their research study. And so they have developed their own list of 36 sub criteria skills, which were covered into four major skills as shown in table 2, such as – Aptitude, Job, Soft & Technical skills (JAST).

Name of the Skills	No. of Sub Criteria
Aptitude Skills	2
Job Skills	12
Soft Skills	20
Technical Skills	2
Total No. of skills- 4	**36**

Table: 2 Number of Sub criteria in JAST

FINDINGS

As far as the e-learning and four major skills are concerned, correlation test is used to measure the relationship between two or more variables. With the help of the correlation test and taking into consideration the level of significance as .05, we came to know that there was a positive correlation between e-learning (Mean = 19.48) & Technical Skills .007; but all other three factors were negatively correlated. They were between e-learning & Soft Skills .177; e-learning & Aptitude Skills .295 and e-learning & Job Skills .117. Technical Skill was the only positive correlating factor with e-learning. The same is shown in the Table 3.

Correlations test – e-learning & 4 Major factors

		e-learning	Soft Skills	Tech Skills	Job Skills	Apt Skills
e-learning	Pearson Correlation	1				
	Sig. (1-tailed)					
Soft Skills	Pearson Correlation	-.042	1			
	Sig. (1-tailed)	.177				
Tech Skills	Pearson Correlation	.109	-.092	1		
	Sig. (1-tailed)	**.007***	.019			
Job Skills	Pearson Correlation	-.053	-.240	-.146	1	
	Sig. (1-tailed)	.117	.000	.001		
Apt Skills	Pearson Correlation	.024	-.117	.007	-.279	1
	Sig. (1-tailed)	.295	.005	.440	.000	

*. Correlation is significant at the 0.05 level (1-tailed)

Table: 4

To know the association between e-learning and four major skills, χ^2 test is used. We came to know that there are significant associations between e-learning and Technical Skills ($\chi^2 = 9.872$, 0.43<0.05), e-learning and Job Skills ($\chi^2 = 20.932$, .000<0.05) and overall Employability Skill ($\chi^2 = 9.90$, 0.41<0.05). There are no significant association between e-learning and Aptitude Skills ($\chi^2 = 6.005$, .199>0.05) and e-learning and Soft Skills ($\chi^2 = 2.647$, .618>0.05)

With the help of RoC Curve Fig. 3 and Table: 5, we came to know that the Aptitude Skill, Soft Skill, Job Skill, Technical Skill and Overall Employability Skills have at least one link between the positive actual state group and the negative actual state group with reference to e-learning.

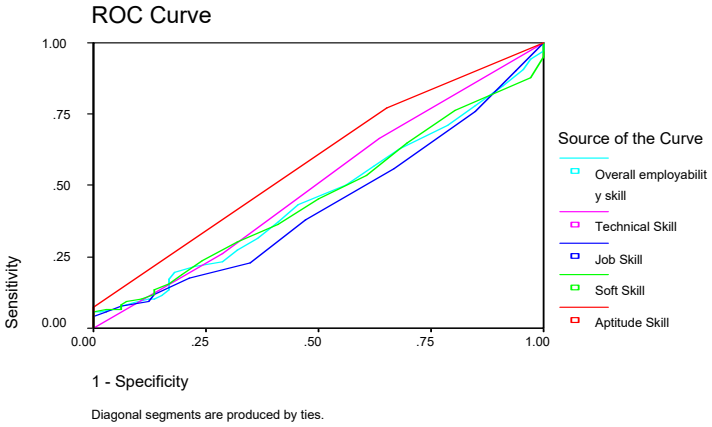


Fig. 4

Area Under the Curve

Test Result Variable(s)	Area
Aptitude Skill	.583
Soft Skill	.464
Job Skill	.431
Technical Skill	.502
Overall employability skill	.461

The test result variable(s): Aptitude Skill, Soft Skill, Job Skill, Technical Skill, Overall employability skill has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

Table: 5

CONCLUSION

Students are registered in colleges to get degrees. A few get jobs with the degree they possess. As it is very difficult for them to get employment only with their degrees, they prefer to study online certification courses. Among the four major skills, Technical skills can be learnt through e-learning. E-learning supplements and supports the students to gain more awareness and confidence in a specialized field, which enhances the possibilities for employment. The future research in the area could be the possibility of exploring various aptitude and soft skills. Though soft skills can be taught, it can also be imparted through e-learning as well. It opens the door of new avenues for further research in this regard.

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FACE TO FACE AND ONLINE MOBILE LEARNING SYSTEM

J.M. GNANASEKAR[1], D. MIEYAPPAN[2], Rajesh M[3]
[1]Professor, Dept. of Computer Science and Engineering, Sri Venkateswara College Of Engineering,Chennai, India.
[2]Research Scholar, Department of Computer Science & Engineering, SCSVM University,
Kanchipuram, India. mieyappan@gmail.com
[3]rajesmano@gmail.com

Abstract: The fast developments of information and communication technology (ICT) today not only have an impact on the world of industry, but also in the world of education. In the world of education, the usage of ICT is expected to improve the performance, especially the performances of students with regard to their academic matters. This study aims, first to provide empirical evidence that mobile learning will improve student performance not only in technical skills but also in personal skills. Second to prove and test the effectiveness of mobile learning as opposed to face-to-face learning in improving the competence of students. Method of learning with mobile technology is expected to support the learning process of the present method so as to improve the competence of students in terms of technical competency skills, personal skills, business knowledge and extensive expertise. Face-to-face lectures lack persistence and when students fail to understand. In case of lectures during the off face-to-face sessions, there is no opportunity to playback the lecture. Recording lectures with Opencast Matterhorn and making these available to these students as a supplementary resource to the face-to-face lecture has potential to alleviate this problem. Accessing the Video or Audio of opencast recorded lectures (ORL) on students' mobile devices anywhere and at any time after face-to-face lecture could enhance student understanding of lectures and improve learning. This paper describes the architecture and design of Mobile learning through face to face online.

1. INTRODUCTION

With the tremendous growth and advancements in mobile and wireless technologies such as Smart Phones, iPads, Tablets, Wi-Fi, GPS, 3G; mobile learning has come into focus. This proposed Interactive mobile learning has the potential of activating an educational shift from a formal, classroom-based and teacher oriented approach towards an informal, interactive and learner oriented approach where learning happens anywhere and at anytime. In this paper, we have developed a mobile application (figure 3) where students can view their recorded lectures on their mobile devices at anywhere and anytime. The short coming of this system is that students cannot post a comment on the ORL as they watch it, there is need to navigate to another page, which disrupts the interaction with the ORL. The ORL also cannot be downloaded.

In this proposed interactive mobile learning (figure 2), students can watch the video or listen to the audio of the ORL and also download it. The comments can be posted while watching the video. The strength of interaction in this system lies in the collaboration between students and students, students and lectures. The students post comments after watching the ORL; these comments help weak students to understand the lectures. This form of interaction is beneficial to students having limited access to the lecturer after the face-to-face lecture. They can see the comments of other students on the ORL in different official languages of India.

2. OPENCAST MATTERHORN

Opencast Matterhorn is a free, open-source, platform for supporting the management of educational audio and video content and has the affordance to improve the efficiency and

production of recorded lectures than IADIS International Conference Mobile Learning 2012 331 traditional podcasting. Most institutions of higher education produce a huge number of lecture recordings which are stored in an archive; opencast allows access to this storage when needed. Podcast works with a variety of tools and programs to produce and distribute content while Opencast Matterhorn offers all the relevant functionalities as an integrated whole. This reduces the amount of manual work needed to shepherd media objects across various sub-systems, thus increasing productivity and reliability.

Opencast Matterhorn also provides the educational community with a rich media platform for educational research, both technological and pedagogical. Higher education students can be reached in more ways, through plugging into the right learning context, or access through mobile devices hence increasing interaction, universal access and improved discoverability.

Opencast Matterhorn aims to make lecture capture affordable for institutions whether an institution is just starting an academic podcasting program, or wanting to integrate with existing infrastructure for those institution who have already invested in a lecture recording program. Opencast Matterhorn includes the following features:

- Administrative tools: tools for scheduling automated recordings, manually uploading files, and managing metadata, captioning and processing functions
- Integration with recording devices in the classroom for managing automated capture
- Processing and encoding service: services that prepare and package the media files according to configurable specifications
- Distribution: local streaming and download servers and configuration capability for distribution to channels such as YouTube, iTunes or a campus course or content management system. The feed distribution channel provides an easy endpoint for integration with any third party system wanting to connect to Matterhorn. The implementation of the service is straight forward, copying the distribution media files to local download and/or streaming servers and creating an rss and/or atom feed out of the static metadata of the media package
- Rich media user interface for learners to engage with content, including slide preview, content-based search and captioning

3. MOBILE LEARNING

Mobile Learning (M-learning) also called nomadic learning has influenced and enhances the benefit of e-learning, accessing learning contents and making available personalized learning anywhere and anytime. Many definitions of M-learning exist in literature. Geddes defines mobile learning as ‘the acquisition of any knowledge and skill through using mobile technology, anywhere, anytime that results in an alteration in behavior’. Some other authors place more emphasis on the mobile devices and the mobility of the user. These authors viewed m-learning as occurring in informal learning settings.

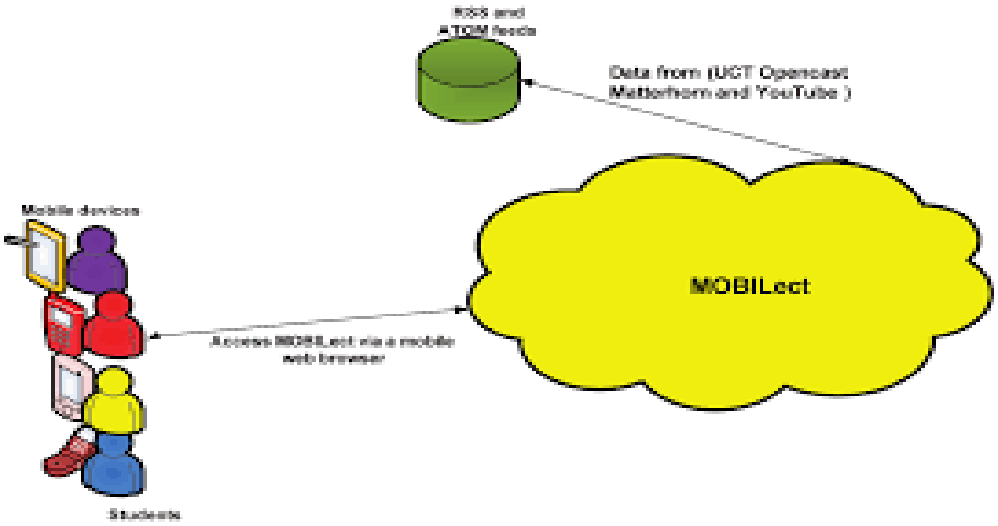

Fig1 - Overview of an Interactive Opencast Mobile Learning

4. DESIGN OF AN INTERACTIVE MOBILE LEARNING

There is need to capture and record lectures using Opencast for continuity and persistence outside the traditional classroom which lack persistency. Opencast Matterhorn provides a way of automatically capturing and recording lectures in higher education hence making lectures persistent. Pilots are currently being run at the Faculty of Health Sciences, University of Cape Town. Our view is that when students download (ORL) to their mobile devices, the pedagogical potential of Opencast Matterhorn would be realized as most students own mobile devices.

Apart from students having difficulties in face-to-face lectures due to language barrier, there is need for part-time students who are always on the move to have a mobile version of the Opencast; examples of such students are mothers having to wait in the doctor's waiting room for hours and students working as salesmen spending a lot of time driving from one customer to another either on train, bus or in their own car will be able to use the mobile application (fig4) which can be viewed on mobile devices by students. Students can watch and listen to the ORL on their mobile devices. For students that are shy to ask questions during the face-to-face lectures, this mobile Opencast encourages participation and collaboration among students using blogs. The major short coming of this application is the inflexibility of the interactive mode. Students have to navigate to another page to post the comments after watching the ORL and cannot download the ORL. We have provided a solution for this problem by proposing an interactive opencast mobile learning, an improvement on this existing application. In this design (fig3) the students can post their comments while watching the video in different languages. There is also a download option.

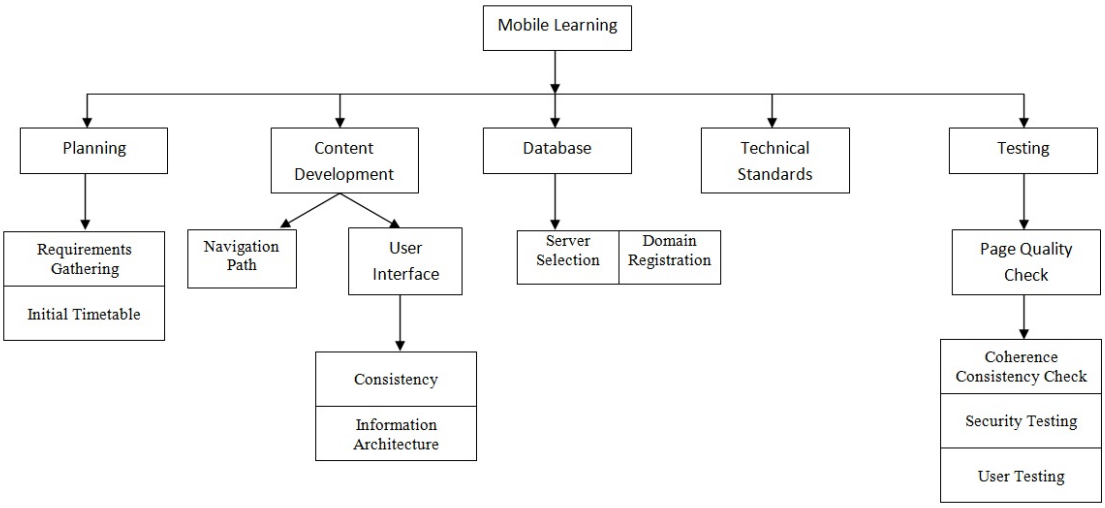

Fig2 - Architecture of the interactive opencast mobile learning

Describes the architecture of the interactive opencast mobile learning (Fig2). In this architecture

- Mobile devices provide interfacing to the application.
- Host web site provides the fields to access data (ORL) for the application on the mobile device.
- Administrator authorizes the upload and download of ORL from the host site

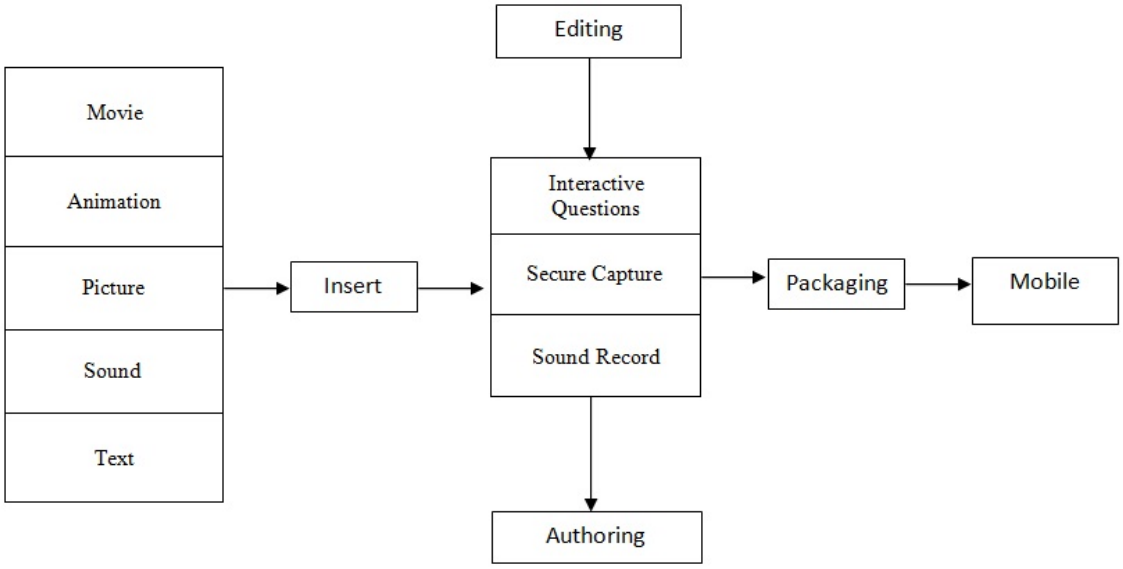

Fig3 - Block diagram of Interactive m-Learning System

(Fig3)Shows the block diagram of Interactive m-Learning System where the input involves the motion pictures, animations, sound and text which is inserted to the editing section which involves the interactive questions, secure capture and sound record and the output is packaged and given to the mobile.

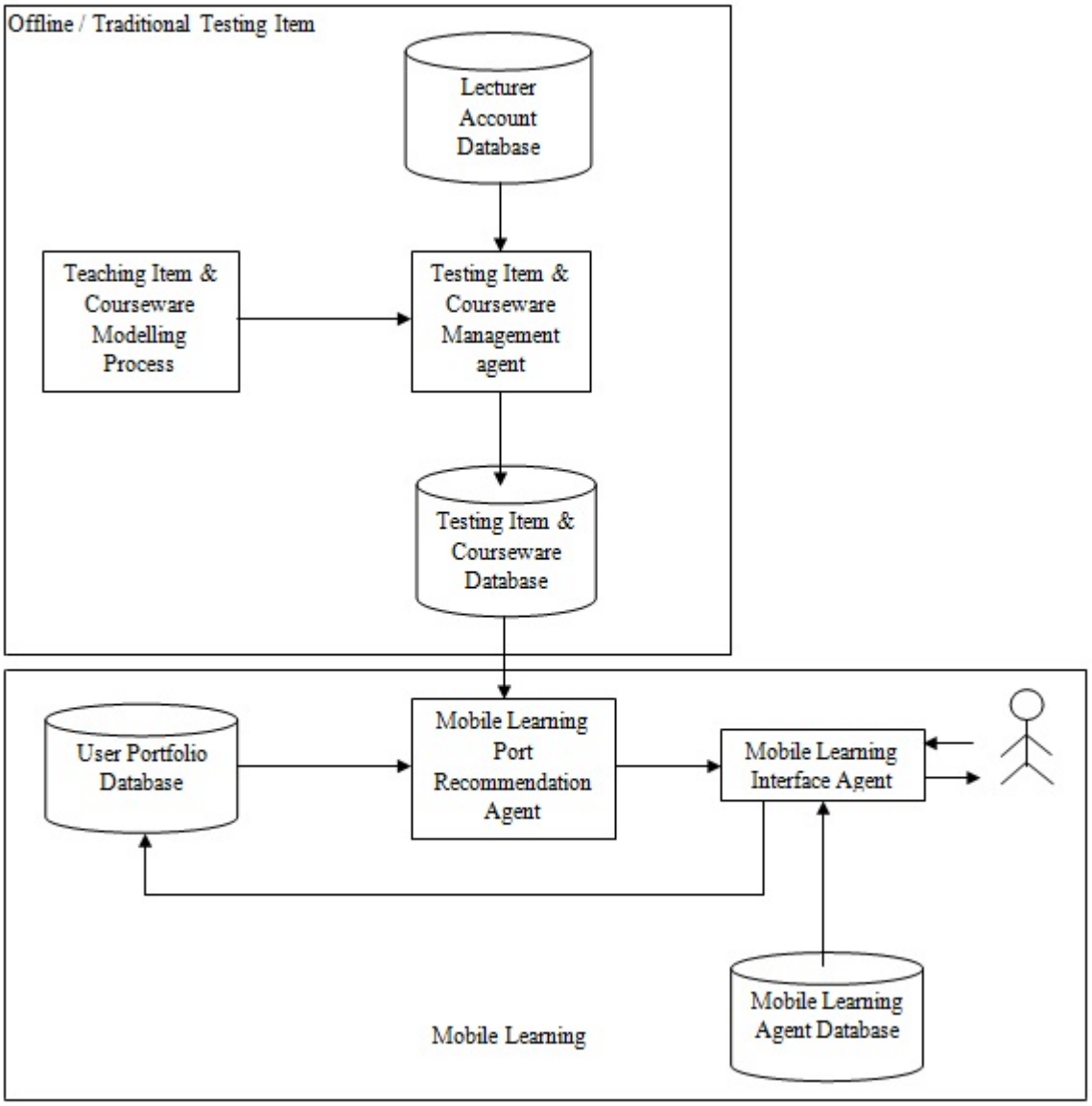

Fig4 - Mobile learning Architecture from the offline to the online system

(Fig4)Shows the entire Mobile learning Architecture from the offline to the online system. The first diagram involves the testing item which is the course details and material. The second diagram involves the mobile learning end user interface.

5. EFFECTIVENESS OF MOBILE LEARNING

One of the benefits of mobile learning is the life-long learning as indicate on the Core Competency Framework (from AICPA) which supports the concept of continuous learning that starts from the academic environment and continuing (life-long) through professional education and experience. Therefore, this study aims to provide empirical evidence that the approach to learning with mobile learning will improve student performance not only in technical skills but also in personal skills. In addition, by adopting mobile learning technology in accounting education, accounting students not only understand the importance of personal skills in the accounting profession, but they also learn to accept and use ICT as part of the accounting profession. In other words, mobile learning that support conventional

learning will drive the achievement of the overall competence of accountants: the technical competence, personal competence and a broad business perspective competency.

This research also aims to prove and test the effectiveness of mobile learning as opposed to face-to-face learning in improving the competence of the students and the national education goals. Method of learning with mobile technology is expected to support the learning process of the present method so as to improve the competence of accountants in terms of technical competency skills, personal skills, business knowledge and extensive expertise.

Mobile Learning also helps in teaching the students the professional values, ethics, and attitudes, but still need to balance the percentage of the knowledge, skills, values, ethics and professional attitude, and assessment of methods and techniques of teaching.

This study is important for several reasons: first, this study tried to carry out a review of the methods and techniques of teaching by providing a solution that is more sophisticated learning methods in accordance with the advancement of technology, the mobile technology-based learning methods. Second, although
mobile technology has developed very rapidly, up to date positive impact of mobile learning is still questionable, considering there are positive and negative impacts of the emerging mobile technologies.

Fig5 - Prototype design of the Interactive Mobile Opencast

Fig6 - Mobile User interface to Opencast

The real time images of the Interactive mobile learning system is shown in images Fig5 and Fig6. This proves the real time effectiveness of Mobile Learning Interactive Systems.

6. CONCLUSION

This interactive Mobile learning seeks to enhance learning in case of education. With this work one can be able to improve on our existing mobile opencast application that supplements the face-to-face lectures. This application will run on different mobile devices of student and allow collaboration between students that are good and weak in understanding English language. Students will also have seamless access to recorded lectures anywhere and anytime on their mobile devices to watch at their convenience. This mobile application supplements the traditional face-to-face lecture and not substitutes it.

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FACULTY TRANSITIONS TO ONLINE INSTRUCTION: A QUALITATIVE CASE STUDY

Charlotte E. Cochran, Ph.D.
Albright School of Education, City University of Seattle

Lorraine T. Benuto, Ph.D.
Department of Psychology, University of Nevada, Reno
panque7@yahoo.com

Abstract: The introduction of technological tools has created a paradigm shift in the field of education. As such, online learning has become a popular method for students to access educational courses. Due to the increased demand by learners for online classes, administrators at American institutions of higher learning are faced with the challenge of moving faculty members to an online environment. However, transitioning to an online environment requires a role change for faculty members. Specifically, faculty members must shift their instructional methods from on-ground lecturer to online mentor, which can be challenging. Indeed, many faculty members transition to online instruction without the necessary training, support, or skills needed to be successful. The purpose of this qualitative, multiple case study was to develop a better understanding of how higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format. Participants included nine faculty members, representing different colleges and universities, who teach at post-secondary institutions within the United States. Participants had taught face-to-face classes for one year or more, and had taught at least three classes using an online format. An in-depth, open-ended, semi-structured interview format was used to gather data. The data provided by the participating faculty members were collected, coded using a line-by-line format, and the codes were compared to one another with the goal of finding a pattern. The development of conceptual categories and data analysis continued until saturation was achieved. Based on the data analysis, *transforming* was the conceptual theme for how higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format.
Faculty Transitions to Online Instruction: A Qualitative Case Study

Introduction

Online learning refers to a method of learning that uses technological tools (Moule, Ward, & Lockyer, 2011) while connected to the Internet and includes the incorporation of devices (e.g., iPads, Clickers) and Internet websites (e.g., YouTube, Podcasts, Blackboard, WebEx) to enhance learning (Rollag & Billsberry, 2012) and to share information (Moule et al., 2011). Online learning has grown tremendously over the past few decades (Jandric, 2012) resulting in changes in how students learn (Schubert-Irastorza & Fabry, 2011) by affecting how they access information, collaborate, and communicate (Marais, 2010; Siemens & Canole, 2011). Not surprisingly, technological tools, not limited to Web 2.0, social networking sites, cloud computing, and wikis (Namdev, 2012) and those mentioned above, have presented new opportunities for higher education institutions (Schulte, 2010) and online learning has become a viable option for many students (Kerr, 2011). In fact, as of 2011, there were more than 6.7 million learners enrolled in at least one online class (Allen & Seaman, 2013), and enrollment in online classes continues to grow (Hoskins, 2011) creating a need for more faculty members to teach online (Schubert-Irastorza & Fabry, 2011) and prompting administrators to encourage faculty to move into the online teaching environment (Buckenmeyer, Hixon, Barczyk, & Feldman, 2011).

In the United States approximately 300,000 faculty members teach classes using an online format (Mayadas, Bourne, & Bacsich, 2009). Teaching online requires faculty to shift their thinking and manner of instruction from lecturing to mentorship (Bair & Bair, 2011). This shift requires a change in roles (Tripple, 2010) and may leave faculty feeling unprepared to teach online (Bair & Bair, 2011). Although researchers have emphasized the importance of faculty receiving training when shifting from face-to-face to online teaching (Batts, Pagliari, Mallett, & McFadden, 2010), faculty continue to move to the online teaching environment not fully prepared (Allen & Seaman, 2012; Schubert-Irastorza & Fabry, 2011) making it critical for administrators and faculty to understand how to complete the transition to online instruction. Despite the existence of online best practices, faculty members continue to experience difficulties transitioning to online teaching. Indeed, post-secondary administrators do not have sufficient information about the skills faculty need for transitioning to online instruction and as a result administrators cannot design effective support and training programs (Buckenmeyer et al., 2011). Moreover, when faculty members experience a poor transition to online instruction, adverse consequences exist for students, including inadequate communication from the student to the instructor (Beebe, Vonderwell, & Boboc, 2010) and poor feedback to improve learning (Jordan, 2012). Thus a better understanding of how instructors transition was necessary to improve faculty training methods and in turn improve student learning experiences.

Methodology

The purpose of this qualitative, multiple case study was to develop a better understanding of how higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format so as to obtain an improved understanding of the training needs of faculty members who are transitioning from a traditional mode of teaching to an online platform. Transitioning between the two instructional environments can be challenging for some instructors (Barrett, 2010) and this study explored how higher education faculty members made the transition. An in-depth, open-ended, semi-structured interview format was used to gather data. Participant responses to the interview questions yielded data that, after analysis, answered the following research question: *How do higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format?* Within the context of this research question, a better understanding of the needs of faculty to successfully navigate this transition process was obtained.

Data Collection

Snowball sampling (i.e., one participant refers a researcher to the next participant and so forth [Tabak, Khoong, Chambers, & Brownson, 2013]) was used to recruit participants. A diverse group of nine participants from various colleges and universities across the United States participated in semi-structured interviews conducted via phone or Skype.

Materials

The data presented within this manuscript represents data collected as part of a larger study that included the administration of a 10-question interview protocol. For this manuscript only data from three of the 10 interview questions were analyzed:

1. What were your experiences transitioning from a face-to-face teaching environment to an online teaching environment?
2. Do you feel there were any skills you lacked that might have helped you make the transition to online instruction?

3. What skills from the face-to-face instructional environment do you think transferred directly to teaching effectively in the online instructional environment?

The interview was conducted in a semi-structured manner and follow-up questions were asked when appropriate.

Participants

While nine faculty members were interviewed, only eight of the interviews were recorded (due to a technological failure) and therefore only data from eight of the nine participants was analyzed. Participants were between the ages of 41 and 64; one participant was male and seven were female; and all participants had taught face-to-face for a minimum of eight years and online for a minimum of four years. Table 1 contains the demographic data of all the participants.

Data Processing & Analysis

Participation in the study was completely voluntary and participants did not receive any compensation for their participation. Participants were given the option to be interviewed via telephone or Skype and 4 opted to be interviewed via Skype and 6 opted to be interviewed by telephone. The interviews were recorded and transcribed by the researcher. However, technological difficulties prevented the interview for Participant 9 from being recorded; thus, data from only eight participants were used to answer the research questions (this was sufficient to reach saturation). Each participant was asked 10 interview questions and the responses to three of these interview questions yielded data that were analyzed, coded, and memoed [sic] to identify emergent themes using data analysis resembling grounded theory data analysis procedures (which is appropriate for case study; Yin 2014) to answer the research question *How do higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format?* Within the context of this research question, a better understanding of the needs of faculty to successfully navigate this transition process was obtained and several themes emerged from the data.

Results

There was one overriding conceptual theme that was generated from the analysis of the data regarding how instructors transition from face-to-face instruction to online instruction: *Transforming*. Transforming is comprised of two descriptive categories supported by subthemes (see Figure 1). The two descriptive categories were *Knowledge Acquisition* and *Experiential Learning.* Within the descriptive category of Knowledge Acquisition, the following subthemes were identified: *1) technology, 2) best practices, 3) subject specific, and 4) mentoring*. The second descriptive category of Experiential Learning yielded the following two subthemes: 1) *mirroring*, and 2) *overcoming challenges*.

Transforming

When an instructor begins the process of transitioning to online instruction, he or she embarked on a new journey and experiences a personal transformation. Transforming was the main theme of how instructors transition to online instruction. The transformation was aided by the knowledge the instructor gained and the experiences he or she had during the online transition process.

It is important to note that transitioning can be viewed as being on a fluid continuum. Some instructors (Participants 1, 4, 5, 6, and 8), who transitioned to online instruction many years ago, still felt, based on the information gleaned from the interviews, as if they are still

transitioning in terms of trying to understand how to be successful in specific areas of transitioning such as how to encourage the students to work in collaborative groups or how to use specific software; whereas other instructors (Participants 2, 3, and 7) implied that the transition was relatively smooth and that the challenges were with the technology as opposed to their abilities to move to online instruction.

Based on the results of the study, the process of fully transitioning to online instruction is one that is based on a fluid continuum. For example, as new technologies and online learning theories are developed, current best practices may be expanded upon, and as such, there will be need for ongoing training along with the opportunity to apply the newly acquired information. Due to the continued need for knowledge acquisition and experiential learning opportunities, the process of transitioning remains on a sliding scale and instructors will be in various places on the continuum of transitioning and transforming.

Two themes were identified as pertinent to the transformation process and addressed the first research question: 1) *Knowledge Acquisition* and 2) E*xperiential Learning*.

Knowledge acquisition. Knowledge acquisition was voiced by all eight participants as an integral component for transitioning from a face-to-face learning environment to an online environment; however, how the knowledge was acquired varied. Knowledge was either acquired via formal or informal training. The training provided the necessary support to improve the chances of being successful online. All the participants discussed the need for either formal or informal training to successfully transition to online instruction. Various training areas were discussed; 1) technology, 2) best practices, 3) subject specific, and 4) mentoring.

Technology. The need to learn new technology was voiced by all eight participants. The technology ranged from learning how to navigate the Learning Management System (LMS) such as Blackboard, Epic, or Canvas, to finding applications and learning how to use the applications (apps), to learning how to use interactive technologies, such as Skype. Understanding how to use the various LMSs, in addition to learning how to use interactive technologies, such as Skype, aided in the transition process.

Best practices. Many authors (Baghdadi, 2011; Foster, Shurtz, & Pepper, 2014; Kerr, 2011) have written about best practices in an online environment and not surprisingly, teaching an online course using best practices was discussed by all the participants. Using best practices in an online course increases the chances for success for both the online instructor and the online students. Finding a common language to use when communicating is also an integral part of best practices. People in the e-learning industry seem to have a common language that people outside e-learning may not be familiar with as indicated by Participant 5 who said, “In the beginning I wish someone had given me a vocabulary list. I have no idea what some of these people were talking about.” When people are immersed in a subject specific language such as technology speak v. teacher speak, it may take effort to remember that vocabulary needs to be reviewed in order to ensure that the message being communicated is being received.

Communicating with students is an important component of online instruction (Vitale, 2010). There are various methods online instructors can use to communicate effectively with their students. Thirteen methods were identified by the participants and these methods included:

(a) repeating instructions several times (Participant 6);
(b) making him or herself available via a virtual office such as Skype (Participants 2, 5, and 6);
(c) making him or herself available by email or phone (Participants 1, 3, 4, 5, 6, and 8);
(d) providing feedback or information to the students that is clear and concise (Participants 1, 4, and 6);

(e) creating videos to facilitate communication (Participants 3, 5, and 6);
(f) using red tracking (feature in Microsoft Office) on a student's document (Participant 6);
(g) providing written or audio feedback (Participants 1 and 6);
(h) using humor to help connect with the students (Participants 1 and 4);
(i) telling the students "that it is ok to make mistakes." (Participant 1)
(j) using Voiceboard for oral assignments and oral feedback (Participants 1 and 5);
(k) asking students for feedback in addition to the feedback asked for by the school (Participant 4);
(l) writing a lot on a test (Participant 3);
(m) using the Announcement feature in Blackboard. Participant 8 stated, "if I see that several students are making the same type of error, I'll put an announcement out in Blackboard that says, 'hey, a lot of you all doing this. Why don't you try this instead…'"

By using a variety of different methods to communicate with students, an instructor will increase his or her ability to ensure the students are able to receive and process the information provided. The transition process is enhanced when there is effective communication between the instructor and the students.

Collaboration (Ishtaiwa & Abulibdeh, 2012; Pan & Franklin, 2011) has been identified as a method to improve an educational environment. This may be true in theory, but after analyzing the data, it seemed that the application of creating collaborative environments in an online class was challenging. Seven of eight participants found collaboration to be challenging. Collaboration is an integral part of online instruction as voiced by Participant 6, but identifying the best way to create a collaborative environment outside of theory and best practices remains a serious issue in the process of transitioning to online instruction. Understanding how to implement online learning theory and best practices would aid an instructor who is transitioning to online instruction.

Subject specific. Some courses are more difficult to teach using an online format as expressed by Participant 3, who stated that,

> I have been so disappointed in some of the training that I have gotten in some areas, not specifically transitioning from face-to-face to online but a lot of the training that is out there seems to not really work well in math. Math is more like a foreign language . . . everything you hear from most math professors is that it sounds really good, but it didn't work for math.

This echoed what Participant 1 stated,

> Formally, there was a 4 week introduction to Bb online learning class that I took at the school where I'm teaching, but it didn't focus on foreign languages. So while having a Webquest activity or a fish bowl activity is theoretically an excellent activity, it does absolutely zero good in a first semester foreign language class when the students can't say hello.

Developing training that targets specific course topics remains an issue that needs to be addressed in formal training sessions to support the transitioning instructor.

Mentoring. Working with another person who would be considered more experienced in the field can be really helpful during the transition process. Working together decreases the feelings of isolation that many students feel when they take an online course and through mentorship, feelings of isolation can be decreased among online instructors as well.

Experiential Learning

While many authors (Baghdadi, 2011; Foster et al., 2014; Kerr, 2011) have written about best practices and theory for online instruction, there is a problem when instructors try to apply best practices and theory as Participant 1 stated, "best practices don't align with constraints of online classes." Learning about how to teach online may be very different from the reality of teaching online and new-to-online instructors may not fully understand what is happening or what is expected until they are in the middle of it and experiencing it. Thus, *experiential learning* was identified as a key theme for how faculty members transition to online instruction. This theme is supported by two subthemes. The two subthemes are as follows: 1) *mirroring* and 2) *overcoming challenges*.

Mirroring. Participant 2 summarized this subtheme very well when she said, "if you don't know what to expect or how anyone else does it, you are starting from a blank screen." An instructor will often provide templates for how to submit an assignment and students are expected to copy (mirror) the template. The same is true for new-to-online instruction instructors. Without seeing an example of what an online course looks like, it is challenging for an online instructor to meet the requirements or to be successful. It can also mean that an educator is unable to anticipate errors and inadvertently creates challenging situations for him or herself as well as for the students such as creating documents or templates too late in the course for them to be useful. Mirroring ties in with the need for mentorship during the transition process as discussed previously in the section called Knowledge Acquisition.

Overcoming challenges. When moving to an online instructional environment, instructors should expect some changes to their instruction and be willing to make adaptations. Adapting to a new situation such as online instruction can be facilitated by starting with a course that an instructor has "already been teaching" (Participant 8). As such, according to Participant 8, only the format changed; the content was not new. Without the ability to adapt to a new environment (online), or having the ability to learn new technologies or various means of communicating, online instruction can be very daunting as voiced by Participant 2.

Many challenges were identified by the participants. Challenges made the transition to online instruction more difficult for faculty members. These challenges included timing, technology, course development, and connecting.

When training sessions were offered by administrators, the timing needed to be considered. The timing of formal training could be improved if the training sessions were scheduled closer together and not over a period of years. In addition to timing the training sessions in a manner more conducive to learning, technology should be addressed in the training sessions.

Technology was perceived as taking time to learn and without support it could be very challenging. Developing a course was seen as taking time and an instructor needs to repeat him or herself in a number of different areas in the course shell. In effect, an online instructor needs to "create a course that is stupid proof" (Participant 6). If the students are not able to find the necessary materials in the course shell, it will be difficult for them to be successful; thus, the instructor needs to take the time to ensure that the course has been well developed and that it meets the needs of the students.

Connecting with students was perceived as an important part of encouraging engagement in a classroom and connecting or developing rapport with online students could be challenging. When an educator is not able to connect with students, creating collaborative groups can also be challenging. Using humor such as graphics of "people smiling and laughing" is a method Participant 1 and 4 used to connect to their online students.

Discussion

This study represents an important first step in developing a bettering understanding of how higher education faculty members transition from a face-to-face (i.e., on-ground) teaching format to an online teaching format. The information gleaned from this study can be used to help administrators better understand the transformation process that faculty undergo and within that context a better understanding of the training needs of online faculty who are transitioning was obtained. Ultimately when the training needs of online faculty members are met, faculty are better able to meet the needs of their students. The results from this study have several important implications that offer administrators a better understanding of what faculty members need to effectively transition (and transform) to the online environment and be effective online instructors.

Implication1: The Transformation Process

Administrators who understand that faculty members need to transform themselves during the transition to online instruction process will be better prepared to develop training sessions to support these instructors. Administrators who seek to support faculty members in transition to online instruction will be required to provide formal or informal training opportunities. Results from the current study suggest that knowledge acquisition can take two forms. First, knowledge acquisition can be in the form of formal training provided by the administrators at schools of higher education. Second, knowledge acquisition can be in the form of an online instructor taking the initiative to find workshops or finding relevant current scholarly articles or books on a specific topic germane to the current area of need.

A review of the extant literature revealed that training for faculty members generally involved the use of best practices (Batts et al., 2010; Haar, 2010). For faculty members new-to-online instruction, understanding teaching strategies has been documented to be beneficial (Northcote, Reynaud, & Beamish, 2012). Per the literature, effective online teaching strategies included maintaining open lines of communication (Baghdadi, 2011; Foster et al., 2014) and using reflective thinking via discussion questions (Pedro, Abodeeb-Gentile, & Courtney, 2012). Moreover, researchers have documented that best practices such as modeling appropriate responses for students in the online forum, encouraging students to use social networking sites such as Facebook to improve feeling part of a group and avoiding feelings of isolation, and ensuring the students understand the technological tools needed in the course (Kerr, 2011) are useful strategies that online instructors can use in the online classroom. Instructional design skills, content-area expertise (Foster et al., 2014), and using collaborative activities (Lewis, Koston, Quartley, & Adsit, 2011) are also touted as online instructional best practices. Results from the current study support the importance of best practices and the development of effective online teaching strategies. However, results from this study also provide a stepping stone for administrators who are responsible for supporting their online instructors. Armed with the information from the results of this study, administrators can apply these strategies to help improve the ability of the online faculty to meet the needs of their students; thus, improving the academic experience of the instructor and students.

Implication 2: Best Practices and Practical Application of Collaborative Activities:

Findings from this study also revealed a conflict between best practices and practical application of collaborative activities. Based on the data analysis of this study, online faculty members did not yet understand how to effectively engage online students in collaborative

activities and thus, it remained challenging to develop online collaborative activities. For an instructor to cultivate collaboration in an online course, the use of technology is paramount (Marmon, Vanscoder, & Gordesky, 2014). However, based on the findings of this study, there was a disconnect between understanding what collaborative activities entailed and applying established effective online collaborative activities. The challenge stems from an online instructor's lack of understanding of how to support and encourage online collaboration.

The benefits of collaborative activities are plentiful (Agosto, Copeland, & Zach, 2013; Ruey, 2010) and while online instructors in this study were aware of the benefits of collaborative work, they were unsure of how to apply them making it challenging for the instructors to encourage collaboration among online students. Thus, one important implication that can be drawn from the current study is that instructors may need training in the area of how to support online students in their attempts at collaborative work and on how to guide students in collaborative activities. Training may include hands-on activities where the instructor is given the opportunity to practice supporting students and helping them create an engaging collaborative environment online.

Implication 3: Learning and Applying New Technology

Participants in the current study also identified the need to learn the LMS and its features in order to instruct online learners effectively. This finding is consistent with findings by other researchers (e.g., Hoffmann & Dudjak, 2012). Instructors who are new to the online environment need to understand the technology tools available to them and the best strategies for teaching online. Faculty members also need to obtain the skills needed to navigate the challenges they will face as they transition online.

Curiously, while the extant literature identified the need for training (Fish & Gill, 2009; Lee & Tsai, 2010; Marmon, et al., 2014; Shattuck, Dubbins, & Zilberman, 2011; Vaill & Testori, 2012) and the findings of this study supported the need for training, the need for subject specific training was also identified after data analysis; yet, subject specific training was not raised as a need in the extant literature. Results from this study indicate that faculty members who teach mathematics or foreign language courses online need training specific to their subject areas. Knowledge acquisition is fundamental for an online instructor to be successful both with regard to the technology that is being used (i.e., the LMS) and with regard to knowledge that is subject-matter specific.

Implication 4: Gaining Experience in the Virtual Environment

In addition to knowledge acquisition, online instructors also need to gain experience working in a virtual environment. Inexperienced online instructors tend to use traditional teaching strategies, which are ineffective in the online teaching environment (Allen & Seaman, 2010). Many on-ground faculty members have transitioned to online instruction without identifying the need for subject specific training is significant because administrators are now aware of its importance and can develop training sessions to address the needs of faculty members. If online faculty members are trained properly, then the students will benefit from better course design and instruction.

Administrators who implement the aforementioned training suggestions will be able to tailor their training to meet the needs of their online faculty in an effective manner. This is significant because such tailoring will improve instruction and thus lower attrition rates of faculty and students. As online faculty members become more proficient in online instruction, students will also benefit.

Limitations

There were several limitations in this study: a) the participants represented the field of education and specifically, only data from faculty members from institutions of higher education were used, b) the participants were all over the age of 41 years, which meant that the participants did not grow up with the Internet and, as such, they may not be as fluent with new technologies as millennials (persons born "roughly to the beginning of the 1980s through the end of the 1990s" [Levenson, 2011, p. 257]) may be, and c) each participant had been teaching in the online environment for a minimum of four years. Due to the number of years of experience in the online environment, participants may have discussed the skills needed to transition based on their current situation as opposed to when they first began their transition to online instruction. Also, the participants may not have been able to recall events from four years ago or longer.

Recommendations

Practical Applications. Recommendations for practical applications exist based on the implications expressed in this study. First, participants explained the need to align themselves with a mentor who supports them through the transition process and beyond. While researchers (Lackey, 2011; Williams, Sunderman, & Kim, 2012) have noted issues with mentorship, other researchers (Barczyk, Buckenmeyer, & Feldman, 2010; Herman, 2012) supported the use of mentors. Aligning oneself with a mentor is also supported by the results of this study. Because a mentor is an integral part of the transition process, he or she would be of great benefit to the transitioning online faculty member. A mentor should be willing to share how he or she set up his or her online course so that the transitioning instructor could mirror his or her class. This is significant in that online faculty members would have an ally during their transition to online instruction. The online faculty member would not feel isolated or feel that he or she was expected to learn how to teach online on his or her own if he or she were aligned with a mentor.

A second recommendation based on the results of this study addressed the process of transitioning. Participants explained the need for post-secondary administrators to include a course on collaboration in a program for aspiring teachers. Collaboration has been identified by researchers as a method to support student learning (Barczyk et al., 2010; Marmon et al., 2014). Since the education field is expanding to the online environment, K-12 teachers and post-secondary faculty members will need to understand how to organize and maintain collaborative online groups in an effective manner. Managing conflict within collaborative groups is also an area that should be addressed in training. A course that focuses on collaboration is significant because it would support the beginning teacher and transitioning online instructor.

A third recommendation based on the results of this study addressed the process of transitioning. Participants explained the need for post-secondary administrators to provide training that includes a course shell where transitioning instructors can practice their collaboration skills with their colleagues and also to practice how to maintain collaboration with their students. Transitioning faculty members need experiential learning opportunities.

Future Research. There were two recommendations for future research and application can be made based on the data analysis and findings of this study.

Recommendation 1. A missing piece to current training and support practices for online faculty was the absence of addressing subject specific areas. While training and support address best practices, based on data analysis administrators were not offering transitioning instructors subject specific training. For example, while a French, Spanish, or mathematics online instructor would benefit from learning about the best practices in the field of online instruction, additional

support and training is needed for teaching French and Spanish language instructors and mathematics instructors in terms of how to communicate more effectively with their students. A future area of research should include how foreign language instructors develop asynchronous communicative collaborative activities.

Recommendation 2. A second area of future research should include how administrators could add specific subject area needs into their training programs or workshops. For example, a mathematics online instructor would benefit from training in the area of how to communicate with students using mathematical symbols.

Conclusion

The purpose of this multiple case study was to understand how faculty members transition to online instruction and to gain a better understanding about the transition process. With a better understanding of the transition process, educators and administrators could focus on specific training needs to improve the success of transitioning. The results from the data analysis have also helped explain how faculty members would be able to transition more effectively. As supported by the results from the data analysis, additional studies in the areas of online collaboration and subject specific training are needed.

Table 1: ***Participants' Demographic Data***

Partici-pant	Age	Sex	Description Of Work Area	Location of College	YT F2F	YT online	Taught Blended Classes?
1	41-55	M	Urban	MO	8	4	No
2	56 -64	F	Rural	TX	26	14	Yes
3	56 -64	F	Rural	TX	30	15 or 16	Yes
4	56 -64	F	Suburban	PA	8	5	Yes
5	56 -64	F	Suburban	VA	33	7	Yes
6	41-55	F	Urban	PA & MD	12	8	Yes
7	56 -64	F	Suburban	PA	33	Since the 80's	No
8	41-55	F	Urban	TX	15	7	Yes
9	56 -64	M	Urban	AL	10	7	Yes

Note. M=male; F=female; MO=Missouri; TX=Texas; PA=Pennsylvania; VA=Virginia; MD=Maryland; AL=Alaska; YT F2F=years teaching face-to-face; YT online=years teaching online.

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MEDIA-ASSISTED UNDERGRADUATE TEACHING – PANEL EVIDENCE ON LEARNING OUTCOMES

Dr. Stephan H. Schmucker
Lecturer in Business Administration, University of Hamburg
School of Economics, Business and Social Sciences, Von-Melle-Park 9
D-20146 Hamburg
stephan.schmucker@wiso.uni-hamburg.de

Abstract: Electronic learning media experience ever wider use in tertiary education as a supplement to traditional lectures, and they come in an increasing number of formats. However, we lack conclusive evidence as to which format produces the best learning outcomes, especially if we consider the vast range of possible applications. This study presents a test of three different formats - audio only, voice-over slides, and slides plus a video of the lecturer - employed in a 'inverted classroom' undergraduate teaching context. The results suggest that the learning effects of the video format may not warrant the additional effort required for its production, leaving voice-over slides as the preferred medium of instruction. Perhaps more importantly though, the paper provides a detailed account of the experimental set-up - which is one that many lecturers will easily be able to replicate in order to ascertain which media format is most suitable in the teaching context at hand.

1 INTRODUCTION

In undergraduate teaching and elsewhere, the classic lecture is increasingly being supplemented with, or even replaced by, various other types of learning media, including video lectures. Such media are typically available on the internet, often via public platforms such as YouTube. This availability makes the learning media more widely accessible, hence we see calls for their increased use, for example in the political environment of German universities (Hamburger Bürgerschaft 2015). Also, the fact that such media can be consumed repeatedly makes them more learner-friendly than lectures, amongst a range of other benefits (Karnad 2013).

One teaching approach that strictly necessitates the use of non-traditional learning media is the so-called inverted (or flipped) classroom, a blended learning technique. The classroom is flipped in the sense that the instructional content is delivered via home learning, often aided by video lectures or other types of educational media, while the lecture time is instead used for a more in-depth exploration of the subject, to answer questions about the subject matter, for homework-style exercises and increased interaction with the lecturer as well as among the students.

Non-lecture learning media enjoy ever wider use (Fischer and Spannagel 2012) and come in increasingly diverse forms, ranging for example from simple audio files to voice-over slides, Khan-style videos, lecture capture, or elaborate, animated picture-in-picture videos. What we lack though, according to Chen and Wu (2015) and many others, is sufficient evidence as to which types of learning media are most suitable in a given educational setting (subject discipline, student body, etc.), where suitability is typically defined in terms of student acceptance and / or learning outcomes. Chen and Wu provide a brief survey of several studies of the performance effects of different types of learning media without arriving at a clear preference. Fey (2002)

explicitly investigates whether audio-visual learning media can achieve better learning outcomes than audio-only media but fails to find any significant effects. Interestingly though, her subsequent survey showed that the students *considered* audio-visual input to be more effective.

A lecturer who is planning to supplement a course with additional learning media, perhaps in order to 'flip' the classroom, will thus find little guidance as to the optimal type of learning media in the literature. Furthermore, existing studies will be of no value to her in conducting her own investigation to find out which format is best suited to her specific circumstances because – to the best of our knowledge – any insights generated so far have been derived from extensive experiments involving, for example, questionnaires, laboratory tests, non-standard learning or testing equipment, including even brainwave detection (Chen and Wu, 2015).

This study aims to help the hypothetical lecturer in two ways. First, we provide additional evidence on the differential performance effects and the students' evaluation of three different learning media: narration only; voice-over slides; slides plus video of the lecturer. The study was conducted during normal lecture hours in a second-year undergraduate course on Introductory Human Resource Management at the University of Hamburg. Based on a panel data set with a fixed effects approach, the results confirm Fey's (2002) warning that audio-visual media may not be worth the effort.

Second, if the lecturer is unwilling to directly adopt for her specific situation what little advice the literature provides, this paper presents an experimental design that is applicable to virtually any standard lecture setting with only modest additional effort required. In other words, by following the procedure we document, any lecturer can find out over the course of the first two or three lectures of a term which one from a set of alternative media formats works best in her setting and then concentrate on delivering that format henceforth.

The only technical prerequisite for conducting such an experiment is the availability of a set of classroom response devices or 'clickers' (see, e.g., Kundisch et al. 2013). Classroom response systems are experiencing ever wider use and have been associated with a number of benefits in teaching (Kay/LeSage 2009, Caldwell 2007, Schmucker 2015, Schmucker/Häseler 2015, Simpson/Oliver 2007). Most relevantly for our purposes, clickers allow a lecturer to conduct single or multiple choice tests. The questions and corresponding answer choices are shown to the students who then use the clickers to select and to transmit their choices. All responses are recorded electronically and later analysed. Clickers thus allow us to conduct performance tests much more conveniently than any paper-based or computer-based method.

The paper proceeds as follows: Section 2 exposes the research design. Next, the data are described, both in terms of descriptive statistics and in terms of a number of thoughts on data quality. Section 4 presents the results of the performance tests and of a subsequent survey of student opinions on the three media formats. Section 5 concludes with a summary and discussion of the results.

2 RESEARCH DESIGN

The greatest challenge in determining the influence of consuming different media types on learning outcomes lies in excluding, or holding constant, any potentially contributing factors that cannot be taken into account as explanatory variables in a regression analysis: the students'

general aptitude, their prior knowledge of the subject area, their individual skill at completing single choice tests under time pressure, their very participation in the tests (selection effects), etc. Our approach to this problem consists in creating and analysing panel data. The students were asked to participate in three tests (held incidentally during the Monday lectures in three consecutive weeks), in preparation for which they were furthermore asked to consume one of three types of audio-visual learning media on the subject of Introductory Human Resource Management:

- **Type A** is a series of three videos in which the screen is split between a video recording of the lecturer delivering a mini-lecture of roughly 8 to 10 minutes in a studio setting, and the lecture slides, which build up in step with the oral presentation.
- **Type B** videos are identical in content to Type A, but they lack the video image of the lecturer, i.e. they show only the slides accompanied by the audio track of the lecturer's narration, which is identical to the recording shown in Type A.
- **Type C** has no visual content but comprises only the audio track.

The video / audio files are available, at the time of writing, at https://lecture2go.uni-hamburg.de/veranstaltungen/-/v/17553 and associated websites.

In the lecture preceding the first test day, the setup and purpose of the experiment was explained to the students, and they were asked to consume at any time before the first test day a specific type of learning media. Each student was assigned to one of the three media types in a quasi-random fashion – via the last digits of their matriculation number. That way, we were able to avoid the students self-selecting their preferred media types, which would have invalidated the results. Immediately after the introductory lecture, the videos were uploaded to the University of Hamburg's 'Lecture2Go' platform at a site known to the students. At the end of each of the first two test days, the students were again assigned to a media type in such a way that those students who participated in all three test days would have consumed all three media types.

We thus obtain a panel data set with a time (test days) and a cross-section (students) dimension. This permits us to employ a fixed effects approach in estimating the performance outcome of media consumption: Every student who has participated in at least two test days and consumed at least two different media types is assigned an individual dummy variable. That way, all student-specific factors of influence that cannot be controlled for in the model are kept constant and we are able to examine the differential effect of the media types for each student. Furthermore, a set of dummy variables was also created for the test days to account for the possibility that the three tests were of unequal difficulty.

The actual test days were conducted in the following fashion: Clicker devices were distributed to all students, who were first of all asked to transmit the last five (out of seven) digits of their matriculation number so that their results can be matched with those of the other test days while maintaining a degree of anonymity. The students were then asked to indicate with their clickers:

- which media type(s) they had actually consumed in the course of the preceding week – choosing from media types A, B and C, plus all possible combinations thereof, plus "none",
- how many days since they had last consumed the media – selecting an integer number from 0 (consumption on the test day) to 7,

- and how many times they had consumed the media – indicating from one to four or "more" times.

Finally, the students were to answer five single-choice questions on each test day whose contents derived from the video tutorials. Three to five answer choices were presented for each question. The entire test consumed about 30 minutes of lecture time each Monday.

3 DATA

3.1 DESCRIPTIVE STATISTICS

A total of 174 tests were completed – to various degrees – by the students over the course of the three test days (the 'full sample'). Using the available information on matriculation numbers, we were able to identify 40 students who participated in two or three test days, i.e. those students whose results can be used in a fixed effects regression. This subgroup of students participated in a total number of 96 tests (the 'usable sample').

Figure 1 below shows the frequency distribution of the media types consumed before the three test days within the usable sample. We see a fairly even distribution across Types A, B and C, which is good news – most students adhered to the video type assigned to them. Only two test results were preceded by the consumption of more than one media type – too small a group to make any inferences. Fortunately, contrary to the instructions given to the students, a sizable number of tests were completed without the prior consumption of any of the tutorials. This set of test results can serve as a benchmark to ascertain whether the media have any learning effects at all. If all students had watched or listened to one of the tutorials as instructed, we would only be able to check for the differential effects of the three media types; the question whether they have any use at all would have to remain unaddressed.

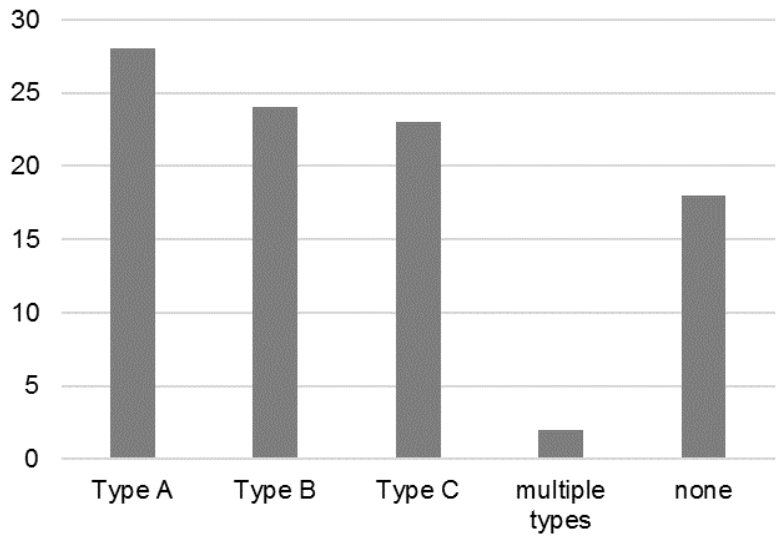

Figure 1: Media types consumed

As mentioned above, the students were also asked to indicate on which of the eight days preceding and including the test day they had consumed the media. This question was to serve a twofold interest: First, to simply observe the students' habits, and second, to test whether the time of consumption had any effect on performance – plausibly, content that was absorbed more recently will be better remembered in the test. Figure 2 below shows the resulting frequency distribution. Consumption more than one day before the test day occurred infrequently and is

therefore subsumed under one category. Evidently, most students consumed the media on the day immediately preceding the test. As for the second interest, it was sadly not possible to include this variable in the regression reported in the next section because the students' incomplete answers to this question would have overly curtailed the usable sample in a fixed effects specification. Nevertheless, inclusion of the variable in a random effects estimation of the full sample tentatively indicates that more recent consumption is indeed associated with better performance (results not reported).

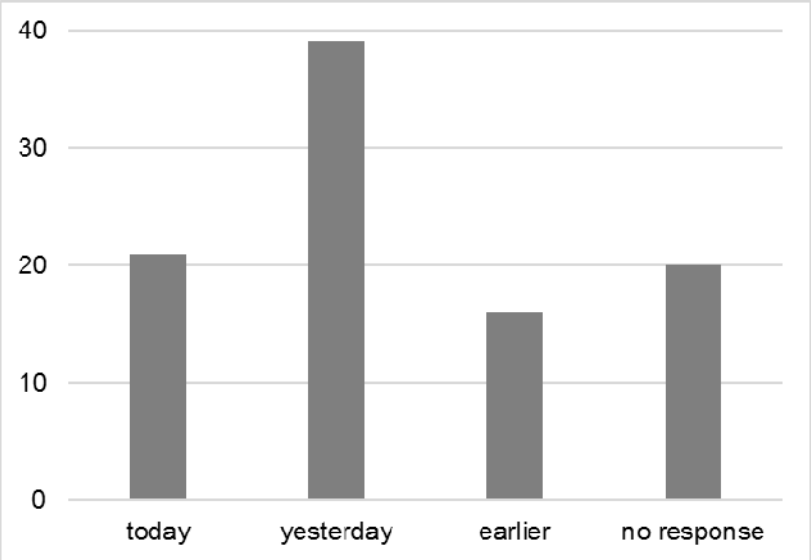

Figure 2: Day on which the media were consumed, relative to the test day

As a final piece of information before the lecture-related questions, the students were asked how many times they had consumed the media. The results were transformed into a dichotomous variable (repeated consumption – yes / no) because very rarely had students consumed a tutorial more than twice. Thus rephrased, 65 test results were preceded by one-time media consumption, 15 by repeated consumption, and no response was given in the remaining 16 cases. This variable was unsuitable for inclusion in a fixed-effects regression for the same reason as above. Yet, in the full sample, random effects estimation, in accordance with expectations, indicates that repeated media consumption indeed significantly improves the learning outcomes (detailed results again not reported).

3.2 DATA QUALITY

The data that was exported from the software which records the clicker responses unfortunately exhibited signs of poor quality. In a number of instances, the students evidently submitted incomplete and inaccurate information, either purposely (e.g. because they did not want to disclose their identity) or inadvertently (perhaps because they accidentally pressed the wrong clicker button or pressed the correct button but with insufficient determination). These conjectures about student behaviour are based on several observations:

- A number of students submitted fewer than the required five digits of their matriculation numbers; some even submitted no information at all that would allow them to be identified across the three test days. In some cases, such behaviour was likely deliberate. Other students, by contrast, participated in two or three test days and missed one or two digits of their matriculation number only on one of the days. Here, the omission was likely inadvertent. In cases where three or four digits were transmitted, it was sometimes

possible to deduct the full matriculation number and thus to match the specific test results with results produced by the same student on a different test day, increasing the usable sample size. However, this procedure is subject to a risk of error if the student in question participated in the test without having enrolled in the course.

- In 13 cases among the full sample, when asked about the media type consumed, students responded "none" even though, two questions further on, they did indicate a day on which their consumption had taken place, rather than not responding to this question. Similar inconsistencies exist between the questions on media type and repetition.
- In additional questions (which we turn to in the next section) on their personal experience with the media, some students transmitted a relative evaluation of the different types even though they simultaneously reported having consumed none of them.

The consequence of incomplete information is a reduction in the usable sample size; the consequence of inaccurate information is the introduction of random noise in the data, which will tend to inflate standard errors in the regression and thus to reduce the probability of finding significant effects. This we must bear in mind when interpreting the estimation results in the next section. Furthermore, the issue of data quality presents a major task for future research.

In a second iteration of this experiment, the questions and answer choices would also need to receive some revision. In one question posed on the first test day, the correct alternative from three given response options received 84% of the votes, with all of the remaining votes going to the second option, and none to the third. This question clearly made only a limited contribution to generating information about the students' performance. Furthermore, a minor mishap on the third test day also practically rendered one of the five questions obsolete: One of the five response options was accidentally formatted slightly differently from the other four, which virtually all students (correctly) interpreted as indication of this being the correct answer.

4 RESULTS

4.1 PERFORMANCE EFFECTS OF MEDIA CONSUMPTION

The main results pertaining to the performance effects of the different audio-visual media are summarised in Table 1 below. The dependent variable – the number of correct responses by a given student on a given test day – was regressed on a set of dummy variables for the different video types (with "none" being the omitted category), on dummies for the second and third test day, and on a set of dummies for the 40 students in the usable sample. Within this fixed effects approach, Poisson estimation was selected due to the count nature of the dependent variable. The coefficient estimates of the student dummies are not reported here, though a number of them are highly significant. The variables relating to the time of media consumption and repetition are not included in the model for the reasons given above.

Variable	Coefficient estimate	P > z
video type A	0.5339	0.020
video type B	0.6338	0.007
video type C	0.3726	0.163
multiple v-types	1.1984	0.003

test day 2	-0.3808	0.002
test day 3	-0.0145	0.891
Conditional Poisson regression with fixed effects at the student level. Robust standard errors. 96 observations from 40 students.		

Table 1:
Regression results.
Dependent variable: number of correct responses by student i on test day t

The results show that, relative to the first test day, the students performed significantly worse on the second day but only marginally worse on the third. This pattern may well be ascribable to the above-mentioned unintentionally simple questions on the first and third day, respectively.

Our primary attention, however, is directed at the performance effects of the different types of media. All three formats appear to promote the performance of their consumers relative to the case of no media consumption. Types A and B exhibit a significantly positive performance effect, Type B even strongly so. As for Type C, we cannot reject the hypothesis that its consumption makes no difference to performance. The estimate relating to multiple video types shall receive no further mention for the dual reason that this particular subsample comprises only two test results which, moreover, benefited from greater exposure to virtual teaching than those that were preceded by only one type of media. As a final lesson from Table 1, we note the ranking of coefficient sizes among the three media types: B>A>C.

To establish whether there is a significant difference in the performance-enhancing effect of the three media types, we run pair-wise X^2-tests for the equality of the respective regression coefficients. The results are reported in terms of p-values in Table 2 below. The p-values express the probability of obtaining, due to random sampling, a pair of coefficients with at least the given differential if in the 'true' relationship that underlies the data the coefficients are in fact equal. The only notable result is that Type B has a greater effect than Type C, but only if we apply the 10%-level of significance. We hypothesise that more clear-cut results could be obtained with better data.

Video Types	**B**	**C**
A	0.295	0.257
B	-	0.054

Table 2:
X^2-test of coefficient equivalence – probability values

4.2 STUDENT ATTITUDES TOWARDS MEDIA-ASSISTED LEARNING

At the end of the third test day, the students were asked to respond to two extra questions on their attitudes towards media-assisted learning. The first of these sought to elicit the degree to which the students agree with the statement, 'I appreciate the opportunity to prepare for lectures using audio-visual media'. Figure 3 below shows the frequency distribution of the responses. The data underlying Figures 3 and 4 cover all participants of the third test day, regardless of whether their results were included in the regression analysis.

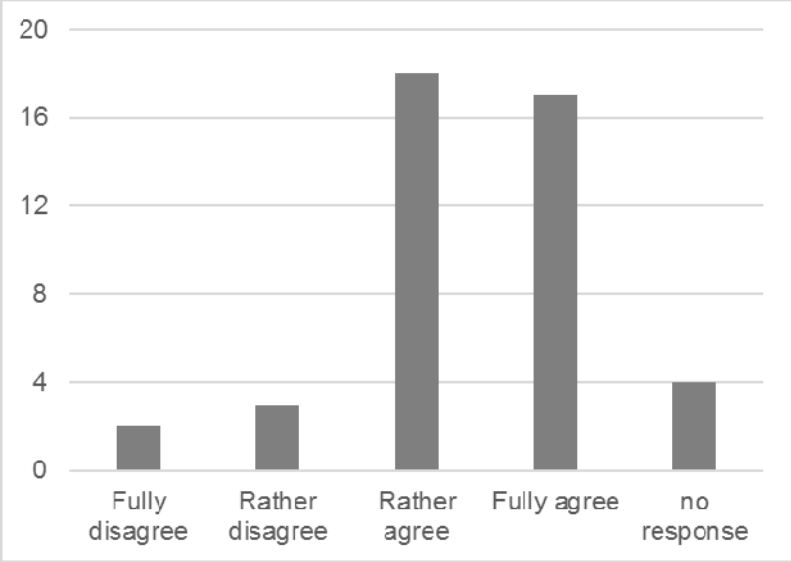

Figure 3: Responses to the statement: 'I appreciate the opportunity to prepare for lectures using audio-visual media.'

Clearly there is a great amount support for the use of such media on the part of the students. This comes as no surprise, considering the specific context of our experiment: The audio / video files were made available to the students not quite as an alternative, but more as a supplement to traditional lectures. Following the completion of each test, the contents were discussed in class so that the students were able to learn the relevant concepts even if they had not consumed the media. Hardly any cost was associated with them consuming or failing to consume the media; there was no trade-off. To them, the tutorials constituted an additional, optional source to learn from – which they predictably appreciated. The responses to this question will likely differ in other contexts, for example if students are presented with the choice of audio-visual tutorials as a strict alternative to lectures. Fischer and Spannagel (2012) list a number of ways in which video lectures can be used in relation to conventional lectures. In a setting not dissimilar to ours, the authors also find a strong preference among students for the use of electronic learning media. Furthermore, in any event the students' attitudes by themselves cannot guide the decision as to whether such media should be employed in teaching: In the evaluation, the students need not consider the substantial effort required to produce the media.

The second and final extra question posed on the third test day promises more interesting insights. The students were asked to indicate which of the three media formats they consider most beneficial to their learning progress. Figure 4 displays a count of the responses.

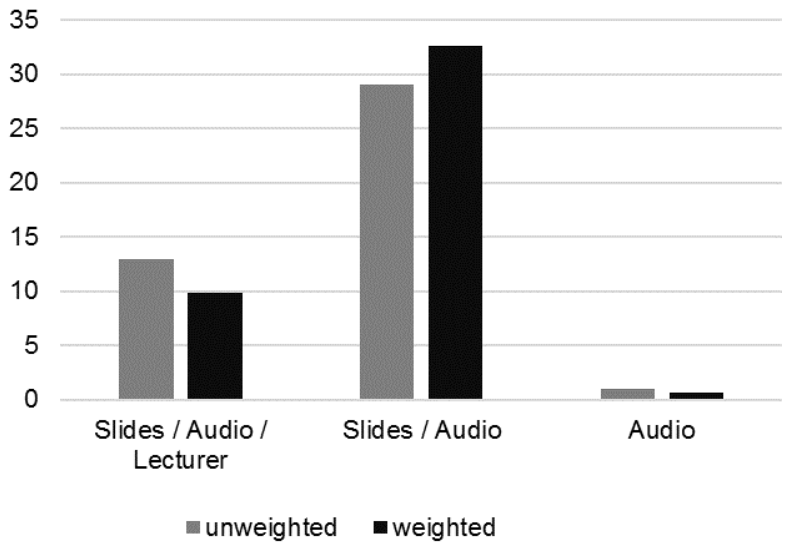

Figure 4: Responses to the question: 'Which type of media do you consider most beneficial to your learning progress?'

The bars shaded in grey represent the unweighted frequencies. They show a clear preference for media Type B, which receives more than twice as many votes as Type A, with Type C being preferred by only two respondents. The picture becomes even clearer if we weigh the responses by the number of media types that each respondent has consumed in total to take account of the fact that an evaluation by an experienced consumer should be more valuable than one submitted by an individual who has not consumed any of the tutorials. The ranking of the students' preferences thus matches the ranking that we obtained from their performance data.

Like the results obtained from the performance data, the students' preference for Type B is somewhat unexpected and stands in contrast to results obtained by Fey (2002) in a comparable setting. One might have thought that more information were always preferable, that the additional video component of Type A could only help the students' learning. Yet the results seem to remind us that the assumption of free disposal does not apply to information. Multi-media tutorials entail the risk of cognitive overload; due to our limited cognitive capacity, more information can actually obstruct learning (Sweller et al. 1998). Video imagery promotes learning in that - and only if - it serves to motivate and to elicit emotions in the learner (Edelmann 2000). Whether the videos used in this study were suited to achieving these objectives remains open to question.

5 CONCLUSIONS

Picture a lecturer who wishes to enhance her course with electronic learning media, perhaps even to 'flip' the classroom. She may wonder which of the ever-widening range of media formats to use. A survey of the literature will only be of limited value to her: The results are mixed, the methodologies are hardly comparable and the question remains to what extent recommendations derived from an experimental setting are transferable to her classroom.

In contrast to much of the literature, we have tested the learning effects of three different media formats in a standard lecture context, coping with the sporadic attendance and perfunctory participation of some of the students, amongst other real-life obstacles. A sufficient class size (50+), a set of clicker devices and some knowledge of statistics are the only prerequisites for the lecturer to replicate the experiment described here and thus to find out which format works best for her purposes.

We find that both voice-over slides and a split screen showing the slides and a video of the lecturer significantly improved the knowledge of a group of second-year management students. A mere audio recording of the presentation, by contrast, yielded no significant learning effects. Considering that the audio files required the same effort to produce as the voice-over slides, little

is to be said in favour of offering the former format to the students, especially since virtually none of them indicated a preference for the audio files.

Perhaps somewhat surprisingly, the voice-over slides marginally outperformed the videos, both in terms of learning performance and the students' preferences. This result seems to suggest that learning videos must be very well done, perhaps including animation and other more elaborate elements, for the risk of cognitive overload to be outweighed by their positive effects, including additional motivation and emotional involvement. Yet we agree with Fey (2002) in cautioning that any limited value-added of the videos' learning effects may not be worth their substantial production costs. We also caution not to overly generalise our - or anybody's - results because of the large differences between individual learning media even within a given format: No two lecture videos are alike and can be expected to have the same effect. This is all the more reason to advocate an ad hoc, 'on-site' investigation as to which format works best in a specific teaching context.

If this experiment were to be repeated, we recommend dropping the audio-only media as the dominated choice to focus on the differential effects of Types A and B. Also, efforts should be undertaken to obtain a larger and better data set. Possible measures to that effect include, for example, advertising cash prizes for students who perform well on the test and who submit all required answers to the auxiliary questions.

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MOODLE'S EFFECTIVENESS IN A DEVELOPING COUNTRY

Faiz MMT Marikar[1], Kasun Alwis[2], SN Satharasinghe[3],
DAP Wickramasinghe[4], KKGGS Kariyawasam[5]
[1,2,3,4,5]General Sir John Kotelawela Defence University, Rathmalana, 10390, Sri Lanka
[1](Corresponding author - faiz.marikar@fulbrightmail.org)

Abstract: This study examines the important of MOODLE platform and its effect in teaching at Defence University in Sri Lanka. Even after 3 years of usage of MOODLE there are some practical issues on usage of it. Therefore this study examines students' and teachers impact on MOODLE for learning and teaching process. In a developing country the importance of underlying information technology principles that are critical for an in-depth learning by MOODLE platform. A structured multiple choice questionnaire was distributed among students' and lectures that were enrolled and employed at the General Sir John Kotelawela Defence University, Sri Lanka. A total of 100 students and 30 lectures participated in this study and completed written and online questionnaire related to MOODLE. The outcome of this study shows that there is a strong positive response on MOODLE learning among students and they believe lack of support from the technical support to improve the current situation. Lecturer's perspective was entirely different they believe mixture of traditional method or blend will improve the quality of learning than MOODLE. Therefore there were somewhat 50% or more lectures avoid using the new technology due to this reason. Both parties believe that MOODLE can be improved. Although the outcome is preliminary in nature, the results provide cause for concern over the status of e-board education in Sri Lanka which is not satisfactory.
Keywords*:* MOODLE, effectiveness, blend method

I. INTRODUCTION

Education has always been the most significant aspect of human life. Although the sources of education kept on evolving through the ages, it still remains to be an inseparable part of 'living'. With the advent of the industrial age, occurred the rapid development of technology, helping a great deal in educating the masses all round the world. Technology is proved to be of profound help for teachers in teaching as well as for students in learning. The attractive and easily comprehensible nature of digital technology make the process of education more entertaining, interesting and therefore efficient. This could also be the major reason for the adoption of technology in teaching methodologies by education policy makers. With the advances in digital technology, information sharing methods worldwide are gradually evolving. Yet, the low quality and high maintenance costs of information delivery sources such as projectors are ineffective for modern day classrooms and meeting rooms.Teachers nowadays are incorporating new modes of communication in order to bridge the gap between them and their audience/students and the recent developments in display technology have made it a possibility. Reliable sources proclaim that more and more countries have brought internet and interactive display boards into the classroom and other buildings, creating new avenues of information sharing and presentations for education and business applications. Producing scientifically and technologically literate citizens has been a concern of educators and many policy makers around the world for more than three decades. UNESCO (1994) suggests that scientific and technological literacy are necessary to deal with the requirements of modern life(UNESCO 1994). Accordingly, an emphasis on intensifying e-learning is obvious in many curricula all over the world(Kaminski 2005). Over the past few years, digital media have enriched the teaching and learning experiences and have become

commonplace with university students and lecturers(Liaw *et al.* 2007).Universities in Sri Lanka tried to introduce e-learning, i.e., the application of digital media for teaching and learning in last couple of years. With financial support by the government, universities have been encouraged to develop e-learning strategies. These initiatives resulted in a variety of best-practice examples for e-learning and course development(Narciss *et al.* 2007).

Besides the fact that the internet and cloud technology is a vast source of information, there are some specific web-based applications that are conceived to be used as a teaching resource(Shee&Wang 2008). These applications (often called e-learning platforms) allow teachers to provide the students with material of different sorts, as well as to interact with them in real-time(Martín-Blas&Serrano-Fernández 2009). They also allow teachers to follow the evolution of the learning process and to know the performance of each student in specific tasks(Beatty&Ulasewicz 2006). E-learning platforms (also known as a virtual learning environment (VLE)) are especially useful when teaching anything in general(Pintrich&Schunk 1996). They allow implementing objects of many kinds such as: videos, mp3s, text documents, scanned images, links to other web sites or animations which can be used to show dynamically many physical situations and concepts that are often difficult to apprehend by the students(Weller 2007). A VLE is a software system designed to support teaching and learning. A VLE typically provides tools such as those for assessment, communication, uploading of content, return of students' work, administration of student groups, questionnaires, tracking tools, wikis, blogs, chats, forums, etc. over internet(Weller 2007).

MOODLE is a user friendly and a powerful web site hosting solution which is widely used around the world. It is a promising high technology product used in education, Enterprise training, conference, military commanding, remote telecommunication and etc. The massive effectiveness of MOODLE lies on the fact that it holds the attention of an audience to the extent that it increases participation, enhancing the overall learning and information sharing experience to a great deal. Participants are given the space to share files and other material while the teachers or the presenters are given the authority to control audience devices during the classes. This method helps in improving learning skills outside of the classroom while also making the students focus more during class.Even though the application of e-learning at universities has increased rapidly and our university use MOODLE platform little is known about students' expectations and experiences. Until recently, research focused on students' experiences with specific aspects of e-learning courses, e.g., the interaction with an instructor, learning with a specific learning management system, or certain characteristics of a course (Alexander&Golja 2007; Coates *et al.* 2005; Engelbrecht 2005).

MOODLE is not designed particularly for language teaching, it provides a number of useful learning tools that can be used in teacher training projects. In the academic field, the choice of a Learning Management System (LMS) is of great relevance for any e-learning activity/project intended to deliver didactic modules for higher education(Bruinsma 2004). To our knowledge, there are only a few e-learning platform evaluations available in the current literature regarding Sri Lankan concept. Their main focus is on commercial products.

In 2011 General Sir John Kotelawala Defence University in Sri Lanka introduced their MOODLEsystem to the every department, though it was common in the west still it is indeed a luxurious thing for us. So it helped both lecturers and students maximize the

teaching and learning out puts. Though, it was introduced still there are some problems of usage. So in this study we address the issues ofapplication of the system how far successful the mission and if there are gaps how to bridge it. The aim of this study is to identify issues pertaining to the usage of MOODLE in the university system and to explore the possible means and methods to enhance the effectiveness of using it. This paper presents an evaluation of open source e-learning platforms with the aim of finding the platform most suitable for extending to an adaptive one. The extended platform will be utilized in an operational teaching environment. Therefore, the overall functionality of the platform is as important as the adaptation capabilities, and the evaluation treats both issues.

II. METHODOLOGY

In this study we have examined teachers, students' capabilities of learning with MOODLE, especially concepts and knowledge on the learning platform in university system. This topic was judged to be extremely important to have a conceptual understanding of what is MOODLE and to find out in detail knowledge on current trends in using MOODLE. The study design in this study is presented in the Figure 1. Approval for the study was obtained from the Staff Development Center. Target population of this study represents all faculties from the university, including staff and students. All lectures and students were given a questionnaire related to MOODLE. One hundred students and thirty lectures, which participated in the consecutive e-learning and gave their consent, were included in the study. The purpose of the study was explained to the lecturers and students at the beginning of the lecture regarding MOODLE. The students who consented to participate in the study were individually tagged and given them a tag. They were allocated to a group the MOODLE based practical spot test group (n=130).

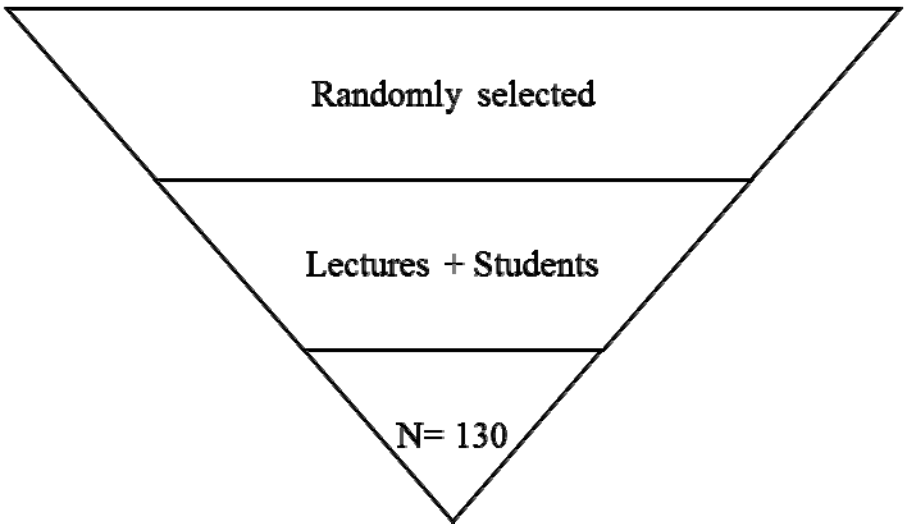

Figure 1 – study design

Questionnaire Used

A questionnaire, onself generated e-learning was introduced ''Learning with MOODLE''. The data were collected by means of the questionnaire consisted of 13 items including questions which generated in the printed platform (Appendix 1 and 2). The use of

the questionnaire was justified because it had been prepared by an experienced research group working in e-learning education and it had already been tested and validated before the distribution. In addition, the questionnaire was designed to assess conceptual understanding of e-learning in the Sri Lankan university. The question which was used is attached as the Annexure.

Research Context and Participants

One hundred and thirty took part in this study. Six faculties including Law, Medical, Allied Health Sciences, Engineering, Management and Defence equally represent from General Sir John Kotelawela Defence University, which was located in Ratmalana, Sri Lanka. All studentswere employed at the university as lectures or enrolled as students. The students learned about basic of e- learning by self learning and all the materials were provided at the learning phase. The Faculty is a socially and economically diverse community in Western Province of the country and this is the one and only Defence University in this country. The students had the backgrounds knowledge of knowledge on computing and e-learning with respect to MOODLE.

Administration of Questionnaire among the Students

The questionnaire was administered among each of the respective students at theuniversity; with respect to e-learning within a period of a week they have to answer the entire question online or printed form.Care was taken to avoid exchanging the students' information or ideas.

Data Analysis

To analyze the questions, we compared informal reasoning displayed by individuals representing high and low level of understanding of MOODLE with the computer aided interactive board system. The validity of the translation was independently assessed by two observers competent in English language. We analyzed our data as a balanced figure in a percentage of application. For statistical analysis, we transformed all our data using the basic statistical analysis package

III. RESULTS AND DISCUSSION

In this study we used a questionnaire in order to get data for our syndicate. We forwarded questionnaires to both students and lecturers. It helped more to found most important area on usage of MOODLE. One hundred cadets representing all streams from intake 31 and 32 used as a sample for our research. Gathering data from lecturersunique because it was represented all the faculties.

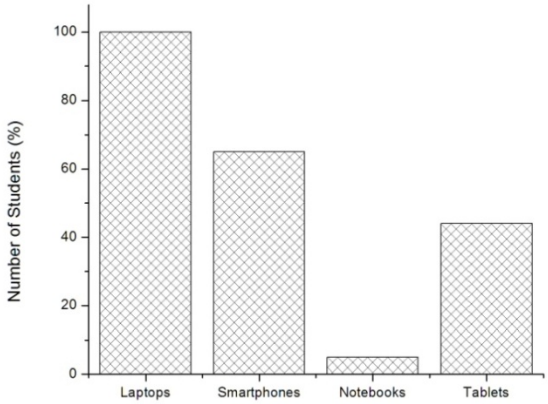

Figure 2: Usage of E-Devices by students

As per Figure2,to learn through the MOODLE every student should have e-devices to connect it. In KDU all the students have laptops as well as they have free Wi-Fi. As a defence university there are some restricted to use some e-devices. So it is an effect for the usage of MOODLE. Because of the new technology students deviating from the laptops they use smart phones, tablets, notebooks etc. but the there are some problem to use that devices in the class rooms specially this mostly effect to the cadets. So this is one fact on distance learning. It shows 100% students owns a laptop computers and less people 5% only have Notebooks beyond the computers. Basically data reflects 60% of them are having smartphones and 40% use tablets which is an extra device beyond their computers. It reflects MOODLE can be easily implement at KDU easily.

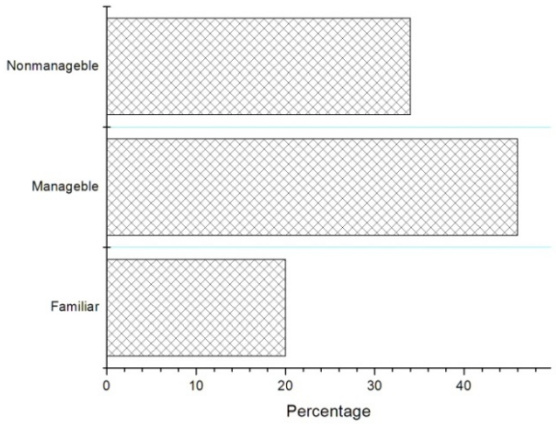

Figure 3: Awareness of students on MOODLE

Though they have laptops or any other electronic devices doesn't reflect the usage of MOODLE. According to the findings the knowledge of the students on MOODLE is very low. Out of 100 students 45% only can manage the MOODLE, difficult to use percentage is

also high as 38%. Still most of the KDU students are not familiar with the e-learning system. 34% students still don't aware on MOODLE. So this is a large amount we should conduct the awareness programmes on e-learning (Figure 3). Use of MOODLEis so difficult because 76% students didn't use MOODLE beforejoining KDU. MOODLE also like any other devices still they not use maximum in effective manner. The main reasons for that most of the students don't have their personal MOODLE account. So they don't have chance to use MOODLE, the data reflects that use of MOODLE is only 50%

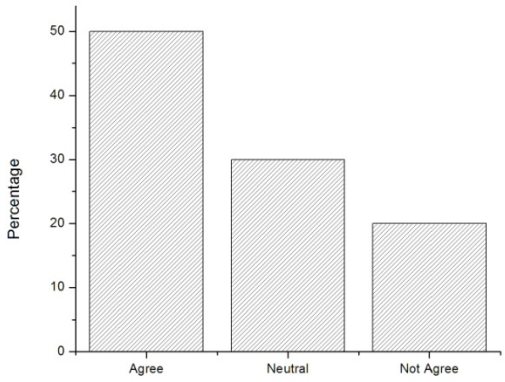

Figure 4: MOODLE enhancement for learning

As per our questionnaire 50% of students agreed that MOODLE has enhanced their learning capabilities because they can explore more from the internet. From the students' side they have good view on e-learning (Figure 4).

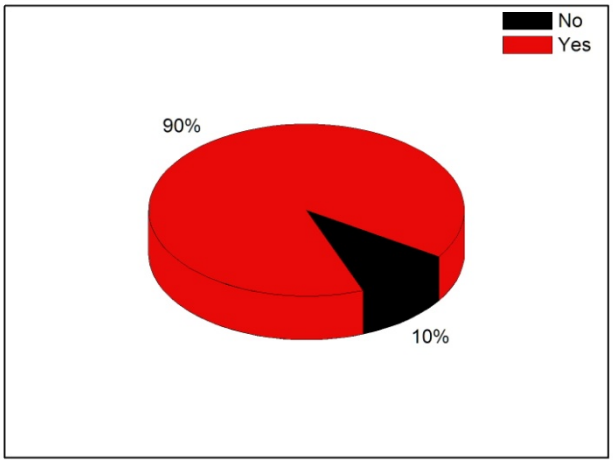

Figure 5: MOODLE contribution for successful academic life

According to the Figure 5; 90% lectures said MOODLE is help to them and students. MOODLE use as open source software for the learning purpose in KDU. Because of MOODLE students can learn more. They can share their knowledge among them. As well as

MOODLE helps to lecturers also. They can distribute notes assignments etc. through the MOODLE. So MOODLE help for the successful academic life.

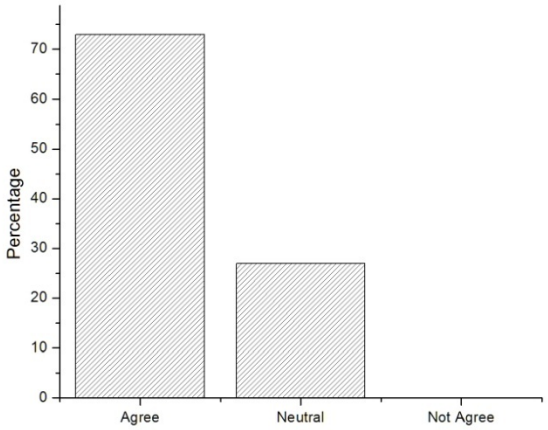

Figure 6: Help of students' extra knowledge to conduct lectures

Today most of the students refer the internet for their additional knowledge. But most of them are doing that after the lectures. They take basic knowledge from lecturer and refer the internet. As per our research we found that. If students have refer about the lecture before begin it's a very big support for the lecturer. Then lecture can explain basic things in few minutes. So lecturers can allocate more time for the hard areasand percentage of agree is 70%(Figure 6).

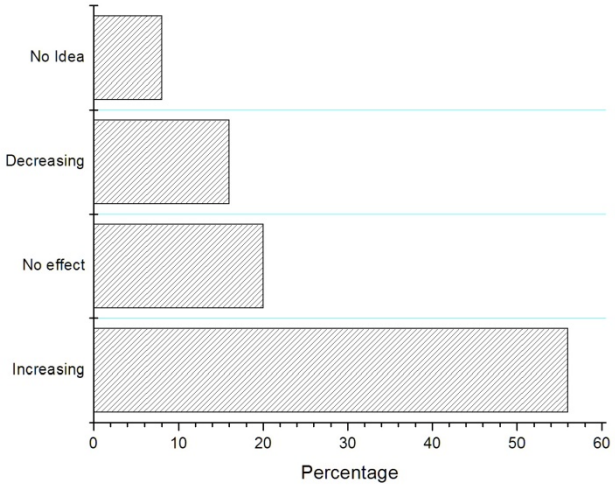

Figure 7: Relationship between lecturers and students because of distance learning

Today there is a big argument on the relationship between lectures and students because of e-learning systems. Some are argue that it increasing and others argue its decreasing. But it depends on the attitude of the students. Most of the lectures agreed that because of e-learning

the relationship is increasing because in the modern world students like to work with the new technology so from the e-learning they keep a good relationship between lecturers (Figure 7).

IV. CONCLUSION

In our study, two aspects contribute strongly to learning achievements and course satisfaction: students' achievement goals and the instructor. Students who considered gains in competencies as especially important, experienced higher achievements. Furthermore, the results of our study emphasize the instructor's expertise and role as a counselor and facilitator in learning. The instructor does not become less important in e-learning. On the contrary, students experience the instructor's support and expertise as especially important for the acquisition of knowledge, skills, and competences and for course satisfaction. Other than these variables, only a few others contribute to learning achievements or satisfaction: students' motivation, opportunities for self-regulated and collaborative learning, and the clarity of the course structure. Instructors need a high degree of didactic expertise in the implementation of an online course. Yet, not all instructors are sufficiently skilled in the implementation of e-learning as indicated by students' assessments. Until recently, however, only a few universities in Austria offer continuing education and training for e-learning instructors (Narciss, Proske et al. 2007). The results of our study stress the importance of such further training.In addition to that (Reis 1998) describes a project where courses are collaboratively developed by faculty staff, industry experts and students. This type of effort in a developing country like Sri Lanka would increase the industrial applicability of learning material as well as helping the academics currency up to date. The industry will also gain from the state of the art research carried out by academics (Bermejo 2005) studies student centered learning paradigm in learning high order skills. Here the importance of co-operative learning was discouraged. In the research explained by this paper quality was measured at a minimum level. This can be further developed using a method similar to which is explained in (Dinevski *et al.* 2010).

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APPENDICES

QUESTIONNAIRE FOR STUDENTS ON MOODLE

Please put ✓ mark in front of your stream.

☐ MBBS ☐ ENG ☐ LLB ☐ MTS ☐ SS ☐ LG

01. Are you familiar of learning with MOODLE?

☐ Fully familiar ☐ Manageable ☐ Not familiar

02. Have you used MOODLE before join to the KDU?

☐ Yes ☐ No

03. Do you use MOODLE at KDU?

☐ Yes ☐ No

04. Is it effective open source software for learning?

☐ Yes ☐ No ☐ No idea

05. Are you agree that use of MOODLE effective for learning?

☐ Strongly agree ☐ Agree ☐ Not agree ☐ Strongly not agree

06. How many times do you use the MOODLE per lecture?

☐ Always ☐ Sometimes ☐ Never

07. Are you satisfied with the information on MOODLE?

☐ Yes ☐ No

08. Do you agree that learning with MOODLE enhanced your learning capability?

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Not agree ☐ Strongly not agree

09. Anything you need to suggest to improve the MOODLE in KDU?

……
……
……
……
……

QUESTIONNAIRE FOR LECTURERS ON MOODLE

Dear sir/madam,

Please be kind enough to fill this questionnaire in order to derive important findings for our research.

Please put ✓ in front of your answer.

01. Do you think MOODLE help to undergraduate for successful learning?

☐ Yes ☐ No

02. "It is easy to conduct a lecture if students have learnt something on subject matter from the internet" do you agree?

☐ Yes ☐ Neutral ☐ No

03. Because of e-learning the relationship between lecturer and students is

☐ Increasing ☐ Not an effect ☐ Decreasing

04. Do you have any suggestion to enhance the productivity of MOODLE in KDU?

……
……
……
……

ONLINE TRAINING PROJECT FOR THE PREVENTION OF SEXUAL HARASSMENT AT UNIVERSITIES

Arzu İnan
Arzu İnan Institutional Ethic Manager,Human Resources Directorate, Koc University, Istanbul, Turkey
ainan@ku.edu.tr

Nihan Uğur
Nihan Uğur, Human Resources Directorate, Koc University, Istanbul, Turkey,
nugur@ku.edu.tr

Seda Balvan
Seda Balvan, Human Resources Directorate, Koc University, Istanbul,Turkey
sbalvan@ku.edu.tr

Abstract- "Sexual Harassment" is an act, which violates individual autonomy based on personal choices of life, right of development and protection of personality, and human dignity that aims to protect human values. This type of act, which emerges in various forms, is defined as a kind of violence. Koç University is against sexual harassment, in all areas of teaching, research, and administration.

Consequently, being aware of our societal roles and responsibilities as Koc University, we are aiming to guide our society by carrying out a project on Sexual Harassment, which is a matter with many aspects such as social and psychological. Sexual Harassment incidents, which we are following up with sadness on the media, is an important social issue not only in Turkey but also around the world. As we consider preventing Sexual Harassment incidents a mission for us, we aim to contribute to the achievement of Gender Equality in Society with this project.

With the online training project for the Prevention of Sexual Harassment, and by focusing on the problems of our society, creating solutions, and sharing solution suggestions in various platforms, we have pioneered the embracing of this awareness both within our university and with other institutions.

Keywords: Sexual Harassment, Online training, Social issue, University

INTRODUCTION

Beginning our studies with building an Institutional Ethics Mechanism, and with the addition of our university's watchfulness of the matter and holistic perspective, have achieved many first steps and provided guidance for other universities.

After having built the Institutional Ethics Mechanism, instead of initially preparing policy documents or manifestos; with the mentality of raising awareness, making conscious, and prevention of sexual harassment; we have prepared the Sexual Harassment Prevention Regulation, which is a first in Turkey, and shared it with our all partakers.

Following the Regulation, "online training project for the prevention of sexual harassment" has been prepared to raise awareness and attention significantly, in order to prevent facing such situations. This study's most important dimension that creates a difference, is the fact that the training upon this very sensitive subject has been prepared in a way that it is rich, understandable by anyone and it is the first of its kind in Turkey.

In the online training project, sexual harassment issue has been treated with all of its legal aspects. In addition, some false beliefs that are deemed true by the society have been foregrounded so as to forestall false learning. A plain language has been used, while being enriched with case studies. Discussing the psychological aspect, in all messages it has been stressed that one is not without help.

In the online training project featuring all sensitive points of sexual harassment, we have also provided various information on; to how to act when coming by, witnessing, and being the victim of such an incident; our responsibilities on the matter; the extent of the process of complaint; the way an investigation is carried out with respect to its duration and administration; significant points and principles in a process of investigation. The existence of a mechanism, which protects human dignity, utmost confidentiality, mutual respect and trust, is illustrated by providing such extensive information.

The study continues as follows. Difficulties that are experienced while working on the matter are treated in the second part. In the third part, results of the evaluation of the online training project are given. In the fourth part, sample screens from the online training project are featured. Lastly, in the results part, the importance of the matter is restated and spreading of such projects is stressed.

SECOND PART

Foremost of the major difficulties, encountered while preparing online training project for the prevention of sexual harassment, are diversity, effectively managing uncertain situations, and the need to create holistic solutions in areas with very limited present studies or with no other examples.

If we had to list the essential distinctions in managing diversities and differences;

Partaker Diversity: Academic and administrative staff, students, interns/trainess, exchange students, subcontractors, visitors, and guests.

Cultural Diversity: A wide cultural diversity formed by employees and exchange students from 36 different countries, and students from 69 different countries.

Furthermore, preparation process of the project was made more difficult, because of the fact that as practices have been very limited in Turkey, there is no source that could be deemed a reference on sexual harassment.

Sensitivity of the matter, false beliefs that are deemed true, legal regulations' uncertainty on some areas, differences in perception and interpretation resulting from cultural variety, make it more difficult for the studies done on the subject of Sexual Harassment Prevention to become actualized.

It has become a significant difficulty to define a comprehensive mechanism, because of previously mentioned difficulties and other ones such as, magnitude of diversity, and differences between 'Labor Law' and 'YÖK Legislations', to which partakers are subjected.

Especially, it can be shown as another difficulty to convey the training content without distorting its legal meaning and by using a plain language that can easily be understood by anyone.

THIRD PART

An evaluation survey has been prepared for the online training project; and trainees were asked to take this survey.

Questions of the survey are given in Table 1. Additionally, focus group evaluations that are created by comments on this evaluation survey are presented in Table 2.

TABLE 1. Questions of the Survey

Area	Question
Quality of Training	It was prepared to adequately cover essential concepts information about the subject.
Quality of Training	It was purposeful to divide subjects into parts, transition and flow between different parts were easy.
Quality of Training	Used language, expressions and texts were clear and apprehensible.
Suitability of Material	It was easy to use the e-training interface, and to progress within the training.
Suitability of Material	It was visually designed in accordance with the purpose (photographs, use of colors, etc.).
Suitability of Material	Interactions, which make learning more easy were given sufficient space (consolidating examples, and questions)
Participation in Learning Process	Training's duration was sufficient.
Participation in Learning Process	I have become conscious of the subject with the knowledge that I have acquired during training.
Contribution to Work and Social Life	It was a training agreeable with my development needs.
Contribution to Work and Social Life	What I have learned from this training will positively contribute to my working life and social life.
General	What other subjects would you prefer that the training treated, or what subjects can be added for the next training?
General	The most important part that remains in my memory is:
General	From now on, I would like to have other trainings on different subjects.
General	Overall, it was a successful training.

TABLE 2. Focus Group Evaluation Notes

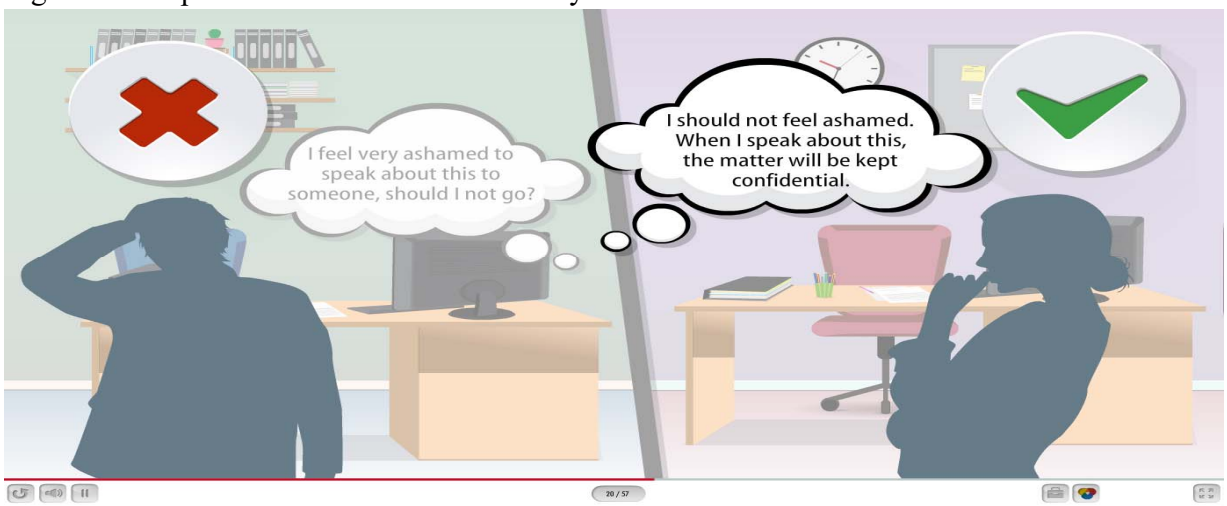
FOCUS GROUP EVALUATION NOTES		
KOC UNIVERSITY FOCUS GROUP	**OPINIONS ON THE TRAINING**	**MOST CLEARLY REMEMBERED PAR OF THE TRAINING**
KOC UNIVERSITY FOCUS GROUP	Definitions are highly illustrative. Video samples were very enlightening. The parts where examples of what cross the mind of a victim of harassment were very good.	The fact that insistent proposals can also account for sexual harassment.
KOC UNIVERSITY FOCUS GROUP	It is a very well prepared, informing, enlightening, plain, clear and apprehensible training.	The fact that persistently repeated proposals can also be defined as sexual harassment.
KOC UNIVERSITY FOCUS GROUP	It was a consciousness raising and non-boring training, which was enriched with visuals.	The difference between sexual harassment and sexual assault; and how a process functions in our university.
KOC UNIVERSITY FOCUS GROUP	It was very good both with respect to its presentation and with respect to content; and I want to say that it is the result of a diligent effort.	Plain and clear description of incidents such as, harassment and assault.
KOC UNIVERSITY FOCUS GROUP	Subjects are handled thoroughly.	Important points that a victim of sexual harassment should know.
KOC UNIVERSITY FOCUS GROUP	It was definitely a successful training.	Respecting others and ourselves for the sake of human dignity.
KOC UNIVERSITY FOCUS GROUP	In terms of content, it was very satisfactory.	Offices, to which we can appeal in our university and beyond.
KOC UNIVERSITY FOCUS GROUP	It was definitely a successful training.	The difference between sexual harassment and sexual assault.

FOURTH PART

Training has some screens in order to provide more efficiency on adopting basic concepts in Sexual Harassment issues.

Figure 1: Sample Screen about Preven Sexual Harassment

Figure 2: Sample Screen about Confidentiality



CONCLUSION

Our university attaches high importance to the mission of raising awareness and making consciousness of sexual harassment, and to prevent sexual harassment, which is an important issue that affects our working environment.

We consider it to be a crucial step to spread this consciousness, which we are creating in our university, to society for its benefit. That is why, as we were preparing the online training project, we paid attention to including information that can be used in both working life and social life.

All members of our university, from students to academics, receive training of guiding nature, which will raise awareness of sexual harassment, and which will inform people about sexual harassment. Since our university produces many graduates every year, this practice contributes to the development and welfare of society; making it a crucial project.

We wish that this training on prevention of sexual harassment at universities and all other environments, becomes a pioneer and an example to all universities.

FACULTY MEMBERS WHO CONTRIBUTED THIS PROJECT

This project is prepared with the contributions of the Dean of our Law School, Professor Bertil Emrah Oder and Assistant Professor Murat Önok

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OPEN EDUCATION IN INTERNET DICTIONARIES AS A COMBINATION OF TECHNOLOGY, SOCIETY AND CULTURE [i]

Assoc. Prof. Mediha Sağlık Terlemez
Anadolu University, Open Education Faculty, Eskişehir/Türkiye
msaglik@anadolu.edu.tr

Abstract: Anadolu University Open Education System has existed to date as a steadily developing/growing system in views of both the number of programmes and instructional content and materials since it was founded in 1982. Various attitudes (positive or negative) towards the system have been adopted by the students and graduates in the meantime. Reviews of these attitudes and studies on their reasons are fairly rare.

With the proliferation of social media, hypertexts, developed with the voluntary participation of users, have acquired the characteristics of a database of perceptions, comments and attitudes representing different sections of society as well as their numerous functions.

Ekşi Sözlük[ii], founded in1999 as a format peculiar to Turkey and a collaborative structure providing an environment of free expression and broad participation, has ranked among the most used social media tools thanks to broad participation and access. It is observed that Open Education System has been subject of discussion under various and numerous topics and posts from its foundation to date. Thus, 16 years' experience is the point in question in this issue. This study is a content analysis conducted considering the feedbacks on the system, having departed from the idea that this experience may make it possible to draw inferences about the attitude towards the system of the community it represents. The study deals with the posts and topics about Open Education between 1999 and 2015.

INTRODUCTION

Turkey was introduced to Open Education System in 1982, when Anadolu University began to offer education. Although there had been practices of distance learning (such as Yaykur, correspondence course) in the country before, it was not until Open Education System that it became widespread, popular and people became familiar with it; one may as well say that Open Education System became synonymous with distance learning. Various appraisal patterns have been identified through students and graduates alike in the meantime. One may think that these patterns of perception, some positive and some negative, have developed and even have undergone changes in time; however, the number of the surveys and studies on the reasons of the results is fairly low.

With the proliferation of social media, hypertexts developed with the voluntary participation of users, have acquired the characteristics of a database of perceptions, comments and attitudes expressing different sections of society as well as their numerous functions.

Ekşi Sözlük was set up as a social media environment in a format peculiar to Turkey in 1999. Soon it ranked among the most used social media environments with such participation and access that even its founder hadn't expected; its likes emerged and steadily proliferated. The open access website, matching up with public sphere functions with its collaborative structure enabling a participatory environment of free expression, has the characteristics of a leading design nowadays. One can write on whatever topic they wish in the website, defining itself "a sacred source of information". In this respect, items and entries on practically all topics in question are available

[i] This study was summarised from the book "Yalın İsim Üzerinden Kapsamlı Açılım: Ekşi Sözlük'den Açıköğretim Okumaları" (Comprehensive Definition Through A Simple Title: Open Education Readings From *Ekşi Sözlük*) by the author.

[ii] *"Ekşi Sözlük"* literally means *"sour dictionary"* in Turkish.

online. Although the general style of the dictionary seems like a humorous approach towards topics in question and such style has influence on a few of the posts within the scope of this study, it has been rarely observed in the posts. In other words, the posts in question are not generally humurous statements; and they are statements, sometimes brief and sometimes comprehensive, expressing experiences, judgements as to life, problems, likes, and appraisals. It is possible to notice the dissenting manner, present in the main structure of the dictionary, in some of these statements, as well.

Both Open Education System and *Ekşi Sözlük* have been subjects of discussion in a great number of posts and topics. It has been observed that there are many graduates and students of the system among the authors of *Ekşi Sözlük* and that a large group of authors who are not directly related to the system have edited posts about Open Education System. What has been observed through the posts examined is that the educational level of dictionary authors is generally tertiary education, and that they are composed of well-educated professional groups.

AIM

It is obvious that Open Education System has been subject of posts and threads in numerous and various topics from 1999, when it was opened in Ekşi Sözlük, to date. Thus, a 16 years' feedback on this topic is in question.

This study has been conducted, accepting this as the feedback on Open Education System, having departed from the idea that this experience may make it possible to draw inferences about the attitude of the community it represents towards the system with the analyses to be carried out.

METHODOLOGY

This study is a web-based content analysis (*Ekşi Sözlük*). The main approach adopted for this analysis is the content-based approach. "Content-based approach is one of the approaches towards the analysis of the content used among internet users" (Çomu ve Halaiqa, 2014 s.27). In this approach, not users or authors, but the content itself is important.

Population-Sample and Limitations

The sampling of the study is composed of the data from the items found as a result of the search performed in the context of Open Education System's different pronunciations format as *aöf, aof, açıköğretim ve açık öğretim"* in *Ekşi Sözlük*, posts edited under these items, and that from additional contexts related to the system but not concerned with these contexts but can be found under *distance education, second university and Anadolu University".* There are 67 topics and 1266 posts edited between 1999 and Feb 15, 2015 within the scope of the study.

Data Collection and Analysis

Recording units have been established with the data acquired through context search, and the smallest recording unit has been defined as a "post". The categories of topic and negative-positive attitude have been determined as analysis categories for the data gathered within the scope of the study.

As a result of the analyses carried out accordingly; six topics have been determined based on *Ekşi Sözlük* posts, and the posts present under the items in these topics have been examined in views of the attitudes.

FINDINGS AND INTERPRETATION

As a result of the searches through the relevant contexts, the topics have been classified under six main groups:

1. Open Education: Comprehensive Definition Through Simple Title
2. Being a graduate of Open Education
3. Second University with Open Education
4. Being a student of Open Education
5. Distance Learning- Open Education Relation
6. Anadolu University- Open Education Relation

Presentation of these items in views of attitudes has been featured in Table 1.

1. Open Education: Comprehensive Definition Through Simple Title

The first one of the items within the scope of the analysis is the overview on the system handled under the topic "Open Education: Comprehensive Definition Through Simple Title Results". It has been observed in the definition approaches, in which the system is generally overviewed, that the posts regarded as 'negative' account for 51 %, while the percentage of the positive posts is 24 % according to the results of Table 1. The percentage of no comment or only news posts found under this item is 25 %. Poor educational methodology and low levels of students' qualifications in comparison to formal education have been shown among the reasons for the negative attitude. It has been observed that the posts under this topic have stemmed from the negative perceptions of the Open Education System, and have voiced these negative attitudes.

It is obvious that the advantages of the distance learning lie beneath the positive approaches to the system as a result of the comparison with the formal education. Enlightening explanations about the topic have been included in these posts, which properly deal with the existential justification of distance learning.

Table 1
Ways of approaching topics

Topic Classification	Positive		Negative		No comment/ news		Total	
	n	%	n	%	n	%	n	%
1. Open Education: Comprehensive Definition Through Simple Title	152	24.0	322	51.0	158	25.0	632	100
2. Being a graduate of Open Education	168	62.5	73	27.1	28	10.4	269	100
3. Second university with Open Education	67	37.6	59	33.2	52	29.2	178	100
4. Being a student of Open Education	20	29.4	45	66.2	3	4.4	68	100
5. Distance Learning- Open Education Relation	21	30.9	28	41.2	19	27.9	68	100
6. Anadolu University- Open Education Relati	12	23.5	20	39.2	19	37.3	51	100
Total	**440**	**34.8**	**547**	**43.2**	**279**	**22.0**	**1266**	**100**

The definition approaches have been found to be based on the different components of the system, in addition to holistic view on the system, under the item in which how Open Education is defined under a simple title has been analysed and the highest number of posts have been edited. These have been found as follows according to the percentages of frequency of editing, respectively: overall view on the system, assessment and evaluation- pass and fail grading, support services, student affairs, exam organisation, learning environments, second university and graduation. These sub titles and approach rates are shown in the Table 2.

Although the percentages of negative and positive attitudes toward assessment and evaluation-pass and fail grading are close to each other, the percentage of negative attitudes is higher. With the changeover to the credit system in Open Education System, because bell curving may result in lower grades, this result has been regarded as 'positive' by a group, whereas the same result has been considered 'negative' by those who find it too easy. Various problems are said to have been encountered by students particularly in the period of changeover to credit system.

Support services and student affairs have been determined as two areas in which negative attitudes have been observed with a higher frequency. The issue of long queues in front of the offices especially during the registeration and re-registeration periods has been frequently mentioned as the main reason for negative attitude in this area. Furthermore, the failures occuring in the online system during exam periods have been mentioned among the negative appraisals.

Exam organisation has been determined as the topic having the highest percentage of negative attitudes among the topics handled in this context. As far as year 2015 is concerned, Open Education System administers at least four exams in an education year for undergraduate programmes, all of which one and a half million active students take in 107 different exam centres across the country. As exam organisation is a process which should be planned in a detailed way and carefully administered, it is made in accordance with some rules and regulations. The arrangement of exam venues for students is made on the basis of adress information system. Nevertheless, the issue provoking the most intense critisism in the exam organisation context is to enter exams fairly far away from students' residential adresses. The rate of negative attitudes is high in this topic for this reason.

Table 2
Approaches on the basis of topics in the definition posts

TOPICS	Positive	Negative	Observation, news.	TOTAL	%
1. System (overall)	58	97	38	193	**30.5**
2. assessment evaluation- pass and fail gradin	39	48	57	144	**22.8**
3. Support services an student affairs	24	70	31	125	**19.8**
4. Exam organisation	6	46	10	62	**9.8**
5. Learning environm	14	12	-	26	**4.1**
6. Second university	13	3	7	23	**3.6**
7. To graduate	9	6	5	20	**3.2**
8. Others	12	17	10	39	**6.2**
Total	**175**	**299**	**158**	**632**	**100**

The learning environments offered to students in the Open Education System are printed materials, e-learning services, academic consultancy services, and TV programmes. Considering the appraisal of learning environments in the context of this topic, it has been observed that positive attitudes towards the topic have prevailed in the context of books and particularly e-learning environment. The failures in access to e-learning environments have decisive role in the negative attitudes.

It has been observed that the topic of second university has the highest number of positive attitudes among the topics mentioned in the Open Educatiın definitions. The opportunity of second university has been mentioned as a chance by those who haven't been able to attend a department they desire before, and the issue has been approached by highlighting the advantages of receiving distance education. Positive contributions of the opportunity of second university to students in their self-improvement and their social standing have been emphasised in the relevant posts. It has been observed that few negative approaches to the topic are the thoughts of those who adopt negative view on distance learning and don't believe the benefits of having a second university degree.

The topic of graduate and graduation results as the outputs of Open Education System has been one of the subjects in which the positive views prevail. What the positive attitudes in this topic have in common is the grant of the equal rights to the university graduates by law; furthermore, the opportunity of short-term military service the system offered for men is particularly emphasised.

2. Being An Open Education Graduate

The second most commonly mentioned topic after the definitions under the title of Open Education has been the subject of graduate-graduation. The way of approach to the issue of graduates and graduation as the outputs of Open Education System has been found more meaningful in views of the appraisal of the overall system because they have been focused on the results. The value attached or positive attitude towards the outputs and the contrary negative views have been seen as results associated with the system, as well.

The percentage of positive attitudes under this title (Table 1) has been found 62,5 %; that of negative attitudes, 27,1 %; the percentage of the pure news entries, 10,4 %. It seems that the level of positive attitude towards being an Open Education graduate has become higher with the observation and experiencing of the graduation offers, and this positive attitude has been expressed. In this context, the Open Education System has been appraised and found positive in views of having the same rights as the graduates of the other higher education institutions and the quality of the outputs of some higher education foundations. References to the negative prejudgements about the Open Education System have been criticised, and the prejudgements deemed to be wrong have been clarified.

The basic reasons for a negative attitude towards being an Open Education graduate are based on the discussion on the quality of formal education - distance learning, and already existing negative prejudgements.

The general conclusion of the detailed analyses of topics and posts in this context is that the view finding 'Being an Open Education graduate' valuable outweighs.

3.Second University with Open Education

The third of the analysis titles, whether it is within the scope of being a student, is the issue of "second university", differing as a result of its mission and expressed under different titles. It ranks the third in views of percentage of post edition about the topics, too.

The opportunity of attending the second university with open admission, offered to students or graduates of higher education programmes, differs as a selection on a voluntary and optional basis. With its such properties, the system at least remains independent of the prejudgement of "integrating with the system without being able to enter a higher education programme". Therefore, the attitude towards a second university opportunity included in the Open Education System is expected to shift. The context of second university has been analysed on the basis of this assumption, and the results have confirmed it.

As a result of analysing the attitudes towards second university with Open Education, it has been found out that the percentage of positive attitudes in Table 1 (37,6 %) is high in comparison to that of negative attitudes (33,2 %) and that there have been meaningful levels of pure news-information content posts (29,2 %).

As for the reasons for the positive attitude, it has been shown as follows: The opportunity of completing the programmes offered to those who have had no chance of attending before, the contributions of second diploma to personal self-improvement and social standing, and taking advantage of being a student again.

The reasons for negative attitude are that being a graduate of Open Education System is a disadvantage, that it has no contribution to personal self-improvement and social standing contrary to the reasons put forward among the positive ones, and that it places a huge burden on a person attending another programme (MA, PhD etc) at the same time.

4. Being An Open Education Student

Approaches to the topic "student and studentship", the most important component of the system, have been considered in the context of "being an open education student". In this context, while the percentage of positive attitudes is 29,4 % according to the results of Table 1, the percentage of the negative attitudes is 66,2 %.

The general conclusion of this context is that, in line with the student profiles of Open Education System, those who act aware of being a student in a higher education institution have been appreciated and their promotion has been supported. Again, with reference to the student profile, some negative attitudes have been expressed considering the student groups who underestimate their studentship in the system and exploit this state (as a reason for staying in Eskişehir or only for taking advantage of student discounts etc). Furthermore, it has been observed that negative prejudgements against the Open Education System have a decisive role in this view.

5. Distance Learning-Open Education relation

The fifth of the analysis topics is the relation between distance learning and Open Education. In addition to the investigation of main contexts, distance learning title has been examined for the purpose of determining how the content of this education has been commented on in *Ekşi Sözlük*. According to the Table 1, while the percentage of positive attitudes towards distance learning is 30,9 %, those of negative attitudes and no comment news have been found 41,2 % and 27,9 %, respectively.

It has been found that in the distance learning definitions there exist different approaches employed both from the characteristics of the methodology and present distance education practices; consequently, the appraisals have been separately examined in terms of practice and theory, and it has been observed that the negative attitudes are higher in both practical and theoretical terms. In *Ekşi Sözlük*, the practices have been examined both in comparison to the formal education and on the basis of the shortcomings of the mentioned or observed practices. At theoretical level, the educational methodology has been compared with formal education, and has been assessed in views of their strengths and weaknesses. As a result of the analyses under this title, it has been concluded that distance learning is an educational method which hasn't been fully adopted yet. In this regard, what should be examined in another study is how the view on distance learning shapes the attitude towards Open Education and how the practices of Open Education shapes the view on distance learning.

6. Anadolu University-Open Education relation

The last one of the analysis topics is the relation between Anadolu University and Open Education. Open Education System is naturally a system associated with Anadolu University. In general, while negative views (39,2 %) outweigh in the attitude of the posts in this context (Table 1), the percentage of positive attitudes has been found 23,5 %.

In this context, how Open Education System is associated with Anadolu University has been investigated, and the association is as follows:

1. Mentioning Open Education, too, while defining Anadolu University, that means, accurately perceiving the system as a part;
2. Adressing Anadolu University only as Open Education or in a way only focused on Open Education, that means, wrong perception

According to the first context, when Anadolu University is considered as a superset of Open Education System, that means, when it is perceived with a correct positioning, it has been found that the number of positive attitudes increases. When Open Education System is associated with Anadolu University in the second context, this wrong perception is regarded as a negative state especially by the students in the departments of formal education (in the departments other than Open Education System) in that they can't explain themselves about the type of education they receive. Even if the number of posts analysed are not enough to make generalisations, the result of this heading is that "Open Education" is not well recognised and accurately perceived by a sector of the society. Likewise, it has been observed that such headings as "Open Education University" or "Mistaking Anadolu University for Open Education" have been opened about this topic.

CONCLUSION

It would be a better approach to give a general overview of the study results taking different variables into consideration. The first of these is that the study results can only be generalised for the group *Ekşi Sözlük* authors represent. According to the researcher, the author group of the dictionary is composed of active internet users, most of whom are at higher education level and volunteer to participate in the social media environments. The number of users, rather than the authors, is significant in views of dissemination of the ideas written. The statistics indicate that the website may have ranked the third behind Facebook and Twitter in the number of users, and that the users aren't those who have entered the website once but have visited there continuously (ConnectedVivaki Business Intelligence, 2014). Although there is no data about the identities of the users, it is possible to deduce that they are composed of relatively young people who take part in the group of active internet users. All the posts about Open Education are made available by these

users. Thus, this may be thought to play a role in the perception of a huge mass other than the author group.

Assessing the attitude towards the topics of being a graduate of and a student in Open Education, it will be an accurate approach to take into consideration the attitude towards the higher education across Turkey as well as Open Education. Although this comparison is so broad as to be the subject of another study, the topic explicitly expressed in the posts within the scope of the study has been discussed in views of the education qualities of some universities, as it has been handled in terms of graduation of a formal higher education programme in Turkey and limited employment opportunites. Approaches related to the topic have been further discussed under numerous titles such as “Being a student in Turkey” or “being a university student”.

There is no available data about the open identities including the states of studentship of the authors of the dictionary. However, the impression received from all the posts within the scope of the study is that generally the positive attitudes have been displayed by the active student groups and a group of people who have no relation with Open Education have agreed on these positive attitudes. In line with the qualifications of the target group of distance learning, this group, who may be called ‘the outsiders’, are aware of the students particularly both working and studying in the system because of domestic and economic reasons, and they have shaped their attitudes on the basis of this awareness.

The most significant problem of the active Open Education students, whose aims are to graduate from the target higher education programme, is that they remain within the system with the idea that the negative attitudes towards the system, they are involved in, diminish the value of their studentship and graduation, and thus they are unfairly treated. That means, the real students are adversely affected by the negative attitudes repeatedly expressed by means of such tools as social media. Likewise, the positive attitudes and different voices have impacts through this network of dissemination and interaction, too.

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TECHNOLOGY OWNERSHIP AND ACADEMIC ACHIEVEMENT STATUS OF LEARNERS AT ANADOLU UNIVERSITY OPEN EDUCATION SYSTEM BETWEEN 2011 AND 2014

Sinan Aydın
Open Education Faculty, Anadolu University, Turkey
snaydin@anadolu.edu.tr

Aylin Öztürk
Open Education Faculty, Anadolu University, Turkey
aylin_ozturk@anadolu.edu.tr

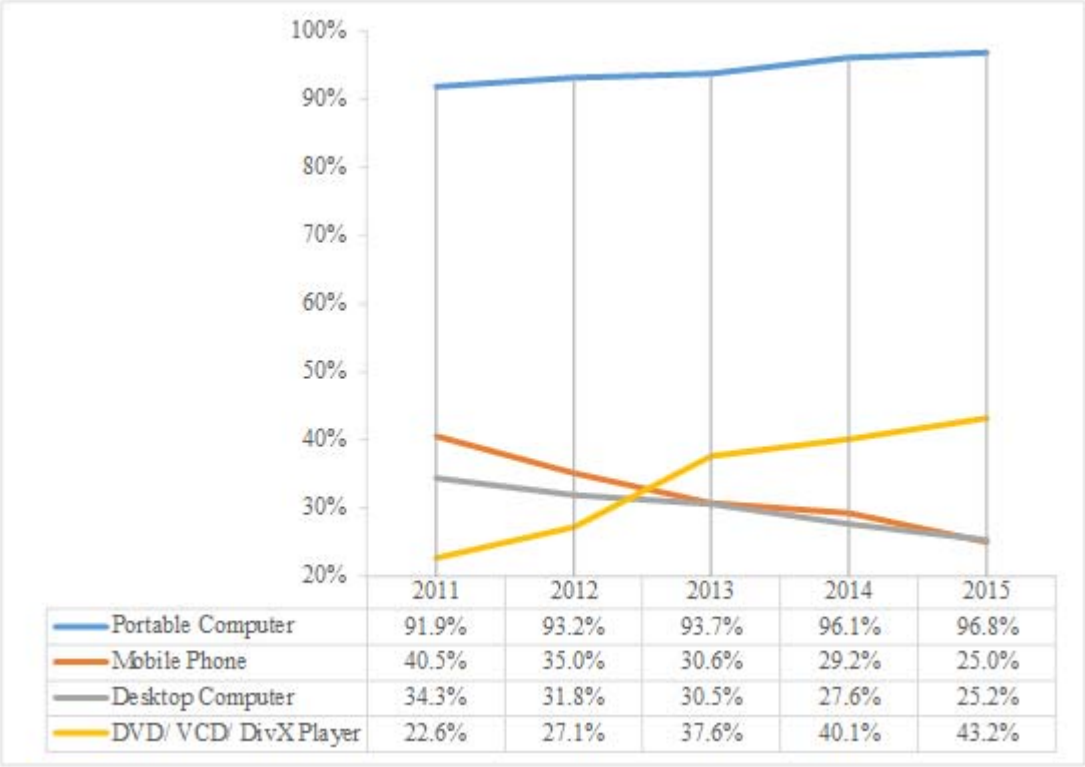
Abstract: The aim of this study is to analyze the technology ownership of learners who were enrolled in Anadolu University Open Education System between 2011 and 2014, to assess its current state, to investigate the changes in this four-year-period, and to explore whether there is a link between learners' technology ownership and academic achievement. The data set was obtained by combining the questionnaire data, which included technology ownership and internet access opportunities for learners who were enrolled between 2011 and 2014, with their academic achievement information was analyzed. The changes and trends in technological device ownership during these four years, and the relationship between technological device ownership and academic achievement were interpreted. In addition, learners' computer usage levels, internet access possibilities, usage purposes and reception of television broadcast were investigated. 722,399 questionnaire data were analyzed to determine technology ownership and 438,363 questionnaires were analyzed to determine whether there is a difference between technology ownership and academic achievement. As a result of these analyses, it was determined that there was an increase in mobile phone and tablet computer ownership, while there was a decline in MP3/MP4 players, VCD/DVD players, phone and television ownership. As a result of independent two sample t-tests that were conducted at a 95% significance level, it has been found that there was a difference in academic achievement between the learners who have and do not have computers, handheld computers, and tablet computers.
Keywords: Open Education, Open and distance learning, Learners' technology ownership, Academic achievement.

INTRODUCTION

The usage of information and communication technologies has been rapidly increased in the 21st century and technology permeates all aspects of our lives. Also the usage of technology and advancements in internet technologies have affected and transformed learning environments. Online learning environments, that are designed to be independent of location, time and space of learners, are commonly preferred and have become more advanced, varied, personalized and mobilized as time has gone on. Parallel to advancements in technology, online materials have begun to be used alongside printed materials in open and distance learning environments. Learners' ownership of appropriate technologies is important from the perspective of their inclusion in the system and getting benefit from the services provided in an efficient way. Effective use of technological devices such as computers, smartphones, and tablet computers in open and distance learning, which find widespread usage in daily life as well, allows learners to access different learning environments and content.

Technological device ownership is important for learners to have fast and effective access to learning and information resources. In the 2000s, learners' access to technological devices and environments have dramatically increased. According to the results of the study conducted by the Turkish Statistical Institute (TurkStat) on Information Technology Ownership in Households between 2004-2015, the percentage of households that have access to the internet is 69.5%, while the percentage of households that have at least one mobile

phone is 96.8%. When internet usage purposes were examined, it was seen that usage of social media ranks first, and use of portable devices has increased. On the other hand, an Information and Communication Technology (ICT) Usage Questionnaire in Households and Individuals (2015) conducted by TurkStat shows that 41.3% of participants use the internet to search for information about education, apprenticeship, or private tutoring and courses. It can be argued that increase in access to the internet and use of portable devices, as well as the provision of online content, will help learners have easier access to educational content and facilitate mobile learning in becoming more widespread. Figure 1 shows households' technology ownership percentages in TurkStat's 2015 questionnaire.



	2011	2012	2013	2014	2015
Portable Computer	91.9%	93.2%	93.7%	96.1%	96.8%
Mobile Phone	40.5%	35.0%	30.6%	29.2%	25.0%
Desktop Computer	34.3%	31.8%	30.5%	27.6%	25.2%
DVD/ VCD/ DivX Player	22.6%	27.1%	37.6%	40.1%	43.2%

Figure 1. Information technology ownership in households (2011-2015)
Note: Data obtained from http://www.tuik.gov.tr/PreTablo.do?alt_id=1028.

It can be claimed that advancements in information technologies, increase in personal internet usage and speed, proliferation of access from anywhere, and widespread use of cloud computing have all increased use of portable computers, mobile phones, and all other similar portable devices. It can also be said that this situation is important for the educational institutions that provide learning services independent of time and space, and that it should be analyzed by these institutions. Technology is an instrument that supports and makes learning easier. From the perspective of online learning environments, learners' technology ownership and use of technology for learning purposes can affect their achievement. In open and distance learning systems, in order for learners to use resources in an effective way, they need to have suitable technologies and should be able to use them. It can be assumed that since technology ownership increases possibilities for access to information, it also increases academic achievement. However, many research studies in the literature show that the opposite of this can also be possible. Within this context, it would be wise for institutions to investigate their own learners' technology ownership and usage.

The objective of this study is to analyze the technology ownership of learners who were enrolled in Anadolu University Open Education System between 2011-2014, to make an assessment of the current situation, to analyze the changes in this four-year period, and to investigate whether there is a difference between technology ownership and academic achievement. The study also analyzes learners' computer usage levels, internet access possibilities, internet usage purposes, and reception of television broadcast. In order to do this analysis, 722,399 questionnaire collected from the learners are analyzed to determine the technology ownership, and 438,363 questionnaires are analyzed to show if there is a difference between technology ownership and academic achievement.

LITERATURE REVIEW

The literature on learners' technology ownership is very rich. However, results of these studies differ with respect to learners' age differentials, the level of education, income level, and the countries they live in. When the relationship between learners' technology ownership and academic achievement is analyzed there is no consensus in the literature. With the same variables and different samples, researchers found positive, neutral and negative relationships, which also point to the fact that it will be appropriate for institutions to carry out studies about their own learners.

In the study titled "Students, Computers and Learning: Making The Connection, PISA" which was commissioned by the Organization for Economic Co-operation and Development (OECD) in 2015 and which included more than 70 countries, it was mentioned that learning environments should be designed in such a way as to allow for digital skills, and that technology can make significant contributions in good learning environments. The study showed that in 2012, 96% of 15-year-old students in OECD countries had a computer at home, but only 72% of them used desktop, laptop or tablet computers at school. The study mentioned that while the learners who spent little time on computers at school had the best learning outputs, the learners who used computers frequently at the schools ranked among the last ones with respect to learning outputs. The same study gave the percentage of Turkish learners who had at least one computer in 2012 as 70.7%, the ones who had two or more computers as 4.1% and learners who had computer availability at school as 48.7%. According to the same study, daily out-of-school internet usage duration was 52 minutes on weekdays and 15 minutes at school on weekdays and these figures were below the OECD averages. The percentage of students who made a search on the internet for schoolwork at least once a week was 28% at school and 50.2% out of school. The study mentioned that on average learners in OECD countries were online more than two hours and the internet was being used mostly for entertainment purposes. The usage percentage of mobile computers has increased in schools. In countries where internet usage is low for schoolwork, a faster progress has been observed in the reading levels of learners. Likewise, a negative relationship has been found between computer usage level and performance at the schools that were above the OECD averages. This study particularly emphasized that appropriate usage of technology in well-designed learning environments could enhance academic achievement, otherwise technology usage either would not make any contribution to academic achievement or it would affect it in a negative way.

In an Educause Center for Analysis and Research (ECAR) study in 2014 that included 213 universities, 15 countries and more than 75,000 learners, learners' technology experiences, the devices they owned, the way they use them and their technology perceptions were analyzed. The study determined that ownership of mobile devices, such as smartphones and tablets, increased dramatically while there was not a significant upward trend in laptop and e-

reader ownership. The same study also investigated the use of e-readers, tablets, smartphones and laptops for academic purposes, and observed that there was an increase in the usage of these devices between 2012-2014, while the biggest increase was observed in the usage of tablet computers and smartphones. The usage ranking of the devices for academic purposes in descending order was as follows: laptop, smartphone, tablet and e-reader. When one looked at the degree of importance of the devices with regards to academic achievement, the ranking stayed the same. Between 2013 and 2014, the importance of all devices except laptops with regards to academic achievement decreased. Looking at the results of this study, it can be said that the usage of tablet computers and laptops, in particular, will be more widespread in the coming years.

There are some studies which found a positive relationship between technological device ownership and academic achievement. In Ahlan, Atanda and Shehu's (2014) study that was conducted in Ilorin University, the researchers investigated performance-increasing effects of computer aided tests on the academic performance of learners, their acceptance and how they can be developed further. They also analyzed the relationship between computer ownership and academic performance. The study concluded that there is a positive relationship between technology ownership and academic performance. In a study conducted by Judge (2005) on 1,601 nursery students and first graders, a positive relationship was found between computer usage and access and academic achievement. Jackson et al. (2006) analyzed the relationship between internet usage at home and the academic achievements of 140 lower income learners and found a positive relationship. The age variable did not lead to a change in this situation. In other studies, a positive relationship was found between ownership of home computers and school performance (Attewell and Battle, 1999; Beltran, Das and Fairlie, 2006).

In the studies which found a negative relationship between technological device ownership and academic achievement, it has been particularly emphasized that learners' concentration levels are lessened while studying because of the usage of social media, messaging or chatting, and therefore they are unable to use their time effectively. In the study conducted by Lepp, Barkley and Karpinski (2013) a negative relationship was found between cellphone use and academic performance. In their study on university students, Jacobsen and Forste (2011) found a negative relationship between electronic device usage and grade point averages. The researchers found that learners were spending too much time with electronic devices and this negatively affected their academic performance. Likewise, Paul, Baker and Cochran (2012) found a negative relationship between social network use and academic performance.

On the other hand, there are also some studies which found no relationship between technological device ownership and academic achievement. In their research conducted on 101 tenth grade students, Hunley et al. (2005) did not find a significant relationship between computer usage and academic achievement. Using Program for International Student Assessment (PISA, 2000) data, Bielefeldt (2005) analyzed the relationship between learners' technology usage and their academic achievements. Bielefeldt did not find a significant effect of having access to computers at school on mathematics and reading skills; however, he found that having access to computers at home had a negative effect on academic achievement. In their study, which was conducted with 1,123 learners between sixth and tenth grades, Fairlie and Robinson (2013) did not find any relationship between having home computers and academic achievement.

METHODOLOGY

In this study, the data that was obtained from questionnaires applied to individuals who were studying in Anadolu University Open Education System between September 2011 and February 2015 was analyzed. The questionnaires were applied both on those learners who recently joined the Open Education System and on the learners who were already in the system, in order to measure the service quality and to collect more information about the learners. The data characteristics were analyzed in the study and the tasks that were performed are shown as follows:

- Questionnaires were applied online to gather information regarding learners' technology ownership, their level of computer usage and internet usage.
- Through the web-based questionnaire in which the learner information system guides the learners, questionnaire data along with learners' identity information were stored in a database management system.
- Questionnaire data was made ready for analysis using the MS SQL server database management system. In the preparation process, multiple questionnaire entries and invalid questionnaire data were cleared.
- Questionnaire data of the learners who answered the questionnaire questions were associated with their grade point averages for the relevant period. By this way, the grade point average that the learner received in the period in which learner filled in the questionnaire form is reflected onto the data set.
- The data set was transferred to IBM SPSS Statistics software and analyzed.

Table 1 presents numbers of questionnaire participant with respect to years in the data set prepared for the study. Descriptive statistics of the data obtained from the questionnaire studies applied in 2011-2012 and 2014-2015 academic years were derived.

Table 1: *The Number of Students Filled the Questionnaire by Years and Studentship Type.*

Studentship Type	Year				Total
	2011	2012	2013	2014	
New Registration	61,259	201,910	92,554	72,661	428,384
Registration Renewal	30,791	136,068	74,286	52,870	294,015
Total	92,050	337,978	166,840	125,531	722,399

In order to determine if there is a difference between learners' technology ownership and academic achievement, which is the subject of this study, the following three hypotheses were constructed and statistical data analysis is carried out by IBM SPSS.

- H_1: There is no difference between the academic achievement of learners who have computers and learners who do not have computers.
- H_2: There is no difference between the academic achievement of learners who have handheld computers and learners who do not have handheld computers.
- H_3: There is no difference between the academic achievement of learners who have tablet computers and learners who do not have tablet computers.

FINDINGS

A total of 722,399 questionnaire data collected from the learners who were enrolled in Anadolu University Open Education System in the period of 2011-2014 are analyzed, of

which 428,384 were new registrations and 294,015 were registration renewals. Learners' technology ownership is analyzed with respect to years. In order to determine whether there is a difference between the academic achievement of learners who have and do not have the technology in question, as well as to test the hypotheses of the research, independent two sample t-test is applied. Table 2 shows the learners' computer usage levels by years.

Table 2: *The Number of Learners at Different Computer Usage Levels by Years*

Computer Usage Level	Numbers			
	2011	2012	2013	2014
No Computer Skills At All	560	444	227	240
Beginner Level	7,024	5,276	2,988	3,032
Intermediate Level	67,190	58,640	29,156	28,319
Advanced Level	55,827	47,581	23,146	21,999
Total	130,601	111,941	55,517	53,590

When Table 2 is analyzed, it can be seen that the number of learners at different levels decreased from 2011 to 2014. This might be related to the fact that the total number of questionnaire filled by respondents declined at the same period. Therefore, it will be more appropriate to look at percentages to make better interpretations of computer usage levels. Computer usage percentages of learners by years are presented in Figure 2.

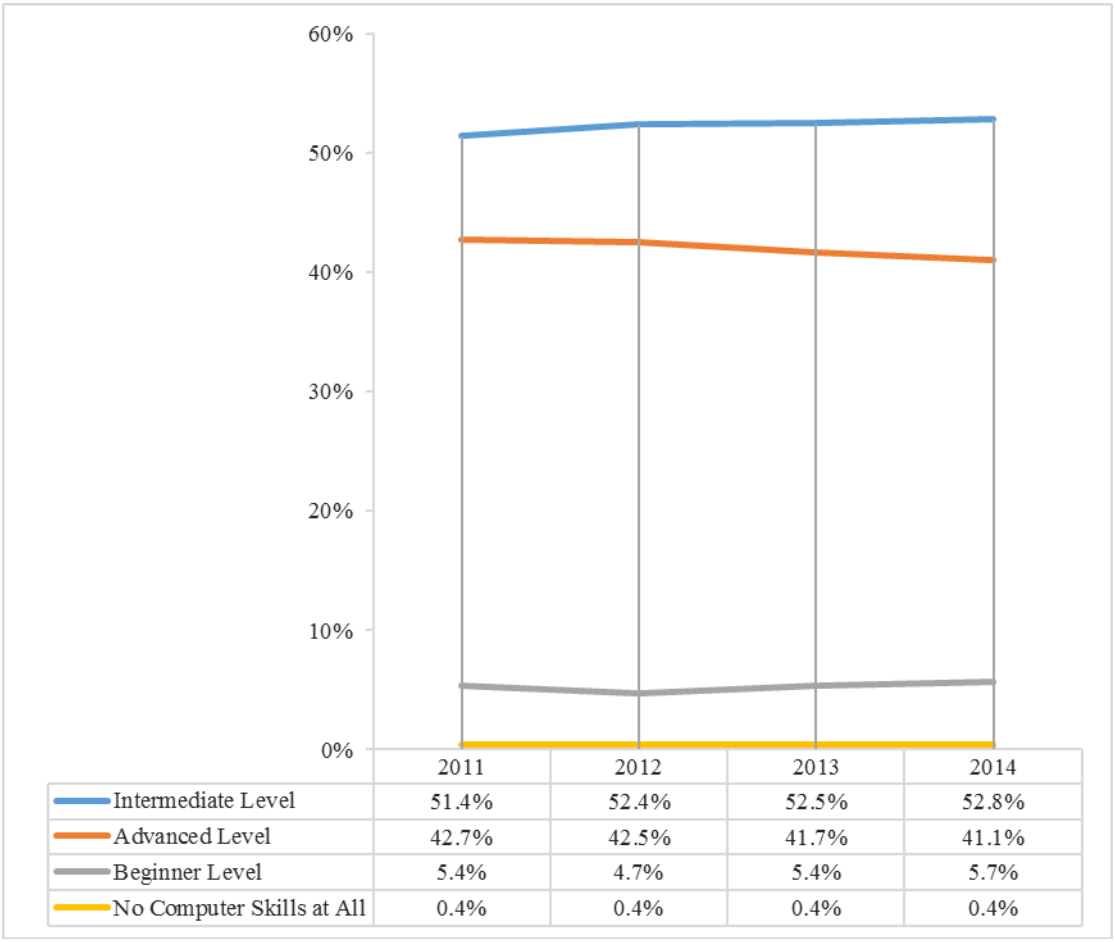


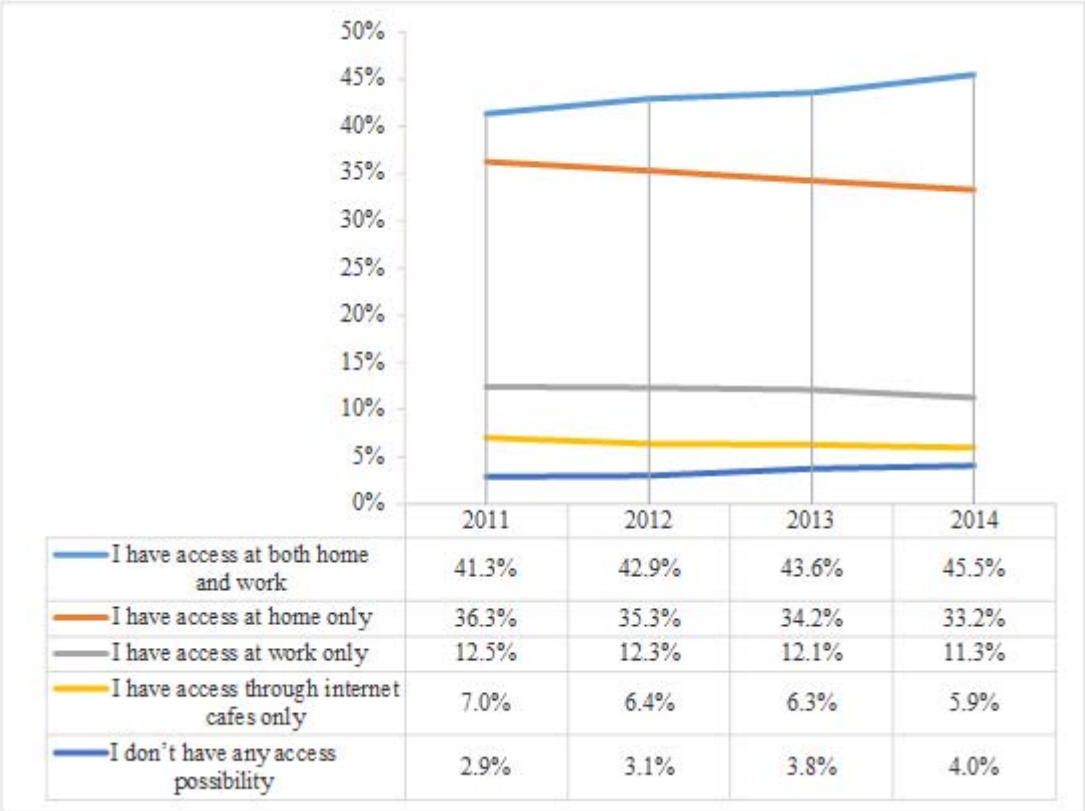
Figure 2. Computer usage percentages of learners by years

When Figure 2 is analyzed, it is seen that in the period 2011-2014, the percentage of learners who mentioned that they did not use computers at all stayed the same at 0.4%, the percentage of those at beginner level increased from 5.4% to 5.7%, the percentage of intermediate level learners increased from 51.4% to 52.8%, and the percentage of advanced level users decreased from 42.7% to 41.1%. It can be said that, in general, learners think themselves as intermediate and advanced level computer users. Any significant changes in the data gathered related to the computer usage were not observed. The fact that there was only one question in the questionnaire form related with computer usage may have led to obtain this result. In the future including more detailed and varied questions to measure the computer skills of individuals may allow for gathering this data in a more consistent way. Table 3 presents internet access possibilities of learners in the Open Education System by years.

Table 3: *Internet Access Possibilities of Learners by Years*

Internet Access Possibilities	Years			
	2011	2012	2013	2014
I don't have any possibility for access	6,181	6,312	4,127	3,903
I have access only at home	77,996	72,965	37,394	32,212
I have access through internet cafés only	15,127	13,280	6,913	5,761
I have access only at work	26,814	25,461	13,228	10,928
I have access both at home and work	88,878	88,768	47,578	44,078
Total	214,996	206,786	109,240	96,882

When Table 3 is analyzed, it is seen that learners who have access to the internet only at home and learners who have access both at home and at work constitute a majority of the learner body. Figure 3 shows learners' internet access possibilities by years.



	2011	2012	2013	2014
I have access at both home and work	41.3%	42.9%	43.6%	45.5%
I have access at home only	36.3%	35.3%	34.2%	33.2%
I have access at work only	12.5%	12.3%	12.1%	11.3%
I have access through internet cafes only	7.0%	6.4%	6.3%	5.9%
I don't have any access possibility	2.9%	3.1%	3.8%	4.0%

Figure 3. Learners' internet access possibility percentages by years

Analysis of Figure 3 reveals that in the period 2011-2014 the percentage of learners who did not have internet access increased from 2.9% to 4.0%; the percentage of learners who had internet access only at home decreased from 36.3% to 33.2%; the percentage of learners who had access through internet cafés only decreased from 7% to 5.9%; the percentage of learners who had internet access at work only decreased from 12.5% to 11.3%; and the percentage of learners who had access to the internet at both home and work increased from 41.3% to 45.5%. Learners have the highest internet access possibility percentage at both home and work. The fact that individual and mobile internet usage increased and internet access from anywhere became commonly available can explain the declines in access possibilities from home, workplaces, and internet cafés, which are location-dependent access points.

When learners' internet access ownership by years was examined, it is seen that between 2011 and 2014 internet access percentages were 97.1%, 96.9%, 96.2%, and 96%, respectively. According to these results, it is observed that approximately 96% of learners have internet access. This percentage is significantly higher than the internet access percentages reported in the study by TurkStat (2015). When one takes into account the online services, content, and resources provided by the Open Education System, learners having a high percentage of internet access is important from the perspective of accessing and benefitting from these services. Learners' distribution between 2011 and 2014 with respect to internet usage purposes is presented in Table 4.

Table 4 :*Internet Usage Purposes of Learners by Years*

Internet Usage Purpose	Years							
	2011		2012		2013		2014	
	Yes	No	Yes	No	Yes	No	Yes	No
Obtaining Information	113,993	16,608	97,912	14,029	47,731	7,786	45,221	8,369
Communication	87,375	43,226	74,607	37,334	36,414	19,103	34,094	19,496
Shopping	47,328	83,273	43,194	68,747	21,326	34,191	20,508	33,082
Entertainment/Chat	44,926	85,675	40,489	71,452	20,158	35,359	18,618	34,972
Reading Newspaper/Journal	66,737	63,864	58,604	53,337	27,569	27,948	24,524	29,066
Banking Transactions	56,296	74,305	49,700	62,241	24,069	31,448	23,018	30,572
Social Media	72,896	57,705	66,088	45,853	33,450	22,067	31,445	22,145

A closer look at Table 4 reveals that in 2011 the most frequently mentioned internet usage purpose was obtaining information, with 113,993 learners, whereas the least mentioned purpose was shopping, with 44,926 learners. In 2012 the most widely mentioned usage purpose was obtaining information, with 97,912 learners, while the least-mentioned purpose was shopping, with 43,194 learners. In 2013 the most frequently-cited internet usage purpose was obtaining information, with 47,731 learners, and the least-mentioned purpose was entertainment/chatting. In 2014 the most frequently-mentioned internet usage purpose was obtaining information, with 45,221 learners, while the least-mentioned purpose was entertainment and chatting with 18,618 learners. Learners used the internet most often for obtaining information between 2011 and 2014. The percentages of learners' internet usage purposes in the period 2011-2014 are presented in Figure 4.

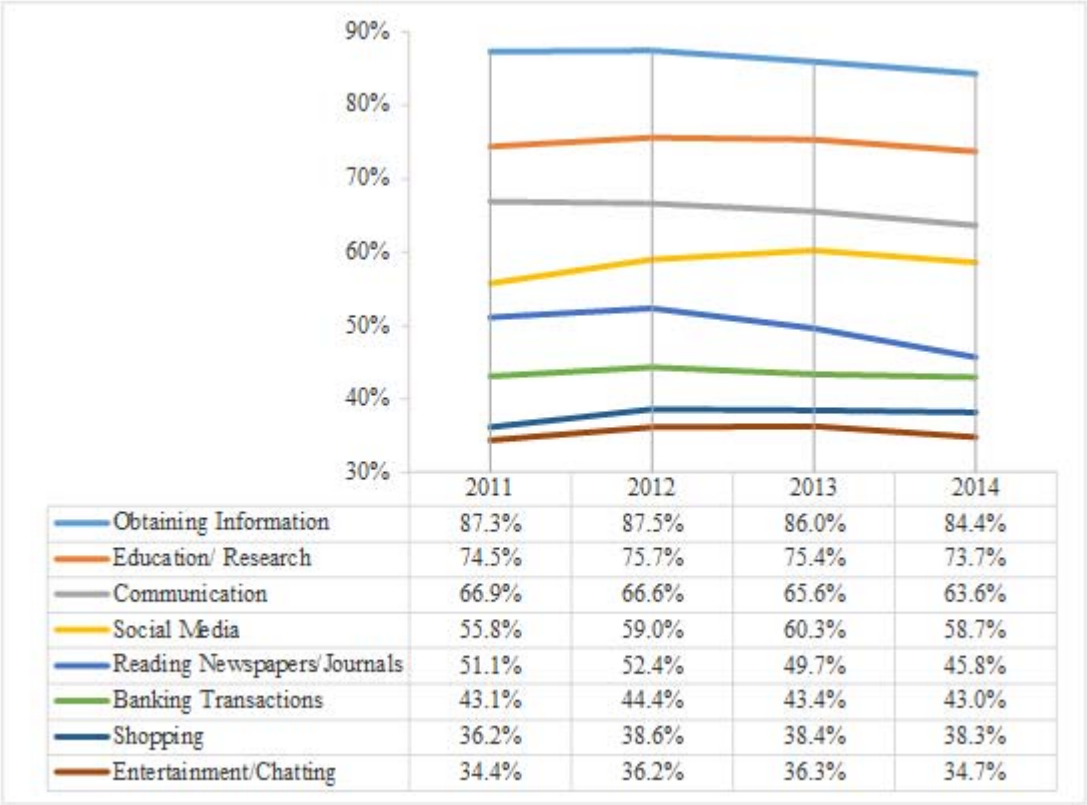


Figure 4. Internet usage purpose percentages of learners by years

Figure 4 reveals that, in descending order, the internet was used by learners for obtaining information, education and research, communication, social media, reading newspapers and journals, banking transactions, shopping, and entertainment/chatting purposes. The usage percentage of the internet for social media purposes increased. Using the internet particularly for obtaining information, education and research is in line with the characteristics of learners of open and distance learning systems. Learners' distributions with respect to their reception of television broadcast between 2011 and 2014 are presented in Table 5.

Table 5: *Reception of Television Broadcast of Learners by Years*

Reception of Television Broadcast	Years							
	2011		2012		2013		2014	
	Yes	No	Yes	No	Yes	No	Yes	No
Cable TV	36,945	178,051	36,665	170,121	19,602	89,638	17,628	79,254
Digiturk	32,018	182,978	32,906	173,880	15,956	93,284	13,423	83,459
Antenna	42,746	172,250	40,144	166,642	21,403	87,837	17,577	79,305
D-Smart	19,099	195,897	20,645	186,141	10,748	98,492	9,049	87,833
Satellite TV	118,063	96,933	109,737	97,049	56,649	52,591	50,400	46,482
Mobile TV	3,890	211,106	5,099	201,687	3,635	105,605	3,583	93,299

Table 5 shows that in the period 2011-2014 the most commonly used reception of television broadcast is satellite TV and the least used reception of television broadcast is mobile TV. The percentages of learners' reception of television broadcast between 2011 and 2014 are presented in Figure 5.

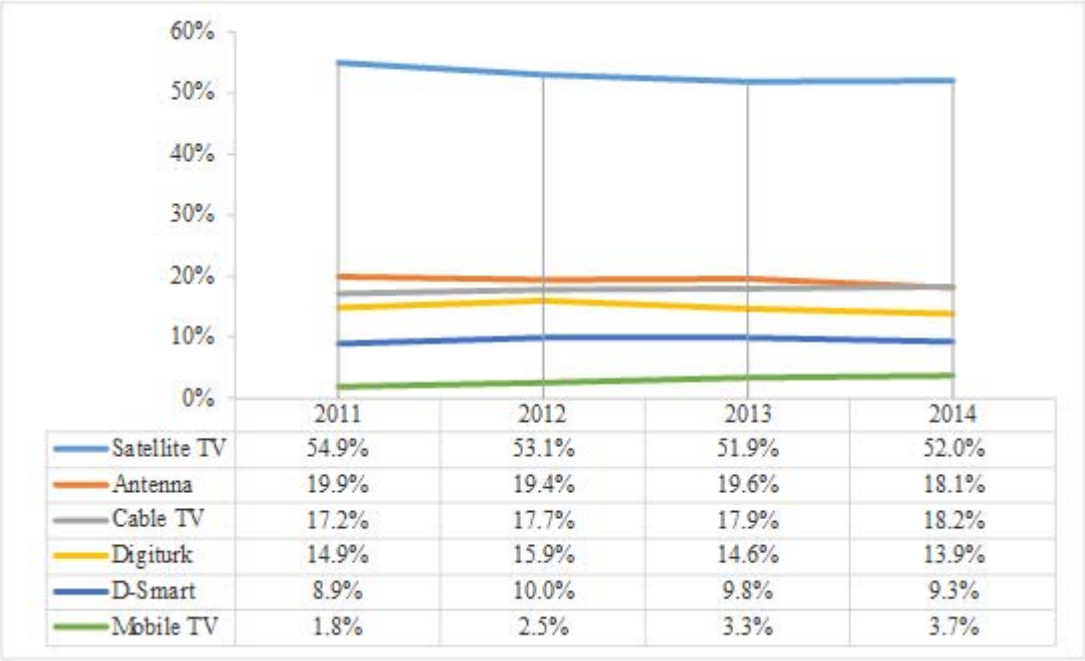


Figure 5. Percentages of learners' reception of television broadcast by years

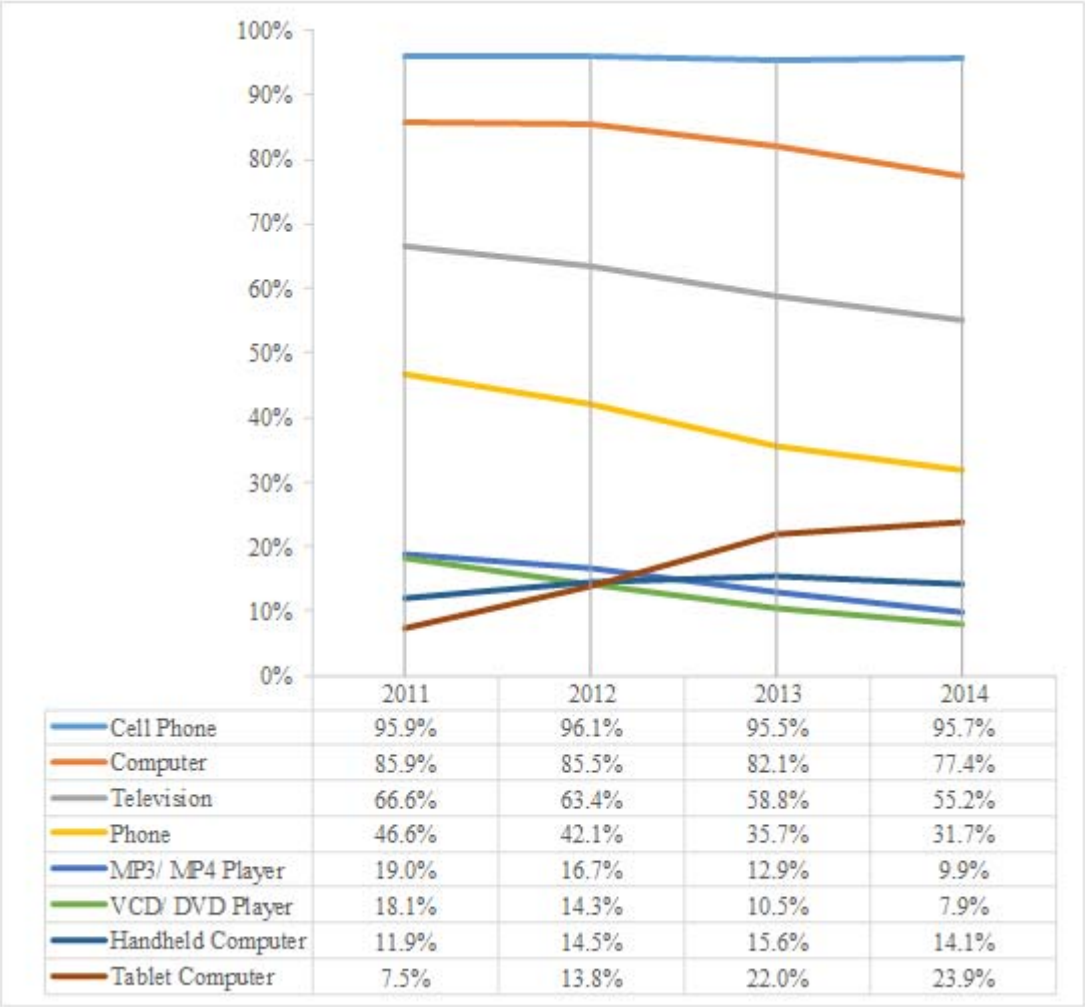
An analysis of Figure 5 reveals that between 2011 and 2014 satellite TV usage decreased from 54.9% to 52%, antenna usage decreased from 19.9% to 18.1%, and Digiturk usage dropped from 14.9% to 13.9%. Contrarily, Cable TV usage increased from 17.2% to 18.2%, D-Smart usage increased from 8.9% to 9.3%, and mobile TV usage increased from 1.8% to 3.7%. It can be claimed that, in general, there is a downward trend in reception of television

broadcast of learners, however in line with the increase in usage of mobile devices, there is an increase in mobile TV usage. Table 6 shows numbers of learners enrolled in Anadolu University Open Education System who owned technological devices in the period 2011-2014 by years.

Table 6: *Learners' Technological Device Ownership by Years*

Technological Device	Years							
	2011		2012		2013		2014	
	Yes	No	Yes	No	Yes	No	Yes	No
Cell Phone	206,236	8,760	198,677	8,109	104,355	4,885	92,695	4,187
Handheld Computer	25,594	189,402	30,009	176,777	16,998	92,242	13,628	83,254
MP3/MP4 Player	40,744	174,252	34,463	172,323	14,050	95,190	9,577	87,305
VCD/DVD Player	38,838	176,158	29,506	177,280	11,427	97,813	7,665	89,217
Computer	184,760	30,236	176,761	30,025	89,643	19,597	74,989	21,893
Telephone	100,251	114,745	87,064	119,722	39,002	70,238	30,735	66,147
Television	143,094	71,902	131,040	75,746	64,242	44,998	53,481	43,401
Tablet PC	16,039	198,957	28,530	178,256	24,010	85,230	23,154	73,728

When the data is analyzed, it can be seen that in 2011 learners' cellphone ownership is the highest and the learners tablet computer ownership is the lowest; in 2012 learners' cellphone ownership is the highest and the learners tablet computer ownership is the lowest; in 2013 learners' cellphone ownership is the highest and the learners' VCD/DVD player ownership is the lowest; in 2014 learners' cellphone ownership is the highest and the learners VCD/DVD player ownership is the lowest. The percentages of learners' technological device ownership in the period of 2011-2014 are presented in Figure 6.



	2011	2012	2013	2014
Cell Phone	95.9%	96.1%	95.5%	95.7%
Computer	85.9%	85.5%	82.1%	77.4%
Television	66.6%	63.4%	58.8%	55.2%
Phone	46.6%	42.1%	35.7%	31.7%
MP3/ MP4 Player	19.0%	16.7%	12.9%	9.9%
VCD/ DVD Player	18.1%	14.3%	10.5%	7.9%
Handheld Computer	11.9%	14.5%	15.6%	14.1%
Tablet Computer	7.5%	13.8%	22.0%	23.9%

Figure 6. Percentages of technological device ownership

According to Figure 6, between 2011 and 2014 cellphone ownership stayed almost the same; tablet computer ownership increased dramatically; while computer, MP3/MP4 player, VCD/DVD player, telephone and television ownership percentages declined. Handheld computer ownership, however, increased between 2011 and 2013, but declined in 2014. The reason for changing trends in handheld computers might be that it is not a commonly used concept nowadays and learners might have confused it with tablet computers. The increases in portable device ownership such as cellphones and tablet computers are especially important for open and distance learning institutions to realize the objective of learning from anywhere and at any time. Widespread and effective use of these devices in academic environments can increase use of e-learning content and resources.

In this study, having determined learners' technology ownership percentages, t-tests were employed to test the research hypotheses and determine whether there was a difference between the academic achievement of the learners who own and do not own a technological device. Research hypotheses were analyzed by grouping learners' technological device ownership status and employing independent two sample t-test.

In order to test the hypothesis 1, which is "There is no difference between the academic achievement of learners who have computers and learners who do not have computers", independent two sample t-test was applied. According to the independent two sample t-test

results, out of 438,363 learners, the grade point average of 361,190 learners who own a computer was calculated as 1.938, while the grade point average of 77,173 learners who do not own a computer was calculated as 1.738. A significant difference is observed between the averages of these two groups. The scores of learners who own a computer (M= 1.938, SD= 0.826) turned out to be higher than for those who do not own a computer (M= 1.738, SD= 0.815). In the test for equality of variances the calculated F= 0.273 and p-value for this F is p = 0.601. Accordingly, since p= 0.601 is greater than significance level α= 0.05, the H_0 hypothesis that variances are equal is accepted. The t value which is calculated under the assumption that variances are equal is t= 61.384 and p-value for this t is p= 0.000 (t(438361)= 61.384, p<0.001). This result shows that there is a statistically significant difference between the academic achievement of learners in terms of computer ownership. In the 95% confidence interval, the significance value turned out to be less than 0.05. Therefore, the hypothesis 1 is rejected. The test results show that there is a difference between the academic achievement of learners who have computers and learners who do not have computers.

After this first analysis, the second hypothesis was tested. In order to determine the hypothesis 2, which is "There is no difference between the academic achievement of learners who have handheld computers and who do not have handheld computers", independent two sample t-test was applied. According to the results of these tests, out of 438,363 learners, the grade point average of 59,835 learners who own a handheld computer was calculated as 1.892, while the grade point average of 378,528 learners who do not have a handheld computer was calculated as 1.905. It is observed that there is a significant difference between the averages of these two groups. Scores of learners who have a handheld computer (M= 1.892, SD= 0.825) turned out to be lower than scores of learners who do not have a handheld computer (M=1.905, SD= 0.828). In the test for equality of variances the calculated F= 0.574 and p-value for this F is p= 0.109. Accordingly, since p= 0.109 is greater than the significance level α= 0.05, the H_0 hypothesis that variances are equal is accepted. The t value calculated under the assumption that variances are equal is t= -3.546 and p-value for this t is p= 0.000 (t(438361)= -3.546, p<0.001). This result shows that there is a statistically significant difference between academic achievement in learners in terms of handheld computer ownership. In the 95% confidence interval, the significance value has turned out to be less than 0.05. Therefore, the hypothesis 2 is rejected. Test results show that there is a difference between the academic achievement of learners who have handheld computers and learners who do not have handheld computers.

Finally, the third hypothesis was tested. In order to determine the hypothesis 3, which is "There is no difference between the academic achievement of learners who have tablet computers and who do not have tablet computers", independent two sample t-test was applied. According to the independent two sample t-test results, out of 438,363 learners, a grade point average of 72,343 learners who have a tablet computer was calculated as 1.952, while a grade point average of 366,020 learners who do not have a tablet computer was calculated as 1.893. It is observed that there is a statistically significant difference between the averages of these two groups. Scores of learners who own a tablet computer (M=1.952, SD= 0.839) turned out to be higher than scores of learners who do not own a tablet computer (M= 1.893, SD= 0.825). F value calculated in the test for equality of variances is F=7.483 and p-value for this F is p= 0.006. Accordingly, since p= 0.006 is less than significance level α= 0.05, the H_0 hypothesis that variances are equal is not accepted. The t value calculated under the assumption that variances are not equal is t=17.181 and p-value for this t is p= 0.000 (t(101913)=17.181, p<0.001). This result shows that there is a statistically significant difference between the academic achievement of learners who own a tablet computer and who

do not own a tablet computer. In the 95% confidence interval, the significance value turned out to be less than 0.05. Therefore, the hypothesis 3 is rejected. Test results show that there is a difference between the academic achievement of learners who have tablet computers and learners who do not have tablet computers.

CONCLUSION

In this study, in which 722,399 questionnaire data obtained from the learners who were enrolled in Anadolu University Open Education System between 2011 and 2014 were analyzed, it was found that learners think of themselves as intermediate level computer users, that they have internet access both at home and at work, that they use the internet for obtaining information, and that they prefer satellite TV. When their technological device ownership is analyzed, a majority of learners have cellphones and the biggest increase across the years was observed in tablet computer ownership. When the internet access possibilities and changes in technology ownership is analyzed, it can be said that learners can benefit from online services provided in the Open Education System through their mobile or other devices. When the hypotheses of the study were tested it was found that there is a difference at a 95% confidence interval between the academic achievement of learners who own a computer, a handheld computer or a tablet computer, and learners who do not own these devices.

In order to create a positive difference between technological device ownership and academic achievement, demographic, personal and behavioral characteristics of learners, their learning styles, needs and preferences can be determined and the most appropriate learning environments can be created, with the help of technological possibilities. Using technology and technological devices in an appropriate way to create the most suitable learning environments and to reach maximum learning outputs can enhance learners' success. If the content, environment and learner's characteristics are compatible with each other technology can help learners to be successful. Technology allows for the learning process to be more easily facilitated, sped up and diversified. Using technology, which is a powerful instrument for learning environments, in an effective way, it is possible to combine the qualities of the instructor and the learning environment, which will lead to the improvement of open and distance learning environments.

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TOWARDS INCREDIBLE EVALUATION OF E-LEARNING SYSTEM FOR EDUCATIONAL SECTOR: A STATISTICAL REPORT

Dr. D. THILAGAVATHY
Professor, Department of Computer Science and Engineering (Autonomous)
Dr.MGR Nagar, Hosur, Tamil Nadu , India
prabu.cse@adhiyamaan.in & prabu_pdas@yahoo.co.in

Abstract: E-Learning was introduced in 19th century. It has grown tremendously and many new techniques are introduced to make E-Learning successful. In late 20th century, industries started to use E-Learning to train their employees. The material in E-Learning is updated according to the trends of the peoples. The E-Learning focus on not only on the theoretical data but also focus on the practical knowledge of the content. Thus this is impressive for many people so, they prefer E-Learning. Now-a-days, E-Learning plays an important role in the educational sector. The investigation is done to know why E-Learning is impressive to the students and whether the implementation gives the good result in the Student Education, we reviewed 102 experimental papers and survey papers published during the period of 2010-2014. We summarized our observations and identified the common pitfalls among surveyed works.
Keyword: Analysis; Educational Sector; E-Learning; incredible; Statistical Report; Survey

INTRODUCTION

E-Learning, (Electronic learning) which has been boomed in the past decade. It is the process of learning using electronic devices from anywhere and anytime. E-Learning exploits interactive technologies and communication system to improve the learning experience. It began decades ago with the introduction of television and over-head projectors in classrooms. E-Learning has advanced to include interactive computer programs, 3D simulations, videos and real time online discussions from all over the world. People can set their own schedule and work at their own place[1].

E-Learning is also called as distance learning, distance education, virtual learning, online learning, online education and web based training. There are many types of E-Learning. The primary types are 1) Information E-Learning 2) Corporate E-Learning 3) Academic E-Learning. In formal E-Learning websites offers materials at no cost. It is provided to improve the knowledge and polish the skills of students/readers. The corporate E-Learning is provided to the employees for the success of industries. The academic E-Learning was offered to students for the accreditation of degree through internet [2].

Though face-to-face classes are very interactive, it is offered only on the time basis whereas E-Learning is not time based. For the better understanding of E-Learning, we focused on the research papers that are published in the interval of four years from 2010-2014. We analyzed seven major parameters in each study that, we believe, are critical for the evaluation and comparison of E-Learning system. These components include model, advantages, implementation, cloud computing, simulation, web based and case study/survey. The main contribution of this paper is to provide a statistical report of E-Learning in the field of education.

The paper is organized as follows: Section 2 contains the overview if the related work. Section 3 explains the evaluation methodology of this paper. Section 4 enumerates the E-Learning in Educational Sector. Section 5 indicates the observations. Section 6 discuses about the question arised. Section 7 proposes some suggestion. Finally, Section 8 concludes the survey of E-Learning.

RELATED WORK

In the past decade, online learning has been developed considerably. Here, we focused only on schools, colleges and industries. E-Learning has evolved the educational sector to next level and has changed the way we look at knowledge and skill acquisition altogether. Now-a-days, many students and employees are using E-Learning to get their degrees and build their knowledge base to develop new skills. An increasing number of online courses are now being offered in order to meet the ever-growing demand. According to a recent study conducted by The Research Institute of America, the power of E-Learning has increased information retention rates up to 60%. It means that, E-Learning is cost efficient and also it is more effective.

In schools, E-Learning is in the form of smart classes. Students are very much attracted towards to the E-Learning than traditional classroom. They can visually understand the concepts through E-Learning. E-Learning ensures 1) Transfer of knowledge 2) Memory retention 3) Visualization of the concept 4) Result in the examination. It is estimated that about 46% of college students are taking at least one online course. However, by 2019, roughly half-of all college classes will be E-Learning based. The research report takes an in-depth look at the important role that technology now plays in the educational sector.

In Industries and Company it was estimated that about $35.6 billion was spent on self-taught eLearning across the globe in 2011[7]. Today, E-Learning is used in $56.2 billion industry, and it will be double by 2015.Corporations have report that E-Learning is the second most valuable training/learning method that they use. This analysis gives no surprise, that E-Learning saves businesses at least 50% when they replace traditional based training with E-Learning Training. According to a report released by IBM, companies who utilize E-Learning tools and strategies have the potential to boost productivity of trainee's up to 50%. For every $1 that company spends, it is estimated that they can receive $30 worth of trained people. The world's most rapidly growing E-Learning markets are Malaysia and Vietnam. In fact, the estimated 5 year annual growth rate for the Asian E-Learning market is 17.3%. That is the highest compound annual growth rate of any global region.

The following questions are addressed in this paper:

1. Why do we go for E-Learning?
2. Does E-Learning is useful to people in rural area?
3. Why E-Learning is popular today?
4. How E-Learning differs from classroom learning?
5. How E-Learning is useful for disabled students?
6. How can you secure the data in E-Learning?
7. What is the ratio of Students involved in E-Learning when compared to Traditional Learning?

EVALUATION METHODOLOGY

We conducted a survey of research work in the area of E-Learning system published during the period of 2010–2014. To avoid selection bias, we collected all research papers indexed by the Google Scholar and the Digital Bibliography and Library project (DBLP) databases and IEEE Transactions for the reviewed time period. From this set, we excluded short papers, extended abstracts, non peer-reviewed research, and papers not available in the English language and those containing no evidence of experimental study. During this process, we encountered seven cases of self-plagiarism (nearly identical papers, i.e., more than 90% content overlap, published in different venues by the same authors) and one case of plagiarism (an original work was later republished by different authors). For these cases, we chose to retain the earlier copy of each work.

To narrow our focus, we further selected research work relevant to E-Learning. After excluding the fault, fraud detection papers, the final set of 102 papers, containing 79 journals and 23 conference/workshop papers, was reviewed manually without any means of automatic search techniques. In that 102 papers reviewed, We got a result that 21 papers indicates about E-Learning in Industrial Sector,24 papers are under Social Sector and 57 papers are about Educational Sector.

EDUCATIONAL SECTOR

Students are the Backbone of our nation. So, to make the students stronger we need to educate them in a creative and in innovative way. E-Learning plays a vital role in students life [11]. It enables them to become thinkers, Independent learners and allows them to learn virtually by means of digital classroom. The main advantage is, through E-Learning any educational materials can be available online immediately[10]. Instead of carrying lots of book, students can carry laptop and smart phones which can contains entire book and they can hold them in their hands unlike books.

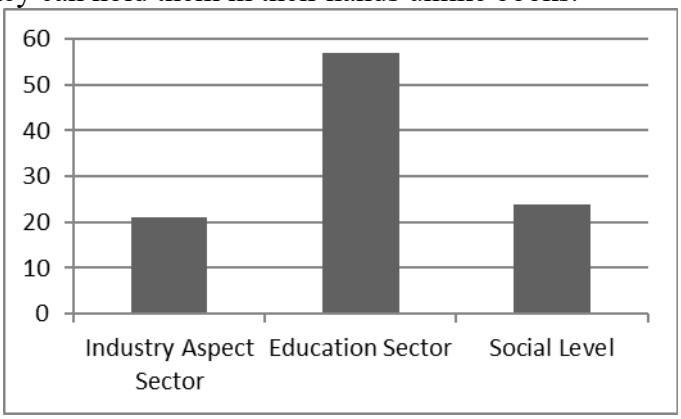

Figure 1 Bar Chart of the Surveyed Papers

ROLES AND RESPONSIBILITIES IN E-LEARNING

The roles for developing E-Learning are 1) Content Analysis 2) Design 3) Development 4) Deployment. The Responsibilities of these roles are as follows [12]:

1) Content analysis: Initially the content for the course is gathered. The content must be correct and only the related content is extracted from the gathered.
2) Design: From the extracted content the design for the presentation of content is designed. This design will give the overview of the course.

3) Development: From the design the E-Learning web page must be developed. The developed web page must be easy to use even for the new users.
4) Deployment: The developed web page is deployed in the internet so that all user can use the page through internet.

E-LEARNING IN SCHOOL

The mode of teaching has changed to E-Learning. In traditional method of teaching the teachers in schools feels difficult to make sure that all students in class have understood the lesson. Thus the students may have multiple doubts and some feel shy to raise their doubts. In these places E-Learning plays the vital role [13]. E-Learning provides the visual explanations so that the students can easily understand the concepts. Students feel very bored when they are always teach in board whereas when they have the visuals they will feel interesting and this is impressive to the present generations.

E-LEARNING IN COLLEGE

Students feel bored when they have regular classes in college. Now-a-days college provides the E-Learning so that the students can learn the syllabus whenever they are free and feel interested. This provides flexibility to students as well as faculty[15]. There won't be any problem in completing the portion on the faculty side and students can revise number of times and the time taken to prepare notes is completely reduced. Thus students can know new things related to their courses.

Table I Details of the Surveyed Papers

Papers by E-Learning System	
Industry Aspect Sector	21 out of 102
Education Sector	57 out of 102
Social Level	24 out of 102

Table II Analyzed Papers and Its Result

E-LEARNING IN EDUCATION SECTOR					
S. NO	AUTHORS	COUNTRY	PAPER TITLE (YEAR)	EDUCATION SECTOR	ANALYSED
1	Bach Xuan Tran, Quyen Le Thi Nguyen, Vuong Minh Nong,	Hanoi and New York	Student-Centred Outcomes of an E-Learning Course on Public Health in Hanoi and New York(2014).	Medical University	Around 36 students participated in this course and 26 students paid a attention in E-Learning.
2	Sulaiman Abd Anter, Abdallah M Abualkishik, Yousif	Iraque	Proposed E-Learning system for Iraqi Universities(2014).	Al-Anbar University	It produces more outcome of Students and Teachers and minimizes the cost.
3	Edda Tandi Lwoga	Tanzania	Critical success factors for adoption of web-based learning management systems in Tanzania(2014).	Muhimbili University of Health and Allied Science	Around 408 undergraduate students are analyzed in this university and 66.7% produces a good result while studying using E-Learning.
4	Amal Rhema and Iwona Miliszewska	Australia	Analysis of Student Attitudes towards E-Learning: The Case of Engineering Students in Libya(2011).	Victoria universities	Here various country students attitude are compared with Victoria university student.
5	Dr Gunamala Suri, Sneha Sharma	India	The Impact of Gender on Attitude Towards Computer Technology and ELearning: An Exploratory Study of Punjab University, India(2010).	Punjab University	89 % of course materials are uploaded in internet. 68% of students had responded whereas 22% of students had not tried for the course in E-Learning.

DISCUSSION

Based on the research about E-Learning from the published papers the questions arises are:

A: Why E-Learning is popular today?

The new trend in learning is through E-Learning system. This is due to the fact that there are so many benefits the online environments can offer that a traditional learning simply cannot [4]. Though there are several different reasons why e learning is popular worldwide, some of the keys are: 1) Real time access 2) Saving 3) Flexible 4) Convenience 5) Technology.

1) Real time access: E-learning would not require any schedule to the training it can be accessed the course any time anywhere.
2) Savings: Even through e-learning requires some initial investment it can reduce travel expense, instructor time saving and remove the need for face to face activities.

3) Flexible: Flexible is more in e-learning. People can be accessed the course and receiving on site training even/remote place at their convenient time.
4) Convenience: Instead of having to try to fit your life around fixed schedules, you can keep our own schedules. This means there's no rushing to get into the place on time; you can just sit down and switch on your computer when you have the time to study. It is even more convenient for those people with busy schedules.
5) Technology: The most important reason why E learning is so popular is that the technologies. In the past, technology wasn't up to par and the courses were lacking because of it. But in recent days the trend changes because of the improving technology. In most of the school students are having smart classes instead of having only blackboard based class and in industries people can work from home.

B: How E-Learning differs from classroom learning?
Some of the main difference between E-Learning and classroom learning are as follows: 1) Learning Content 2) Types of media 3) Social Dynamics 4) Time 5) Mediums 6) Writing Content 7) New language [5].

1) Learning Content: Learning content is a unique environment for teaching and learning.
2) Types of Media: E-learning has more opportunity to view the visible message and use the variety of media than the instructional design and learning theory.
3) Social Dynamics: The communication in e-learning is only through e-mails.
4)Time: In traditional course the time consumption is more but in e-learning, takes very less time to complete the task.
5) Mediums: Here the objective of E-Learning and classroom learning are same but delivery and interactions are different. E-Learning needs new agenda, flow, visuals and activities.
6) Written Content: To create effective written content the important specifications are Tone, Clarity in data, Brevity i.e. The text which is lost should be eliminated.
7) New Language: should have some knowledge about the online tools and infrastructure including learning management system and content management system.
C: Why do we go for E learning?

E learning is
1) Self-Paced: E-learning program can be viewed whenever the students are in need. Usually we refer books for learning. It describes only about the module-based design and it is useful for the user to absorb, but in e-learning there is large amount of contents and there is no constraint for it[16].
2) Environment friendly: E-learning saves paper and deforestation will be avoided. Most of the e-learning courses are based on tools used for communication such as email, PDF manuals, synchronous classrooms and web based tools.
3) Faster: In classroom based learning, we can learn based on the timing of classes. But in e-learning it is faster cycle to learn.

D: How the data are prevented from unauthorized user?
In E-learning, the data stored in the database can have access to authorized users. Unauthorized users cannot access it. Captcha can be helpful to prevent viruses and spammers[17]. It also can be prevented from unauthorized use of data by changing its

original format. In some cases, the data can be downloaded from the internet in E-learning. PDF document provides higher protection than the other, because it is difficult to modify. The best way to prevent the data in E-learning is to prevent the access for the first time. Some pages are encrypted i.e., it contains some password this pages can be protected in E-learning system. This will also be helpful to prevent the tactful data in the E-learning. The users who are authorized can only access the data, so that the information stolen can be limited.

E: How can you secure the data in E-Learning?
Powerful data can be encrypted from low level to high level. The data which is sent and accessed by devices should be encrypted. This can be the precaution to assure the information is safe on all devices.

F: How E-Learning is useful for disabled students?
Some of the multimedia E-learning offers audio, video and animated presentations for increasing the experience and access of information for students[9]. E-Learning is one of the important and useful ways for promoting great access to all learners. To bring the disability students from the outer edge of education staffs need to know the better understanding and new skills of E-Learning.

G: What is the ratio of Students involved in E-Learning when compared to Traditional Learning?
A real time example is taken to explain this question. The Government of Gujarat [8] had undergone in the analysis of students in the school. They implemented E-Learning in 15,493 government schools. It is found that around 80.73 % of students are enjoying while learning using E-Learning. This analysis also provides extra information that E-Learning is run through 5 workstation for each PC so that the power consumption is reduced.

PROPOSED WORK AND SUGGESTION

The necessary and importance of E-Learning is increasing in all the fields, here we focused only on the Educational Sector. Thus there are many papers about E-Learning in educational Sector, here only 102 papers are reviewed and the result is that no paper gives the clear focus in educational sector. It just gives only the overview, in 102 papers around 57 are survey papers and only 9 papers are implemented. It is just a review about E-Learning in education sector and does not say anything new. It is based on the analysis to give the idea of past papers in E-Learning. Thus the implemented papers are not that much effective that is needed in today's trend. E-Learning has to be developed more in schools and colleges as only some of the institution follows this trend. Technology is now becoming more advanced and trends go beyond the visuals. The usage of mobile phone is more when compared to laptop and personal computer because it is hand held. We are suggesting to create an application for E-Learning in mobiles where the learners can login to their accounts and access the resources easily. It is recommended to implement all over world to improve the knowledge of learners.

CONCLUSION

As technology improves everyday new developments are constantly infiltrating our life's. The research in E-Learning is an ongoing process and the requirement of online learners change every day. E-Learning differs from other learning methods in terms of mobility. Summarizing our observation about E-Learning, we find that most of the survey determines only the method and model. Since our survey is based on the published papers in the period of 2010-2014, we have not attempted to analysis the quality of the suggested methodologies.

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