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Greetings Dear readers of TOJDE,

TOJDE is appeared on your screen now as Volume 12, Number: 3. In this issue it is published 5 notes for Editor, 16 articles, 2 book reviews. And this time, 34 authors from 10 different countries are placed. These published articles are from Bangladesh, Ghana, India, Iran, Malaysia, Nigeria, Pakistan, Saudi Arabia, Turkey and USA.

The first Notes for editor arrived from USA, written by Kevin YEE and Jace HARGIS. They focused on Web site does not offer a way on its main page to restrict searches only to Creative Commons licenses. They mentioned that while Google Images does many functions extremely well, this search Web site does not offer a way on its main page to restrict searches only to Creative Commons licenses. There is a setting on the Advanced Search page for “reuse” licenses (not precisely the same concept as Creative Commons), provided users remember to check this before performing any search. Before restricting the setting, a search for the term “tiger” yielded 48 million results. After restricting Google Images just to “reuse” results, only 14,000 webpages were identified for the term “tiger”.

The second notes for editor is titled as “Self-Efficacy Beliefs, Achievement Motivation and Gender as Related to Educational Software Development” which is written by Alev ATES from Ege University, Faculty of Education, Computer Education and Instructional Technologies Department, Bornova, Izmir, TURKEY. The aims of her to investigate preservice computer teachers’ self-efficacy beliefs and achievement motivation levels for educational software development before and after the “Educational Software Design, Development and Evaluation (ESDDE)” course.

“The Effects of The Interactive White Board Usage On The Students’ Learning Level And An Application in The Financial Markets Courses” is the third paper for “Notes for Editor” section of TOJDE’s in this issue. It has written by Yasemin ERTAN, Elif YUCEL, Esen KARA and Lale KARABIYIK, Uludag University, Bursa, TURKEY. In this paper they intended that The effect of intense and fast lifestyle emerged from globalization has also an influence on education.

The fourth notes for editor written by Hamid R. KARGOZARI and Hamed GHAEMI from Islamic Azad University, IRAN on “Web-Based Writing Instruction And Enhancing Efl Learners’ Writing Quality”. The purpose of the present study is to determine whether Web-based Writing Instruction (WBWI) has any influence on the writing quality of Iranian EFL learners.

The fifth and the last notes for editor is again from Pakistan, on “Evaluation of New Primary Teachers Orientation Course Project Launched Through Allama Iqbal Open University”, written by Syed Manzoor H. SHAH, Naveed SULTANA and Rehana MASROOR from Allama Iqbal Open university, Islamabad, PAKISTAN. Their study is based on the documentary analysis. All the existing record of the project including different reports, documents etc. were consulted for the purpose. It was concluded that the project achieved its trainee teacher’s targets up to 70% and training of tutors and senior tutors up to 100%. There were some problems and challenges in its implementation including; late release of funds, shifting of targets to next semester and its non continuation by the AIOU.
The first article is from NIGERIA, on “Globalization, Information And Communication Technologies (Icts) And Open/Distance Learning In Nigeria: Trends, Issues and Solution” written by Akande Joshua OLUSOLA and Sofowora Olaniyi ALABA from Obafemi Awolowo University. The paper identifies a number of issues that impede the effective optimization of ICTs in open and distance learning in developing countries. Prominent among the issues highlighted are poverty, intermittent supply of electricity and language barrier. The paper argues that these problems are to be tackled if the objective of enhancing the potentials of ICTs in open and distance learning in developing countries were to be achieved.

The Second article is on “Student Experience In Blog Use For Supplementary Purposes In Courses”, written by Adile Askim KURT, Serkan IZMIRLI from Anadolu University, Eskisehir and Ozden SAHIN-IZMIRLI from Eskisehir Osmangazi University, Eskisehir, TURKEY. The purpose of this study is to determine the views of students about blog use for supplementary purposes in courses.

The third articles are from, MALAYSIA. The third one is on “Pre-Service Teachers’ Training In Information Communication And Technology For The Esl Classrooms in Malaysia”, conducted by Chan Yuen FOOK, Gurnam Kaur SIDHU, Nursyaidatul KAMAR Md. Shah and Norazah Abdul AZIZ, Faculty of Education, Universiti Teknologi mara Malaysia. In their paper they mentioned that to investigate the ESL pre-service teachers’ attitudes, competency and preparation in integrating ICT in their teaching and learning activities. These pre-service teachers, who had undergone 12 weeks of practicum teaching in secondary schools, were given a set of questionnaire and the data gathered from the questionnaires were statistically analyzed.

The 4th article arrived from SAUDI ARABIA which is prepared on “Best Practices In Online Education: Online Instructors, Courses, And Administrators” Written by Ziad D. BAGHDADI. This paper describes the roles of teachers and administrators in online learning, and discusses the rules of best practices for both.

The fifth article again from MALAYSIA which is entitled as ”Users’ Behavior Towards Ubiquitous M-Learning” written by Norazah Mohd SUKI and Norbayah Mohd SUKI. This study focused on beneficial for leaning institutions which desire to use M-learning.

The sixth article from TURKEY on “The Use of Mobile Technologies In Multimedia-Supported Learning Environments” written by Suzan DUYGU ERIŞTİ, Halil Ibrahim HASESKİ, Betül ULUUYSAL and Ferit KARAKOYUN from Anadolu University, Faculty of Education. The aim of the study is to reveal the students’ opinions about the use of PDAs (Personal Digital Assistant) in learning environment within the context of multimedia based applications.

The seventh one is again from NIGERIA. On “Survey of Barriers Affecting The Use of Information Communication Technologies (Icts) Among Distance Learners: A Case Study of Nigeria” written by Christine I. OFULUE, National Open University of Nigeria, Lagos, NIGERIA. Her paper has aimed to seek and to identify these barriers and consequently, strategies to overcome them within the Nigerian context. Subjects of the research are OD learners in three selected distance learning institutions in Nigeria.

The eighth article is come from INDIA. Titled article is on “Re-Searching Secondary Teacher Trainees In Distance Education And Face-To-Face Mode: Study of Their Background Variables, Personal Characteristics and Academic Performance", written by Mamta GARG and Sudesh GAKHAR from Department of Education, Panjab University, Chandigarh, INDIA.
The purpose of this study was to conduct to describe and compare the background variables, personal characteristics and academic performance of secondary teacher trainees in distance education and face-to-face mode. The results indicated that teacher trainees in distance education differed from their counterparts in age, marital status, sex and socio-economic status.

The 9th article is arrived to us from BANGLADESH and written by Sabiha SULTANA, Tasrun JAHAN and Sharker Md. NUMAN from Bangladesh Open University, Gazipur, BANGLADESH on A Study Of Learners Perception And Attitude Towards Ba/Bss Program of SSHL of Bangladesh Open University. This paper focuses of this paper is to find out learners’ views and attitude towards BA/BSS program at BOU. In this study, 187 respondents were randomly selected from 15 tutorial centers of 2 Regional Resource centers (RRCs) of BOU.

The article is which numbered as 10, again from INDIA. Article is entitled as “Planning The Networking of ODL Institutions For Establishing Integrated Distance Education System In India”, written by Pankaj KHANNA and P. C. BASAK from Indira Gandhi National Open University (IGNOU), INDIA. Their paper attempts to establish connectivity between the ODL institutions would be achieved through the use of VPN (Virtual Private Network) involving wireless networking and optical networking. Various benefits of providing VPN connectivity to the ODL institutions in India, such as cost effectiveness, security, and shared applications/services have also been discussed.

11th article is on “Cooperative Learning Environment With The Web 2.0 Tool E-Portfolios”, written by Soh OR KAN, from Universiti Tunku Abdul Rahman Perak, MALAYSIA. This study main focuses are directed on developing a cooperative learning environment to promote an active learning environment of smart schools in Malaysia. Within this learning process, multimedia technology and Web 2.0 tools, namely, MyPortfolio were integrated to provide the students to learn on their own as well as to document their progress and experience within this cooperative learning environment. The core purpose of this study is to establish the impact on student learning, their perceptions and learning experiences of the cooperative learning environment using web 2.0 tools among the smart secondary schools students in Malaysia. Surveys were conducted to students to ascertain their reaction towards these learning environment activities.

Next article is 12. This article entitle as “Student Preferences And Experiences In Online Thesis Advising: A Case Study of Universitas Terbuka” from MALAYSIA, written by Suciati, Universitas Terbuka Indonesia, Indonesia Open University, MALAYSIA. This study explored student perceptions of the thesis advising process and the use of online communication through the internet for thesis submission, correction and feedback. The study also tries to explain various factors influencing student perceptions and tendencies in completing their theses, such as advisor’s attitude and student readiness to embark on thesis writing.

The 13th Article based on “Understanding Older Adult Learners in Distance Education: The Case of Universiti Sains Malaysia”, written by Nailul Morad MOHD NOR, from School of Distance Education Universiti Sains Malaysia, Penang, MALAYSIA. The objectives of this study were to identify factors related to older adult learners’ participation in the distance education degree programs and their characteristics. Data were collected by using interviews and questionnaires. The findings indicated that older adult learners’ participation in the distance education degree programs is mainly due to career advancement and to seek knowledge.
The fourteenth article is from GHANA. Titled as "Door Of Hope Or Despair: Students’ Perception of Distance Education At University of Ghana" and written by M. Oteng-Ababio, from University of Ghana, Legon, GHANA. The study recommends the implementation of electronic mediated services as one of the main ways of making the objectives of DE a reality.

The fifteenth article on "Integrating Internet Protocol Television (IPTV) In Distance Education: A Constructivist Framework for Social Networking", written by T. Volkan YUZER and Gulsun KURUBACAK, from Open Education Faculty, Anadolu University Eskisehir, TURKEY. In this study, the design strategies and principles of how to build social networking based on constructivist learning theory are discussed in order to generate a theoretical framework that provides everyday examples and experiences for IPTV in distance education.

The sixteenth is on “Emergence Of Virtual Communities As Means Of Communication: A Case Study On Virtual Health Care Communities” written by Mehpare TOKAY ARGAN, Metin ARGAN from Anadolu University and Idil K. SUHER from Bahcesehir University, TURKEY. This paper provides an overview and discussion of virtual communities in health care.

Two books are reviewed in this issue the first one reviewed by Yasin OZARSLAN from Osmangazi Eskisehir, TURKEY. The book titled as "Augmented Reality The Horizon Of Virtual And Augmented Reality: The Reality of the Global Digital Age", edited by Soha Maad. In this review indicated that this book collects the case studies of AR and VR technologies and applications, new techniques, theory and standards. This book gives information about potential, a continued strength, and penetration of AR and VR technologies in various application domains.

Second review is reviewed by R.Ayhan YILMAZ, Anadolu University, Eskisehir, TURKEY on Marketing Online Education Programs Frameworks For Promotion And Communication, edited by me and my colleague Serdar SEVER. Topics of the book is cover on building corporate identity for educational institutions, cultural and regional issues in educational product development, defining the role of online education in today’s world, individualization of open educational services, integrated marketing communications, measuring the impact of educational promotions, new customers and new demands, open and Distance education, reputation issues in online education and sustainable communication before, during and after enrollment.

Dear readers, you can reach us online either directly at http://tojde.anadolu.edu.tr or by visiting Anadolu University homepage at http://www.anadolu.edu.tr from English version, clicking on Scientific Research button and than goes to the Referred Journals. To receive further information and to send your recommendations and remarks, or to submit articles for consideration, please contact TOJDE Secretariat at the below address or e-mail us to tojde@anadolu.edu.tr

Hope to stay in touch and meeting in our next Issue, 1st of October 2011

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OPEN-SOURCE AND ROYALTY-FREE IMAGES
FOR INSTRUCTION:
Compfight and Wylio

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As student audiences become ever more sophisticated, they yearn for increasing amounts of visual stimulation alongside the traditional text-based approach of content delivery. The first step in a sequence of learning and memory events is for the learner to attend to a viable stimulus (Gagne, 1973; Keele, 1973; & Bransford, 1979). Following successful attention to viable stimuli, the Information Processing Theory (Atkinson & Shiffrin, 1971) holds that the learner relates new knowledge to existing information in the short term memory.

If the information is determined to be of subsequent value, the learner transfers the information into the long-term memory, where knowledge is permanently stored. Following this logic, it seems apparent that significant effort should be expended to make sure that the first step -viable stimuli- is provided to the viewer. Students already want stimulation to be ever more visual in nature, and if the predictions of Martin Van der Werf and Grant Sabatier (2009) come true, students in the near future will expect an educational menu from which they can select, assemble, and remix their academic brew of choice; a choice, one assumes, to be guided at least partly by the visual attractiveness of the material.

At a minimum, teachers and college instructors should consider becoming versed in embedding imagery into their digital texts and presentations, ranging from HTML-based modules to PowerPoint presentations used directly in class.

Many educators search Google Images by default to locate pictures for such purposes, but it is not clear that even such educational uses are protected under the Fair Use doctrine in the United States and many other countries’ copyright law. To be safe, we should be using images that have been uploaded and shared under the Creative Commons license. Such works have been deemed by their creators as explicitly safe from copyright issues to use in educational contexts, provided that certain conventions are followed. Typically, these conventions include citing the creator’s name or username, the name of the Creative Commons license, and sometimes providing a link back to the web-link where the work was originally uploaded (Creative Commons, 2010). Thus, a typical Creative Commons attribution might read like this: “Image from flickr user_ucumari_, shared under the Creative Commons license.” The attribution might come as a visible caption to an image, or as ALT text if displayed on an HTML page.
While Google Images does many functions extremely well, this search Web site does not offer a way on its main page to restrict searches only to Creative Commons licenses. There is a setting on the Advanced Search page for “reuse” licenses (not precisely the same concept as Creative Commons), provided users remember to check this before performing any search. Before restricting the setting, a search for the term “tiger” yielded 48 million results. After restricting Google Images just to “reuse” results, only 14,000 webpages were identified for the term “tiger”.

Relatively new web sites such as www.compfight.com and www.wylio.com make the searching of Creative Commons images simpler. However, the trade-off is that both search only the smaller archives of flickr.com images rather than the larger Google database. Still, a Creative Commons search for “tiger” at compfight.com generated 52,000 results, easily surpassing the “safe for reuse” results at Google Images. Compfight.com is ideal for users seeking to download images for use in educational slideshows provided to or shown in class. At times, the quality may be lower in resolution than we would find ideal. However, as educators, we may need to focus on the priority of merely using the graphic as a visual reinforcement, regardless of quality, and ensure that the visual increases the opportunity for attention.

Wyl.io.com performs much the same service as compfight.com, but with one additional component in the form of packaging the results for HTML pages. Using the same search term, wyl.io.com finds 55,000 results for “tiger” in the flickr database--a number that should be, but for some reason is not, identical to the compfight.com results. Wyl.io.com requires a one-time free registration and login for each user. Once signed in, users can click the search results to open a window for configuring the image. It can be centered, aligned to one side or the other (with text wrapping on it), or the size can be adjusted. When finished, users click the button labeled “Get the Code” at the top, and a textbox opens with a pre-made embed code that can be dropped without any editing into an HTML page or document.

This code takes care of not only aligning and adjusting the image, but more importantly, also creating the caption and providing the attribution links as required by the Creative Commons license. To download the images, users must upgrade to the paid Pro account, but this will be unnecessary for HTML pages that can simply link to the existing image hosted on flickr.

This approach renders the entire process of image acquisition simple for the user, so they can focus on the content.

Most importantly, these sites offer the educator the ability to enhance the visual identity of their presentations significantly, and does so within the copyright law of most countries.

REFERENCES


Creative Commons (2010). Definition of license and use retrieved on June 12, 2010 from http://creativecommons.org.


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Dr. Kevin YEE has published extensively in the field of faculty development and his disciplinary research field of German Literature. His present position is Assistant Director of the Faculty Center for Teaching and Learning at the University of Central Florida. His undergraduate and graduate degrees are in German Literature, and he has worked in faculty development since 2004.

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SELF-EFFICACY BELIEFS, ACHIEVEMENT MOTIVATION AND GENDER AS RELATED TO EDUCATIONAL SOFTWARE DEVELOPMENT

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ABSTRACT

This study aims to investigate preservice computer teachers’ self-efficacy beliefs and achievement motivation levels for educational software development before and after the “Educational Software Design, Development and Evaluation (ESDDE)” course. A pretest and post test design without a control group was employed. In 2008, 46 senior students (25 male and 21 female) who were enrolled at Computer Education and Instructional Technology department participated in this study.

The data were collected by the scale of self-efficacy beliefs towards Educational Software Development (ESD), achievement motivation scale besides student demographics form. Positively, the results revealed that the students’ self efficacy beliefs towards educational software development significantly improved after ESDDE course. Before the course, the students’ self-efficacy beliefs were significantly different according to perceived level of programming competency and gender in favor of male, however after the course there was no significant difference in self-efficacy beliefs regarding gender and perceived level of programming competency. Hence, achievement motivation levels after the course were significantly higher than before while gender and perceived level of programming competency had no significant effect on achievement motivation for ESD. The study is considered to contribute studies investigating gender and computer related self efficacy beliefs in IT education.

Keywords: Educational software development; multi-media software development; gender; IT education; self-efficacy; achievement motivation.

INTRODUCTION

The concepts “motivation” and “self efficacy” are considered as among the factors which have a great impact on teaching and learning processes. As Hastings (1997) implied motivation is a key factor for successful teaching as well as learning. Marshall (1998) defined achievement motivation as “the need to perform well or the striving for success, and evidenced by persistence and effort in the face of difficulties, achievement motivation is regarded as a central human motivation”.

It is a reason for why some students study voluntarily while others do not and why some of them make efforts to improve themselves and others do not (Çakmak & Ercan, 2006). The relations among motivation and other psychological and educational variables such as self-esteem, exam anxiety, achievement, efficacy belief and attribution styles are under investigation in many studies as Bozanoglu (2004) cited.
Borich (2007) addressed that cognitive psychologists have proposed three distinct yet overlapping theories of academic motivation which are attribution theory, self-efficacy theory and goal theory. Among these, self-efficacy theory holds academic motivation hinges on learners’ beliefs that they can succeed at school tasks.

People’s beliefs about their capabilities are considered to have a central role among the mechanisms of personal agency to control over events that affect their lives (Bandura, 1989).

Perceived self-efficacy is defined by Bandura (1994), the originator of self-efficacy theory, as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives”. Self-efficacy beliefs determine how people feel, think, behave and function as an important set of proximal determinants of human affect and action.

As cited by Ortaçtepe (2006), Bandura noted that people’s beliefs in their efficacy influence them in various ways, such as the actions they take, the choices they make, how much effort they put in their struggles, how long they will persist against obstacles and failures, their flexibility for adversity, how much stress and depression they experience in coping with environmental demands, and the level of accomplishments they ultimately achieve. As Bandura and Locke (2003) addressed, individuals’ self efficacy beliefs contribute significantly to the level of their motivation and performance as well. Therefore, self efficacy beliefs need to be investigated as a key determinant in education (Aşkar & Dönmez, 2004; Aşkar & Umay, 2001; Kurbanoğlu, 2003). Highlighting the relations between gender and computer self-efficacy, Vekiri & Chronaki (2008) examined relations between outside school computer experiences, perceived social support for using computers, and self-efficacy and value beliefs about computer learning for 340 Greek elementary school boys and girls. Among their findings, they noted that the boys reported more perceived support from their parents and peers to use computers and more positive computer self-efficacy and value beliefs than girls. Meelissen & Drent (2008) also indicated that female students are likely to have less positive perceptions of their computer competence.

Another study investigating 100 preservice computer teachers’ self-efficacy for educational software development in Turkey, Demirer, Özdinç & Şahin (2009) found that although male students have higher self-efficacy beliefs than female, the difference is insignificant. On the contrary, surveying 605 Turkish pre-service science and mathematics teachers’ computer related self-efficacies, attitudes, and the relationship between these variables, Pamuk & Peker (2009) reported that a participant’s gender was not a significant factor on his/her computer self-efficacy and computer attitude scores (CAS) except for the computer liking sub-scale of the CAS.

In the context of computer teacher education, self-efficacy and gender issues were investigated by İmer & Özkılıç (2009). They examined 296 preservice computer teachers’ educational software self-efficacy beliefs. According to their findings, the students’ self-efficacy beliefs are at moderate level. While, no significant differences were observed in project management and instructional design, graphic design, programming dimensions of educational software development self-efficacies of the preservice computer teachers with respect to gender, a significant difference was found in the dimension of animation and sound-video design. Difference was in favor of male teacher trainees. This study also examines the relations among preservice computer teachers’ gender, self-efficacy and achievement motivation for educational software development.
In order to bring up the need for conducting this study, it is considered that the goals of the computer teacher education program in Turkey should be mentioned. One of the goals of the Computer Education and Instructional Technology (CEIT) departments in Turkish educational faculties is to provide preservice computer teachers skills in developing computer and/or Web based instructional materials and educational software. Demirer et al. (2009) defined self efficacy beliefs for educational software development as the individuals’ self confidence levels and personal judgments about educational software development process. To prepare educationally effective software, preservice computer teachers need to be well equipped with both pedagogical and technical knowledge. In order to help achieving this goal, it is considered that investigating their self efficacy beliefs and achievements motivation levels before and after training can contribute development of CEIT programs.

PURPOSE OF THE STUDY

This paper aims to investigate self-efficacy beliefs of students towards educational software development and their achievement motivation levels for the “Educational Software Design, Development and Evaluation (ESDDE)” course before and after the course. ESDDE is one of the eighth semester course of Computer Education and Instructional Technologies (CEIT) program at faculty of education. The key research inquiries are:

- What are the levels of self-efficacy beliefs towards educational software development before and after ESDDE course considering following dimensions?
- Project management and instructional design,
- Animation and sound-video design,
- Graphics design,
- Programming
- Is there any significant difference between students’ self-efficacy beliefs towards educational software development before and after ESDDE course?
- Is there any significant difference between students’ self-efficacy beliefs towards educational software development before and after ESDDE course regarding gender?
- Is there any significant difference between students’ self-efficacy beliefs towards educational software development before and after ESDDE course regarding their perceived level of programming competency?
- Is there any significant difference between students’ achievement motivation levels for educational software development before and after ESDDE course?
- Is there any significant difference between students’ achievement motivation levels for educational software development before and after ESDDE course regarding gender?
- Is there any significant difference between students’ achievement motivation levels for educational software development before and after ESDDE course regarding their perceived level of programming competency?

METHOD

Research design of this study is one-group Pre-Test/Post-Test Design. The study was limited with one sample without a control group; therefore the findings obtained cannot generalize to a broader population.
Delimitations for this study include the use of a purposive sample of preservice computer teachers enrolled in one CEIT program in Turkey. However, by filling a gap in this era, the study is considered to provide valuable contributions for investigating self efficacy beliefs for educational software development and achievement motivation level of preservice IT teachers before and after the ESDDE course.

Participants
The sample of the study is of 46 senior students (25 male and 21 female) at Computer Education and Instructional Technologies department of faculty of education at Ege University, Izmir, Turkey. Demographic data of the participants are summarized in Table: 1.

Table: 1
Demographics of the sample

<table>
<thead>
<tr>
<th>Demographics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>54.3</td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>45.7</td>
</tr>
<tr>
<td>Type of high school they graduated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Computer Science intensive vocational</td>
<td>17</td>
<td>37.0</td>
</tr>
<tr>
<td>- Anatolian/Science Intensive English</td>
<td>4</td>
<td>8.7</td>
</tr>
<tr>
<td>Their perceived level of programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Very low</td>
<td>2</td>
<td>4.3</td>
</tr>
<tr>
<td>- Low</td>
<td>2</td>
<td>4.3</td>
</tr>
<tr>
<td>- Moderate</td>
<td>21</td>
<td>45.7</td>
</tr>
<tr>
<td>- Good</td>
<td>16</td>
<td>34.8</td>
</tr>
<tr>
<td>- Very good</td>
<td>5</td>
<td>10.9</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

Content of the “Educational Software Design, Development and Evaluation” (ESDDE) course
ESDDE was one of the eighth semester courses of the Computer Education and Instructional Technologies Program which aims the students excel at computer teaching and become well-equipped instructional technologists. However, with the new program for educational faculties, this course is excluded. In ESDDE course in this study, the students are asked to follow the educational software development process in a defined schedule including 14 weeks as follows:

- Choosing a partner student (or may study individually) and selecting a course topic from the list given,
- Making interviews with a subject expert and a group of target level of students, and report what their teaching and learning needs are (Needs Assessment),
- Preparing the educational goals of their software and review them after lecturer's feedback,
- Examining and criticizing available educational software programs that prepared for same topics of theirs with the lecturer,
- Reviewing principles and suggestions for educational material design (interface design, usability issues. etc.)
- Starting to design the interface elements of the software and review them after lecturer’s feedback,
Getting help from experts about resources and forming content of the software,
Making audio and other visuals such as video, graphics, animations or simulations, (the students are required to use multi-media options for the content)
Integrating all components of the educational software through guidance of the lecturer,
Debugging and finalizing the software,
Piloting the software in a target group of students and get feedback from students and their teachers as well.
Reporting feedback for the software and make suggested changes in the program,
Exhibiting software to his/her peers, lecturers and other people who are interested.

For developing software, Adobe Flash program is suggested since they studied with Flash in previous term. Barretto, Piazzalunga, Ribeiro, Dalla and Filho (2003) implied that Flash has a user-friendly and comprehensive online tutorial with plenty of examples and explanations available.

Flash enables users to create attractive animations, to apply several visual effects, and to make use of MP3 audio format, which adds to sound quality and reduced file size and has many advantages such as generating vectorized images and vectorizing images imported from other software. As Flash has limited possibilities of programming, there is a reduced potential for promoting interactivity between user and software.

Data Collection
Two data collection tools are made use of in this study which is as follows:

Personal information form: This form includes eight questions regarding gender, type of high school they graduated, their perceived level of programming competency, difficulties they face during educational software development and their possible reasons for these difficulties.
Scale of self-efficacy beliefs towards Educational Software Development (ESD): This scale was developed by Aşkar & Dönmez (2004), including 22 items for assessing the level of their self-confidence in their competency at the given task about educational software development process ranging from 0 (no confidence) to 100 (full confidence). The final version of the scale was administered to 283 junior and senior students studying at Computer Education and Instructional Technologies departments of Hacettepe, Ankara, Orta Doğu Teknik and Gazi University in Turkey. Principal components factor analysis rotated to varimax rotation was used for the purpose of obtaining evidence for validity estimates, yielded four factors, namely,

- Project management and instructional design,
- Animation and sound-video design,
- Graphics design,
- Programming.

The estimated reliability of the scale scores by using Cronbach’s was .92 (Askar & Dönmez, 2004). The maximum score for the scale was 2200 while the minimum was 0. Scale of achievement motivation.
This scale was developed by Umay (2002) and conducted to total 229 students who started the program recently every year since 1998 and scale was readministered to the first group completed the program at 2002. The scale includes two sections; the first section aims to reveal the student’s perception of achievement, definition of achievement and the factors effecting his/her achievement motivation. This section includes 7 items and scored as 0/1 (Bernoulli experiment) (Umay, 2002).

The second section which includes 14 items is three point Likert type for assessing the level of achievement motivation according to several learning theories. Considering the second section, the reliability of the scale scores by using Cronbach’s was .75. Since achievement motivation is not regarded as constant, coefficient of the scale is found to be relatively high (Umay, 2002).

Data Analysis
The data were analyzed by a statistical packaging program using descriptive statistics, t-Test and ANOVA.

FINDINGS

Self-Efficacy Beliefs Towards Educational Software Development Before And After ESDDE Course

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Before ESDDE</th>
<th>After ESDDE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Project management</td>
<td>385</td>
<td>960</td>
</tr>
<tr>
<td>Animation and sound-video design</td>
<td>210</td>
<td>600</td>
</tr>
<tr>
<td>Graphics design</td>
<td>65</td>
<td>300</td>
</tr>
<tr>
<td>Programming</td>
<td>0</td>
<td>300</td>
</tr>
</tbody>
</table>

It was clear from the findings presented in Table: 2 that the students’ self efficacy beliefs towards educational software development improved after ESDDE course in each dimension (project management, animation and sound-video design, graphics design and programming). And these improvements were found to be statistically significant (p=0.000) as presented in Table: 3.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>X</th>
<th>SD</th>
<th>dF</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before ESDDE</td>
<td>46</td>
<td>157</td>
<td>264.84</td>
<td>45</td>
<td>40.35</td>
<td>0.000**</td>
</tr>
<tr>
<td>After ESDDE</td>
<td>46</td>
<td>186</td>
<td>195.21</td>
<td>45</td>
<td>64.83</td>
<td>**(p&lt;0.001)</td>
</tr>
</tbody>
</table>
Table: 3 showed that the difference between educational software development self efficacy beliefs before and after ESDDE course was significant at p=0.001 level (t(45)=40.35, p<.001).

<table>
<thead>
<tr>
<th>Table: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>t-Test results for ESD self-efficacy beliefs regarding gender</strong></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Before ESDDE</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>After ESDDE</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* (p<0.05)

Table: 4 revealed that male students’ self-efficacy beliefs towards educational software development were significantly higher than the female before ESDDE course. However, after the course, the difference was insignificant.

Table: 5 presented that the students’ self-efficacy beliefs before ESDDE course were significantly different from each other according to their perceived level of programming competency.

Nevertheless, the differences in their self-efficacy beliefs after ESDDE course were insignificant according to their perceived level of programming competency. Achievement motivation levels for educational software development before and after ESDDE course in the first part of the Achievement Motivation Scale, Umay (2002) described a series of statements representing achievement motivation level.

In Table 6, expected responses from students with high level of achievement motivation and their distribution for the participants before and after the ESDDE course was presented. It is clear from Table: 6 that students’ achievement motivation levels were generally increased after ESDDE course.
Table: 6
Distribution of expected responses of students with high achievement motivation level

<table>
<thead>
<tr>
<th>Expected responses of students</th>
<th>Before ESDDE</th>
<th>After ESDDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>with high achievement motivation</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>I feel that I can succeed in developing educational software</td>
<td>36</td>
<td>78.3</td>
</tr>
<tr>
<td>I think success is to surpass oneself</td>
<td>39</td>
<td>84.8</td>
</tr>
<tr>
<td>I think effort and working are keys for success</td>
<td>30</td>
<td>65.2</td>
</tr>
<tr>
<td>I mostly study to learn something new or to develop myself for a course</td>
<td>31</td>
<td>67.4</td>
</tr>
<tr>
<td>I want to be successful for myself</td>
<td>41</td>
<td>89.1</td>
</tr>
<tr>
<td>I plan on short-term learning goals when studying with computers e.g. designing two buttons in an hour</td>
<td>12</td>
<td>26.1</td>
</tr>
<tr>
<td>I struggle to get the highest score that I expect to get.</td>
<td>28</td>
<td>60.9</td>
</tr>
</tbody>
</table>

Table: 7
One sample t-Test results for ESD achievement motivation levels

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>SD</th>
<th>dF</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before ESDDE</td>
<td>4</td>
<td>3.1</td>
<td>45</td>
<td>71.42</td>
<td>0.000**</td>
</tr>
<tr>
<td>After ESDDE</td>
<td>6</td>
<td>3.4</td>
<td>45</td>
<td>67.94</td>
<td></td>
</tr>
</tbody>
</table>

** (p<0.001)

Table: 7 showed that the difference between educational software development achievement motivation before and after ESDDE course was significant at p=0.001 level in favor of after ESDDE scores (t(45)=71.42, p<.001).

Table: 8
t-Test results for ESD achievement motivation regarding gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before ESDDE</td>
<td>Female</td>
<td>21</td>
<td>2.79</td>
<td>1.425</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>25</td>
<td>3.47</td>
<td></td>
</tr>
<tr>
<td>After ESDDE</td>
<td>Female</td>
<td>21</td>
<td>3.38</td>
<td>0.485</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>25</td>
<td>3.57</td>
<td></td>
</tr>
</tbody>
</table>

(p<0.05)

Table 8 revealed that female students’ achievement motivation towards educational software development were higher than the male before ESDDE course although that difference is statistically insignificant. After ESDDE course, the male and the female almost showed equal achievement motivation while the female scores were 0.5 point higher than the male. However, this difference is also insignificant.
Table 9
ANOVA results for ESD achievement motivation regarding perceived level of programming competency

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before ESDDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>7.82</td>
<td>4</td>
<td>1.96</td>
<td>0.182</td>
<td>0.946</td>
</tr>
<tr>
<td>Within groups</td>
<td>440.55</td>
<td>41</td>
<td>10.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>448.37</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After ESDDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>31.74</td>
<td>4</td>
<td>7.93</td>
<td>0.651</td>
<td>0.629</td>
</tr>
<tr>
<td>Within groups</td>
<td>499.42</td>
<td>41</td>
<td>12.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>531.15</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(p<0.05)

Table 9 presented that the students’ achievement motivation both before and after ESDDE course were insignificantly different from each other according to their perceived level of programming competency.

DISCUSSION

The results of this study revealed that the students’ self efficacy beliefs towards educational software development significantly improved after ESDDE course in each dimension including project management, animation and sound-video design, graphics design and programming. As it is expected, after the ESDDE course and having prepared educational software by them, the students tend to feel confident in their educational software development skills at every dimension and showed more positive self-efficacy beliefs than before.

This finding is considered to be an indicator of the positive outcomes of the ESDDE course for preservice teachers. When we review the findings related to gender and self efficacy beliefs for educational software development, we came across an interesting finding. Before ESDDE course, male students’ self-efficacy beliefs were significantly higher than the female in consistent with the findings of Aşkar & Dönmez (2004) and Demirer et al. (2009) who found male preservice computer teachers’ self efficacy beliefs were higher than female. However, in this study, after ESDDE course there was no significant difference in self-efficacy beliefs between male and female students. It is considered that at the end of the course, by developing educational software themselves, female students felt more confidence in their abilities for developing educational software.

The findings related to perceived level of programming abilities and self efficacy beliefs for educational software development before and after the course led us to similar results. It seemed that after the course, the students’ perceptions of their programming abilities has no longer significantly effect their self efficacy beliefs towards educational software development. On the other hand, the students’ achievement motivation levels after the course were significantly higher than before. This finding may evidence the positive effects of the ESDDE course on students’ achievement motivation which may also indicate the success of the course activities.
Meanwhile, the variables such as gender and perceived level of programming competency had no significant effect on achievement motivation for educational software development.

**IMPLICATIONS AND CONCLUSION**

The results of this study about self-efficacy beliefs and achievement motivation of preservice computer teachers in educational software development had some conclusions. Studies investigating the relation between gender and computer self-efficacy come up with different findings; while some of them (Aşkar & Dönmez, 2004; Demirer et al., 2009; Meelissen & Drent, 2008; Vekiri & Chronaki, 2008; Whitley, 1997) found that male students had higher self-efficacy beliefs than female, some of them (Pamuk & Peker, 2009) found that no significant difference regarding gender and some of them (İmer & Özkılıç, 2009) found difference only in animation and sound-video design dimension of educational software development according to gender. In this study, preservice computer teachers had significantly different self-efficacy beliefs according to gender before the ESDDE course.

However, the situation was not the same after the course. Regardless of gender, the course activities in this study seemed to have a positive impact on all preservice computer teachers’ self-efficacy beliefs for educational software development. It is clear that making gender related generalizations and prejudgments about computer and/or technology self-efficacy beliefs may be inappropriate since many other factors need to be considered and further investigated in various contexts. As Volman & Eck (2001) implied that the way in which teachers interact with students during ICT related activities contributes implicitly to the impression that boys are inherently better in ICT than girls.

Such impressions may mislead female students about their self-efficacy beliefs for developing such computer based educational materials as supported by Vekiri & Chronaki (2008).

Therefore, educators in ICT field need to avoid making inherent impressions that male students can better and/or easily succeed in ICT related courses than female can do. They must be aware of their possible prejudices against female students with regard to their computer skills.

Similarly, the preservice computer teachers’ perceived level of programming competency was a significant factor in their self-efficacy beliefs before the course while it was not after the course. It is considered that preservice computer teachers perceived programming capabilities as a crucial requirement for educational software development before the ESDDE course.

However, after they developed educational software by themselves, they possibly realized that programming capabilities were less important for educational software development than they thought it was.

In order to develop self-efficacy beliefs and motivation of preservice computer teachers for educational software development, further investigations about the effects of the independent variables such as gender, cognitive engagement, computer self-efficacy beliefs, attitudes towards computers, perceptions and willingness of preservice teachers’ use of technology in instruction as well.
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REFERENCES


THE EFFECTS OF THE INTERACTIVE WHITE BOARD USAGE
ON THE STUDENTS’ LEARNING LEVEL AND AN APPLICATION
IN THE FINANCIAL MARKETS COURSES

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ABSTRACT

The effect of intense and fast lifestyle emerged from globalization has also an influence on education. As the access to the information increases, the information load on the students is increasing gradually as well. The need to give more and new information to the students in a short period of time made new technologies a requirement to be used in education. For this reason, lecturers are searching for new ways that they can teach more efficiently and get benefit from the educational technologies to make students learn more easily.

These tendencies are also observed in the accounting and finance in which the numerical data is intensively used. According to various educational theories, using visual aid as well as audio methods is increasing the efficiency of the education. On the other hand, conventional teaching methods are supported by PowerPoint presentations and the need of internet utilization appears in the finance education due to the importance of accounting and mathematical calculations.

The use of interactive whiteboard technique, that is an educational method providing these opportunities, is quite new.

This study examines how interactive white board technique, that appeals to students both aurally and visually, affects graduate students’ learning in “Financial Markets Course” by using pretest-posttest control group model.

Keywords: Interactive White Board, Computer Assisted Education, Multiple Intelligences Theory.
INTRODUCTION

Rapid development of technology has a deep influence on education and science world as well as all sections of society in today's world and also utilization of information and communication technologies have become a necessity (Taşpinar & Gümüş, 2004, p.2). In view of technology use of students as a part of their daily life, classical education that has been in school-teacher-student triangle for thousand years has remained incapable and using new multi-channel alternatives has become a necessity (Oğuz, Oktay, & Ayhan, 2004, p.21).

In the presence of changing society, the only way to provide more effective education is systematically redesigning teaching and learning processes and also mutually using human and technological resources by integrating learning and communication (Reiser, 1987, p.11).

In addition to identifying the necessary changes in accounting education and providing professional skills and knowledge in an accounting course during undergraduate education, Accounting Education Change Commission has been established under American Association of Accountants. The aim of this Commission is to keep the education up to date and commission states that the aim of the lectures nowadays is to teach students how to learn instead of conveying information through conventional methods (Position and Issues Statements of the Accounting Education Change Commission, 1990). Teaching students how to learn requires reaching information from different resources, assessing and using it, and also using technologies like internet. As a result topics are represented more effectively with the help of technology during learning and teaching processes, learning time decreases and teaching becomes more pleasant and comprehensible.

One of the most advanced educational technologies, interactive white board technology is a technology that transmits computer screen to the whiteboard by means of a projector and that enables controlling the computer by only touching the whiteboard with a special pen (Becta, 2003, p.1). Many studies indicate that the interactive white board technology facilitates and increases learning. Hwang et al. (2006) has developed a web-based interactive whiteboard system helping elementary students to solve mathematics problems.

A questionnaire conducted after the lecture has evaluated the students' attitude towards interactive whiteboard. It shows that students are pleased with area of use and ease of use of the interactive whiteboard; they have become eager to solve problems by using interactive whiteboard, and to correct the mistakes that their friends have done on the board. Mechling, Gast, & Krupa (2007) have analysed the effect of interactive whiteboard technology on teaching reading to students with mental disabilities Although none of the students could match the objects and photos with the target words before interactive whiteboard technology, after the application of the technology students have become 85.2% successful in matching objects with the words, 88.9% successful in matching words with the objects. Ekici (2008) evaluates the effect of the interactive whiteboard technology utilization on the success of 6th grade primary students in mathematics through applying interactive whiteboard technology to experimental group and using traditional method of teaching in the control group.

The research results indicate that there is a significant difference between successes prior to teaching and after the teaching in the experimental group and this difference is in favor of the teaching after the technology has been applied.
So, using interactive whiteboard technology is beneficial for mathematics teaching. On the other hand, there is a significant difference between success of the experimental group and the success of the control group after teaching and the significance is in favor of the experimental group. Schmid (2008) in his study analyzes the integration of interactive whiteboard technology to lectures conducted on the doctoral program students taking English course. According to the questionnaire, interactive whiteboard enhances the students’ learning, increases their interest to the course and helps them better understand the course content.

The studies on the utilization of interactive whiteboard technology in education mainly focus on measuring the fact that how students perceive interactive whiteboard technology during lessons. However the number of empirical studies assessing the influence of interactive whiteboard technology on success of the students is relatively few. But to the extend of our knowledge, there are no studies that examine the advantages of interactive whiteboard technology in teaching and the effect of the technology on the success of students in a finance education at the graduate level so far.

This study examines the effects of educational advantages of interactive whiteboard technology on the success of graduate students in the Financial Markets course.

**INTERACTIVE WHITEBOARD TECHNOLOGY**

Nowadays, just chalk and board are not enough to attract attention of the students who are intensely exposed to external stimulus like television and computer. In the presence of a changing society, the only way to provide more effective education is redesigning teaching and learning processes systematically and using human and technological resources mutually by integrating learning and communication (Reiser, 1987, p.11). Thus, well educated individuals as the products of applied modern education system have the ability to represent societies in which they live in an international arena (Ozsoy, 2003, p.24).

**Theories of Learning Supporting the Use of Technology in Education**

The influence of sense organs on learning is indisputably tremendous. The more appealing the teaching to the sense organs, the more effective and permanent the learning is. Several theories of learning assert that technological tools have an influence, which words cannot achieve alone, on directing individuals, focusing their attention, and their capability to analyze and synthesize.

For instance, according to Ausubel, the proponent of the “Teaching via Presentation” strategy, instead of recording the information as is, students relating new knowledge to relevant concepts that they already know achieve meaningful learning and have remembered them for a long time. For this reason teachers should give lots of examples and should use visual stimulus such as graphics, charts, pictures (Akınogluet al., 2007, pp.38,173,174). Visual stimulus are logical networks specifying reason-result relationship between different cases, circumstances and concepts. These visual stimuli that are especially used to achieve aims at cognition, application, analyses and synthesis steps are associated with cognitive phases presented by Bloom (Yalın, 2002, pp.69,72).

Max Wertheimer from Gestalt school of psychology however asserts in his classic “Productive Thinking” that individuals should understand the inner structure of knowledge in order to learn. Visual learning is one of the techniques of learning the inner structure of knowledge (Lawrance, 2007, p.1).
Gagne indicates that the aim of teaching is the development of students’ problem solving skills that is parallel to Wertheimer. According to Gagne, learning depends on configuration of external stimulus with cognitive processes. (Akınoğlu et al., 2007, p.131)

Cognitive theorists further explain learning by means of internal processes. According to cognitive theory, some parts of the environmental stimulus have come to short-term memory via selective perception. Short-term memory is a memory that holds a small amount of information for a short period of time. Considering the capacity of the short-term memory despite all the stimuli competing for attention, attractive stimulus should be presented to ensure that learners focus on the objective (Yalın, 2002, p.83). Long-term memory with a larger capacity on the other hand permanently holds the information in a complex mental organization.

Information stored in the long-term memory can be retrieved more easily and can move into short-term memory by means of visual aids (Miller, Yay, & Bekir, 2008, p.304). Utilization of technology ensures that short-term memory holds the information for a longer time and information is moved into long-term memory. Interactive whiteboard creates multiple learning environments (Erduran & Tataroğlu, 2009, p.19). Thus, interactive whiteboard technology is appropriate for entire class teaching (Bennett & Lockyer, 2008, p.298; Glover, Miller, & Averis, 2001, p.258). The theory of dual coding memory is one of the most important theories on how information is permanently encoded and stored into the memory. According to this theory, information is stored in long-term memory both aurally and visually. Hence, information presented aurally and visually has a higher chance of retrieval (Paivio, 2006, p.3). Studies show that concrete words are rehearsed more likely than abstract words and pictures more than words. Using visual symbols with verbal representations provides multiple paths to retrieve the information from the memory (Yalın, 2002, p.87).

Theory of multiple intelligences emphasizes that individuals come into the learning environment with different intelligence levels. Theory suggests that everyone learns with different reasons, in different ways and with different speed. Using technological tools in education offer greater number of students learn more easily than theory of multiple intelligences in the areas of verbal-linguistical, logical-mathematical and visual-spatial intelligence offers (Akınoğlu et al., 2007, pp.133, 134). Offer

**Utilization of Whiteboard Technology in Education**

Since computers entering into education environment, advances in technology used in classes increase without any slow down. One of these developments is “the interactive whiteboard technology” that becomes more and more prevalent in our country in recent years. Interactive whiteboard technology that enables using white boards just like computers is first produced by Smart Technologies Company in the U.S.A. in 1991 (Shenton & Pagett, 2007, p.129). Interactive whiteboard technology is a technology that moves computer screen to the whiteboard by means of a projector and that enables controlling the computer by only touching the whiteboard with a special pen (Becta, 2003, p.1).

Whiteboard provides ability to intervene in actions performed on the screen immediately by the screen’s interactive touch-sensitive feature. Interactive whiteboard technology makes possible to attach sound clips, videos, and animations to the course material that we already have and it is capable of stressing such as screening, zooming in and out. Particularly, its ability of internet connection makes lessons more attractive and they can be easily remembered (Becta, 2003, p.1).
Interactive white board can be used in place of all traditional and modern class resources such as books, blackboard, overhead projector, maps, pictures, numerical axis, calculators, slides, and video players and it is also a useful presentation tool that enables students to access to the information having been collected for many years and taking up lots of space in bookcases with just one-touch (Becta, 2003, p.1).

Particularly schools in developed countries make large investments on interactive white board technology that is believed to have a positive effect on the success of the students (Slay, Sieborger, & Hodgkinson-Williams, 2008, p. 1322).

Interactive white board technology usage in classes has some favorable results for both students and teachers. For example, interactive white board use increases the attendance of students to courses (Erduran & Tataraoglu, 2009, p.19) (Wall, Kate; Higgins, Steve; Smith, Heather, 2005, p. 864) (Hodge, Sue; Anderson, Bill, 2007, p.277). Students focus their attention and are motivated by means of interactive whiteboard usage (Wall et al., 2005, p.859; Slay et al., 2008, p.1334; Erduran & Tataraoglu, 2009, p.19; (Bennett et al., 2008, p.297; Beauchamp, Gary; Kennewell, Steve, 2008, p.312; Schmid, 2008, p.1558; Mechling et al., 2007, p.1879; Hodge et al., 2007, p.277). It facilitates students’ understanding of ideas and concepts and also strengthens and expedites their learning (Wall et al., 2005, p.857; Wood & Ashfield, 2008, p.94; Schmid, 2008, p.1560).

It enables teaching a specific topic in different ways by the use of different programs. (Wall et al., 2005, p.858). Therefore, it appeals to different learning styles (Ball, 2003, p.6; Schmid, 2008, p.1560). For instance, individuals learning via kinesthetic learning style learn more easily since they are able to move objects, individuals learning through hearing can learn without any difficulties since they participate into in-class discussions, and visual learners learn more easily since they can see the material developed on the screen. Not using materials, which are detrimental and cause infection such as chalk, felt pen, enables teaching in a more hygienic and healthy environment (Becta, 2003, p.2). Courses taught by interactive whiteboard can be saved into computer and augmented as lecture notes.

Consequently, students who do not attend to lessons can follow topics (Becta, 2003, p.2). Interactive white board can also be used in increasing students’ information communication skills, thinking skills, software utilization skills, and general learning skills such as note-taking and note preparation (Hodge et al., 2007, p.278). Interactive white board technology increases students’ interest in searching information on internet and processing information (Hodge et al., 2007, p.278). It allows for using games that can support learning process (Wall et al., 2005, p.858) and makes lessons more entertaining (Wall et al., 2005, p.859; Erduran & Tataraoglu, 2009, p.20). It makes it possible to use and combine a wide variety of multimedia resources such as articles, pictures, videos, websites, and sounds (Levy, 2002). It allows for a student-centered approach and provides an opportunity for participants’ interaction (Geer & Barnes, 2007, p.92).

Interactive white board utilization reduces teachers’ class preparation time since it enables saving lessons and using them again (Bennett, Sue; Lockyer, Yori, 2008, p. 297). It reduces the need to use the board and increase the pace of teaching through facilitating the usage of available material (Wood et al. 2008, p. 89; Ball, 2003, p. 6; Glover et al., 2003, p. 185; Bennett et al., 2008, p.298; Schmid, 2008, p.1561). Teachers look for new ways and methods of teaching that they have already taught and thus their creativity has enhanced (Hodge et al., 2007, p.279; Bennett et al., 2008, p.297).
Moreover, it reduces the instructors’ workload by giving an opportunity to save, to share and to reuse course materials (Wood et al., 2008, p.89; Glove et al., 2003, p.263). It also provides an opportunity for instructors to make effective presentations by combining multimedia resources with the course content (Geer & Barnes, 2007, p.92).

On the other hand, dark classrooms can create negative influence on students during interactive whiteboard utilization (Erduran & Tataroğlu, 2009, p.20).

It can cause technological problems like other technological tools and latency time for calibration (Wall et al., 2005, p. 863; Erduran & Tataroğlu, 2009, p. 20). Furthermore, instructors teaching more rapidly can cause information overload on students (Schmid, 2008, p.1562). Since the entire necessary course materials are given students without difficulty, this can encourage students to be lazy (Schmid, 2008, p. 1563).

LITERATURE SURVEY

The studies on the utilization of interactive whiteboard technology in education mainly focus on measuring the fact that how students or teachers perceive interactive whiteboard technology during lessons. (Glover & Miller, 2001; Levy, 2002; Wall et al, 2005; Hwang et al., 2006; Geer- Barnes, 2007; Schmid, 2008; Slay et al., 2008; Wood & Ashfield, 2008; Lewin et al., 2008; Beauchamp et al., 2008; Elaziz, 2008, Erduran & Tataroğlu, 2009; Bennett et al., 2008). Most of these researches show that interactive whiteboard utilization has favorable result in terms of students and teachers. These studies based on teachers’ and students’ point of view are deficient in the actual effect of interactive white board technology on learning, interaction in class, success and different types of skills (Higgins et al., 2005, p. 213). So, empirical studies should analyze this effect.

Some of the studies evaluate the integration process of interactive whiteboard technology to classrooms. According to Armstrong et al. (2005) integrating interactive whiteboard technology into classes is a more complicated process than building interactive whiteboards and loading the software. Teachers should be educated on using interactive whiteboards and on-the-job training should be provided as well. According to Beauchamp (2004) teachers must be educated since the commencement of the technology usage. However, teachers need time to combine and assimilate topics that they have learnt and their course experiences. Each teacher has different aptitude towards using technology and consequently has different learning style and rate. As the teachers’ self-confidence is increasing, they will prefer using the technology to a greater extend, make students use the technology to a greater extend and therefore self-confidence of the students will rise as well. Hodge and Anderson examine the effect of integration of interactive whiteboard technology to primary schools and they concluded that what is important is how the technology is used not presence of the technology (2007). Successful utilization of the interactive whiteboard technology in class depends on the ability to use it.

Limited number of empirical studies indicates positive results of use of interactive whiteboard technology in class. Akdemir (2009) compare the influence of using interactive whiteboard technology and blackboard in geography courses. The study points out that interactive whiteboard technology increases the success of the students and for this reason it can be preferred over blackboard. Ekici (2008) examines whether interactive whiteboard technology has an influence on the success of the students in the 6th grade of the primary school in mathematics.
To analyze this, experimental group has used interactive whiteboard and control group has learned the course by means of traditional methods. The research results indicate that there is a significant difference between successes prior to teaching and after the teaching in the experimental group and this difference is in favor of the teaching after the technology has been applied. In addition, there is a significant difference between success of the experimental group and the success of the control group after teaching and the significance is in favor of the experimental group. Tataroğlu (2009) analyzes the influence of interactive whiteboard utilization on success of the 10th grade students in mathematics, on the aptitude towards mathematics course, and on their self-sufficiency level. His study shows that there is not any significant difference between successes of the students in classes that the interactive whiteboard is used and success of students in classes where the interactive whiteboard is not used.

Also, there is not any significant difference between control group’s and experimental group’s attitude toward mathematics before the application and there is however a significant difference between control group’s and experimental group’s attitude toward mathematics after the application.

Furthermore, this result is in favor of the experimental group. Moreover, when students between 7 and 11 years of age are educated by interactive whiteboard, there are advantages that are directly related to time of reading, writing, mathematics, and science (Lewin et al., 2008).

The critical factor in this study is the length of time that the students are educated. Beauchamp and Kennewell (2008) have not found a significant difference between the success of the classes in which the interactive whiteboard is used and the success of the classes in which the interactive whiteboard is not used.

RESEARCH METHODOLOGY

The Aim of the Application
This study evaluates the effect of the independent variable, “interactive whiteboard utilization”, on the dependent variable which is “efficiency of personal gains of graduate students throughout the Capital Markets course”

Hypothesis
To find the effect of interactive whiteboard technology on the success of the students after teaching, following hypothesis is developed:

\[ H_0 : \mu = \mu \] There is not any significant difference between experimental group’s and the control group’s success after teaching.
\[ H_1 : \mu \neq \mu \] There is a significant difference between experimental group’s and the control group’s success after teaching.

The Method Used
Of all the actual experimental types, this research applies ‘the model with the pretest and posttest control group’ (Karasar, 2008, p.97). There are two groups formed by unbiased assignment in pretest-posttest control grouped model. One of them is used as an experimental group and the other one is used as a control group. Measurements are done before and after the experiment in both groups. Pretest enables identifying degree of similarities between groups prior to the experiment and correcting posttest results in line with them.

Symbolic view of the model is as follows:
In this model, pretest and posttest measurement results should be used together in order to decide the effect of X. For this purpose:

- Percent increases in the pretest-posttest scores are found for each group and increase in means are compared, or,
- Pretest scores are used as covariate and their covariance with posttest scores is analyzed, or,
- Pretest scores (O_{1,1}, O_{2,1}) are first compared and if there is not any significant difference, then difference between means are tested by only using posttest scores.

**Data Collection**

Of all the non-thesis and thesis graduate students of the Department of Business Administration at the Institute of Social Sciences at Uludag University, the universe of this research is students taking Financial Markets course in the 2009-2010 Academic Year. The sample of this research is formed by 22 students who have attended Capital Markets course and posttest. In this study, experimental group comprises of non-thesis graduate class and control group consists of graduate students with thesis. The number of samples in each group is equal.

**Analysis**

This study contains pretest and posttest prepared as achievement test to measure the academic achievement of the students. Experts verify the validity of the tests. Analyses are conducted at 5% significance level. Pretest and posttest results of the students are entered into the SPSS 17.0 in order to conduct statistical analyses.

Pretest has 36 questions to determine the homogeneity of the experimental group and the control group. Reliability of the achievement test is tested on the 55 graduate students who previously took the Capital Markets course at the Institute of Social Sciences at Uludag University. Measurement tools’ reliability test is conducted by the use of Cronbach α test. As a result of the evaluation, 10 questions reducing the reliability of the test are eliminated. Cronbach α reliability coefficient of the test is found as 0.604. Considering the fact that reliability coefficient between 0.600 and 0.800 is reliable enough, there is no need to eliminate more questions from the test in order to keep the number of the questions at an adequate level.

Kolmogorov-Smirnov test is used to analyze whether test results have normal distribution since the number of observations are more than 30 and the results show that they have normal distribution since asymp. significant value of 0.773 which is larger than 0.05.

Afterwards pretest measurement tool that contains 26 questions is applied to both experimental group and control group. At this point Shapiro-Wilk test is used to examine whether results have normal distribution since the number of observations is less than 30. Significant value of experimental group is 0.384 and the significant value of control group is 0.530. Data follows normal distribution as those values are larger than 0.05.
One-way-ANOVA test is used to determine the homogeneity of the experimental and control group. The result of the one-way-ANOVA test is 0.418 that is a result of the statistical operations conducted through Statistical Analysis package. So, experimental group results are not significantly different from control group since 0.418 is larger than the 0.05 significance level. In other words, they are homogenous. The following table provides means and standard deviations of the experimental and the control group.

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>11</td>
<td>61.27</td>
<td>16.644</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>62.55</td>
<td>18.742</td>
</tr>
</tbody>
</table>

The proof of the homogeneity is the very close means and the standard deviations of the pretest. After determining the homogeneity of the groups, topic, "Stock Exchange Index", is taught via traditional methods to control group and via interactive whiteboard to experimental group and then, 10 question posttest measurement tool conducted on both groups in order to measure the class acquisitions of interactive whiteboard system. Shapiro-Wilk test is used to examine whether results have normal distribution since the number of observations is less than 30. Significant values of the experimental group is 0.613 and significant value of the control group is 0.979. Data follows normal distribution since those values are larger than 0.05.

Afterwards, hypotheses are tested to assess the effect of interactive whiteboard technology on the success of the students subsequent to teaching. Test statistics is calculated at $\alpha = 0.05$ (%95) significance level and the results are evaluated.

The following table provides independent sample t-test results that show whether posttest scores of the experimental group are significantly different from the scores of the control group.

<table>
<thead>
<tr>
<th>Posttest</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp. Group</td>
<td>11</td>
<td>77.27</td>
<td>14.178</td>
<td>-.723</td>
<td>0.404</td>
</tr>
<tr>
<td>Control Group</td>
<td>11</td>
<td>72.55</td>
<td>16.397</td>
<td>-.723</td>
<td>0.404</td>
</tr>
</tbody>
</table>

Table: 2 presents t-test results of the post-test scores of the experimental group students and the control group students. P-value is 0.404 and the H0 is accepted since p-value is larger than 5% (0.05) significance level. Therefore, success of the experimental group after the teaching is not significantly different from the success of the control group subsequent to teaching.

RESULTS

Studies related to interactive whiteboard usage in education are grouped into two. Some of them measures students' and teachers' perception of interactive whiteboard. These studies generally state that interactive whiteboard increases the learning capacity. Relatively small number of empirical studies yields different results.
As a result of this study conducted on the graduate students taking financial markets course, there is not any significant difference between posttest scores of experimental group and control group.

While average success of the group using interactive whiteboard was less than the control group before the experiment, it goes ahead of the control group after the experiment.

Since the mean of the pretest scores of the experimental and control group students are different, experimental application is more effective in increasing the success of the students than the success of the application given to control group.

Nonetheless, few students in the sample could have affected the application results. And also the fact that the scope of the application is limited to one course and the institute has just started to use interactive whiteboard technology could have an influence on the application results. In view of that, future empirical research may improve this research.

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WEB-BASED WRITING INSTRUCTION
AND ENHANCING EFL LEARNERS’ WRITING QUALITY

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ABSTRACT

The purpose of the present study is to determine whether Web-based Writing Instruction (WBWI) has any influence on the writing quality of Iranian EFL learners.

Two groups of EFL learners who were studying English in an English Language Institute participated in the experiment. They were enrolled in an advanced writing course. Before instruction, both groups were pre-tested through writing essays. T-test results illustrated significant differences between two groups in writing ability. The experimental group made too many errors and had many writing problems. Both groups studied the same in-class material, and were given the same assignments and assessment. In addition, the experimental group used an online course, which was provided for them through establishing a so-called website, from home. Experimental students posted their points, wrote short essays and posted stories in the comment section of the so-called website.

They located information in sites like “Yahoo Movies” and “webMD”. They processed their essays and checked their spelling through Microsoft Office Word (2007). At the end of the experiment, both groups were post-tested through writing an essay. ANCOVA results showed considerable differences between two groups. The experimental group made more gains as a result of web-based instruction. They became more proficient, and made few errors.

Keywords: Web-based Writing Instruction; EFL; E-learning; Writing Skill

INTRODUCTION

Although the number of schools and classrooms using technology in general and distance learning in particular is growing, many researchers are concerned with the effect of educational technology on student achievement since the efficient utilization of technology needs momentous investments in hardware, educational software, staff development, and technical support. Evidence that use of technology in instruction is constructive, necessary, and cost-effective is also required. A review of the L1 and L2 writing research on technology and student achievement has shown three paradoxical findings.
Studies by Meem (1992), Batschelet and Woodson (1991), Cifuentes and Hughey (1998), Chambless and Chambless (1994), Hood (1994), Clark (1996), Grejda and Hannafin (1992), and Jannasch-Pennell, DiGangi, Yu, Andrews and Babb (1999) found that use of word-processing, use of a accompanying program that guides students through the writing process, computer conferencing, computer-based instruction, electronic mail, and World Wide Web page design had no significant differences on the writing quality nor attitudes towards writing between L1 elementary, middle school, secondary and college students who used technology and those who did not.

In contrast, studies by Jones (1994), Davis and Mahoney (1999), Beyer (1992), Shaver (1986), and Allen and Thompson (1994) shown that word processing, participation in a project using a personal computer in the classroom to teach the writing process, using the Writing- Aid and Author’s Helper (WANDAH) computer writing system, and using a computer assisted collaborative writing by L1 elementary, high school and college students amplified the quantity of writing instruction and the amount of student writing more than those using conventional instruction. The quality of students’ writing and their attitudes towards writing on the computer enhanced as well. Similarly, Pennington (1993), Sullivan and Pratt (1996), Braine (1997) and Liou (1997) found that the writing skills of ESL students who used word-processing, a computer-mediated networked environment, and web-based materials improved considerably. Amazingly, in some ESL classroom settings, traditional instruction was found to be more successful. For instance, Izzo (1966) found that technical essays written by ESP college students in Japan using computer workstations were not as well organized and were extensively shorter than hand-written essays.

Results of a study with college students in Taiwan found that face to face discussions that preceded writing activities in a traditional classroom were superior to computer-mediated discussions in producing written comments and clarifications of their plans for writing more. Students in the face-to-face group could support and refute each other’s arguments better (Huang, 1998). Given those opposing results about the effect of technology on student achievement in the writing skill, it seems that the effect of technology on learning depends on the learning objectives, varieties of tasks and activities involved, kind of technology used, how long it is used, and how it is used. Therefore, the present study attempted to use a variety of instructional technologies consisting mainly of an online (web-based) course, some WWW resources, e-mail and word processing in EFL writing instruction from home, in combination with traditional writing instruction. The primary focus of this study was to find out whether the incorporation of technology in traditional EFL in-class writing instruction significantly improves the writing skills of EFL learners. The present study attempted to answer the following questions: Is there a significant difference between EFL learners exposed to a combination of traditional in-class writing instruction and web-based instruction and those exposed to traditional in-class writing instruction only in their writing achievement as measured by the posttest?

THE STUDY

Participants
A total of 52 EFL learners, studying advanced writing course in two intact classes, participated in the present study. The study was conducted in Jahan Elm Higher Education Institute, which is one of the most well-known IELTS centers in Iran. One of the classes was considered as Control group and the other one as Experimental group. Students in both groups were all from Iran, and were all native speakers of Farsi. Their age range was 18-21.
The participants of both classes had passed two writing courses, i.e. Basic and Intermediate Writing Courses, before entering the advanced course. Therefore, all of them were to a great extent in the same level of writing proficiency.

**Instruction**

The same traditional in-class writing instruction was applied on the experimental and control groups. They studied the same writing textbook assigned by the institute which is “Interactions I: A Writing Process Skills Book, by Segal and Pavlik. The aim of the book is to develop the students’ ability to write an academic essay that has an Introduction paragraph along with at least three Body paragraphs and one conclusion paragraph. The book consists of 12 chapters. Each chapter was completed over one week, i.e. three class sessions per week, and the book was covered over 10 weeks.

Each week, students in both groups completed all the skills, exercises and writing tasks in the chapter and wrote two essays per week. Students were always required to do all the exercises and at least write part of their essay in class and rewrite them when necessary. While doing the exercises and writing the essays, students’ work was scrutinized and individual aid was provided. The students received communicative feedback focusing on meaning. Feedback was provided on the presence and location of errors but no correct forms were provided. Self-editing and peer-editing were encouraged.

For assessment, students in both groups were tested every other week. They were given a total of 5 quizzes. On quizzes 1 and 3 the students wrote an essay and on quizzes 2, 4, and 5, they completed different tasks similar to those covered in the book. Quizzes were always graded, returned to the students with comments on strengths and weaknesses.

**Treatment**

In addition to the traditional in-class writing classroom instruction, the experimental group used an online (web-based) course provided for them via a so-called website that the author developed. Prior to the web-based instruction, students’ computer literacy skills were assessed by a questionnaire. The purpose of IT questionnaire (Adapted from [www.staff.bath.ac.uk/pssrj/IRN/LTSN%20questionnaire%20(Gre).doc](http://www.staff.bath.ac.uk/pssrj/IRN/LTSN%20questionnaire%20(Gre).doc) Greenwich University Website available at: ), including 58 items, was to distinguish between IT literate participants and those with no or low level of IT literacy.

Course components were explained and introduced once. Instructions on how to use them were also posted in the “For Students” area of the so-called website. Sites were added in the “External Links” according to the specific writing skills and grammatical structures under study in the classroom. Web-based instruction was started by the author posting an Announcement note in the “For Students”, by starting a point on the “Discussion Board” and by sending e-card to the group. He continued to do so occasionally throughout the semester.

The students responded by similar points, e-cards and group messages. Then, they started to post their own points on the “Discussion Board” on a topic they have studied in the book or any topic of their choice. They responded to the instructor’s or another student’s point. They posted the stories that they had read and liked to share with others.

They felt free to e-mail each other or e-mail the instructor on any occasion like a student’s birthday, religious and national holidays or whenever they needed help. Students checked the links posted in the “External Links”.
Many students wrote a paragraph about themselves in the “Student Expressions”. They answered the quizzes posted in the “Assessment” area and send them back to their teacher. In addition to the online course, the experimental group found information related to the topics covered in the book from internet sites like “Yahoo Movies”, and “Encarta”. They were also encouraged to word-process the essays they wrote in class and check their spelling at home using MS WORD. Typed essays were analyzed in class, so that students could read each other’s essays.

Throughout the semester, the author served as a facilitator. He offered technical support on word-processing, using the different components of the online course, and responded to individual students’ needs, comments and requests for certain sites. The author did not spell-check word-processed paragraphs. Students were given extra credit for using the online course, word-processing their essays and locating information from internet resources. The online course was not assigned a part of the final course grade.

**Procedures**
Before instruction, the experimental and control groups were pre-tested. They took the same pretest that consisted of an essay. Test instructions specified the essay length and essay component related to the tasks and skills to be practiced in the book. At the end of the experiment, the experimental group answered a post-treatment questionnaire that aimed at finding out how the students felt about the online instruction and whether they found it helpful. At the end of the course, both groups were post-tested. They took the same posttest. The posttest consisted of an essay that the students had never seen nor practiced in class or in the online course. The essay topic was within the students’ background knowledge. The test instructions specified the essay length and essay components that were taught and practiced during the course.

The pretest and post-test essays of both groups were holistically graded based on a general impression of content, organization, cohesion, word choice, language use and mechanics. All essays were read once and a quality rating of high, above average, average, below average and low was given to each paper. Essays were then read for a second time and each was assigned a grade. Those who graded the essays were from among the professors who had been teaching Writing Courses for at least four years in the institute.

**Test Validity and Reliability**
The posttest is believed to have content validity as it aimed at assessing the students’ ability to develop an essay. The topic was based on a new situation and was not a reproduction of the material offered in the textbook or classroom. The essay components and writing tasks required in the posttest were equivalent to those covered in the book and practiced in class. The test instructions were expressed clearly and the students’ task was defined. The minimum and maximum essay length was specified (120 – 180 words). 96% of the experimental and control students comprehended the essay topic and writing tasks and responded to the topic as instructed. Concurrent validity was determined by establishing the relationship between the students’ scores on the posttest and their scores on the last essay quiz that was administered two weeks prior to the administration of the posttest. The validity coefficient was .75 for the experimental and .79 for control groups.

To estimate inter-rater reliability, a 55% random sample of the pretest and posttest essays was selected and double-scored. A colleague who taught Writing and hold an MA degree in TELF scored the pretest and posttest essay samples holistically.
He followed the same scoring procedures employed by the author. The marks given by both raters for each essay in the sample were correlated. Inter-rater correlation was 93% for each group.

In addition to inter-rater reliability, participants’ reliability was computed as it indicates how consistently examinees perform on the same set of tasks. Examinee reliability was calculated by correlating the students’ scores on the posttest with their scores on another essay-type subtest that was administered at the same time as the post-test. The post-test consisted of several objective and essay-type questions.

On another question, which was part of their final exam, the students were asked to write a letter. Reliability of the posttest scores was computed using student scores on both subtests (essay and letter).

The Kuder-Richardson formula 21 for essay tests was used. The examinee reliability coefficient was .77 for the experimental group and .88 for control groups.

**Data Analysis**

All pretest and post-test raw scores were converted into percentages. The mean, median, standard deviation, standard error and range were computed for the pretest and posttest scores of both groups.

To find out whether there is a considerable diversity in ability between the experimental and control groups prior to instruction; a T-test was run using the pretest scores.

Results are reported in table (1), Result section. Since difference in the writing ability existed between the experimental and control groups prior to the experiment, and the two groups were intact and unequal in size, Analysis of Covariance (ANCOVA) was run using the posttest scores as the response variable and the pretest scores as the covariate to correct for chance differences that existed when the participants were assigned to treatment groups.

This correction will result in the adjustment of group means for pre-existing differences caused by sampling error and reduction of the size of the error variance of the analysis. Finally, to understand whether each group has made any progress as a result of the writing instruction, a within group paired T-test was computed for each group to find out whether there is a significant difference between the pretest and posttest mean scores of each group.

**FINDINGS**

The pretest scores showed that the experimental (online) and control (traditional) groups varied significantly in their writing ability before the writing instruction began ($T=5.65$, $Df=161$, $P<.01$). The control group outperformed the experimental group (see Table: 1).

The typical students in the control group got a score of 82% on the pretest compared to 69% for the experimental group, with more variations existing among students in the experimental group as depicted by their pretest standard deviation and score range.
A qualitative analysis of the pretest paragraphs demonstrated many writing problems that the experimental group had. Experimental students made too many spelling mistakes, did not use punctuation marks at all, and had difficulty expressing, generating and organizing ideas. Many wrote incomprehensible sentences. By contrast, the control group could construct sentences and express ideas. Their spelling ability and knowledge of punctuation marks was much better.

As indicated in Table (2), the typical learner in the experimental group scored higher than the typical student in the control group (medians=88% and 76% respectively) with less variations existing among students in the experimental group (SD=14.6) than the controls (SD=17.10).

Results of the paired T-test reported in Table (3) illustrate a major difference between the pre-test and post-test mean scores of the experimental group at the .01 level, suggesting that student achievement in the experimental group has significantly improved as a result of using a combination of web-based writing instruction and traditional in-class writing instruction (T=14.15, Df=64). Similarly, a significant difference between the pretest and post-test mean scores of the control group was found at the .01 level, suggesting that achievement in the control group has significantly improved as a result of the traditional in-class writing instruction (T=5.9, Df=56).

However, T-test results alone do not show which group has made higher gains. After adjusting for initial group differences on the pretests, Analysis of Covariance (ANCOVA) on adjusted post-test means revealed significant differences between the experimental and control groups (F=31.48, P<.0001).
The experimental group has made higher gains in writing achievement than the experimental group as a result of web-based instruction. The effect size, i.e. degree of superiority of the experimental treatment over the control treatment was .62.

CONCLUSION AND RECOMMENDATION

The present study found that participants in the experimental group who were taught using a combination of web-based writing instruction and traditional in-class writing instruction scored significantly higher than controls that were taught using traditional in-class writing instruction only. Use of web-based instruction as a supplement to traditional in-class writing instruction was significantly more effective than using traditional writing instruction alone. Web-based instruction seems to be an important factor in enhancing the writing quality of EFL learners. It enhanced their writing abilities and resulted in a significant improvement in their posttest scores.

Qualitative analysis of the posttest essays indicated that participants of the experimental group showed a great development in their writing skill. They became more competent, could write fluently and communicate easily. They could write long essays, with lengthy sentences and more compound and complex structures instead of short and simple sentences at the beginning of the semester.

There was a significant decrease in spelling, punctuation and capitalization errors. Only 6% of the students failed the course as opposed to 31% of the controls. Moreover, students’ responses to the post-treatment questionnaire showed that the online course had a positive effect on their attitude towards the writing process. It enhanced their self-esteem, motivation and sense of achievement and improvement. The students enjoyed writing and were motivated to write. Online learning encouraged writing and exchange of ideas. Student-student and student-instructor interactions increased. Achievement was enhanced by the multiple skills practiced: writing, reading, spell checking and word-processing, and by the variety of innovative technologies utilized: the online course, WWW resources, e-mail and word-processing.

The effect of online instruction on the writing achievement of EFL writers obtained in the present study is consistent with findings of other studies conducted with learning disabled or remedial writers in the L1 and L2 literature. Lewis (1998) conducted a study with learning disabled students in grades 4-12 who used word processing tools (spelling and grammar aids). He found that word processing had the most impact upon the writing accuracy of learning disabled students. Spell checks were found to be effective editing tools but grammar checks were not. Spell checks had a more positive effect on students’ writing quality and accuracy than synthesized speech. In another study, Wresch (1993) found that use of writing process software has improved disadvantaged college students’ writing performance and pass rates. Furthermore, Spaulding and lake (1991) found that freshmen remedial writers who used a set of networked computers to assist them in their writing lessons interacted freely and comfortably with their teachers and peers and thus opportunities to learn and grow increased. Finally, Jacoby (1993) found that secondary limited English proficient students who used a word processing program and were encouraged to use the computer independently acquired word processing skills and learned to use the computer for daily written assignments for regular classes.

The positive effect of web-based instruction on the attitudes of EFL learners in the present study is also supported by findings of other studies. For example, Huang (1999) found that the EFL college students using internet-related assignments had positive attitudes towards use of the internet in writing instruction.
In addition, Richards (1996) surveyed teachers, library media specialists and students in grades K-12 and found that the internet is a great motivational tool for students. Moreover, Shields (1991) used an 8-week practicum that aimed at improving use of Standard English and attitude towards writing of students in grades 6-8.

Assessment of students’ stories showed that they had improved their use of Standard English and the post treatment questionnaire indicated that students enjoyed writing the stories and felt more positive about the writing process.

Despite the positive attitudes that experimental students had towards writing as a result of their web-based writing experience, the author had always to prompt the students to use the course site by sending a group e-mail and by responding to and commenting on students’ ideas.

The minimum requirements of students’ contributions in online course should be specified. A percentage of the course grade should be also assigned to using the online course in order for the students to take it more seriously.

In the present study, web-based writing instruction was found to be a powerful tool for improvement of EFL learners’ writing ability. Online instruction was found to be effective in improving student-writing skills.

Improvement was distinguished in the computer generated and handwritten assignments. Differences in length, neatness, mechanical correctness and style were also observed. Results also demonstrated that in learning environments where technology is unavailable to EFL learners and instructors, use of technology from home and even as a supplement to traditional classroom techniques helps motivate and enhance EFL learners' writing skills.

As a result, use of web-based writing instruction to improve the writing skills of EFL learners is strongly recommended. It is also recommended that EFL instructors be trained to use the internet and online instruction in teaching EFL to students from home as it requires no equipment and connectivity from campus and no scheduling. In addition, use of web-based instruction should be extended to students in other levels and to other skills taught such as speaking, listening, reading, spelling, grammar, vocabulary building and dictionary skills. It is also recommended that other researchers and instructors fully deliver whole writing courses and other EFL language courses online.

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EVALUATION OF NEW PRIMARY TEACHERS ORIENTATION COURSE PROJECT LAUNCHED THROUGH ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD PAKISTAN

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ABSTRACT

Primary Education is an important stage in the education system of any country. Every developed and developing nation is keen to develop and improve its primary education. In service training of the primary school teachers is a major factor in improving primary education.

In Pakistan efforts have been made from the very beginning to improve the primary education especially in the late seventy’s. Different Non Governmental Organizations (NGOs), Donors Agencies and Institutions had been involved in taking different initiatives for the improvement of the quality of primary education. New Primary Teachers Orientation Course (N-PTOC) was a similar effort of the Norwegian Agency for Development Co-operation (NORAD) in joint collaboration of Allama Iqbal Open University, Islamabad (AIOU). The major objective of the project was to improve the teaching of primary school teachers through selected microteaching skills, lesson planning, use of teaching kit and AV aids.

This project was started in 1991-92 and completed in the year, 1999. Different studies were conducted which indicated that the project has an impact on the performance of the trained teachers. The present study aimed for evaluation of the N-PTOC project launched through Allama Iqbal Open University, Islamabad. The study is based on the documentary analysis. All the existing record of the project including different reports, documents etc. were consulted for the purpose. It was concluded that the project achieved its trainee teacher’s targets up to 70% and training of tutors and senior tutors up to 100%. Moreover the project produced a model teachers training module for the in-service training of the primary school teachers. There were some problems and challenges in its implementation including; late release of funds, shifting of targets to next semester and its non continuation by the AIOU.

Keywords: Primary Education, in-service, micro teaching skills
INTRODUCTION

With the advancement in Science and Technology, change has occurred in every phase of life. Teacher Education has also experienced new trends with the resultant changes in the methods of training.

The teachers have to acquire new role by using modern means of communication so that the teaching learning process becomes more effective. Teacher is the focal point in the system of education. Any change or innovation in the field of education depends upon change in the teacher. For this purpose, need of in-service teacher training is increased. An experienced teacher may also need to have additional in service training, especially when some change comes in his/her assignments or when new concepts come in the curricula. National Commission on Education (1959) emphasized that every teacher must be provided in service training, at least, after every five years. In the education system of Pakistan, one year pre service training after ten years of school was required for a primary school teacher but this one year training was not sufficient. In order to make up this deficiency, in-service training for primary school teachers was considered necessary, which had been provided through:

- Education Extension Centres of each province
- The Government College of Elementary Education
- Some nongovernmental organizations (NGOs) and also
- Allama Iqbal Open University, Islamabad.

Realizing the importance of in-service training of primary teachers in Pakistan, the National Education Policy (1979) again recommended that every teacher should undergo at least a four week training course after every five years. In spite of the thrust by the Government of Pakistan through its policy documents of 1959 and 1979, the target of providing the in-service training to the teachers remained unachieved. Seventh Five-Year Plan (1988-1993) indicated some of the weaknesses of teacher training programmes as under:

- The curriculum is not relevant to the actual classroom situation
- Teachers have poor academic knowledge in the subject matter they teach
- The engagement for in service training and continuing education are inadequate.

Lack of commitment with the in-service training has rightly been pointed out. There have been weaknesses in the areas of objectives of the teacher training. The curriculum area has also been subject to so many shortcomings and similar is the case with the content and method parts of in service teacher training programmes. Besides these weaknesses, one of the bottlenecks had been the main emphasis of pre service teachers’ training programme and less or no attention towards the in service teacher training programme. In late 1970’s, the situation in some of the areas of Pakistan was that trained teachers were not available and untrained teachers had to be employed. In this situation, distance education system came for the rescue and it introduced in service training for the primary school teachers in Pakistan. It was through the old PTOC of AIOU that 83658 primary school teachers i.e. 54,733 male and 28,925 female were registered during the years 1976 to 1986. But this course, like other in-service teacher training programmes of Pakistan was characterized by heavy theory oriented curriculum for primary school teachers and it had an academic bias in the training.

Hence it was felt that it had a limited impact on the overall training of primary school teachers. (Effectiveness of N-PTOC Project, 2001)
A need was felt to launch such a course with necessarily practical component so that primary education in the country could be further improved. After required process, the New PTOC was planned to be offered through joint collaboration of AIOU and Royal Norwegian Government.

This project was approved in 1991 at the cost of Rs. 57.346 million. The main objective of the project was to enhance the quality of working primary school teachers with respect to selected teaching competencies supported with media i.e. TV, Radio, Video or Micro teaching and thus to improve their teaching skills. Through this project nomination was to be made in favour of only such in service primary teachers, who had no previous orientation in the new methodologies and teaching skills. The New PTOC Project was unique in the sense that it was directly related with the objectives of primary education curriculum, which is an integral part of the teachers training programmes at the primary level. It emphasized both the content and the methodology of primary level programme, which was deemed to be essential for the qualitative improvement of primary education in Pakistan. (PC-I of N-PTOC, 1992)

It was with this historical background that the New PTOC programme was visualized with the sponsorship of NORAD for the period from 1991-92 to 1995-96 and then extended up to December, 1999. The Project aimed at the retraining of 42000(later on addition of 8000 was made) primary school teachers who were approximately ten percent of the primary school teachers in Pakistan in 1989-90. For this purpose the programme was planned by the Allama Iqbal Open University, Islamabad which initiated its implementation in 1992. In 1992 N-PTOC Project was launched on pilot scale with an enrolment of 545 in-service teachers of Rawalpindi and Islamabad Regions. This was done to test material of the programme on the limited scale and to device instruments for the improvement of materials and other critical inputs of the project. After successful launching of the pilot phase in 1992 other regular full scales launching of the project were carried out in the coming years. (1st Steering Committee Minutes, 1992)

SALIENT FEATURES OF THE PROJECT

The New PTOC Project was different from other programme, and as the courses of PTOC were directly related to the objectives of Primary education curriculum which is still an integral part of the teachers training programme at primary level. It emphasized on both the content and methodology of primary programme which is deemed to be essential for the qualitative improvement of primary education in Pakistan. Some of the salient features of the project are as under:

Admission procedure
The admission in the course was made through nomination from the District Education Offices (EDOs). The DEO’s sent nomination to AIOU main campus through its regional offices. The nominations were asked in Autumn Semester each year. The admission forms were processed by the admission section of AIOU and after completing the process; books were sent to the admitted teachers. The admission to the nominated teachers was free. The criterion for nomination was that the teacher should have;

- SSC with PTC
- Teaching experience not less than three years
- Had not any in service training before.
- Maximum age limit was 45 years.
- The course was full credit which accounted as one credit towards the intermediate programme of AIOU. (PC-I of the Project 1991)
Provision of Text Material
The book along with necessary allied materials was provided to the trainee teachers free of cost. This was an incentive to attract maximum teachers in the N-PTOC programme.

Tutorials
It was necessary for the trainee teachers to attend 9 tutorials in their respective study centres. The trained tutors guided them as per guidelines and training which they got from the University. Each tutorial was conducted with an interval of 15 days. If a teacher failed to attend the tutorials he/she was not eligible for further components of the project and was considered as dropped.

Assignments
The students had to submit four assignments with an interval of 25 days to their tutors either on their address or in the tutorials. Passing marks in the assignments were 40%. The tutors evaluated the assignments along with comments and send the assignments back to the students and the result of the assignments to the University’s main campus.

Workshops
Since the project objective was to train primary teachers to improve their class room performance by updating their teaching strategies. For this purpose the practical component had two workshops. The first workshops was of 3 days in the mid of the semester whereas the second workshops was of 6 days. The workshops emphasized the use of micro teaching techniques through the use of micro teaching equipment provided by the NORAD.

Media component
The media component comprised of 2 TV programmes i.e. Role of Primary teachers and Single School teacher and Teaching, 5 radio programmes i.e. counselling, testing, teaching of Urdu, English, Islamiyat, 1 audio cassette comprising teaching of Urdu and English. These TV and Radio programmes were broadcasted every Thursday of the third week of October, December each year, whereas the audio cassette was provided to the trainee teachers in their mailing packet. Media component supported and supplemented the printed material and facilitated the trainees in learning different aspects of the course at their door step.

Annual Examination
At the end of each semester, the university arranged examination for the trainee teachers in their relevant districts. It was essential for the students to get at least 40% marks in their assignments, 100% attendance in the tutorials and both three days and six days workshops and 33% in the final examination.

Payment of Conveyance charges
The trainee teachers were paid conveyance charges of Rs. 1240/- for attending the nine tutorials, 3 days midterm workshop, 6 days final workshop and 1 day final examination. The payment was released to the completers of the course i.e. to those who have passed the course including all of its components. This was a financial incentive to motivate the trainees to complete the course without any extra financial burden.

Operational teams
Four operational teams were constituted to meet the targets well in time and to maintain an adequate level of course operation.
These teams were very helpful to meet the challenge of full scale launching with meticulous planning according to the work plan of the project.

These teams worked very assiduously to execute the project activities during its launching. The senior and experienced academicians and experts were identified to work as Convenor of the operational team with 4 or 5 members from the relevant field. (Steering Committee’s Agenda and Minutes, 1992). These operational teams are mentioned as under:

- Operational Team for Students Material Development
- Operational Team for Pre testing and evaluation
- Operational team for audio visual and media component
- Operational team for regional Services

**Annual Feedback meetings**

The project clutched a series of feedback meetings at the end of each semester in the following sequence.

- Annual Regional Directors Meetings
- Tutors feedback meeting held at provincial headquarters
- Senior Tutors feedback meeting held at AIOU Campus
- Pre testers and evaluators meeting held at AIOU campus

The purpose of the meetings was to get feedback about each major component of the previous cycle to set and reshape proper strategies for future launching.

**International Movement towards Education Change (IMTEC)**

IMTEC has been very useful in the successful launching of New PTOC course. It had helped in the shape of consultancies for improvement of course materials along with other operational activities.

The experts provided regular guidance to the project’s management on different issues and problems. The IMTEC provided consultancy from 1989 to 1994. The experts who worked for the project were Ms. Anne Halland for Pre testing and Micro teaching, Ms Dalia Sinus for micro teaching during senior tutors training workshops, Felisa Tibbits for Monitoring and evaluation of the Project and Ms Dalia Sinius again for Text revision and development. (Annual steering Committee Meeting, 1995).

**Annual Review Mission**

Annual review missions from the Norway and Ministry of Education of Pakistan visited N-PTOC project to assess and review the work of the project and assess remaining activities in order to fulfil project achievements as stated in the project documents and to secure sustainability of investments of the project. The missions also assessed the time frame and budget of the project. Overall the mission monitored the quality, cost and project management work. (N-PTOC annual report, 1999)

The main objectives of this New PTOC project according to Project PC-I (1991) were as under:

- Updating primary teachers to the current teaching strategies and methodology and relate them to cognitive development with special emphasis on reading, guidance and counselling.
- Integrating the teaching techniques with the current curriculum and text book
– Enriching the New PTOC by adding a practical component of two workshops one in the middle of semester and one at the end
– Enriching the new PTOC course work with media support, TV, Radio and Video
– Monitoring the tutoring and supervision aspects of the course

The New PTOC aimed at providing an intensive in-service training of 18 weeks to the in-service trained teachers of primary schools, having at least three years of practical experience of teaching in the primary schools after their ten years of schooling and one year of pre service teacher training at their credit. The Project aimed at adopting innovative approaches to make up the deficiencies on the basis of the experience in the other pre service and in service teacher training programmes and the main emphasis of the New PTOC project was on improving practical skills of the teachers by using video recording system and enhancing selected teaching competencies of teachers with the use of micro teaching techniques. The main teaching skills emphasized in the PTOC programme were as under: Set induction i.e. opening of the lesson.

– Presentation
– Effective questioning
– Listening and finding out the difficulties of the students
– Pupil reinforcement
– Teacher liveliness
– Closing

CONCEPTUAL FRAME WORK OF THE STUDY

Quality education is conditioned with quality teaching learning process and for making the teaching learning process interactive, effective, attractive and communicative there is need to make the teachers well conversant with pedagogical skills. So for focusing the pedagogical proficiency and competency, New PTOC project was initiated. The extent to which project has raised the level of proficiency and competency among the targeted population of teachers, the present study was designed. The conceptual frame work of study was to build around effectiveness of N-PTOC Project. For this purpose, the present study was divided into three major areas,

– theoretical perspective of the project
– hypothetical perspective which covers the objectives of the study
– analytical approach for interpreting and making conclusions from the data.

Overall this study was intended to examine the targets of N-PTOC Project through which practical efforts were made to enhance the teaching competencies of the primary school teachers in Pakistan.

METHODOLOGY

The objective of the study was to evaluate the N-PTOC Project with reference to its targets as committed in its PC-I. The study is based on the documentary analysis and all the documents of the Project along with original and revised PC-I for the period from 1991-92 to 1999-200 have been critically analyzed.

As the nature of the study was documentary analysis, it covers analysis of the salient features of the project and analysis of this project comprises the enrolment, gender
wise enrolment ratio, training tutors, training of senior tutors, pre testers training, educators practicum, video and camera technician, regional directors, annual steering committee meeting, district educational institutions, private school teachers, award ceremonies and the most important aspect of the project was academic achievement. All these aspects consist of sample of the study. For analysing these aspects percentage and graphic interpretation was used.

PROJECT ACHIEVEMENTS

Enrolment:
The teacher training through N-PTOC was the major target of the Project. In the pilot launching the project enrolled 545 (male 267 and female 278) students from District Rawalpindi and Islamabad (the capital of Pakistan). Thereafter, in its full launching, the project enrolled male and female primary school teachers without in service training throughout Pakistan. The Project enrolled 51119 primary teachers from 1991-92 to 1998-99. The detail of enrolled teachers is illustrated in the given graph (N-PTOC Annual Report, 2000):

Gender wise enrolment ratio of primary school teachers enrolment
According to the provision of the PC-I, the project has to ensure participation of both gender in its different launching. In the enrolment of 51119 primary teachers, the female teachers from Urban and Rural areas of Pakistan have about equal participation. The following illustration reveals total completers in a semester with the participation of both genders. (Effectiveness of N-PTOC, 2001)
Training of Tutors
The second major target of the project was tutors training. As the tutors were responsible for the training of primary teachers in their respective districts. The project trained 3000 tutors during tutors training workshops at four provincial headquarters i.e. Peshawar, Lahore, Karachi and Quetta. The tutors were identified and recommended by the concerned Regional Directors of AIOU on the basis of criteria provided by the Project. For tutors training national and international experts were involved. The tutors’ manual, tutors training manual and workshops manuals were used for training. The detail of semester wise tutors trained is given as (N-PTOC Annual Report, 2000):

Training of Senior Tutors
New PTOC was the only programme of AIOU in which senior tutors’ role had been identified to enrich academic support to the tutors and students and to strengthen the regional network by serving as Liaison between the university and the region. The project trained 251 senior tutors throughout Pakistan with its launching. This training took place at the main campus of AIOU. Detail is given as under: (Terminal Report, 2001)

Pretesters Training
The course development of New PTOC was aimed at qualitative inputs through pretesting. The course materials had been pre tested in different cycles by the trained pretesters in the regions. These pretesters were formally trained at AIOU campus and in the Regional training workshops held at different regional offices of AIOU. (Annual Steering Committee Meeting, 1996) The details of trained pretesters in as follows:
Students, Senior Tutors, Tutors and Pretesters workshops

The training workshops of the students, tutors, pretesters were held at AIOU regional campuses at four provincial headquarters. Whereas the workshops of the senior tutors and camera technicians were held at AIOU main campuses. (Annual Report, 1999). Following detail indicates the semester wise workshops with male and female.

**Detail Of Students/ Senior Tutors/ Tutors/ Pretesters/ Camera Technicians Workshops Conducted So Far**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Session/ Semester</th>
<th>No. of 3 day's midterm workshop</th>
<th>No. of 6 day's final workshop</th>
<th>No. of senior tutors training w/shop</th>
<th>No. of tutor training w/shop</th>
<th>No. of pretester s/evaluator w/shop</th>
<th>No. of Regional Tech. W/shop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M  F  T</td>
<td>M  F  T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1992</td>
<td>9    7   16</td>
<td>9    7   16</td>
<td>01(27)</td>
<td>09(16)</td>
<td>01(12)</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>1993</td>
<td>86   39  125</td>
<td>86   39  125</td>
<td>01(21)</td>
<td>09(121)</td>
<td>01(12)</td>
<td>01(14)</td>
</tr>
<tr>
<td>3</td>
<td>1994</td>
<td>132  67  199</td>
<td>132  67  199</td>
<td>01(39)</td>
<td>09(202)</td>
<td>01(28)</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>1995</td>
<td>110  62  172</td>
<td>110  62  172</td>
<td>01(48)</td>
<td>09(231)</td>
<td>01(52)</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>1996</td>
<td>188  98  286</td>
<td>188  98  286</td>
<td>01(17)</td>
<td>10(286)</td>
<td>140</td>
<td>01(12)</td>
</tr>
<tr>
<td>6</td>
<td>1997</td>
<td>222  148 370</td>
<td>222  148 370</td>
<td>01(48)</td>
<td>13(450)</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>1998</td>
<td>152  90  242</td>
<td>152  90  242</td>
<td>01(51)</td>
<td>13(700)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Educators Practicum*

For an effective interactive and participatory approach, an educator practicum was managed for the resource persons of senior tutors workshop in September 1995. Twelve participants attended it. As a result of this activity a resource file for tutors training at nine regional campuses (Peshawar, Lahore, Faisalabad, Multan, Gujranwala, Rawalpindi, Islamabad, Karachi and Hyderabad) were prepared. (Steering Committee Minutes, 1995)

*Regional Technicians Training Workshop*

Regional Technicians Training workshop was managed in 1994 for the training of 14 Regional Technicians.
Through this workshop the technicians were trained for operation and maintenance of the camera, T.V. monitor etc. Second technicians training workshop was held in August, 1996 for the retraining of 12 Regional Technicians. The purpose of retraining was to equip the technicians with additional skills needed for making videos of teacher’s education and AIOU activities in the regions. (Steering Committee Minutes, 1995)

Annual Regional Directors Meeting
The New PTOC Project convened Annual Regional Directors meetings at AIOU Campus and at other different hilly stations and in provincial headquarters as well.

The main objectives of the meeting had been to get feedback and plan future activities but the RD’s had also been provided proper briefing about the course. This training aspect had been useful for the RD’s in coordinating the major academic activities in the Regions, especially, tutorials and for three days and six days workshops. In this way, manpower of Regional Directors of 32 Regions of AIOU was enriched. The detail of RD’s who attended the project annual meetings in different places is given as under: (Annual RDs Meeting, 1992-1998)

Annual Steering Committee Meetings
According to Article, 1, para-3 of the agreement between Government of Pakistan and Norwegian Government, Annual Steering Committee for N-PTOC was responsible to review the project implementation and develop implementation strategy for future. Furthermore, it was responsible to finalize the project annual budget and expenditure of the previous years. Annual Steering Committee Meetings under the chairmanship of the Vice-Chancellor AIOU had regularly been convened at the AIOU Campus.
The Senior Educational Authorities and representatives of their departments had been participating in the annual meetings. Similarly, Representatives from Ministry of Education, University Grants Commission (Presently Higher Education Commission, HEC), Planning Commission, Economic Affairs Division (EAD) and Norwegian Embassy had participated.

These meetings had provided guide-lines for the Project and specially, the Provincial Educational Authorities had been helpful in advocacy and through their influential position, the project got more nominations of primary teachers.

These officials also provided other facilities during conduct of major academic activities in the Regions.

The Steering Committee being the statutory body of the project also approved its annual budget and other major activities. These meetings continued from 1992 to 1996.

The numbers of the senior members and participants of the annual steering committee are given in the following graph: (Annual report, 1998)

![Graph showing the number of senior members and participants from 1991 to 1997]

**Indirect involvement/and impact on Divisional Educational Institutions**

Since New PTOC Course was very demanding and was for in-service primary teachers and nominations of these primary teachers were directly managed through their Educational Institutions. The RD’s made contact with District Education Officer, Dy. District Education Officers, Sub Divisional educational Officers for nomination and also brief them and motivated these officers for nomination and for further involvement in the course i.e. continuation of teachers to co-ordinate PTOC activities even schools are opened.

The N-PTOC was able to conduct tutorials, three days and six days workshops through the help of these offices as study centers in all over the country were provided by them. Hence the Educational authorities at District and Division level were also directly involved in the project activities and most of them were well briefed regarding the impact of this unique programme. Through this practice, they were informally trained to facilitate AIOU in its further courses. (Annual report, 1999)

**Impact on Private School Teachers**

Generally, the Private Schools, do not recruit trained teachers as these institutions do not afford heavy pays etc. In some cases, however fresh PTC teachers were recruited who have no professional experience or any orientation. Through this course, the teachers of private institutions had also been enrolled in different semesters.
Although the number of teachers from private sector is not attractive but overall the participation of private school teachers had also an impact of this course in private institutions and the Project had also served this sector. (Terminal report, 2001)

**Award Ceremonies**
The N-PTOC Programme had in built incentives for trainees standing on merit. The first award ceremony was held at National Level in Islamabad and four in provincial headquarters in 1995.

The female trainee, standing first at national level for gold medal was invited at main Campus.

Other successful trainees were awarded certificates. On this occasion, the Senior Tutors and Tutors were awarded special shields as recognition of their valuable services for the project. On this occasion, the Karachi Regional office took out special issue called the Majala.

In Provincial Headquarters, the Secretary of Educations chaired the ceremony. Through these ceremonies, the Project objectives were publicized.

These functions had been very fruitful specially in getting nominations in different semesters. (Annual Steering Committee, 1996)

**ACADEMIC ACHIEVEMENTS**

**Training Package for trainee teachers**
The training package of New PTOC programme comprising;

- Students material
- Tutors Material
- Senior tutors material had been finally revised in 1995 under the supervision of local as well as external consultants appointed for the purpose.

The course context and other material had been revised by involving the pretesters and other resources. The training package had relevant content, clear illustrations, clarity of language and best printing. The training package of the revised books had been developed on the following new format. (N-PTOC Terminal report, 2001)

<table>
<thead>
<tr>
<th>S. No</th>
<th>Parts</th>
<th>format</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Part-I</td>
<td>Theoretical text</td>
</tr>
<tr>
<td>02</td>
<td>Part-II</td>
<td>Practical text</td>
</tr>
<tr>
<td>03</td>
<td>Part-III</td>
<td>Instructional text</td>
</tr>
<tr>
<td>04</td>
<td>Part-IV</td>
<td>Curriculum guideline overview</td>
</tr>
</tbody>
</table>

The following material was developed by the project by involving national and international consultants in the field.
<table>
<thead>
<tr>
<th>S.No</th>
<th>Block No</th>
<th>Unit No/Name</th>
</tr>
</thead>
</table>
| 01   | Expository (3 units)  | 1. New Trends and issues in Primary Education  
|      |                       | 2. Social problems and education                                             |
|      |                       | 3. Primary school management                                                 |
| 02   | Pedagogy (3 Units)    | 4. Learning Process                                                          |
|      |                       | 5. Lesson planning, AV Aids                                                  |
|      |                       | 6. Testing                                                                   |
| 03   | Teaching of Science  (3 units) | 7. Plants and Animals                                                      |
|      |                       | 8. Matter and Energy                                                          |
|      |                       | 9. Earth and Universe                                                         |
| 04   | Teaching of Mathematics (2 units) | 10. Teaching of Maths I (number)                                           |
|      |                       | 11. Teaching of Maths-II (Geometry)                                          |
| 05   | Language/Humanities (5 Units) | 12 Principles of Language learning                                           |
|      |                       | 13. Teaching of Reading                                                       |
|      |                       | 14. Teaching of Writing                                                       |
|      |                       | 15. Teaching of social studies                                               |
|      |                       | 16. Teaching of Islamiyat                                                    |
|      |                       | Alternate language block on teaching of Sindhi for rural Sindh (2 Units in Sindhi, 1 unit on Urdu) |
| 06   | Teaching of Physcial Education/Arts and Craft | 17. Teaching of Physical Education                                            |
|      |                       | 18. Teaching of Art and Craft                                                |
| 07   | Students workshops manuals | 1. Workshop Manual-I for midterm workshop                                    |
|      |                       | 2. Workshop Manual-II for six days final workshop                            |
| 08   | Students Guide        | Student Guide for their general guidance                                     |

**Training Package for tutors and senior tutors**

**Tutors’ Package**

In addition to complete student package, the tutors and the Senior Tutors had also the additional items. These items were necessary required for training and later on during student’s tutorial and for two workshops.

These training manuals were developed by the Project’s staff in consultation with different national and international experts in the field. The services of Ms Dalia Sinus IMTEC consultant were specially borrowed for the revision and improvement of the material. (Senior Tutors Training Director, 1999)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Title of the manual</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Tutor Guide</td>
<td>This manual has been developed for tutor in Urdu. This provide the project objectives and the tutors role there in.</td>
</tr>
<tr>
<td>02</td>
<td>Tutors Training Manual</td>
<td>This manual comprised English as well as Urdu language. It has detail of different sessions of the tutors training workshops. This also provides different proforma/forms used by the tutors during a semester. The guide was developed for the use of senior tutors</td>
</tr>
<tr>
<td>03</td>
<td>Senior Tutor Guide</td>
<td>This guide was developed for the guidance of the senior tutor. It was in English.</td>
</tr>
<tr>
<td>04</td>
<td>Tutor Manual workshop-I</td>
<td>The manual expressed the guidance as how to conduct students midterm workshop</td>
</tr>
<tr>
<td>05</td>
<td>Tutor Manual workshop-II</td>
<td>The manual expressed the guidance as how to conduct students final workshop</td>
</tr>
<tr>
<td>06</td>
<td>Regional Directors Guidelines</td>
<td>This manual provided general guidance for the working of the Regional Directors for N-PTOC</td>
</tr>
</tbody>
</table>
**Media Support**

The Printed package for the students was supported with the following media inputs.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Programs</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>2 TV Programmes</td>
<td>1. Role of Primary Teacher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Single School teacher &amp; Teaching</td>
</tr>
<tr>
<td>02</td>
<td>5 Radio Programmes</td>
<td>1- Counseling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2- Testing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3- Teaching of Urdu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4- Teaching of English</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5- Teaching of Islamiyat</td>
</tr>
<tr>
<td>03</td>
<td>1 Audio Cassette:</td>
<td>Side “A” Teaching of Urdu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side “B” Teaching of English</td>
</tr>
</tbody>
</table>

These TV and Radio programs were developed in close consultation and working of media personnel of the University as well of the Country. The students were provided the schedule of telecasting of these programmes through TV and Radio channels; (Terminal report, 2001)

**MID TERM EVALUATION OF THE PROEJCT**

- The Norwegian Government directly deputed two external consultants and M/S Coopers and Lybrand for the midterm evaluation of the Project. The team visited AIOU Campus as well as different selected Regions for midterm evaluation and submitted its report to the Donor Agency. Since the Project’s management was seriously concerned with some of observations, therefore it was properly replied and the Project, desired a follow up review specially of accounts matter since July, 1994. M/S Coopers and Lybrand re-visited AIOU in1998 and submitted a final report on the Project achievements. (Terminal report, 2001)

- Agha Khan University was involved in the evaluation of the project being based on different semester’s students, tutors senior tutors and RD’s. The evaluation was done by the professionals and based on scientific methods/approach.

- The 3rd study on the project was conducted by Miss. Misbah Khurshid. The title of her study was “effectiveness of the PTOC on primary education”. She designed the study to find out the effectiveness of the New PTOC training on the classroom performance of female primary school teachers in Rawalpindi District. The study was based on two cycles i.e. 1994 and 1995. The classroom performance was observed before and after the N-PTOC training in their respective schools with the help of “classroom observations proforma” for teacher performance. This proforma had two sections. Section A consisted of 5 points scale while section B consisted of two point scale. The proforma had 41 items altogether for observations during classroom performance. These items were related to the following teaching skills.

  **Section A**
  Presenting, black board work, Visual aids, closure lesson planning, Questioning, Responding, lesson planning, home work class management

  - The findings of the study indicated that the performance of the primary teachers trained through N-PTOC was comparatively better. The findings of this study also supported other three studies conducted by Hashmi, Shaheen and Masood. The method used in all the three studies was “Pre test Post-test experimental design”. The teachers were observed on the basis of the pre determined observation scales before
these teachers started that N-PTOC programme and a second observation was made after they had completed their PTOC Programme. (Khurshid, 1998, Shaheen, Masood, Hashmi, 1995)

FINANCIAL POSITION

The grant was released to the project from 1991-92 to 1998 against the provision of PC-I. According to Article 6 para-1 “Norway will twice a year transfer funds in advance according to a request from Pakistan with a statement of costs incurred in the last period, expected costs for the next period and a report of activities carried out.” However release of funds was conditionals and was linked with the performance and targets achievements of the Project.

The project was revised in December, 1996 and its cost was revised from 57.346 million to 97.246 million. The project accounts were audited by M/S Coopers and Lybrand Islamabad and Federal Audit General Islamabad. The detail of the releases is given in the annexure. (Annual Budgets of the Project, 1992-99 and Agreement of the N-PTOC Project, 1989)

DISCUSSION

The New PTOC project was one of the biggest teachers training project in Pakistan. Through this project, the Government of Pakistan has been able to achieve the training target of primary school teachers through Allama Iqbal Open University and its regional net work. The project had achieved its 70% targets of enrolling in service primary school teachers throughout the country.

The rest of the 100% targets i.e. tutor, senior tutors, pre testers and camera technician were also achieved. The midterm evaluation of the Project as mentioned above indicated that the project’s results were on positive side and the teachers trained by the Project had better teaching experience.

It is evident from a number of researches conducted by different students of AIOU enrolled in M.Ed, M.A Education, M.Phil and Ph D programs that the teaching of the primary school teacher was improved through this project. Satti, Z.H, (1998) conducted a study of the effectiveness of N-PTOC Programme in N.W.F.P. The study concluded that the N-PTOC trained teachers performed better teaching with the use of different micro teaching skills. Mehmood, K. (1999) conducted study on; “Effectiveness of In-service Imparted through Teacher Training Project”.

The study revealed that there was a significant difference between the achievement of the teachers of experimental groups and control groups. The performance of the experimental group was better than the performance of the teachers in control group. Hashmi, N. (1998) conducted M.Phil research on the “Effectiveness of N-PTOC Programme of AIOU”. For this purpose she observed the N-PTOC female graduates working in the Primary schools in District Bahawalpur and its surroundings villages and found that the N-PTOC in-service training programme was effective in achieving the teaching skills provided in the N-PTOC training programme.

Semiotics (PVT) Islamabad (1999) conducted a study entitled “Study of the Effectiveness of In-service Training Programs offered to Primary School Teachers in N.W.F.P.” The research showed that there was a positive change in the performance of the teachers trained through this project. The project was successful in is quantitative targets as well as in qualitative aspect of its training cycles.
CONCLUSIONS

- This project was one of the successful educational projects in Pakistan with heavy target of teacher training. The Project completed its 70% targets of imparting training to primary school teachers throughout Pakistan in phased manner from 1991-1992 to 1998-1999.
- The PC-I of the project provided participation of male and female teachers in the training cycle. It is concluded that the Project has been able to ensure participation of both the genders. The second major target of training of tutors, senior tutors was hundred percent achieved by the Project through a proper criterion for the purpose. IMTEC consultants were involved in the training cycle of the tutors and senior tutors.
- There was continuity of the trainee teachers’ workshops, tutors workshops, senior tutor’s workshops, pretester’s workshops and regional technician workshops due to the effective network of AIOU. The Project managed all these workshops successfully with the involvement of local and international resource persons.
- The Project successfully trained regional technicians for operating video cameras during micro teaching lessons in the concerned study centers. These trainings were completed in 1994 and 1996 by involving media persons.
- The meetings of the Annual Steering Committee being the statutory body of the project and Annual Regional Directors meetings were convened by the project yearly. Both being important events helped the project management to achieve the targets of training in due course of time.
- Throughout its launching, the project developed text material for trainee teacher, tutors and senior tutors with the help of pre testers and evaluators, IMTEC consultants, other national and International consultants.
- To supplement the text material, the project produced 2 TV programs, 5 Radio programs and 1 audio cassette for the trainee teachers. These programs were regularly telecasted in each semester.
- To see the effectiveness of the project and probing the problems and shortcomings, the project managed its midterm evaluation through M/S cooper and Lybrand, Agha Khan University, IMTEC consultants and through different students of AIOU enrolled in different higher education programs. These studies helped the project to reshape its strategies for the future launching.
- The Project dealt its financial matters according to the rules and regulation of the Ministry of Education and AIOU. There were no serious audit observations on the accounts of the Project which were regularly audited by the M/S Coopers and Lybrand and federal Audit General Pakistan.

PROBLEMS/CHALLENGES DURING THE IMPLEMENTATION OF THE PROJECT

During the implementation of the Project it faced different problems and challenges, some of which are mentioned along with suggestions for future educational projects in Pakistan.

- Funds were released late in the beginning, as a result, the project started one year late and Project was revised in December, 1996 with an additional amount of Rs.40.00 million. It is proposed that in future funds to the educational projects may be released according to the commitment in the Project PC-I enabling them to complete their targets with in time.
- Lack of incentives for the University’s functionaries and hurdles in the release of Additional Charge Allowance to the Project Director, Dy. Project Director and Programme Coordinator although, the provision was available in the both the PC’s-I. For future planning incentives to the functionaries and management may necessarily be
provided in the project, so that the University’s officers exercising additional duties for the project may get some extra financial benefits.

- Lack of incentives on the part of learners as there were no increments or promotion of Primary School teachers on the basis of PTOC. Although the case was initiated to the Ministry of Education, Islamabad and Provincial Educational Departments. Due to major financial implication the case was turned down. In future teachers training projects may provide regular incentives to the trainees for their active and effective performance in the system.

- Lengthy procedures involved in implementing the Project within the University. Although the work was too much demanding and procedural problems created hurdles for the implementation of the Project. The university may ensure smooth functioning of its different departments in future for any educational project.

- Shortage of staff due to ban on fresh appointments was a problem in the beginning of the Project. In future, for educational projects, the shortage of staff may overcome through other measures like deputation etc.

- A negative attitude of some of the consultants/project’s staff was another problem. Mutual understanding, using human relation tool and a following proper communication channel can minimize the negative attitude of the working person in any project.

- Sustainability of the project after its expiry and stoppage of funds by the donor agency. The project could not be continued by the University in its regular steam, resultantly the donor agency withdraw its remaining grant.

In future the University may go through the complication and implication of any clause while making agreement with the donor agency.

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She carries over 27 years of teaching and research experience at university level Dr. Khan holds master in Secondary Education, received her doctorate in Education specializing in Research and Evaluation from College of Education, the University of the Philippines Systems, Diliman, Quezon city, Philippines in 1990. She has to her credit the distinction of College Scholar for three consecutive semesters during Ph.D program.
Dr. Khan has been honored as post-doctorate visiting scholar at Department of Curriculum and Instruction, College of Education, Southern Illinois University, USA in 1995. Dr. Khan has authored 25 research papers, published in national and international research journals, a research manual for AIOU research scholars, written and reviewed 45 units for MPhil, PhD, BEd, MEd and Diploma in Education programmes, and supervised 22 PhD and MPhil theses. Dr. Khan has participated in more than 20 international conferences, seminar, talks and workshops in Malaysia, India, UK, Paris, Bengkok, and Sri Lanka. Dr. Khan has presented Pakistan in Pre-PCF5 and PCF5 conference organized by COL and University of London, in London in 2008, and, in joint COL-National Assessment and Accreditation Council (NAAC) India Review Committee meeting at Banglore, Dec. 2006. Recently she has attended a workshop in New Delhi on 'Cost and Financing of Distance Education' in September 2009, organized by Commonwealth of Learning. And has also attended a conference on _Regional Thematic Issues for Education for Sustainable Development_ in Thailand in July 2009 organized by UNESCO. Prof. Rehana Masrur is member of _National Accreditation Council for Teacher Education_ of Pakistan, and member and convener of _National Curriculum Review Committee_ for Education. She has vast experience of developing the curricula in Education at graduate and post graduate level in Allama Iqbal Open University.

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## Project Enrolments

<table>
<thead>
<tr>
<th>Project Enrolment</th>
<th>Launching Year</th>
<th>Enrolment</th>
<th>Launching Year</th>
<th>Enrolment</th>
<th>Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot</td>
<td>1992</td>
<td>545</td>
<td>4th Phase</td>
<td>1996</td>
<td>9755</td>
</tr>
<tr>
<td>Its Phase</td>
<td>1993</td>
<td>4315</td>
<td>5th Phase</td>
<td>1997</td>
<td>12508</td>
</tr>
<tr>
<td>2nd Phase</td>
<td>1994</td>
<td>7326</td>
<td>6th Phase</td>
<td>1998</td>
<td>8261</td>
</tr>
<tr>
<td>3rd Phase</td>
<td>1995</td>
<td>8409</td>
<td>7th Phase</td>
<td>1999</td>
<td>Total 51119</td>
</tr>
</tbody>
</table>

### Gender wise enrolment ratio of primary school teachers

<table>
<thead>
<tr>
<th>Year</th>
<th>Male %</th>
<th>Female %</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>49%</td>
<td>51%</td>
<td>549</td>
</tr>
<tr>
<td>1993</td>
<td>59%</td>
<td>41%</td>
<td>4315</td>
</tr>
<tr>
<td>1994</td>
<td>60%</td>
<td>40%</td>
<td>7326</td>
</tr>
<tr>
<td>1995</td>
<td>63%</td>
<td>37%</td>
<td>8409</td>
</tr>
<tr>
<td>1996</td>
<td>64%</td>
<td>36%</td>
<td>9755</td>
</tr>
<tr>
<td>1997</td>
<td>63%</td>
<td>37%</td>
<td>12508</td>
</tr>
<tr>
<td>1998</td>
<td>63%</td>
<td>37%</td>
<td>8261</td>
</tr>
</tbody>
</table>

### Training of tutors

<table>
<thead>
<tr>
<th>Year</th>
<th>Trained</th>
<th>Year</th>
<th>Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>267</td>
<td>1996</td>
<td>278</td>
</tr>
<tr>
<td>1993</td>
<td>2555</td>
<td>1997</td>
<td>1760</td>
</tr>
<tr>
<td>1994</td>
<td>4393</td>
<td>1998</td>
<td>2933</td>
</tr>
<tr>
<td>1995</td>
<td>5264</td>
<td>1999</td>
<td>3145</td>
</tr>
<tr>
<td>1996</td>
<td>6249</td>
<td>1999</td>
<td>Total 4315</td>
</tr>
<tr>
<td>1997</td>
<td>7905</td>
<td></td>
<td>6403</td>
</tr>
<tr>
<td>1998</td>
<td>5160</td>
<td></td>
<td>3001</td>
</tr>
</tbody>
</table>

### Training of Senior Tutors

<table>
<thead>
<tr>
<th>Year</th>
<th>Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>27</td>
</tr>
<tr>
<td>1993</td>
<td>21</td>
</tr>
<tr>
<td>1994</td>
<td>39</td>
</tr>
<tr>
<td>1995</td>
<td>48</td>
</tr>
</tbody>
</table>

### Training of Pretesters

<table>
<thead>
<tr>
<th>Year</th>
<th>Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>12</td>
</tr>
<tr>
<td>1993</td>
<td>12</td>
</tr>
</tbody>
</table>

### Year Wise Allocation And Expenditure/ Achievements

<table>
<thead>
<tr>
<th>S. No</th>
<th>Year</th>
<th>PC-I provision (Rs) Millions</th>
<th>Budget estimates (Rs) Millions</th>
<th>Grants received (Rs) in Millions</th>
<th>Expenditure (Rs) Million</th>
<th>Physical target achieved so far. Enrolment/Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1988-89</td>
<td>-</td>
<td>0.700</td>
<td>0.700</td>
<td>0.525</td>
<td>Research/ material development work carried out as envisaged</td>
</tr>
<tr>
<td>2</td>
<td>1991-92</td>
<td>07.724</td>
<td>07.822</td>
<td>0.225</td>
<td>0.150</td>
<td>1.0239 545 students trained in pilot and infrastructure established for the project 90% staff appointed</td>
</tr>
<tr>
<td>3</td>
<td>1992-93</td>
<td>10.944</td>
<td>8.826</td>
<td>1.089</td>
<td>4.527</td>
<td>4315 teachers trained</td>
</tr>
<tr>
<td>4</td>
<td>1993-94</td>
<td>12.834</td>
<td>12.834</td>
<td>8.461</td>
<td>2.634</td>
<td>7327 teachers were trained</td>
</tr>
<tr>
<td>5</td>
<td>1994-95</td>
<td>13.677</td>
<td>19.167</td>
<td>4.400</td>
<td>5.788 5.583</td>
<td>10.279 8409 teachers were trained</td>
</tr>
<tr>
<td>6</td>
<td>1995-96</td>
<td>12.167</td>
<td>29.553</td>
<td>3.396</td>
<td>10.433</td>
<td>9755 teachers were trained</td>
</tr>
<tr>
<td>7</td>
<td>1996-97</td>
<td>40.00</td>
<td>53.386</td>
<td>12.195</td>
<td>20.000</td>
<td>12508 teachers were trained</td>
</tr>
<tr>
<td>8</td>
<td>1997-98</td>
<td>-</td>
<td>49.885</td>
<td>20.000</td>
<td>11.764</td>
<td>8409 were trained</td>
</tr>
<tr>
<td>9</td>
<td>1998-99</td>
<td>-</td>
<td>41.832</td>
<td>17.581</td>
<td></td>
<td>Enrolled 51119 teachers, trained 251 senior tutors, 3000 tutors, 104 prêt esters and 14 c/tech</td>
</tr>
</tbody>
</table>

| Total | 97.346 | 87.346 | 79.239 |

### APPENDIXES
GLOBALIZATION, INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) AND OPEN/DISTANCE LEARNING IN NIGERIA: Trends, Issues and Solution

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ABSTRACT

The main thrust of this paper is to discuss the development of open and distance education in Nigeria and the major manifestations of the use of information and communication technologies (ICTs) in education in open and distance learning. This study further discusses the importance and use of ICTs in open and distance learning in making education accessible to a larger population of students. From that vantage point this paper reviews the phenomenon of ICTs in open and distance learning in developing countries such as Nigeria.

The paper identifies a number of issues that impede the effective optimization of ICTs in open and distance learning in developing countries. Prominent among the issues highlighted are poverty, intermittent supply of electricity and language barrier.

The paper argues that these problems are to be tackled if the objective of enhancing the potentials of ICTs in open and distance learning in developing countries were to be achieved. On that note the current paper makes some humble suggestions on how to curtail the problems. The study employed descriptive method. An intact class of students that registered for the Bachelor of Education distance learning programme of the Faculty of Education of the Obafemi Awolowo University,Ile-Ife formed the samples used for the study. This was done to collect information on the factors affecting usage of ICT. The result shows that lack of skills rank highest (46.1%), following this is non availability of ICT at home (18.8%), costs (11.3%) and non familiarity with ICT (10.6%).

Keywords: Cyber space, Virtual reality, World Wide Web, Open and Distance Education, Changing economy, Internet, Information and Communication Technology.

INTRODUCTION

Evidently, the last two decades have witnessed considerable growth in education. This unprecedented phenomenon can be attributed to the globalization of open and distance education through the application of ICTs.
In this vein, Moore and Tait (2002), remark that open and distance learning is one of the most rapidly growing fields of education, and its potential impact on all education delivery systems has been greatly accentuated through the development of ICT-based technologies, and in particular the World Wide Web.

In effect, numerous open universities have emerged to absorb large numbers of new learners, while, on the other hand, increasing numbers of traditional universities have begun to offer their programmes also through distance education (Dimevski and Kokol, 2004). A review of research literature reaches the same conclusion that with electronic tools, people can learn virtually anytime and at any place they choose without obstacles in place, time and social status (Velzeoer, 1996; Greer and Murtaza, 2003; and Keegan, 2004). Thus, the importance of information and communication technologies (ICTs) and e-learning in promoting open, distance and flexible education cannot be over-emphasized.

However, the rapid development of ICTs and the shifts from linear to hypermedia learning create new challenges particularly in developing countries.

Moore and Tait (2002) point out that ICTs open up new horizons for progress and the exchange of creativity and intercultural dialogue. Nevertheless the growing digital divide is actually leading to greater inequalities in development. This is giving rise to paradoxical situations where those who were in dare need, the disadvantaged groups, the rural communities, or the physically challenged and less privileged do not have access to the tools which would enable them to become full-fledged members of the knowledge society. Considering numerous issues and problems surrounding ICT, Preece (2006) opines that it may not be seen as a final recipe to widening access to education. Similarly Mejiuni and Obilade (2006) maintain that poverty constraints and access affect the use of ICTs. In the light of the foregoing, ICT is yet to be fully integrated into open and distance learning in most of the developing countries.

Nigeria is a clear example of such countries with high illiteracy rate of about 56%. The implication here is that there is a need to expand access to education as a social justice if the country is to achieve the Millennium Development Goals (MDGs) as it relates to education by the year 2015. One of the effective ways to achieve the goals is through the open and distance learning using technological enhanced instruction. Regrettably, ICTs are not accessible to most Nigerians as a result of scores of issues and problems.

Therefore, the purpose of this paper is to discuss the issues and challenges facing the application of ICTs to open and distance learning in Nigeria.

This is with a view to suggesting strategies for harnessing the advantages of ICTS to open and distance education. To achieve the above, the following objectives are stated for the study

**RESEARCH OBJECTIVES**

The study reviews the efforts being made in developing countries in respect of open and distance learning especially in Nigeria with particular reference to the National Open University of Nigeria (NOUN). It also examines the concept of information and communication technologies (ICTs) and open and distance learning.

The paper also discusses the impacts of ICTs on open and distance learning and outlines of current global trends in open and distance learning. In addition, it investigates factors militating against the effective application of ICTs to open and distance learning.
Information and Communication Technologies (ICTs)
According to Meadowcroft (2006) ICT is the technology used to store, manipulate, distribute or create information. It is also the tool that we use to perform calculations, to store, and manipulate text, and to communicate. Marzelle quoted in UNDP (2002) states that ICTs are both traditional (such as radio, television, dance, drama folklore, print and fax) and new devices such as the Internet, the World Wide Web, electronic mail, teleconferencing, and distance learning tools such as CD-ROMS, hypertext, ipod , virtual classroom etc.

Information and Communication Technologies (ICTs) are electronic and non-electronic technologies, infrastructure, systems, and services used to publish, store, retrieve, and transmit information, to communicate ideas, and to generate knowledge (Mejiuni and Obilade, 2006). World Bank (2002) defines ICTs as the convergence of activities that facilitates capturing, processing, transmission and display of information through digital electronic devices, telecommunication, internet, world wide web, virtual realities and cyber space. According to this school of thought, the potential of ICTs in providing equitable access to education is a fact that is widely accepted by all. It has provided viable platform for generation, adoption and exploitation of knowledge through open and distance education. Information and Communication Technologies (ICTs) perceived in this way can give a boost to open and distance learning. There is no gainsaying the importance of ICTs to open and distance learning. ICTs guarantee the inalienable access of the individual to education.

Open and Distance Learning
Efforts have been made by different individual scholars, institutions, cooperate bodies to define open and distance learning (Dhanarajan, 2000; Evans and Fan, 2002). They all agree that open and distance learning is characterized by the separation of teacher and learner in time and place; learning that is certified in some way by an institution or agency; the use of a variety of media including print and electronic two-way communication that allows learners and tutors to interact; the possibility of occasional face-to-face meetings; and a specialized division of labour in the production and delivery of courses. For the purpose of this paper, the UNESCO’s (2002), definition of open and distance learning is operationally adopted.

Thus the term open and distance learning reflects both the fact that all or most of the teaching is conducted by someone removed in time and space from the learner and that the mission aims to include greater dimensions of openness and flexibility whether in terms of access, curriculum or other elements of structure.

Sometimes, open and distance learning is designed for school-age children and youths. However, in many cases, most courses and programmes of open and distance learning are targeted at the adult population. This is a way of providing and expanding educational opportunities to the adult population in developing countries.

ICTs/Open and Distance Learning
The merger between distance education and open learning to constitute open distance learning has been attributed to the advancement in the field of telecommunications, Information and Communication Technology (Hawkey, 2002). Prior to this, teaching and learning is done through printed materials through regular mails. However as a result of globalization and breakthrough in technology, teaching and learning changed. The present changing economy and the proliferation of modern technologies call for change in demand for education and the approach to teaching/ learning and the delivery of education.
Today, emphasis is on distance education and life long learning using the modern ICT approach either through integrated media approach, multi-site learning system, e-learning or through virtual classroom. Other methods include written materials, interactive television/radio instruction, videos, audio tapes, and CD-ROMS to the learners.

Currently, the e-mail, the web and video conferencing over broadband network connections are used as well. Through these methods, opportunities are provided for the learners to play back or revisit materials they have missed or do not understand. Learners can also check their understanding at the end of sections through the use of self-assessment questions. Similarly, learners can skip or skim materials with which they are already familiar, this is because they are modularized and learners centered. Therefore, ICTs have a positive impact on distance learners. (Galanouli, Redd aclif and Crabbs 2004; Olofssen and Luidberg, 2005). Hence, the use of ICTs for expanding open and distance learning is considered both a necessity and an opportunity in this era of globalization.

Open and Distance Learning: A Global Experience
Access to education is a global issue while education has become an important agent of globalization. Hence, the international community and governments all over the world have made commitments to make education accessible to its citizenry. This is to eradicate inequalities, poverty, hunger and higher level deprivation in educational endeavors in order to achieve the MDGs. In order to meet these goals, attention and priority has been given to the open and distance learning programme. This led to the proliferation of open universities, virtual universities, correspondence schools, external studies, universities of the Air, Correspondence courses using the postal services etc. Open and distance learning is a global phenomenon. The period between 1960-1985 has been the most progressive in terms of credibility and development in distance education, while 1985 to 1995 has been perceived as the stage of stability because distance education is not only accepted world-wide but shifted its focus to consolidation and integration of innovative technologies in the education system.

Other development in the field includes the inauguration of the International Council for Correspondence Education (ICCE) which was established in 1938 in the U.S.A. with 87 delegates from five countries marking a humble beginning. By 1982, at the 12th world conference that was held in Vancouver, Canada, the name was changed from ICCE to International Council for Distance Education (ICDE) with an increase in population from 87 to 450 delegates. In addition, the country grew from 5 to 55. Currently, the ICDE is officially affiliated to UNESCO in category ‘A’ international non-governmental relations and cooperates closely with the United Nations. Therefore, with well over 100 countries represented, ICDE functions as the window to the world of open and distance education. Since the first Open University, the United Kingdom Open University (UKOU) was established in 1969, the growth of open universities worldwide has been phenomenal. Yet, the didactic processes of open and distance learning are not only of good quality but are often superior to conventional face-to-face teaching. Also, since its inception, the open and distance learning programmes have proved to be cost-effective as well. The implication of the foregoing is that it is very difficult to capture accurately the number of institutions running Open and Distance learning programmes or the number of the beneficiaries.

For example, the Central Radio and Television University (CRTUV) in Beijing established in 1978 is at present the largest distance education institution in the world with nearly 2,000,000 students on its rolls.
In the same vein, Indira Gandhi National Open University, Shanghai Television University, China; Anadolu University, Eskisehir, Turkey; Bangladesh Open University, Gazipur Bangladesh; State University of New York, New York, USA, are a few among scores of renowned Open Universities that have turned out millions of graduates of high intelligence. Find below the statistics of students and institutions in Table: 1

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>NO.OF STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Television University</td>
<td>&gt; 500,000</td>
</tr>
<tr>
<td>Anadolu University Turkey</td>
<td>&gt;500,000</td>
</tr>
<tr>
<td>South Korea National Open University</td>
<td>&gt;300,000</td>
</tr>
<tr>
<td>Indira Gandhi National Open University</td>
<td>&gt;200,000</td>
</tr>
<tr>
<td>University of South Africa</td>
<td>&gt;100,000</td>
</tr>
<tr>
<td>Open University of Britain</td>
<td>&gt;100,000</td>
</tr>
<tr>
<td>Univerdad Nacional-Spain</td>
<td>&gt;100,000</td>
</tr>
</tbody>
</table>

Source: Dhanarajan(2000)

Recounting the global phenomenon of Open and Distance learning, Fagbamiye (2006), asserts that it is an educational system that has democratized knowledge, such that previously disadvantaged groups now have access to quality learning. This, in a way, can be attributed to the emerging information communication technologies turning the global village into a global knowledge village. This opinion was also shared by Quane and Glanz (2006)

A Brief History of Open and Distance Learning in Nigeria

Realizing the fact that education has become the core of globalization and also the key to development and an emancipation tool from servitude, thralldom and deprivation, majority of Nigerians sought for higher education at the expense of their comfort. Therefore, in quest for higher education some ardent Nigerians crossed the border down to Fourah Bay College, Sierra-Leone, as the only institution in West Africa which prepared students (as early as October 1876) for Bachelor of Arts (B.A) Degree. However, some Nigerians who wanted to attend Fourah Bay College could not do so because of the problems of expensive transportation, high tuition fees, and maintenance costs. With the approval on April 20, 1887 for the London University Examination to be held in Nigeria, many Nigerians were provided opportunity to register for the Bachelor of Arts, or Science Degree Examinations. Successful candidates also proceeded to the Masters of Arts Degree Examination.

The approval of London University Examinations marked the upsurge of a great number of “mushroom” evening schools in various parts of Nigeria. Besides, majority of serious students in Nigeria patronized correspondence institutions abroad. Some of these institutions include Correspondence College in England, Wolsey Hall, Rapid Result College, Examination Success Correspondence College, City Correspondence, G.B Cooker and Metropolitan Institute etc. Also, various educationists in Nigeria founded evening classes in order to make education accessible to students in pursuit of knowledge.

One major concern to Nigerians has been access to quality education. This is reflected in the number of candidates that applied for admission every year to the tertiary institutions through the Joint Admission and Matriculation Board (JAMB). Of the more than 1,000,000 applicants to Joint Admissions Matriculation Board annually, only few of these students are given admission. This is because most of the universities have limited facilities, space and capacity to admit less than 150,000 candidates.
Table: 2
Statistics showing the number of students who applied and those admitted into university

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of students who sat for UME</th>
<th>Total students admitted</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2001</td>
<td>550,399</td>
<td>60,718</td>
<td>11%</td>
</tr>
<tr>
<td>2001-2002</td>
<td>749,727</td>
<td>9,769</td>
<td>12.1%</td>
</tr>
<tr>
<td>2002-2003</td>
<td>994,381</td>
<td>51,845</td>
<td>5.2%</td>
</tr>
<tr>
<td>2003-2004</td>
<td>1,046,965</td>
<td>104,991</td>
<td>10.1%</td>
</tr>
<tr>
<td>2005-2006</td>
<td>841,878</td>
<td>122,492</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

Cited from Aworuwa 2009

This indicates that we are far behind in achieving and provision of qualitative education as entrenched in the MDGs. It also reveals that the conventional residential /face-to-face institutions are limited by several constraints- teachers, classrooms, lecture theatres, laboratories, funding and lack of modern teaching facilities to cater for the teeming qualified and interested Nigerians. Besides, Nigeria is one of the DE-9 countries -the nine high population countries accounting for 72% of the world’s illiterates (Mexico, Brazil, Egypt, Nigeria, India, Bangladesh, Indonesia, Pakistan and China). A sure recipe to resolve the challenge of providing equitable access to quality education to the majority of the qualified and interested adults/youths is through Distance and Open Education. In this wise, the National Open University Bill formally received the approval of the Senate on the 20th April, 1993. The aim of Nigeria Open University was to provide access to higher education for the physical challenged, those having financial constraints, geographical remoteness, the less privileged and those who could not gain admission into full time residential programme because of the nature of their employment, and those who are not catered for by the existing universities.

The National Open University, since its inception, has been employing integrated media/ multi-media techniques in teaching using correspondence education closely supplemented by lectures, tutorials and counseling services organized through a network of local study centers called multi-site or multi-campus method. Joining the trail-blazers in widening access to education through open and distance education with newer ICTs are some universities in Nigeria. These include the University of Lagos, the University of Abuja, Abia State University, Imo State University, University of Ibadan, The National Teachers’ Institute and Obafemi Awolowo University that was adjudged the best ICT University in Nigeria. It was the foremost ICT University because it has integrated ICTs into Distance Learning and into every aspect of academics and administration using the new ICT strategic plan for resolving the challenges of quality education through distance learning programme.

Impact of ICT on Distance and Open Learning
Although Ict is yet to be fully integrated to distance education on a large scale in Nigeria, however there are empirical evidence to show the positive impact it made where it has been integrated.

Some of these are:

- Equitable access, recent developments in technology provide increasing effective ways to reach out to population in remote areas and to other disadvantaged groups by providing them with quality educational opportunities using the multi-site learning systems.
The use of ICT especially the STEP-B project at Obafemi Awolowo University, Ile-Ife has encouraged cost sharing and partnerships. Through collaborative partnerships, ICT has been used to reduce the cost of provision of quality education. The adoption and application of integrated media approach to distance learning have contributed to improve cost efficiency of ICT to education.

The flexibility and accessibility enabled by ICT led to the emergence of open distance learning (ODL) in OAU Ile-Ife through virtual learning, electronic medium and integrated media techniques for which the university was known and acclaimed as the foremost ICT University in Nigeria.

As a result, the university has set the pace in developing a strong ICT-based programs for out of school youths, adult learners in remote areas all over the country using the multi-site technology via interactive radio/televised instruction, ICT-based simulations and e-learning platforms using the learning management system called Academic Blackboard. Find some of the militating factors as obtained in the data collected from the sample.

Table: 3  
Reasons for not using ICT Resources in the classroom

<table>
<thead>
<tr>
<th>ICT Facility/Service</th>
<th>Lack of skills %</th>
<th>Not Available at all %</th>
<th>Cost of using %</th>
<th>Not familiar %</th>
<th>Lack of time %</th>
<th>No Technical support %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>51.3</td>
<td>16.2</td>
<td>12.0</td>
<td>7.1</td>
<td>9.4</td>
<td>3.4</td>
</tr>
<tr>
<td>E-mail</td>
<td>34.2</td>
<td>17.5</td>
<td>14.9</td>
<td>11.4</td>
<td>18.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Desktop publishing</td>
<td>61.0</td>
<td>12.7</td>
<td>5.9</td>
<td>9.3</td>
<td>7.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Word processing</td>
<td>59.6</td>
<td>10.5</td>
<td>8.8</td>
<td>7.9</td>
<td>9.6</td>
<td>3.5</td>
</tr>
<tr>
<td>DVD/TV</td>
<td>16.8</td>
<td>19.6</td>
<td>7.5</td>
<td>32.7</td>
<td>16.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Digital camera</td>
<td>49.1</td>
<td>18.2</td>
<td>17.3</td>
<td>7.3</td>
<td>3.6</td>
<td>4.5</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>53.2</td>
<td>18.3</td>
<td>7.3</td>
<td>11.0</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>Educational software</td>
<td>43.2</td>
<td>22.5</td>
<td>14.4</td>
<td>5.4</td>
<td>8.1</td>
<td>6.3</td>
</tr>
<tr>
<td>L.C.D projector</td>
<td>48.7</td>
<td>22.6</td>
<td>7.0</td>
<td>13.0</td>
<td>3.5</td>
<td>5.2</td>
</tr>
<tr>
<td>LAP-TOP</td>
<td>46.9</td>
<td>19.5</td>
<td>13.3</td>
<td>9.7</td>
<td>8.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Computer conferencing</td>
<td>47.8</td>
<td>26.1</td>
<td>11.3</td>
<td>7.8</td>
<td>2.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>42.1</td>
<td>21.9</td>
<td>15.8</td>
<td>8.8</td>
<td>3.5</td>
<td>7.9</td>
</tr>
<tr>
<td>Mean Causative Factor/Reason</td>
<td>46.1%</td>
<td>18.8%</td>
<td>11.3%</td>
<td>10.6%</td>
<td>8.6%</td>
<td>4.4%</td>
</tr>
</tbody>
</table>

The findings above showed the factors affecting ICT usage among distance learners who enrolled for the Bachelor of Education programs at OAU Ile-Ife. Lack of skills was the highest factor (46.1%), non availability at home (18.8%), costs (11.3%), not familiar (10.6%). Other constraints are common traditions which include inherited customary pattern of thought, action and social behaviour.

The issue of culture, social attitudes and values has a resultant effect on the utilization of ICTs in distance education.
Although, we cherish education but the poor economy and the current high unemployment rates among the youths are gradually changing the values accorded to education. The value of most Nigerians today is to make money rather than education. The phobia that ICT created is another challenge and this has to do with widening unemployment rates. The summary of the whole issue is that common traditions, cultural values, poor ICT infrastructure in the rural areas and epileptic power supply have negatively affected the development and integration of ICT in distance and open education.

**Issues of ICTs Utilization in Open and Distance Learning**

The utilitarian value of ICTs in promoting open and distance learning cannot be overemphasized. This presupposition however is not without some criticisms. For example, Preece (2006) contends that the introduction of ICTs should not be considered as the only catalytic element in widening access to education through open and distance learning. In essence, successful environments for holistic, multi-sectoral approaches usually supported by institutional legal frameworks and facilitating mechanisms, such as an Education Act, Education Trust Fund (ETF) relevant educational policy and curriculum and a country comprehensive poverty reduction and growth strategies are equally pivotal. Mejiuni and Obilade (2006) assert that many people in developing countries live below the poverty line (below US $2) and expend most of their income on food. This is an indication of poverty – leaving them with no money to acquire modern technologies (ICTs) and quality education. Lack of Internet access, epileptic power supply and non availability of basic amenities, schools and equipment in the rural areas pose enormous challenges. In addition, Internet cafes available in urban centers are run on commercial basis and, in most cases, are high-priced beyond what the poor in the urban cities can afford. Based on the above, Quane and Glanz (2006), regret that poverty, marginalization, poor economy, and poor distribution of essential facilities constitute major problem in many regions of the world. Hence, the use of new Information and Communication Technologies once seen as a possible tool for providing access to education through open and distance learning, has turned out to be impracticable, especially for the poor in the developing nation and in remote areas where people are already neglected.

Secondly, the language of ICTs is still largely English. Oduaran (2006) points to the fact that it will take some time before non-English speakers in the developing world can gain first-hand knowledge of developments that have taken place or which are taking place in ICTs. The language and cultural barriers are key issue in ICTs if it is to be used as an implement to foster open distance learning. Advocates of mother-tongue maintain that the proper teaching of mother-tongue is the foundation of all education”. On that note, Aggarwal (2004) is of the view that proper education can only be imparted through the mother-tongue. Therefore, the language of ICTs has to be liberalized to accommodate mother-tongues or local languages of the developing countries. Doing this presumably can make education more meaningful and accessible to the distant learners. But it is a known fact that this is going to be difficult feat to achieve without adequate funding and political will.

Thirdly, the erratic supply of electricity and incessant larceny and vandalization of electrical equipment have always hamstrung the utility of ICTs in open and distance education in Nigeria. In this wise, Ali-Akpaijak and Pyke (2003) remark that even though Nigeria has an abundant supply of energy sources, thermal, hydro, solar and oil resources, it is described as a poor country in terms of availability of energy for its citizens, because the sector is relatively under-developed. Therefore, if ICTs have to play an active role in the open and distance education, regular supply of electricity is essential.
Fourthly, the use of ICTs by physically challenged is a crucial issue in open and distance education. Alluding to Berdichevsky and Shettle (2001) Mejuni and Obilade (2006) put the number of persons with disabling hearing impairments at 250 million worldwide with two-thirds of them living in developing countries. Non-availability of the appropriate media devices such as TTY, computers specially made for these categories aggravate the situation. If deaf people were to benefit in the open and distance education using ICTs, it becomes imperative to make available to them special phone equipment such as TTY with moderate or highly subsidized cost.

The same kind of gesture should as well be extended to other physically disabled distant learners. This implies that people with disabilities should have the same access as everyone else to education. Regardless of all the issues enumerated above, the objective of providing education for all may not be readily attained except ICTs are fully optimized in open and distance education. Our changing and globalized society makes increased demand for the utility of ICTs in open and distance education an imperative. In this wise it becomes imperative to address the issue of ICTs utilization in open and distance education.

SUMMARY AND CONCLUSION

This paper has discussed the development of open and distance education in Nigeria, the factors that encouraged the development of distance and open education and the importance of ICTs in open and distance learning with particular focus on Nigeria. It was established that if the MDGs with respect to education in developing countries is to be achieved, the importance of ICTs to open and distance learning can hardly be over-emphasized. However, ICT is yet to be fully integrated into distance and open education on large scale in the country. The study identified quite a number of factors that hinder the effective application of ICTs to open and distance education. Prominent among the problems identified include low ICT skills, poverty, epileptic supply of electricity, political bottle necks, poor economy, culture, constant changing traditional values and language barrier. However, these problems are not insurmountable if governmental and non-governmental agencies, corporate bodies, philanthropists, organizations, financial, material and technical interventions are made readily available. In addition, all the stakeholders in the open and distance learning, such as students, facilitators, support staff and administrators should be computer literate. This is with a view to demystifying the application of ICTs to open and distance learning in an era of globalization.

Suggested Panacea for Strengthening ICTs for Open and Distance Learning Education in Nigeria. In view of the importance of ICTs in open and distance education, the following panaceas are suggested.

- The use of ICTs for open and distance learning should be part of the publicly supported education scheme. There should therefore be public places where the candidates of open and distance learning can go to access technology driven - lectures with little or no pay. This will bring about improved computer and internet access for open and distance education. It is also believed that it will also complement the efforts of the open and distance learning centers to establish e-learning courses for the students. A good example is that of OAU Ile-Ife
- ICT specialists in collaboration with the competent and qualified staff in distance leaning, web-based instructional designers and management specialist be encouraged to render their invaluable services in the rural communities.
This will make learning more accessible to rural dwellers through open and distance education.

➢ The capacity building for staff of open and distance education centers is imperative as this will upgrade their technical skills and understanding in specific areas of ICTs to inculcate active learning among distant students.

➢ The sensitization of efforts to demystify the use of ICTs in open and distant learning should be recurrently embarked upon among the adult learners. This will not only reduce the problem of cyber-phobia among them but will also motivate them to appreciate the value of ICTs in open and distance learning.

➢ The fact remains that many people in the south live below poverty line, expend most of their income on food, leaving no money to invest in ICTs for open and distant learning. This poses a challenge for the prompt intervention in the areas of finance, technical and material support from the foreign donors, NGOs, philanthropists, corporate bodies and institutions. Such interventions will go a long way in making ICTs accessible to the adult learners in open and distance education setting. In addition, it will facilitate the optimization of ICTs for development and accessibility to the web-based and on-line instructional materials in an open and distance learning setting.

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STUDENT EXPERIENCE IN BLOG USE
FOR SUPPLEMENTARY PURPOSES IN COURSES

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ABSTRACT

The purpose of this study is to determine the views of students about blog use for supplementary purposes in courses. Survey research method was applied for the quantitative dimension of the study, and the semi-structured interview technique was used for the qualitative dimension. Regarding the quantitative dimension of the study, the participants were 68 undergraduates at a university in Turkey; as for the qualitative dimension, the participants were nine students from the same group. The research results revealed that the students’ interest in courses, the duration of their preparation for exams, and their socialization did not differ with respect to the variables such as their gender and the availability of the Internet connection. On the other hand, the results demonstrated that there was a significant difference in favour of female students in terms of the variable of achievement. Also, in the study, it was revealed that the students who had frequently followed the course blog and their personal blogs had higher levels of achievement and interest in the course.

Keywords: blog, blog use, higher education, ICT

INTRODUCTION

Rapid developments in information and communication technologies (ICT) in the 21st century have influenced many areas of our lives, such as education and communication. The use of ICTs in the teaching-learning processes has brought about a student-centered understanding. Developments in ICT provide both students and teachers with important opportunities to support the learning process and to establish social interaction in student-centered learning environments (Kuzu 2007). One of these developments is social software which allows both teachers and students to establish virtual learning societies, and this supports social processes in learning, enriches interaction and could be applied for learning purposes (Cuhadar 2008; Wang and Hsua 2008). One of the current applications of social software could be said to be blogs. Blogs, established through the combination of Web and log, are environments which enable all users to easily publish pages on the Web without having any Web-programming skills (Altun 2005). In other words, blogs are websites established by individuals who write down whatever they like without having any technical knowledge.
Blogs are websites where the content sent regularly and shown in a reverse chronological order (text, image, audio etc.) is frequently updated and where the readers have the right to make related comments. That is, blogs are websites where written texts and comments are published in an order from the latest to the earliest; where generally, at the end of each entry, the author and submission date of that entry are given; and where depending on the permission of the publisher, readers can make comments on the written texts (Wikipedia 2009). In addition, blogs provide a flexible environment in which students can freely state and share their opinions, gain a critical view point thanks to the social interaction they establish with other individuals and can constantly receive feedback from their teachers and peers. Therefore, blogs are commonly used software (Cuhadar 2008). Godwin-Jones (2003) defines blogs as a second-generation web application that provides cooperation-based environments whose use is constantly increasing.

Blogs could be considered as a new way of personal communication since they allow a number of individuals to publish and change information and to establish new networks or relationships with the current blogs (Rosenbloom 2004). There are several factors that contribute to the frequent use of blogs such as considerable decrease in the use of paper and pencils in daily life due to the increase in electronic literacy, the increasing number of computers that have access to the Internet, the ability of blogs to provide a countless number of materials and feedback, and the availability of a flexible environment for different applications (Johnson and Kaye 2004). Blogs, with the opportunities they provide, are also used in education. According to Duber (2002), blogs can be used in education to establish links to the course-related Internet pages, to carry out cooperation-based studies, to keep records of all the written texts with respect to their submission dates, and to create a course blog with the help of multimedia elements. Du and Wagner (2007) believe that blogs contribute to students’ learning in a way that blogs help write learning logs and help students organize their thoughts as well as determine the areas – through self-reflection activities - in which they need to develop themselves. In addition, blogs not only allow students to make comparisons among their peers and to distinguish between what is good and what is bad but also increase students’ individual responsibility and enable teachers to contact with their students rapidly and to provide feedback.

Yang (2009) aimed to examine the use of blogs as a reflective platform in the teaching process of English as a foreign language. In the study, 43 students were involved in reflective learning processes in a blog environment developed by two educators. The results of the study conducted in a qualitative research design indicated that students discussed learning theories actively in the blog environment. In addition, the reports of the students at the end of the study revealed the blog environment developed their communication and reflection skills.

In another study, Churchill (2009) designed an experimental blog-based environment in which postgraduate students were able to reach course materials and write their reflections. The data were collected via observations, the analyses of the blog activities, teacher reflections, a questionnaire, and interviews held with the students. The results showed that 54% of the students reported they would receive higher marks thanks to the use of the blog environment and that 88% stated the blog environment helped them feel themselves as an important part of their class.

Based on the results of the study, it was concluded that blogs could be an effective educational technology. It was also revealed in the study that blog-based activities useful for learning were reading others’ activities, being able to make related comments, and reading the feedback provided.
In another study, Felix (2008) aimed to determine how blogs were used for communicative and educational purposes and how blogs changed educational applications. For this purpose, the researcher applied an electronic questionnaire to K-12 teachers, held virtual interviews and examined the written texts in their blogs. In the study, it was found out that blogs developed students’ writing skills and were used as a new way of establishing interaction between teachers and students. Moreover, it was considered important that as a part of effective pedagogy, teachers actively participate in blogs during the process. In addition, with the help of this study, the sharers were informed about the contribution of blogs to education in terms of supporting communication in class and increasing the learning of digital-age students.

In another qualitative study conducted by Tekinarslan (2008), who examined the activities of students using blogs in learning environments, the researcher collected the research data via observations, analyses of documents, and interviews. In the study, most of the students stated that the blog environment was user-friendly and that it was an appropriate tool for publishing and sharing their studies. Furthermore, it was concluded in the study that blog applications developed students’ writing skills as well as their skills in searching for information. Also, it was found as a common problem that students copied the information in online sources without paying any attention to copyrights and pasted this information in their own blogs.

Lin and Hooft (2008), in their study, examined how blogs supported learning and social interaction in blended learning environments. The analysis of the qualitative and quantitative data obtained from 28 undergraduate students revealed the importance of interaction for student satisfaction in blended learning environments. Furthermore, in the study, it was found out that blogs were effective tools for student interaction outside the class that they increased information sharing, and contributed to the development of virtual communities.

In another study conducted by Goldman, Cohen and Sheahan (2008), who investigated what effects blogs had on student learning and on student participation, 60 students were divided into six blog groups. During the application process, the students shared all their homework through blogs and received comments from their peers. According to the results of the study, while 60% of the students reported a great increase in their learning thanks to the blogs, 34% reported a little increase. Apart from these, 6% reported no increase in their learning. In addition, when writing in a blog was compared with speaking in class, it was revealed that 60% of the students stated it was easier to write in a blog; 30% of them found no difference and 10% considered writing in a blog as more difficult. In the study, it was also found out that 65% of the students believed the use of blogs would be beneficial for their future studies. In another study which investigated the influence of blogs on individual learning environments, it was found out that the blog-performances of 31 undergraduate students taking the course of Information Systems were significant predictors of learning outcomes. In addition, the study revealed that blogs act as an information-construction tool and are beneficial in social learning environments (Du and Wagner 2007).

In another study, Dickey (2004) aimed to determine the effect of blog use in a Web-based learning environment. For this purpose, the researcher used blogs for discussion purposes in online courses. Moreover, in the study, the students compared Blackboard with blogs and stated that blogs were easier to use and were faster tools. The results of the study suggested that blogs helped students avoid such feelings as social alienation and isolation in distance learning environments and provided a structure that supported interaction among students.
In addition, it was found out in the study that similar problems experienced by their friends in the blog environment helped students avoid the feeling of loneliness and that cooperation-based activities contributed to peer learning.

Williams and Jacobs (2004) conducted a study on blog use as a learning environment in higher education, and collected the data from a total of 102 students via a questionnaire. In the study, the students who did not participate in the blogs were asked to state the reasons for this. 33% of all the students stated that blogs were not worth participating, and 33% of them believed that they were not sure of the benefits of blogs for them. 66% of the students who participated in the blog application mentioned that blogs contributed to their learning, and 23% of them were undecided about this. Moreover, 77% of the students reported that blogs increased interaction among students, while 69% of the students considered blogs as a reflective learning environment. Furthermore, 57% of all the students participating in the study stated that they wanted to use blogs as a learning/evaluation tool.

Stiler and Philleo (2003), in their study, investigated use of blogs as a Web-based blog tool. At the end of the study, which required students to use blogs as a reflective application tool, it was revealed that the blog environment developed students' reflective skills. It could be stated that in literature, there is a great deal of qualitative research conducted especially on the reflective skills of students via blogs, yet there is little quantitative research which employed blog use with different variables.

In this respect, the purpose of the study is to determine the views of learners about the use of blogs for supplementary purposes. In line with this basic purpose, the present study seeks answers to the following research questions.

1) Do students’ achievements, their interest in the course, the duration of their preparation for the course exams and their socialization (in-class interaction) differ with respect to
   - gender
   - the availability of access to the Internet
   - the time of registration to the course blog
   - experience in blog
   - the frequency of participation in the course blog
   - the frequency of participation in personal blogs

2) Do students’ achievements, their interest in the course and the duration of their preparation for the course exams differ with respect to the average study-hours they spend for the course exams?

3) Do students’ achievements, their interest in the course, and the duration of their preparation for the course exams differ with respect to the types of sources they benefit from during their use of the course blog?

4) How do students scan and use the sources that they benefit from during their use of the course blog?

METHOD

In the study, quantitative and qualitative research techniques were used together. Regarding the quantitative aspect of the study, survey model was applied, while regarding the qualitative aspect of the study, semi-structured interviews were used.
**Data Collection Tools**

Regarding the quantitative aspect of the study, a questionnaire for determining learners’ views about the blog use; and regarding the qualitative aspect, semi-structured interview forms were run.

The questionnaire for determining learners’ views about the blog use: The quantitative data of the study were collected via a questionnaire to determine the learners’ views about the blog use -which was developed by the researchers.

For the development of the data-collection tool, first, an item-pool was established, and eight field experts employed in the Department of Computer and Instructional Technologies (five of whom were expert in the field of educational technologies, two of whom were expert in the field of instructional design, and one of whom was expert in the field of quantitative research) were consulted for their views about the form and content validity of the items prepared.

In line with the suggestions of the experts, the questionnaire was finalized. 34-item data collection tool was made up of four sections as demographic information, participation in the course blog, use of the course blog for supplementary purposes, and frequency of the blog use.

Semi-structured interview form: The qualitative data in the study were collected via a semi-structured interview form formed by the researchers. For this purpose, a semi-structured interview form was developed by the researchers, and for the validity of the interview form, four field experts (three of whom were expert in the field of qualitative research and one of whom was expert in the field of Computer and Instructional Technologies) were consulted.

In line with the suggestions of the experts, the interview form was finalized and made ready for application.

**Participants**

The participants regarding the quantitative aspect of the study were 68 students (28 female, 40 male) attending the Department of Computer and Instructional Technologies at a university in Turkey in the Fall Term of 2008-2009 academic year. Participants were undergraduates in the age range 20–25. As for the participants regarding the qualitative aspect of the study, they were nine students (five of whom were male and four of whom were female) from the same group. Maximal variation sampling method which is a purposeful sampling strategy was used to select these nine students. The researcher samples cases or individuals that differ on some characteristic or trait in maximal variation sampling (Creswell, 2005).

In this study, nine students were selected according to their achievement scores. There were three levels of achievement scores: successful, intermediate and unsuccessful. Three successful, three intermediate and three unsuccessful students were selected.

**Procedure**

The procedure was as follows:

1) The content of the course was taught to the students by faculty members on face-to-face basis. In addition, a course blog was used for supplementary purposes.

2) Two blog environments were designed as “Personal blog” (Figure 1) and “course blog” (Figure: 2).
3) The students opened their own “personal blog”, where they would write their reflections they structured in their minds regarding the course subjects of each week. The students were required to write the reflection of each subject of the related week until 9 p.m. the night before the course day of the week. The purpose for the personal blog use was to reinforce what was learnt through the reflections students wrote.

4) Every week, the course instructor attached a discussion question to the course blog regarding the subject of the following week. The students were asked to examine various sources while providing answers to the discussion questions and to respond to the questions by giving reference to these sources. The purpose of the use of the course blog was to have students come to the class with background knowledge about the subject of the following week.

5) In order to determine the views of the students about the use of the course blog for supplementary purposes, 68 students were given the “questionnaire for determining learners’ views about the blog use”.
6) At the end of the academic term, semi-structured interviews were held with nine students (five of whom were male and four of whom were female).

7) The quantitative data collected were analyzed through descriptive analyses; t-test and one way analysis of variance by running SPSS 15, and the qualitative data were analyzed via the inductive analysis technique.

**FINDINGS**

The results of the analyses carried out to find answers to the sub-purposes of the present study are presented below in the order of the stated purposes. In order to see whether students’ achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization differed with respect to their gender, t-test was run. The results obtained are seen in Table: 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>n</th>
<th>$\bar{x}$</th>
<th>sd</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Male</td>
<td>36</td>
<td>3.35</td>
<td>.867</td>
<td>-</td>
<td>.014*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26</td>
<td>3.88</td>
<td>.733</td>
<td>2.530</td>
<td>.014*</td>
</tr>
<tr>
<td>Interest</td>
<td>Male</td>
<td>37</td>
<td>3.29</td>
<td>.920</td>
<td>-</td>
<td>.111</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26</td>
<td>3.64</td>
<td>.710</td>
<td>1.617</td>
<td>.111</td>
</tr>
<tr>
<td>Duration</td>
<td>Male</td>
<td>37</td>
<td>3.15</td>
<td>1.137</td>
<td>-</td>
<td>.144</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26</td>
<td>3.57</td>
<td>1.089</td>
<td>1.481</td>
<td>.144</td>
</tr>
<tr>
<td>Socialization</td>
<td>Male</td>
<td>37</td>
<td>2.92</td>
<td>1.149</td>
<td>-.913</td>
<td>.365</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26</td>
<td>3.17</td>
<td>.910</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

As shown in Table 1, when all the variables are taken into consideration, it is seen that although the average values for female students were higher than those for male students, there was a significant difference only for the variable of achievement.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>n</th>
<th>$\bar{x}$</th>
<th>sd</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Internet available</td>
<td>40</td>
<td>3.61</td>
<td>.891</td>
<td>.523</td>
<td>.603</td>
</tr>
<tr>
<td></td>
<td>Internet unavailable</td>
<td>22</td>
<td>3.50</td>
<td>.782</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>Internet available</td>
<td>41</td>
<td>3.39</td>
<td>.844</td>
<td>-.546</td>
<td>.587</td>
</tr>
<tr>
<td></td>
<td>Internet unavailable</td>
<td>22</td>
<td>3.52</td>
<td>.894</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Internet available</td>
<td>41</td>
<td>3.38</td>
<td>1.131</td>
<td>.544</td>
<td>.608</td>
</tr>
<tr>
<td></td>
<td>Internet unavailable</td>
<td>22</td>
<td>3.22</td>
<td>1.142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td>Internet available</td>
<td>41</td>
<td>2.97</td>
<td>1.069</td>
<td>-.536</td>
<td>.597</td>
</tr>
<tr>
<td></td>
<td>Internet unavailable</td>
<td>22</td>
<td>3.12</td>
<td>1.051</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In other words, female students ($\bar{x}=3.88$) were more successful in the course than male students ($\bar{x}=3.35$). In order to determine whether students’ achievements, their
interest in the course, the duration of their preparation for the course exam, and their socialization differed with respect to the availability of their access to the Internet, t-test was applied. The results obtained are demonstrated in Table 2. As can be seen in Table 2, regarding the variables in the question, there was no significant difference with respect to the availability of students’ access to the Internet (p > .05). In other words, students’ achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization did not differ with respect to whether they had Internet connection or not. For the purpose of determining whether there were significant differences between the time of students’ registration to the course blog and their achievements, their interest in the course, the duration of their preparation for the course exam and their socialization, analysis of variance was applied.

In the case of any difference that might occur as a result of the analysis, Tukey test was run to see which group or groups caused the difference. The results obtained are seen in Table 3.

Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>Difference*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-4</td>
</tr>
<tr>
<td>Achievement</td>
<td></td>
<td>61.984</td>
<td>3</td>
<td>20.661</td>
<td>32.00</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>41.318</td>
<td>64</td>
<td>.646</td>
<td></td>
<td></td>
<td>2-4, 3-4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>103.302</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>Between groups</td>
<td>58.331</td>
<td>3</td>
<td>19.444</td>
<td>29.55</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>42.108</td>
<td>64</td>
<td>.658</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100.439</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td>1-4, 2-3</td>
</tr>
<tr>
<td>Duration</td>
<td>Between groups</td>
<td>53.331</td>
<td>3</td>
<td>17.777</td>
<td>14.78</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>76.974</td>
<td>64</td>
<td>1.203</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>130.306</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td>1-4, 2-3</td>
</tr>
<tr>
<td>Socialization</td>
<td>Between groups</td>
<td>48.474</td>
<td>3</td>
<td>16.158</td>
<td>16.34</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>63.256</td>
<td>64</td>
<td>.988</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>111.731</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
**1: No participation in the course blog, 2: Participation after the first warning of the course director, 3: Participation after the warnings of the course director, 4: Participation after learning that it would influence assessment

The results of the analyses revealed that students’ achievements (F(3,64)=32.004, p < .05), their interest in the course (F(3,64)=29.552, p < .05), the duration of their
preparation for the course exam \((F(3,64)=14.781, p<.05)\), and their socialization \((F(3,64)=16.348, p<.05)\) differed significantly with respect to the time of their registration to the course. The difference regarding students' achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization was caused by the students who never participated in the course blog and by those who participated after the first warning of the course director, those who participated after the warnings of the course director and those who participated after learning that it would influence assessment. In order to see whether students' achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization differed significantly with respect to how frequently the students used the blog environment, variance analysis was applied. The results obtained are shown in Table 4.

### Table 4

The variance analysis results regarding whether students' achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization differed with respect to their experience in the blog environment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Between groups</td>
<td>1.832</td>
<td>2</td>
<td>.916</td>
<td>1.301</td>
<td>.280</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>42.246</td>
<td>60</td>
<td>.704</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>44.077</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>Between groups</td>
<td>4.067</td>
<td>2</td>
<td>2.034</td>
<td>2.941</td>
<td>.060</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>41.497</td>
<td>60</td>
<td>.692</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45.564</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Between groups</td>
<td>3.223</td>
<td>2</td>
<td>1.611</td>
<td>1.276</td>
<td>.287</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>75.775</td>
<td>60</td>
<td>1.263</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>78.998</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td>Between groups</td>
<td>2.665</td>
<td>2</td>
<td>1.333</td>
<td>1.201</td>
<td>.308</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>66.599</td>
<td>60</td>
<td>1.110</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>69.264</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the analysis revealed that students' achievements \((F(2,60)=1.301, p>.05)\), their interest in the course \((F(2,60)=2.941, p>.05)\), the duration of their preparation for the course exam \((F(2,60)=1.276, p>.05)\) and their socialization \((F(2,60)=1.201, p>.05)\) did not differ significantly with respect to how frequently they used the blog environment. In other words, there was no relationship between the frequency of students' blog use and their achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization. During the semi-structured interviews, regarding the influence of the course blog use for supplementary purposes on students' interest in the course, six students reported that the use of the course blog for supplementary purposes increased their interest in the course and three students stated that the blog use did not increase their interest in the course. Deniz, one of the students who reported that the use of the course blog for supplementary purposes increased their interest in the course, stated that:

"It considerably influenced my interest in the course because normally, I would have spent less time studying for the course if it hadn't been for the blog. But with the use of the blog, the subjects of that week were reinforced, and also it became easier to remember what we learnt."
Another student, Ali, was of a similar opinion that "...it increased my interest, my interest in the course, not only because we shared information and reached what we were searching for but also the environment was more enjoyable than typical face-to-face course."

Ahmet, one of the teacher candidates who reported that the use of the course blog for supplementary purposes did not increase their interest in the course stated that:

"well, normally, I'm not much interested in the course, so it did not influence me at all." Similarly, another teacher candidate, Fatma, reported that "Negative...It influenced badly... In fact, at the beginning, I was quite interested in the course, and I liked it."

In this respect, it could be stated that the frequency of students' participation in the course influenced their interest in the course in different ways. Regarding the influence of the blog environment on the duration of students' preparation for the course exam, six students reported that the blog use decreased the duration of their preparation for the exam, while three students stated that it did not have an effect on the duration of their preparation for the exam. Deniz, one of the students who reported that the use of the course blog for supplementary purposes decreased the duration of their preparation for the course exam, stated that

"...if it weren't for the blog, I would study for the exam just one or two hours before the exam, and, well, this is a very common situation among students. And also, I would search the sources. And this would be all I would do, but more time, well, more, well, blogs, because I made comments on the subject every week when I entered the blog, and even though I didn’t study before the exam week, and because I entered the blog and made comments for a long time, I didn't need to study for the exam before the exam week. Another student, Fatih, was of the opinion that "I can say it decreased the time for studying for the exams. And because I entered the blog before the exam week and I learnt the subjects before the exam, I didn't spend much time before the exams."

On the other hand, Ahmet, one of the students who reported that the use of the course blog for supplementary purposes did not influence the duration of their preparation for the course exams stated that

"Because I didn’t use the blog much, well and because I generally don’t study for exams, I didn’t see any effects of the blog." Fatma, another student, stated that "well, I normally study for the exams revising my own notes. I didn’t look at anything from the blog ... Therefore, it didn’t affect the duration of my preparation for the exams."

In this respect, it could be stated that the duration of preparation for the course exam was shorter for the students who regularly used the course blog and that the blog did not influence the duration of preparation for the course exam for the students who did not follow the blog or participate in the activities in the blog environment. Regarding the influence of the blog environment on students' socialization, five students reported that the course blog used for supplementary purposes contributed to their socialization, while four students stated that it did not. Sami, who believed that the course blog used for supplementary purposes contributed to their socialization, stated that:

"it increased my communication and interaction with my friends.” Another student, Fatih, reported that "thanks to the blog, I was able to learn their various characteristics, their social sides, and their thoughts about various subjects. I took part in enjoyable discussions with them."
Contrary to these, Leman, a student who reported that the course blog used for supplementary purposes did not contribute to their socialization, stated that

"there was no environment for communication in the blog; it was rather an environment for tasks to be completed." Fatma, another student, was of the opinion that "...the blog didn't have any effects on our socialization in any way ... maybe, I could say it is my because of my irresponsibility. I myself didn't want to enter the blog and I wasn't interested in the blog, either."

In this respect, it could be stated that depending on certain reasons that result from the course blog used for supplementary purposes or from the characteristics of the students, the blog environment did not have any effects on their socialization.

Table: 5
The variance analysis results regarding whether students’ achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization differed with respect to the frequency of their participation in the course blog

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of the Variance</th>
<th>Some of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
<th>Difference **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Between groups</td>
<td>13.927</td>
<td>3</td>
<td>4.642</td>
<td>9.084</td>
<td>.000*</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>30.150</td>
<td>59</td>
<td>.511</td>
<td></td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>44.077</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td>1-4</td>
</tr>
<tr>
<td>Interest</td>
<td>Between groups</td>
<td>9.608</td>
<td>3</td>
<td>3.203</td>
<td>5.255</td>
<td>.003*</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>35.956</td>
<td>59</td>
<td>.609</td>
<td></td>
<td></td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45.564</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Between groups</td>
<td>7.092</td>
<td>3</td>
<td>2.364</td>
<td>1.940</td>
<td>.133</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>71.906</td>
<td>59</td>
<td>1.219</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>78.998</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td>Between groups</td>
<td>7.799</td>
<td>3</td>
<td>2.600</td>
<td>2.495</td>
<td>.069</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>61.465</td>
<td>59</td>
<td>1.042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>69.264</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

**1: Participation in the course blog once a week, 2: Participation in the course blog two or three days a week, 3: Participation in the course blog four or five days a week, 4: Participation in the course blog six or seven days a week

On the other hand, it could also be stated that the blog environment allowed students to know about different characteristics of their friends and increased their interaction and thus contributed to their socialization. In order to see whether there were any significant differences between the frequency of students’ participation in the course blog and their achievements, their interest in the course, the duration of their preparation for the course exam and their socialization, variance analysis was run. In the case of any difference that might occur as a result of the analysis, Tukey test was applied to see between which groups the difference occurred. The results obtained are presented in Table: 5. The results of the analysis revealed a significant difference between the frequency of students’ participation in the course blog and their achievements (F(3,59)=9.084, p<.05) and their interest in the course (F(3,59)=5.255, p<.05). However, as a result of the analysis, no significant difference was found between the frequency of students’ participation in the course blog and the duration of their preparation for the course exam (F(3,59)=1.940, p>.05) and their socialization (F(3,59)=2.495, p>.05).
The difference found between the frequency of students' participation in the course blog and their achievements was due to the students who participated in the course blog once a week, those who participated in the course blog two or three days a week, those who participated in the course blog four or five days a week and those who participated in the course blog six or seven days a week. In addition, the difference found between the frequency of students' participation in the course blog and their interest in the course was due to the students who participated in the course blog once a week, those who participated in the course blog two or three days a week, and those who participated in the course blog six or seven days a week. In order to see whether there was a difference between the frequency of students' participation in the course blog and their achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization, variance analysis was applied. In the case of any difference that might occur as a result of the analysis, Tukey test was run to see between which groups the difference came out. The results obtained are presented in Table: 6.

Table: 6
The variance analysis results regarding whether students' achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization differed with respect to the frequency of their participation in their personal blogs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
<th>Difference**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Between groups</td>
<td>16.410</td>
<td>3</td>
<td>5.470</td>
<td>11.664</td>
<td>.000</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>27.668</td>
<td>59</td>
<td>.469</td>
<td></td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>44.077</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>Between groups</td>
<td>15.425</td>
<td>3</td>
<td>5.142</td>
<td>10.065</td>
<td>.000</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>30.140</td>
<td>59</td>
<td>.511</td>
<td></td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45.564</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Between groups</td>
<td>14.495</td>
<td>3</td>
<td>4.832</td>
<td>4.419</td>
<td>.007</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>64.504</td>
<td>59</td>
<td>1.093</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>78.998</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td>Between groups</td>
<td>15.099</td>
<td>3</td>
<td>5.033</td>
<td>5.482</td>
<td>.002</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>54.165</td>
<td>59</td>
<td>.918</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>69.264</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05  
**1: Participation in the personal blog once a week, 2: Participation in the personal blog two or three days a week, 3: Participation in the personal blog four or five days a week, 4: Participation in the personal blog six or seven days a week.

The results of the analysis revealed a significant difference between the frequency of students' participation in their personal blogs and their achievements (F(3,59)=11.664, p<.05), their interest in the course (F(3,59)=10.065, p<.05), the duration of their preparation for the course exam (F(3,59)=4.419, p<.05) and their socialization (F(3,59)=5.482, p<.05). The difference between the frequency of students' participation in their personal blogs and their achievements and their interest in the course was due to the students who participated in their personal blog once a
week, those who participated in their personal blog two or three days a week, and those who participated in their personal blog four or five days a week. Moreover, the difference between the frequency of students’ participation in their personal blogs and the duration of their preparation for the course exam and their socialization occurred due to the students who participated in their personal blogs once a week and those who participated in their personal blogs two or three days a week. For the purpose of seeing whether students’ achievements and their interest in the course differed significantly with respect to the average study-hours they spent for the course exams, variance analysis was conducted. The results of the analysis can be seen in Table: 7.

Table: 7
The variance analysis results regarding whether students’ achievements and their interest in the course differed with respect to the average study-time they spent for the course exam

<table>
<thead>
<tr>
<th>Variance</th>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Between groups</td>
<td>3.681</td>
<td>3</td>
<td>1.227</td>
<td>1.792</td>
<td>.159</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>40.397</td>
<td>59</td>
<td>.685</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>44.077</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Between groups</td>
<td>2.478</td>
<td>3</td>
<td>.826</td>
<td>1.131</td>
<td>.344</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>43.086</td>
<td>59</td>
<td>.730</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45.564</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table: 7, the results of the analysis revealed that there was no significant difference between the students’ average study-time for the course exam and their achievements ($F(3,59)=1.792$, $p>.05$) and their interest in the course ($F(3,59)=1.131$, $p>.05$). In order to determine whether students’ achievements, their interest in the course and the duration of their preparation for the course exam differed significantly with respect to the types of sources they benefited from during their use of the course blog, variance analysis was applied. The results are seen in Table: 8.

Table: 8
The variance analysis results regarding whether students’ achievements, their interest in the course and the duration of their preparation for the course exam differed with respect to the types of sources they benefited from during their use of the course blog.

<table>
<thead>
<tr>
<th>Variance</th>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Between groups</td>
<td>3.681</td>
<td>3</td>
<td>1.227</td>
<td>1.792</td>
<td>.159</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>40.397</td>
<td>59</td>
<td>.685</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>44.077</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Between groups</td>
<td>2.478</td>
<td>3</td>
<td>.826</td>
<td>1.131</td>
<td>.344</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>43.086</td>
<td>59</td>
<td>.730</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45.564</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Duration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Between groups</td>
<td>1.151</td>
<td>3</td>
<td>.384</td>
<td>.291</td>
<td>.832</td>
</tr>
<tr>
<td></td>
<td>Within groups</td>
<td>77.847</td>
<td>59</td>
<td>1.319</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>78.998</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As seen in Table 8, the results of the analysis revealed that students’ achievements (F(3,59)=1.792, p>.05), their interest in the course (F(3,59)=1,131, p>.05) and the duration of their preparation for the course exam (F(3,59)=.291, p>.05) did not differ significantly with respect to the type of sources they benefited from during their use of the course blog.

Table 9.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the texts that I would write on the course blog,</td>
<td></td>
</tr>
<tr>
<td>a. I scanned the Internet sources</td>
<td>59</td>
</tr>
<tr>
<td>b. I scanned the printed sources</td>
<td>24</td>
</tr>
<tr>
<td>c. I didn’t do any scanning</td>
<td>4</td>
</tr>
<tr>
<td>d. I wrote what I understood from the sources</td>
<td>55</td>
</tr>
<tr>
<td>e. I wrote down the sources as a whole</td>
<td>10</td>
</tr>
<tr>
<td>f. I wrote without scanning the sources</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: The students marked more than one choice. (n=68)

The texts the students wrote on the course blog revealed that the students scanned the Internet sources (86.8%) more than the printed sources (35.3%). In other words, it was concluded that the students preferred the Internet sources more and did not scan the printed sources in the library at all. A similar conclusion was drawn from the semi-structured interviews as well. Among all the students participating in the present study, seven of them stated that they primarily searched the Internet sources, while two students reported that they scanned the printed sources. Sami, one of the students, remarked that.

“we generally scanned the sources via the Internet as well as the sources in the library.”

In addition, Ali, another student stated that:

“I used the Internet more. Of course, we sometimes searched through the books in the library. …”

Although, among all the students, 80.9% of them reported “I wrote what I understood from the sources (on the course blog)”, it was seen when the course blog was examined that students did not give references to the sources that they benefited from during their use of the course blog and directly used the copy-paste method without paraphrasing. In addition, the fact that 14.7% of the students wrote down the sources as a whole for the texts they wrote on the course blog could be an indicator of their violation of the ethical rules.

DISCUSSION

The present study, which aimed to determine learners’ views about the usage of the course blog use for supplementary purposes, revealed that students’ interest in the course, the duration of their preparation for the course exam and their socialization did not differ with respect to their gender and to the availability of their access to the Internet. On the other hand, the results of the study also indicated that in terms of the variable of achievement, there was a significant difference in favour of female students.
In addition, regarding students’ achievements, their interest in the course, the duration of their preparation for the course exam and their socialization, there was a significant difference to the disadvantage of especially the students who never participated in the course blog. Similarly, a significant difference occurred between the frequency of students’ participation in the course blog and their achievements and interest in the course. Both of these results could be said to be the expected results because participation in the course blog is one of the factors that influence the assessment of students’ achievements.

The findings of the study conducted by Churchill (2009) revealed that 54% of the students stated they received higher marks as they used the blog environment, which supports the related finding of the present study.

In addition, the findings of this study are also similar to the results of the study carried out by Goldman, Cohen and Sheahan (2008) in that 60% of the students in their study reported that blogs considerably increased their learning. Similarly, the conclusions of Williams and Jacobs (2004) showed that 66% of the students believed blogs contributed to their learning. It could be stated that students who never participate in the blog or those who rarely participate in the blog are not much interested in the course and that they thus have a low level of achievement. Parallel to this finding of the current study, the students’ performances in blogs were found to be a significant predictor of learning outcomes in the study carried out by Du and Wagner (2007). Depending on these findings, it could be stated that in order to determine the effects of the use of the course blog for supplementary purposes on students’ achievement, experimental studies should be conducted in different courses. The fact that there was no difference between the frequency of students’ participation in the course blog and their socialization is different from the findings of the study administered by Dickey (2004) since it revealed blogs prevent students’ feelings of isolation and social alienation in distance learning environments and provide a structure supporting the interactions among them.

The current result is not in line with the result of Williams and Jacobs (2004) who showed that 77% of the students stated blogs increased their interaction with each other.

In addition, this finding of the present study differs from the findings of other studies reported in related literature. For example, students in Yang’s study (2009) stated that blogs developed their communication skills in the blog environment. It was also revealed that 88% of students felt themselves as an important part of their own class thanks to the blog environment (Churchill 2009). Different from the current results again, Felix (2008) proved that blogs are used as a new way of interaction with students. The last but not least, Lin and Hooft (2008) showed blogs were effective tools for interaction with students outside the classroom. Although students’ achievements, their interest in the course, the duration of their preparation for the course exam and their socialization did not differ with respect to their frequency of participation in the blog environment, during the semi-structured interviews, most of the students reported that the use of the course blog for supplementary purposes increased their interest in the course.

This finding of the present study could be said to be similar to the finding of the study conducted by Tekinarsian (2008) who emphasizes blogs encourage students by giving them the responsibility for performing better tasks. Thus, the students participating in the present study were given individual responsibilities regarding the use of the blog environment.
In the study, a significant difference was found between the frequency of students’ participation in their personal blogs and their achievements, their interest in the course, the duration of their preparation for the course exam, and their socialization. The difference found between the frequency of students’ participation in their personal blogs and their achievements and interest in the course results from the students who participated in their personal blogs once a week and from those who participated in their blogs more frequently. Thus, it could be stated that the students who participated in their personal blogs once a week did so in order to write down their reflections on their personal blogs.

On the other hand, the students who participated in their personal blogs more than once a week could be said to participate both to write down their own reflections and to read the reflections written by other students. Since especially the reflections written by the students and posted on their personal blogs allow them to revise the subjects in the course and reinforce their related knowledge, their participation in their personal blogs might have increased their achievements and interest in the course and decreased the duration of their preparation for the course exam.

In addition, instead of reporting the present situation on their personal blogs as it was, the students wrote down the reflections by structuring them in their minds. In this way, the students might have developed their reflective skills as well as their critical-thinking skills, which are among high-level thinking skills. It could also be stated that such a process influenced students’ achievements in a positive way.

This finding, which emphasizes blog environment develops reflective critical thinking skills is similar to the findings of some studies in literature (Chretien, Goldman and Faselis 2008; Stiler and Philleo 2003; Williams and Jacobs 2004). Moreover, this finding of the present study is also parallel to the finding of another study conducted by Yang (2009) who found that the blog environment develops communication and reflection skills.

In this study, the students wrote reflections on their own personal course blogs used for supplementary purposes yet did not write any reflections on each other’s personal blogs. In future studies to be carried out, students could be encouraged to write comments onto the reflections on each other’s personal blogs with a critical perspective. In this way, students’ critical thinking skills could be developed.

In the study, there was no significant difference between students’ average study-time for the course exams and their achievements and interest in the course. This result could be said to be due to the individual differences of the students and to the factors that are not considered during the process. In addition, no significant difference was found between the type of the sources that they benefited from during the use of the course blog and their achievements, their interest in the course and the duration of their preparation for the course exams. This finding could be a result of the fact that the students were not able to reach the correct and up-to-date sources, or they did not use the available sources by relating them to the subject of the course. That they used the sources as a whole without understanding the information given in the sources could be another reason as well.

In the texts that the students wrote on the course blog, it was revealed that the students scanned the Internet sources most.

What can be inferred from this is the fact that the new generation had different learner characteristics and that the sources are now available on the Internet.
The fact that most of the students were not aware of the necessity to give reference to the sources they benefited from when they wrote on the course blog and that they used the sources as a whole could indicate that they had low level of awareness of the ethical rules or even had no such awareness.

This finding of the present study is similar to the finding of the study conducted by Tekinarslan (2008), which also highlights some students plagiarize by directly using the copy-paste method without paraphrasing or referring to the sources while creating a content on the blog.

In this respect, it could be stated that courses should be given regarding ethical issues in curriculums or ethical issues could be taught in detail within the related courses.

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PRE-SERVICE TEACHERS’ TRAINING
IN INFORMATION COMMUNICATION AND TECHNOLOGY
FOR THE ESL CLASSROOMS IN MALAYSIA

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ABSTRACT

Today there is sufficient evidence that Information and Communication Technologies (ICT henceforth) has a significant influence on the teaching and learning process that takes places in the classroom. Therefore, this study sought to investigate the ESL pre-service teachers’ attitudes, competency and preparation in integrating ICT in their teaching and learning activities. The study employed a quantitative survey method and involved a total of 70 pre-service Teaching English as Second Language (TESL) teachers in the Faculty of Education from a public university in Malaysia. These pre-service teachers, who had undergone 12 weeks of practicum teaching in secondary schools, were given a set of questionnaire and the data gathered from the questionnaires were statistically analyzed.

The results indicated that the pre-service teachers do possess positive attitudes, moderate level of competency and are adequately prepared in integrating ICT in the classroom. The study also highlighted that the lack of facilities and technical malfunction in schools as the biggest obstacle for the pre-service teachers in their efforts to integrate ICT in the classroom. These result suggested that teachers must be well prepared for ICT use in the classroom. Therefore continuous training and ICT courses should be seen as solution in assisting teachers strengthen their ICT skills and in encouraging them to keep up to date with newer technologies.

Keywords: ICT, training, attitudes, competency, preparation.

INTRODUCTION

The past 30 years has witnessed a rapid development in the use of ICT in education. The use of ICT is deemed crucial to help teachers and students in coping with new challenges that await them in the future. With the help of virtual teaching communities and the ever-expanding resources available through technology, students will be better served compared to before (Duffy, McDonald & Mizell, 2003). According to Duffy et. al (2003), the same technology that supports worldwide students’ interaction in their classroom will support professional interaction among educators. Hence, Baylor & Ritchie (2002) in their study reported that ICT integration in the classroom has positive effects in students’ achievement in secondary and college education compared to traditional classroom learning.
ICT in the classroom is widely believed to be able to help teachers in introducing a more constructive classroom environment. Most researchers are also in the opinion that ICT has an influential effect on the teaching and learning process that takes place in the classroom (Muir-Herzig, 2004). Piaget, as cited in (Brown, 2001), in his constructivism approach stated that learning occurs when the learner controls his or her own acquisition of knowledge.

Therefore, the usage of ICT which is laden with interactive elements and interesting applications that acts as learning tool is seen to have the ability to incite students’ interest while simultaneously encouraging them to get more involved in their learning process. Inevitably, this will require teachers to be more ICT savvy in order for them to be able to effectively and meaningfully integrate ICT in the classroom.

LITERATURE REVIEW

ICT in the Malaysian Education System
Malaysia is now moving forward towards producing an ICT literate generation in its effort to develop the nation’s human capital as aspired in the Education Development Master Plan 2006-2010 (Curriculum Development Centre (CDC), 2008). With this in mind, several steps and approaches have been taken to equip students with the ability to use ICT skillfully and effectively. This would entail equipping pupils with the skills to think creatively, act rationally and practice lifelong learning skills. In view of this, the Ministry of Education (MOE henceforth) has introduced a program called Information and Communication Technology Literacy (ICTL) for Primary and Secondary Schools throughout the country. The program is implemented in stages beginning from 2005 and to be completed by 2010. The program consists of new approaches which encourage students to conceptualize logic and reasoning in line with the use of technology and communication (CDC, 2008).

Another initiative by the government in demonstrating the significance of ICT in the Malaysian education system is the Smart School Project which was founded by the MOE in collaboration with the Multimedia Development Corporation (MDeC). The initial aim of the Smart School Project was to prepare the future generation for the information age through an innovative education delivery process while enhancing ICT utilization in schools (Multimedia Development Corporation (MDeC), 2007). Through the innovation of ICT, the Smart School is intended to revolutionize the conventional practice of teaching and learning which is generally teacher centric with learners as passive listeners towards a more active classroom environment where teachers take on the responsibility as a facilitator to students’ learning than the sole knowledge disseminator. Therefore, in order for this to be successfully achieved, teachers in Malaysia are required to be fully equipped and prepared to teach using ICT especially if they are teaching Smart Schools nationwide.

A representative from the Educational Technology Division in the MOE referred to ICT as tools that enhance learning experience making it more fun, interesting, meaningful, and stimulating for children (Salbiah, 2009). It is designed to cater to the students’ different needs and abilities resulting in a better realization of their potential and capabilities. At the same time, it also promotes autonomy to children where they can manage their own learning using ICT.

Apart from the Smart School Project, the Ministry has also made ICT a subject offered to upper secondary students in schools. Also known as ‘Computer Literacy’, this subject is aimed at preparing students with the fundamental skills of using the computer.
With this in mind, ICT in education shouldn’t be seen as just another subject, but also as an exposure and a stepping stone for further exploration as the students encounter more hi-tech technological applications as an adult.

The importance of ICT in education is further highlighted by the Ministry of Education through the three main policies that scaffolds its implementation in the curriculum. The first policy emphasizes on ICT for all students where it is seen as a medium to bridge the digital gap between schools. Emphasis on ICT as a teaching and learning tool for accessing information, communication and productivity is highlighted in the second policy whilst the third policy stresses on the use of ICT for enhancing productivity, efficiency and effectiveness of the school’s management system (Chan, 2002). With these policies as a guideline, the government hopes to revolutionize the education system and improve learning resulting to a more knowledgeable and technologically savvy society.

Evidently, ICT is making its headway in schools and is seen as a vital step for the Malaysian education system. The school is viewed as the best place to train and prepare students towards becoming a technologically competent society parallel with global demands. The ICTL and Smart School efforts clearly indicate that the government is serious in transforming the education system from the traditional, rigid and teacher dependent methods to a more contemporary, interactive and autonomous learning approach. Therefore, this instigates a crucial need to produce competent teachers who will be the active agents in executing and realizing the government’s aspirations towards the development of a knowledge society in the near future.

ICT Training for Pre-Service Teachers in Malaysia
The importance of computers in education has been substantially addressed by academics and policy-makers worldwide. It has also been acknowledged that if young people were to become equipped to compete in the global information society, education has to be transformed and the inclusion of ICT in the teaching and learning process should be included (Galanouli, Murphy & Gardner, 2004). Nonetheless, as highlighted by a variety of research, not all teachers were willing or inclined to introduce ICT into their classroom (Baylor & Ritchie, 2002). Additionally, research has also shown that, for the younger generation of teachers, the basis of this unwillingness is sometimes found in the lack of training provided with regards to the use of ICT in teaching and learning (Galanouli et al., 2004).

An investigation into the teaching-learning practices and teacher-students readiness in the implementation of Smart School in Malaysia indicated that both teacher and students should be ready to use ICT in the classroom and suggested that teachers needed to be continuously trained in the use of technology for the purpose of teaching and learning (Azizah, Nor Fariza, and Hazita, 2005).

However, another study on the reality of Malaysian ESL teachers’ usage of ICT in their classrooms found that ICT was not widely used in teaching ESL due to teachers’ incompetence in integrating ICT during teaching (Melor, 2007). In Melor (2007)’s survey, a high percentage of teachers reported lack of training opportunities and time to gain computer skills as among the main challenges in using ICT in their teaching activities.

This suggested that teachers were inadequately prepared to integrate ICT into their teaching practices. If teachers have the competency and confidence in using ICT devices, they will be more inclined to possess positive attitudes towards technology which may greatly influence their teaching and learning process.
On the other hand, teachers who are incompetent or reluctant to integrate ICT in their classrooms will prove to be a disadvantage to the students' learning experience. The most ideal solution to this problem is to address the needs and attitudes of teachers with regards to the integration of ICT in the classroom.

Nevertheless, this attempt would require an extended amount of time and funds to be completed. Therefore, it would be more feasible to investigate the perception of pre-service teachers and gauge their attitudes, competency and preparation towards the integration of ICT in the classroom as they embark on their careers as educators.

Based on an analysis on technology investment and its effectiveness, the U.S educational policy indicated that the integration of ICT education through pre-service teacher training is the most direct and cost-effective method in equipping future teachers with technological skills (U.S. Congress, 1995). Exposure and opportunities to practice and experience hands-on integration of ICT during teacher training program will build up the confidence of pre-service teachers and motivate them to apply the gained knowledge on ICT as full-fledge teachers (Choy, Wong, & Gao, 2008).

Nevertheless, short-term exposure is seen as insufficient to provide the necessary scaffolding to effectively integrate technology in the classroom (Moursand & Bielefeldt, 1999). The current practice in teacher training colleges or universities is that all trainee teachers are required to take a minimum of one course either in ICT or Computer Education (Ab. Rahim & Shamsiah, 2008). Further emphasis on computer literacy is shouldered upon teacher trainees trained in the universities where it is compulsory for them to enroll in two computer related courses namely Computer in Education and Computer Aided Language Learning. Nevertheless, questions on how competent are these teachers in implementing ICT in their teaching approaches and integrating technology in their classroom still lingers. Hence, it is the aim of this study to investigate the pre-service teachers’ attitudes, competency and perceived ability towards integrating ICT in their teaching practices.

**RESEARCH OBJECTIVES**

The study attempts to achieve the below mentioned objectives:

- To investigate pre-service teacher’s attitudes in integrating ICT to enhance learning.
- To identify the competency level of the pre-service teachers in using ICT in their teaching.
- To identify the effectiveness of the training received by the pre-service teachers in ICT courses as an indicator of their preparation towards integrating ICT in their teaching.

**METHODOLOGY**

A survey method would be most appropriate in achieving the objectives of the study intended by the researchers. This method allows the researchers to learn about the selected samples through the application of cross-sectional designs to describe attitudes, opinions, behaviors or characteristic of the population (Creswell, 2005). This design has the advantage of measuring current attitudes or practices. This study used a non-probability sampling technique where individuals representing the characteristic the researchers seek to study based on convenience and availability (Creswell, 2005).
Hence, a total of 70 pre-service Teaching English as Second Language (TESL henceforth) teachers in the Faculty of Education from a public university in Malaysia were selected for the study.

They were final year students with two different minors; literature and counseling. They had undergone 12 weeks of practicum teaching in secondary schools within the Klang Valley in their previous semester.

Prior to this survey, the pre-service teachers have attended two basic computing courses (Computer in Education and Computer Assisted Language Learning and Teaching) in which they have learned Word, Excel, PowerPoint, Internet and courseware building applications. The purpose of the two courses was mainly to improve the pre-service teachers’ computer skills and proficiency level as for them to become more competent in utilizing these tools in their English language teaching. The study was conducted during their final semester at the faculty.

Each pre-service teacher received a set of questionnaire and was requested to complete it. This took approximately 10 to 15 minutes. The respondents were required to provide answers to statements given in the questionnaire based on a 4 point Likert scale with 1 being strongly disagree and 4 being strongly agree.

The questions were derived from instruments from previous studies (Galanouli et. al., 2004; Norizan & Amin, 2004; and Torres, 2006) that had been conducted in fields similar to this study. Personal data were analyzed to develop a demographic profile of the respondents while data representing general trends were analyzed descriptively by calculating the mean and standard deviation for each item in the questionnaire.

FINDINGS AND DISCUSSIONS

Demographic Profile of the Respondents
The study achieved a 97.1% response rate as 68 out of the total sample of 70 pre-service TESL teachers in the Faculty of Education from a public university in Malaysia responded to the study. Out of the 68 respondents, 78% of them are females (53) while the other 22% are males (15).

All of them were final year students who had at least 12 weeks of teaching experience in secondary school. The data indicated that most of the respondents were 23 years old (61.4%) followed by 25 years old (11.4%) and 22 years old (8.6%). The other age groups varied from 24 (5.7%), 26 (3%), 27 (2%) and 21 (1%) years old. As a whole, most of the respondents were still in their early 20’s. When asked whether they owned a computer, all of them answered ‘Yes’ (100%).

The next item asked was the total hours spent on the computer for academic purposes on a daily basis and to that 32.9% of the respondents stated that they spent about 2 to 3 hours per day on ICT for academic purposes while 21.4% stated that they spent approximately 6 hours or more. However, 15.7% said that they spent roughly less than 1 hour on ICT for academic purposes.

Pre-Service Teachers’ Attitudes in Integrating ICT to Enhance Learning
The results of pre-service teacher’s attitudes in integrating ICT were divided into two parts as suggested by [8]. Attitudes of the pre-service teachers will be best explained by identifying their confidence in using computers and how they perceived the importance of ICT in their teaching.
The results suggested that most of the pre-service teachers felt that trying new things with computers were tolerable (mean=3.46, SD=.59). The respondents also stated that they are willing to use computers in many ways (mean=3.43, SD=.72). They stated that they felt confident working with computers (mean=3.40, SD=.65), they are generally good with computers (mean=3.21, SD=.64) and they are able to do advanced computer work (mean=3.09, SD=.78).

However, the respondents revealed that figuring out problems related to computers does not appeal to most of them (mean=2.54, SD=.97). Apart from that, the respondents are not intimidated or threatened by the topics related to computers (mean=1.94, SD=.80) and they also indicated their disagreement with the statement that they were unsure with what to do with computers (mean=1.68, SD=.73). They also stated that they are unlikely to avoid using computers in their daily life (mean=1.42, SD=.70).

The results further highlighted that the pre-service teachers felt it was very important for teachers to be able to use computer in teaching (mean=3.81, SD=.47) and that they also wanted to know more about computers (mean=3.66, SD=.64). The respondents also agreed that learning about computers is worthwhile for teachers (mean=3.69, SD=.63) and denied the suggestion that computers do not improve their teaching skills (mean=1.47, SD=.74) nor do they did not enjoy working with computers (mean=1.43, SD=.66). The findings indicated that pre-service teachers were well aware of the importance of ICT in education especially in promoting student-centered learning (Hafizoah & Zuraina, 2007) and improving students’ learning of the English language (Smeets, 2005) as stated in previous findings. The findings also supported the earlier findings that pre-service teachers have positive attitudes towards the integration of ICT in the ESL classroom (Ramanair & Sagat, 2007; Abdullah et. al., 2003; and Juanna, Wong & Samsilah, 2005).

**Pre-Service Teachers’ Competency**

In order to identify pre-service teachers’ competency in ICT, a framework of IT Competency for English Language Teachers was used as suggested by Norizan and Amin (2004).

Most of them claimed that they know how to use basic applications in online communication (email, chatting, social network website etc.) with the mean of 3.56 and SD of .63 and they also know how to operate a computer (mean=3.45, SD=.72). Overall, all the respondents claimed that they have acquired a good command of ICT operational skills. Pre-service teachers admitted that they are able to use application software (mean=3.51, SD=.59), install computer programs (mean=3.44, SD=.63) and run operating systems (mean=3.27, SD=.81).

The results also showed that they know how to use the internet browser and search engine (mean=3.65, SD=.57), online communication (mean=3.63, SD=.60) and capable of downloading materials from the internet (mean=3.62, SD=.57). The results also indicating pre-service teachers have the ability to utilize web-based materials (mean=3.01, SD=.72) and guide students to communicate online (mean=3.04, SD=.68). The future teachers also agreed that they are able to participate in ESL forums and discussion groups (mean=3.01, SD=.71) and conduct consultations and teach online (mean=2.97, SD=.73).

Furthermore, the findings indicated that respondents also know how to evaluate the effectiveness of computers in schools (mean=3.25, SD=.70) and the appropriateness of the software to be used in teaching (mean=3.15, SD=.65).
However, they are more inclined to disagree that they are able to use the computer to monitor students’ use of computers (mean=2.60, SD=.76). As a whole, most of the pre-service ESL teachers perceived themselves at the intermediate competency level when it comes to their ability in using ICT effectively. These findings imply that the pre-service ESL teachers view themselves as about ready to use and apply ICT in language teaching which supports the findings by Juanna et. al. (2005).

The findings also indicated that the training received by the pre-service teachers have helped them master certain important skills such as the courses contents, modeling of technology used, and the skills for the integration of ICT as identified by Torres (2006). However, they revealed that they did not use computers in their teaching frequently (mean=2.63, SD=.85).

Therefore, there is an urgent need to address these skills as this group of pre-service teachers will directly affect the effectiveness of the transition from the conventional school system to the Smart School concept.

On the whole, these findings contradicts the findings of studies done by Norizan & Amin (2004) and Smeets (2005) which discovered that the teachers are far from ready to use ICT in their language teaching. According to Norizan & Amin (2004), an ESL teacher should be better equipped to have the capability to perform these basic tasks as identified in this study in order to be able to be an ICT competent teacher in ESL.

Pre-Service Teachers’ Preparation

The data analysis showed that courses related to ICT offered during their undergraduate’s program are sufficient (mean=3.21, SD=.91) in providing relevant knowledge and information with regards to the implementation and integration of ICT in the classroom.

The pre-service teachers disagree that the course did not prepare them to utilize ICT effectively (mean=1.75, SD=.74) and the content of the courses taken is irrelevant and out of date (mean=1.71, SD=.73). Further data analysis indicated that pre-service teachers do model the use of ICT in the classroom (mean=3.32, SD=.61). This is supported through the findings that most trainees felt that they gained more confidence to integrate ICT into teaching (mean=3.51, SD=.61) and their agreement that they know how to integrate ICT in teaching better (mean=3.41, SD=.70) after completing the courses.

Additionally, a mean of 2.40 also indicated that most of the pre-service teachers did not feel comfortable teaching the traditional way. However, the pre-service teachers claimed that there was lack of support from the administrators when the pre-service teachers indicated their preference in integrating ICT in their classroom during their practical training (mean=3.16, SD=.87). Additionally, the respondents also felt that more computer courses should be added to the existing one (mean=3.54, SD=.61). However, the trainee teachers disagreed with the item saying that it is the faculty’s responsible to prepare them with ICT skills (mean=2.84, SD=.96) and they were reluctantly to agree that their exposure in ICT is enough (mean=2.54, SD=.84). According to the responses, the courses provided ample hands-on opportunity for them (mean=3.28, SD=.75) and the opportunity for them to practice their knowledge of ICT in their teaching is just about right (mean=3.04, SD=.82).

According to Pelgrum (2001), teachers who are not well-trained or well-prepared can decrease the effectiveness of ICT usage in the classroom.
Therefore, Nicholson and Sanber (2007) emphasized that teacher education programmes should incorporate training on using ICT effectively in order to prepare teachers in integrating technology in their teaching and students’ learning. For that reason, it is essential for the course content to be kept abreast, relevant and significant with the current technology trends to ensure that the pre-service teachers are well-prepared and confident when using ICT in their teaching practices.

At the same time, the pre-service teachers also disagreed with the statement that the courses focused more on theoretical rather than practical application of ICT which meant the courses offered did focus considerably on practical integration than merely theories.

This is in line with the suggestion by Angeli (2005) where student teachers needed to be given sufficient opportunities during their training to develop their pedagogical reasoning and be more competent in infusing technology in their teaching. Furthermore, as highlighted by Moursand and Bielefeldt (1999) and Bain and McNaught (2005), ICT should be integrated into other teacher training courses in order to provide the pre-service teachers with ample opportunities needed to put their acquired knowledge and skills into practice. Treating ICT as a standalone subject, although may help in developing basic ICT skills, may also inhibit its application and transfer of skills in an actual classroom context. Nevertheless, constant reinforcement and practice increases the ability for the pre-service teachers to apply their ICT related knowledge and understanding in a variety of educational contexts (Stuhlmann & Taylor, 1998) as cited in Choy et. al (2008).

RECOMMENDATIONS AND CONCLUSION

Schools all over the country are in urgent need of teachers who are capable and comfortable with advanced technologies to meet the learning needs of the students. The findings from this study suggested that more ICT related training or courses should be conducted for pre-service and also in-service teachers.

Based on the findings, the researchers in this study feel that more in-depth studies need to be conducted. Future studies perhaps need to look into the various approaches which may help prepare this new breed of educators. In addition to that, more research should also be carried out among the pre-service teachers in other teaching institutions across the country to identify their attitudes and competency in dealing with ICT. Besides that, more internal action research should also be conducted by school administrators to investigate the root cause of the setbacks in teaching using ICT as claimed by most teachers.

Through the challenges identified from such studies, the government will be adequately informed to further enhance ICT facilities in schools and provide relevant training to suit the needs of the teachers. Support from stakeholders especially the school’s administration and the ministry are also seen as crucial in improving the current scenario.

This is based on the suggestion by a number of pre-service teachers who feel that a revised curriculum focusing on ICT literacy should be included to enhance the students’ learning experience.

Correspondingly, serious thought should also be given to training skilled technical support so that the ICT equipments are regularly maintained for enhanced teaching and learning.
Previous studies (Choy et. Al., 2008); Moursand & Bielefeldt (1999); and Nicholson and Sanber (2007) have also highlighted the importance of modeling technology use in the teaching and learning at all levels which includes teacher training institutions.

In order to motivate pre-service teachers towards the integration of ICT in their teaching, it is crucial that the use of technology is modeled first by teacher educators in teaching training institutions. Nicholson and Sanber (2007) pointed out that previous literature has shown ICT skills development programs doesn’t ensure transfer and application in the classroom. Nevertheless, since modeling is recognized “as a power source of skills transfer” (Nicholson and Sanber, 2007), the concept of apprenticeship through modeling can help reduce the trainee teachers’ anxiety level when dealing with technology while at the same time increasing their confidence in the utilization of ICT in teaching and learning.

Consequently, it is hoped that when the trainee teachers graduate and embark on their teaching professions, they will be inclined to imitate their previous lecturers and model the use of ICT in their classroom. Therefore it is highly recommended that teacher trainers too should be competent in the use of technology for them to be able to model its usage in teaching and learning to their teacher trainees.

On a final note, the researchers would also like to suggest future research on ICT integration in pre-service teacher training in Malaysia to consider looking into the approached of ICT integration in pre-service teacher training such as the one suggested by Steketee (2005) and Nicholson and Sanber (2007). It will be interesting to either compare these approaches and the existing module available in teacher training institutions in Malaysia or to see how far such approaches can be integrated into the Malaysian pre-service teacher training and to what extent does it help in improving and enhancing the pre-service teachers’ ICT skills.

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BEST PRACTICES IN ONLINE EDUCATION: 
Online Instructors, Courses, and administrators

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ABSTRACT

Learning and teaching online imposes certain challenges on both students and teachers. Teachers should be prepared to meet special requirements of teaching online. Teachers play an important role in teaching. Roles of teachers increase with introducing the online learning, contrary to an early assumption perceived with the invention of the Internet. Designing and developing online courses need collaboration of several people with a variety of interests and expertise, including administrators, teachers, designers, and technical specialists. Each course within the curriculum should be well-designed and fit well within the curriculum. The curriculum in turn should reflect the current state of the discipline, enabling the learners to develop appropriate proficiency and mastery within the specific discipline.

This paper describes the roles of teachers and administrators in online learning, and discusses the rules of best practices for both.

Keywords: Online learning, best practices, online teachers, online courses, online administrators

INTRODUCTION

There is no universally accepted definition of what a best practice is. However, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) describes best practices as having four common characteristics: they are innovative; they make a difference; they have a sustainable effect; and they have the potential to be replicated and to serve as a model for generating initiatives elsewhere (UNESCO, n.d). When applied to a particular condition, a best practice must ensure the delivery of the most effective outcome, based on repeatable procedures or activities that have been proven over time for large numbers of people.

The best practice in education is the most efficient (least amount of effort) and effective (best results) way by which society transmits its accumulated knowledge and skills from one generation to another. The use of computers and the Internet in transmitting knowledge and skills is blossoming, and new technology is increasingly being used to complement established education practices and develop new ways of learning such as online education. For technology to offer powerful learning tools for engaging students, online curricula must be developed based on best practices principles and taught by highly qualified teachers using principles of effective online teaching. An academic curriculum is composed of several coherent courses related by themes, enabling the learners to move from the basic foundation of knowledge to more advanced, sophisticated levels of critical thinking and mastery of skills. The attention devoted to each and every course composing the curriculum will lead to a powerful teaching tool, ending with a recognizable scientific degree.
Similarly, the traditional role of teachers is being challenged as a reflection of changing teaching philosophies. Online learning, with its steady increase in popularity and acceptance, exerts more strain on teachers to change their tools and concepts of teaching and evaluating. As an online teacher, close adherence to instructor best practices and expectations ensures a successful outcome of the learning process, which is rewarding to both the teacher and learner alike.

**BEST PRACTICES: Instructor**

The online instructor must actively participate in all dimensions of the online classroom. The two contradictory assumptions that, once created, the online classroom can manage itself versus that the online instructor should be available to the students 24/7 are both faulty. Ragan (2008) emphasizes that students in an online course rely on the instructor to follow the established course schedule and to deliver the course within the scheduled time frame. However, the online instructor is expected to make schedule adjustments as needed to manage special circumstances. The online instructor must serve as a guide to facilitate learning and must do that in a more pronounced way because of the lack of face-to-face interactions.

One benefit of online teaching is that the facilitator need not worry about preparing teaching materials before each ‘class’ begins because the core teaching material, resources, and instructional strategies need to be in place prior to the start of the class. This fact gives the online teacher the liberty and time to interact more with students, responding to their inquiries, addressing difficult subject matter, and engaging more in discussion boards (Faculty Focus, n.d.).

In order for the students not to depend excessively on their instructor as the sole link to the course, which may demand more time and energy from the instructor, a well-developed syllabus addressing proactively many of the course dynamics and the use of ‘frequently asked questions’ are recommended to overcome the mentioned drawback in this area. Mastering learning management system (LMS) of the course will also assist the faculty in attending to the details of course management (Porter, 2004). The effective use of the LMS’s tools enables the online teacher to oversee the students’ progress via reporting functions such as summaries of student online activity, participation in discussion groups, and completion of course assignments.

Another important factor that reflects on time and energy the instructor spends managing an online course is the student-teacher ratio (Bower, 2001). The number of students enrolled in an online course should be large enough to ensure interaction and dialogue amongst course participants, but at the same time enable the instructor to easily monitor and manage the students’ activities and performances. The key is to free the instructors to concentrate their time and energy on crafting a truly engaging learning experience while empowering the learners to take responsibility for managing their own learning experience. Communication amongst the learners and between the learners and their instructor is of paramount importance in addressing the different roles and responsibilities that are expected from each participant. A richer and more equitable learning experience is one of the advantages of online learning over face-to-face learning because of the ability to provide communications to all participants (Gao & Lehman, 2003).

Another best practices rule is establishing patterns of course activities that can aid both instructor and student alleviating confusion of course operation (Faculty Focus, n.d.). Obviously, one of the most striking benefits of online learning is working without the confines of time and location.
However, “anytime, anyplace” education imposes challenges on both student and instructor regarding time management and operation. This lack of operating parameters can be controlled by establishing a pattern of course activity and communicating that to the learner, who should then develop a plan of study to meet the course’s requirements. This course schedule and pattern aids both the instructor and learner to manage course-related activities while at the same time balancing the demands of work and other life commitments. Without a question, online learning needs discipline and time management skills to keep pace with the requirements of the online classroom. Therefore, most online students are older than traditional-aged learners (Chen, Gonyea, & Kuh, 2008), and, expectedly, they have developed these core skills. Instructors and learners should develop work timeframes to prevent the class from interfering with other responsibilities and other life activities which, if takes place, will result in exhausted and overwhelmed situations.

Established course-related patterns should not prevent flexibility—one of the touted advantages of the online learning space; good instructors allow a modicum of flexibility to compensate for different styles of teaching and learning, unexpected technological problems, students’ feedback, and emergency cases. However, when established patterns need to be changed, it is a good habit to create a line of communication regarding these changes: reasons (travel, technology-related excuses, and “life happens”), duration, and a definite “resume function” date. It should be realized that these changes may also be required by the instructor and this will have a greater impact on the course because any interruption in the service may create confusion and anxiety on the part of the learner as the instructor is almost the sole link to the virtual classroom. Again, “having thought through communications strategies for both short term and long term scenarios enables all class participants to manage those times when schedules change, course adjustments need to be made, and life happens” (Faculty Focus, n.d., p. 12).

The time frame for instructors responding to learners’ inquiries should be reasonable. The online instructor should communicate this timeframe from the early beginning of the course and this will reduce student frustration waiting for the instructor’s feedback. Instructors should be aware of the fact that further progress in learners’ academic work may hinge on the instructor’s reply or feedback to an inquiry or a question. The norms for how long it should take before receiving a reply range from one business day during the week to 48 hours over a weekend (Ragan, 2009).

This means that instructors should attend the course activities at least once per weekday, and at least once over the weekend. More importantly, establishing and communicating a response rate expectation by the instructor leads to student satisfaction with the learning system and helps eliminate the guessing and frustration of not receiving an immediate response (Ragan, 2009).

Similarly, unsolicited feedback to assignments, quizzes, and other learning activities should also be current, relevant, and within the established timeframe. Excessive delay (for example, longer than 72 hours) should be avoided unless this time will be invested in articulating well-crafted responses that will improve the teaching and learning experience for all class participants. In such situations, the instructors may communicate a short notice informing the students of the need for extra time beyond the established timeframe. The lines and tools of communication between the instructor and learners should be determined and for ensuring safety and security it is preferable to be within institutionally supported and maintained communication systems.
Therefore, the online instructor must adequately understand the online learning platform available to online learners and, preferably, experience each functional dimension of the online course in order to help learners take advantage of the system’s functionality and performance (Faculty Focus, n.d.; Porter, 2004).

The above-mentioned best practices define the anticipated teaching and classroom management behaviors of the online instructor. Careful adherence to these principles helps the instructor identify and overcome potential barriers and limitations to online learning and achieve the performance expectations. High-quality course content is also essential for a successful learning experience, and will be addressed in the following section.

**BEST PRACTICES: Course**

Designing and developing online courses needs collaboration of several people with a variety of interests and expertise, including administrators, teachers, designers, and technical specialists.

Each course within the curriculum should be well-designed and fit well within the curriculum. The curriculum in turn should reflect the current state of the discipline, enabling the learners to develop appropriate proficiency and mastery within the specific discipline. McGreal (2005) in an article titled “Development Principles for Online Courses:

A Baker’s Dozen,” listed a dozen principles useful for initiating and supporting online projects. They can be summarized as the following.

- **Beg or borrow (steal!) courseware, or learning objects.** Learning materials are available in several sites, such as Merlot, Careo, MIT’s Open Courseware Initiative, Java SIG, and Co-operative Learning Object Exchange, and you can use the learning materials accessible through the Web as is or with some modifications to make them customized to the course objectives. Even if you should pay for these materials, studies show that reusable learning objects cost less money and consume less time than developing and creating your own (Elliott, & Sweeney, 2007).

- **Take what exists and build the course around it.** Instead of building a course out of scratch, you can build courses around available materials. Literature reported on several courses that have used off-the-shelf proprietary materials for developing specific relevant tasks in English, nursing, and business (Christiansen & Anderson, 2004).

- **Avoid the “not invented here” syndrome.** You may choose a tried-and-true course invented by others to be included in your institutional curriculum (Nash, 2004). The notion that things developed by others are always inferior and those internally developed are superior proves to be invalid. Moreover, adaptation of external courses to blend with invented ones will offer the learners with different learning styles the opportunity to meet and serve their individual needs.

- **Know the content—garbage in, garbage out.** Sound content is essential for effective teaching and learning (Porter, 2004). Therefore, content experts should always be fully involved with the course planning and development. In order that sound subject content translates into good learning content, instructional designers should also be part of the course development team.
Provide different routes to learning. Research shows that individuals may try different styles of learning according to factors such as complexity of the concept being learned, the time of the day, the quality of the presentation format, and the level of interactivity (McGreal, 2005). Therefore, learning materials should be presented in a variety of formats to look appealing to the learner and the outcome tested in several independent ways. Fortunately, the online environment enables course development specialists to make the passion for diversity easily attainable.

BEST PRACTICES: Administration

Fear about the quality of an online curriculum may deter faculty from effective participating in planning, developing, and teaching courses online. In order to alleviate such a fear, administrators of an institution that offers both online and on-site classes should deal with faculty issues and course issues in a way to move the institution forward and, preferably, based on best practices principles. Porter (2004) mentioned five principles for developing an effective online curriculum that help an academic institution implement successful online programs and lessens the fears among faculty and administrators about the quality of online curricula and education. These principles include: 1) Recognize that the ways courses or programs may be created can differ, but the resulting product should be equally high quality, 2) Value on-site and online faculty equally, 3) Avoid playing off on-site classes against online classes, 4) Create equally credible online and on-site courses and degree programs, and 5) Set up a dialogue between on-site and online faculty—if they are different groups of faculty. Looking at these principles, two key factors are integrated: curricula and teachers. Best practices must ensure sound curricula and highly qualified teachers.

Recognize That the Ways Courses or Programs May Be Created Can Differ, But The Resulting Product Should Be Equally High Quality

Many educators, particularly those who were traditionally taught, see teaching online as an enormous time sink that will not improve learning. It should be realized, however, that online teaching is different (but not better or less so) from face to face teaching. Online students are expected to read and understand materials on their own, and online facilitators must be able to support students by defining clear expectations for student participation and pacing. Teaching practices must be adjusted to reflect the changes needed by introducing online teaching format and teachers need to change the way they teach to reflect their new understandings of how to teach with technology. Online education requires discipline and time management skills from both the learners and facilitators. The course content must also be able to be delivered well online.

Porter (2004) argued that not every discipline may be well defined through an online curriculum, and that discipline’s experts must determine whether the body of knowledge and skills of a particular discipline are a good match for the current state of online education. Actually students pursuing the doctorate in Computing Technology in Education at Nova Southeastern University agreed that not all courses translate well to an online format (Deubel, 2003), which faculty at University of Illinois (1999) and Valentine’s study (2002) also reported on.

To ensure quality, online courses should be completed, reviewed, and pre-tested for accuracy before their implementation. Quality is affected also by the choice of instruction delivery system; the technology being used to deliver course content should be based on desired learning outcomes and not on the availability of technology.
Value On-Site and Online Faculty Equally

Although online learning requires students to take a more active role in facilitating their own learning, faculty play a significant motivating factor to enriching learning environment. Without a doubt, the number of faculty teaching online courses is steadily increasing. Online education is a new specialty, requiring teachers to rethink their teaching practices. Similarly, there is a need for effective faculty support and development in online education. At the early beginning of distance education, virtual adjunct faculties have carried higher education into the cyber classroom (Puzziferro, 2005).

For example, about 80% of all online course offerings at Florida Community College at Jacksonville were taught by virtual adjuncts in 2005 (Puzziferro, 2005). Managing adjuncts that are geographically separated can be challenging and work against involvement and engagement. However, the adoption of the seven principles of good practice helps virtual adjuncts become a highly valued and precious resource for distance and online learning, and as a result, the stigma of being “cyber-faculty” once endured, is diminishing (Puzziferro, 2005).

The first principle in managing virtual faculty is good practice encourages contact: frequent faculty-institution contact is the most important factor in faculty motivation and involvement. Good practice develops reciprocity and cooperation is the second principle, and it is based on the premise that good learning, like good work, is collaborative and social, not competitive and isolated. Creating shared communities enable connecting faculty to the institution, the administrators, and the students, and this will help increase accountability and promote retention among students and faculty alike. Faculty must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. This would encourage active learning. Professional development is one of the most important motivators for online faculty, and this provides incentive for faculty to improve their teaching skills, earn a certificate, receive a stipend, and network with onsite faculty and other online faculty.

In the online environment, faculty need to know whether they are meeting the institution’s expectations (good practice gives prompt feedback), and whether that be met in a timely manner (good practice emphasizes time on task). Faculty who know that they are working for a professional organization that demonstrate a commitment to quality and expect more—and they are in return will get more—are more likely to feel accountable to that institution. According to Puzziferro and Shelton (2009), close adherence to the seven principles of good practice will undoubtedly enhance online faculty satisfaction and effectiveness.

Avoid Playing Off On-Site Classes Against Online Classes

Different learning offerings by universities should be perceived as sincere endeavors to accommodate the needs of learners. Online learning programs are designed to serve an off-campus population, providing access to higher education for students who cannot attend traditional courses due to several reasons, such as employment, family responsibilities, and distance. There are conflicting attitudes about online learning. In general, people rated the online courses as lower in quality than traditional courses taught on campus (Inman, Kerwin, & Mayes, 1999).

Later studies found that students perceive that they achieve higher quality educational outcomes in the online learning environment, and that they do not believe that they sacrifice a quality of education for the convenience of utilizing this type of learning which allows them to balance their other commitments more easily (Hannay & Newvine, 2006).
Porter (2004) stated several points that, when implemented, would help put both types of learning environments in their correct perspectives as a niche for quality learning:

- Both on-site and online programs need administrative support to allocate the appropriate, necessary sources for success,
- Online courses and on-site courses should not have to compete for the same group of learners,
- Online and on-site classes should follow the same rules within an institution, such as required credentials or prerequisites, and
- One type of program should not be considered better, easier, or of a different quality.

Individuals who are typically enrolled in an online education system are different than those enrolled in an on-site education system; they are married, non-traditional being in the educational environment by choice, and older (25 to 40 years of age) (Hannay & Newvine, 2006).

Create Equally Credible Online and On-Site Courses and Degree Programs
What matters is the high quality of learning, whether that learning is offered on campus or via the Internet. Recently, institutions find advantages in integrating some of the best aspects of online learning into traditional courses to build a hybrid learning environment, or at least using newer technologies to enhance on-site courses. There are many roads to learning, and good practice respects diverse talents and ways of learning (Puzziferro, 2005).

Set Up a Dialogue Between on-Site And Online Faculty-If They Are Different Groups of Faculty
Online faculty are the vital bridge between nontraditional students and institutions that are traditional, enabling these institutions to integrate online education into the core organizational mission while at the same time protecting the faculty roles in research and scholar activities.

Online faculty, who started their work in these institutions as adjuncts and part-timers, are increasingly becoming highly professionalized and full-timers. Porter (2004) urged administrators not to isolate faculty; rather, she encouraged them to find ways for them to work together and communicate.

Poor acceptance of traditional faculty to online education can be explained based on the lack of knowledge about the benefits of online education venues and the separation between on-site and online faculty.

Creative ways to engage online faculty within the context of their disciplines and to share other faculty in developing and maintaining quality and academic integrity are needed.

CONCLUSION
What matters is the high quality of learning, whether that learning is offered on campus or via the Internet. Online education requires discipline and time management skills from both the learners and facilitators. The course content must also be able to be delivered well online. Quality is affected by the choice of instruction delivery system; the technology being used to deliver course content should be based on desired learning outcomes and not on the availability of technology.
This paper presented the best practices rules of effective online teaching and learning pertinent to instructors, course designs, and administrators.

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USERS’ BEHAVIOR TOWARDS UBIQUITOUS M-LEARNING

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ABSTRACT

Mobile technologies have enabled a new way of communicating, for whom mobile communications are part of normal daily interaction. This paper explores the proposed and verified Technology Acceptance Model (TAM) that can be employed to explain the acceptance of Mobile Learning (M-learning), an activity in which user’s access learning material with their mobile device. 100 students from private and government higher learning institutions around Klang Valley area were selected as the sample for this study. There are five major variables in the study but only two of the variables were supported. Malaysian mobile phone users’ intention to positively accept the use of M-learning is due to encouraging factors such as perceived mobility value and perceived usefulness of the Mobile Learning. This study is beneficial for leaning institutions which desire to use M-learning.

Keywords: Technology Acceptance Model, Users’ Behavior, Ubiquitous, M-Learning, Malaysia

INTRODUCTION

The availability of mobile and wireless devices is enabling different ways of communicating. The advent of mobile technologies has created opportunities for delivery of learning via devices such as PDAs, mobile phones, laptops, and PC tablets (which are laptops designed for handwriting rather than a keyboard interface). A wide definition of m-learning is the ability to learn independently of place and time, facilitated by a range of mobile devices (Ufi/learndirect and Kineo, 2007).

Meanwhile Sharples, Taylor, and Vavoula (2007) define it as ‘the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies’.

According to Saedah and Mohd Paris (2005), the increasing number of tools in education in ICT era has change the way of conventional teaching process to the usage of information technology. According to Sharples (2006), there is need for a massive effort in understanding how we can usefully adapt and enhance technology for the benefit of society – and how we need to adapt society to maximize the benefits of new technologies. There is far too little attention being paid to social processes and emergent behaviour of learning communities who adapt to new technologies, such as mobile phone (McLean, 2003).
M-Learning provides the opportunity to connect informal learning experiences that occur naturally throughout the day with formal learning experiences such as those encountered in the virtual classroom model, using games or in online learning implementations.

As an evolving research area, many issues in M-Learning have not yet been exhaustively covered. M-learning acquisition in the academia to support teaching and learning is still immature. This immaturity creates a new interesting research issue on the users’ perception on m-learning.

This research examines the users’ perception on m-learning. It concentrates on the effectiveness of incorporating m-learning into mobile technology as a new instructional model for academician. Smaller screen, interruptibility, high latency, limited storage and functions (Roschelle, 2003) are the deterrents of mobile technologies.

This research aims to increase the acquisition and comprehension of m-learning as a new learning pedagogy in academia for the development of knowledge creatively.

Hence, these all necessitates a need for the current study to explore the users’ behavior towards ubiquitous M-learning from the perspectives of its potential to increase users’ knowledge development in Malaysia by applying Technology Acceptance Model (TAM) in order to explain and predict the acceptance of mobile learning. TAM is a model for explaining the user acceptance of novel technology, and has been theoretically and empirically justified (Devaraj, Fan and Kohli, 2002).

**LITERATURE REVIEW**

Behavior prediction has been one of the major purposes of psychological theories. Some of the more useful theories include the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975), the social cognitive theory (SCT) (Compeau and Higgins, 1995; Hill and Roldan, 2005) and Technology Acceptance Model (TAM) (Davis, 1989; 1993). TAM, originally presented by Davis (1989), is derived from TRA (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). TAM is a behavioral model that describes the antecedents of the adoption of information technology (IT), and is considered a robust tool for measuring the adoption of new technology by users (Agarwal and Prasad, 1999; Davis, 1989; Doll, Hendrickson and Deng, 1998; Segars and Grover, 1993).

Over the years TAM has been validated by various applications and extensions, including web-based information (van der Heijden, 2003; Yi and Hwang, 2003), Internet banking (Wang, Wang, Lin and Tang, 2003) and electronic commerce (Henderson and Divett, 2003; van Dolen and de Ruyter, 2002). The M-learning technology is novel, and is therefore appropriate to be examined using the TAM model.

Figure: 1 illustrates TAM, which includes six constructs, namely external variables, perceived usefulness, perceived ease of use, attitude, behavioral intention and actual usage. It shows that user behavior is determined by perceptions of usefulness and the ease of use of the technology (Adams, Nelson and Todd, 1992; Davis, 1989; Mathieson, 1991).

The concept of actual usage was eliminated from the revised TAM model, because M-learning technology is still at an early stage of development.
This study investigates the future acceptance of the emerging M-learning technology, rather than its current usage. Actual usage is not a cogent measure of the value of M-learning, as indicated in previous studies (Lu, Yu, Liu and Yao, 2003). The following sections describe the constructs of TAM in detail, and its applicability to the present study.

**Perceived Enjoyment (PE)**
Individuals engage in activities because these activities lead to enjoyment and pleasure (Teo and Lim, 1997). According to Davis et al. (1992), perceived enjoyment is defined as “the extent to which the activity of using the technology is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated”. In this study, perceived enjoyment denotes the extent to which an individual finds the interaction of M-learning intrinsically enjoyable or interesting. Perceived enjoyment is seen as an example of intrinsic motivation, and it has been found to influence user acceptance significantly. Furthermore, research on the role of enjoyment suggested the importance of enjoyment on users' attitudes and behaviors (Igbaria, Iivari and Maragahh, 1995; Teo and Lim, 1997; Wexler, 2001; Yi and Hwang, 2003). Hence, perceived enjoyment is addressed as a key factor for influencing user acceptance of M-learning. Prior studies on technology acceptance behavior examined the effects of perceived enjoyment on perceived ease of use (Igbaria, Parasuraman and Baroudi, 1996; Venkatesh, 2000; Venkatesh, Speier and Morris, 2002; Yi and Hwang, 2003). New technologies that are considered enjoyable are less likely to be difficult to use.

H1. Perceived enjoyment has an effect on behavioral intention.

**Perceived Mobility Value**
Perceived mobility value (PMV) denotes user awareness of the mobility value of M-learning. Mobility has three different elements including convenience, expediency and immediacy (Seppälä and Alamäki, 2003). Mobility permits users to gain access to service/information anywhere at anytime via mobile devices. In other words, mobility brings the ability to guide and support users in new learning situations when and where it is necessary. Previous studies found that mobile users valued efficiency and availability as the main advantages of M-learning, and these advantages are a result of the “mobility” of a mobile device (Chen et al., 2003; Hill and Roldan, 2005; Ting, 2005). Therefore, M-learning is valuable because of its mobility. Consequently, the perceived mobility value is a critical factor of individual differences affecting users' behaviors. This study treats perceived mobility value as a new variable in the TAM.
PMV has not been tested previously, but it relates to users' personal awareness of mobility value. Mobility enables users to receive and transmit information anytime and anywhere (Hill and Roldan, 2005; Ting, 2005).

The mobility associated with time-related needs will encourage users to adopt mobile technology since enhanced accessibility is expected to affect dynamic interaction and high levels of engagement (Anckar and D'Incau, 2002, p. 48).

Hence, users who perceive the value of mobility also understand the uniqueness of M-learning and have a strong perception of its usefulness.

In other words, perceived mobility value has a positive effect on the perceived usefulness of M-learning. Therefore, this work treats perceived mobility value as a direct antecedence of perceived usefulness (PU).

H2. Perceived mobility value has an effect on behavioral intention.

Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude (ATT), and Behavioral Intention (BI)

TAM posits that two particular behavioral beliefs, perceived usefulness (PU) and perceived ease of use (PEOU), are two fundamental factors for predicting user acceptance, and that the effect of external variables on intention are mediated by these two key beliefs (Adams et al., 1992; Davis, 1989; Davis, 1989; Mathieson, 1991).

PU is defined as an individual's perception that using a new technology will enhance or improve her/his performance (Davis, 1989; 1993).

Applying this definition to this research context, PU means the users’ perception that using M-learning enhances their learning performance. A strengthening of this belief creates a positive attitude toward M-learning, thereby increasing the user’s intention to use M-learning.

PEOU is defined as an individual’s perception that using a new technology will be free from effort (Davis, 1989; 1993). Applying this definition in this research context, PEOU represents the perception that M-learning is easy to use.

PEOU is hypothesized to be a predictor of PU. Moreover, both PU and PEOU are affected by external variables (Hu and Bentler, 1999; Venkatesh & Davis, 2000; Wang, Wang, Lin and Tang, 2003).

Furthermore, PU and PEOU have a positive effect on attitude. Unlike in TRA, the subjective norm is not a determinant of behavioral intention in TAM; instead, BI in TAM is affected only by PU and attitude (Davis, 1989).

TAM delineates the causal relationships between perceived usefulness (PU), perceived ease of use (PEOU), attitude and behavioral intention (BI) to explain users’ acceptance of technologies. PEOU is hypothesized to be a predictor of PU. Additionally, attitude is determined by two salient beliefs, namely PU and PEOU (Davis, 1989). Finally, BI is determined by PU and attitude.

Thus, behavioral intention is positively influenced by PU and PEOU is proposed herein.

H3. Perceived usefulness has an effect on behavioral intention.
H4. Perceived ease of use has an effect on behavioral intention.
In TAM, BI is influenced by both PU and Attitude. This relationship has been examined and supported by many prior studies (Adams et al., 1992; Davis, et al., 1989; Hu et al., 1999; Venkatesh and Davis, 1996; 2000). Therefore, this study presents the following hypotheses.

**H5.** Attitude has an effect on behavioral intention.

**METHODOLOGY**

100 respondents cooperatively provided complete response to the questionnaire, which consists of students of private and government higher learning institutions in Klang Valley area with 100% response rate. The questionnaire comprises of two sections:

Section A of the questionnaire presented all questions related to the respondent’s demographic data such as gender, age, marital status, race and the respondent’s occupation.

Section B presented separately the factors of PE (Perceived Enjoyment), PMV (Perceived Mobility Value), PU (Perceived Usefulness), PEOU (Perceived Ease of Use), ATT (Attitude), and BI (Behavioral Intention) (refer Appendix 1).

The structure of question provided in the questionnaire was based on likert scale and dichotomous question. Later, data collected are analyzed using multiple regression analysis, via Statistical Package for Social Sciences (SPSS) computer program version 14, as it is a powerful and flexible procedure for analyzing associative relationship between a metric dependent variable and one or more independent variables.

It is concerned with the nature and degree of association between variables and does not imply or assume any causality.

**DATA ANALYSIS AND FINDINGS**

**Demographic Profile of the Respondents**

The descriptive of the demographic profile of the respondents is presented in Table 1. Majority of the questionnaire were answered by female respondents (55%) compared to the male respondents (45%).

The highest number of respondents’ is aged between 21-25 years old (39 respondents) followed by 26 – 30 years old (34 respondents), below 20 years old (22 respondents) and above 31 years old (4 respondents). 87% of the respondents are single and the other 13% married.

The largest number for the racial category is Malay (50%) while the smallest number of racial category is other races (8%). Majority of the respondents are degree/bachelor (55%) students while the minority of the respondents is PhD (1%) student.

Most of the respondents are studying in private higher learning institutions (62 respondents) while the rest is studying in government higher learning institutions (38 respondents).
| Table: 1  
Demographic Profile of the Respondents  |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Female</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Age (years old)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>21-25</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>26-30</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Above 31</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Married</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Chinese</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Indian</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Others</td>
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<td>8</td>
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<tr>
<td>Others</td>
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<td>22</td>
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<tr>
<td>Education Level</td>
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<td>Foundation</td>
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<td>55</td>
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<td>Diploma</td>
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<td>9</td>
</tr>
<tr>
<td>Degree/Bachelor</td>
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<td>1</td>
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<tr>
<td>Master</td>
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<td>38</td>
</tr>
<tr>
<td>PhD</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Institution</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reliability Analysis**

The coefficient of cronbach α varies from 0 to 1 and the value of 0.60 or less indicates unsatisfactory internal consistency reliability. Table: 2 illustrates that the cronbach α value of all variables exceed the recommended value.

Thus, suit for further analysis.

| Table: 2  
Reliability Analysis  |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Perceived Enjoyment (PE)</td>
</tr>
<tr>
<td>Perceived Mobility Value (PMV)</td>
</tr>
<tr>
<td>Perceived Usefulness (PU)</td>
</tr>
<tr>
<td>Perceived Ease Of Use (PEOU)</td>
</tr>
<tr>
<td>Attitude (ATT)</td>
</tr>
<tr>
<td>Behavioral Intention (BI)</td>
</tr>
</tbody>
</table>

**Correlation Analysis among Variables**

Table: 3 describe correlation analysis among variables. There are six pairs of variables were correlated at 99% significant level. They are:
Perceived Usefulness (PU) and Perceived Mobility Value (PMV), Perceived Ease Of Use (PEOU) and Perceived Mobility Value (PMV), Perceived Ease Of Use (PEOU) and Perceive Usefulness (PU), Behavioral Intention (BI) and Perceived Mobility Value (PMV), Behavioral Intention (BI) and Perceive Usefulness (PU); and Behavioral Intention (BI) and Perceived Ease Of Use (PEOU). This provides evidence for both discriminant and convergence validity.

**Table 3**
Correlation Analysis among Variables

<table>
<thead>
<tr>
<th></th>
<th>PE</th>
<th>PMV</th>
<th>PU</th>
<th>PEOU</th>
<th>ATT</th>
<th>BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMV</td>
<td>-.056</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PU</td>
<td>-.179</td>
<td>-.335(**)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEOU</td>
<td>-.190</td>
<td>-.360(**)</td>
<td>.638(**)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATT</td>
<td>-.046</td>
<td>.259(**)</td>
<td>-.099</td>
<td>-.183</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>-.035</td>
<td>-.366(**)</td>
<td>.401(**)</td>
<td>.354(**</td>
<td>-.075</td>
<td>1</td>
</tr>
</tbody>
</table>

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

**Hypothesis Testing**

The dependent variable for this study is BI (Behavioral Intention) while the independent variables are ATT (Attitude), PE (Perceived Enjoyment), PU (Perceived Usefulness), PMV (Perceived Mobility Value) and PEOU (Perceived Ease of Use). The R value for the predictors’ variable is 0.479 while the R Square value is 0.230. After the R Square has been adjusted, the new value is 0.189. This suggest that the additional of another independent variables (PE, PU, PMV, PEOU) factors related to mobile learning, makes contribution in explaining the variances in BI (Behavioral Intention) towards mobile learning.

Table: 4 presented the output of the multiple regression analysis on the proposed hypotheses. The standardized beta (β) coefficient gives a measure of the contribution of each variable to the model. A large value indicates that a unit change in this predictor variable has a large effect on the criterion variables.

**Table 4**
Regression Analysis of Factors Related to M-Learning

<table>
<thead>
<tr>
<th></th>
<th>Standardized Coefficient (Beta (β))</th>
<th>t</th>
<th>Sig.</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Enjoyment</td>
<td>0.020</td>
<td>0.211</td>
<td>0.833</td>
<td>Not Supported</td>
</tr>
<tr>
<td>Perceived Mobility Value</td>
<td>-0.249</td>
<td>2.457</td>
<td>.016</td>
<td>Supported</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.252</td>
<td>2.106</td>
<td>.038</td>
<td>Supported</td>
</tr>
<tr>
<td>Perceived Ease Of Use</td>
<td>0.115</td>
<td>0.940</td>
<td>.350</td>
<td>Not Supported</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.037</td>
<td>0.391</td>
<td>.697</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

Note: R = .479; R² = .230

Hypothesis 1 proposed that perceived enjoyment has an effect on mobile phone users’ behavior intention in Mobile Learning.
From Table 4, the significant value for perceived enjoyment is 0.833 which is far greater than 0.05 at 95% significant level. Thus, the Hypothesis 1 is not supported with β value 0.020. It was found that over 96% of the mobile phone users’ agree that M-learning would make them feel good, interesting and would be fun to use it but only small number disagree with the statements.

Hypothesis 2 proposed that perceived mobility value has an effect on mobile phone users’ behavior intention in Mobile Learning. Table 4 exemplifies that the significant value for perceived mobility value is 0.016 which is smaller than 0.05 at 95% significant level. Thus, the Hypothesis 2 is supported (β value -0.249, p<0.05). Only a small number of the mobile phone users’ do not know that mobile device is a medium for M-learning. 61% of them disagree that M-learning is easy to access at any place at any time.

Furthermore, majority of the mobile phone users’ agree that mobility makes it possible to get real time data and it is an outstanding advantage of M-learning.

Next, Hypothesis 3 proposed that perceived usefulness has an effect on mobile phone users’ behavior intention in Mobile Learning. As presented in Table 4 and as similar to Hypothesis 2, significant result was found where the significant value for perceived usefulness is 0.038. The value is smaller than 0.05 at 95% significant level. It was confirmed that majority of the mobile phone users’ agree while none of the them strongly disagree that using M-learning would save a lot of time, M-learning enhance effectiveness in learning and M-learning would be useful. With regard to mobile phone users’ behavior intention in Mobile Learning, results show that majority of the respondents probably will use M-learning when it become available, intend to say something favorable about M-learning and intend to use M-learning routinely.

Hypothesis 4 proposed that perceived ease of use has an effect on mobile phone users’ behavior intention in Mobile Learning. The significant value for PEOU is 0.350 which is far greater than 0.05 at 95% significant level. Thus, the Hypothesis 4 is not supported with β value 0.115. More than half of the mobile phone users’ (63%) agree that their interaction with M-learning would be clear and understandable and M-learning is easy to use and would not require a lot of mental effort.

Hypothesis 5 proposed that mobile phone users’ attitude has an effect on their behavior intention in Mobile Learning. In Table 4, the significant value for mobile phone users’ attitude is 0.697 which is far greater than 0.05 at 95% significant level. Thus, the Hypothesis 5 is not supported. Positive mobile phone users’ attitude leads to the positive respond towards M-learning. Mobile phone users’ agree that M-learning would be very desirable to use. They also show interest in using M-learning and hold a positive evaluation on M-learning. Above all, previous study found that the entire hypotheses (Hypothesis 1, Hypothesis 2, Hypothesis 3, Hypothesis 4 and Hypothesis 5) were supported with each β value. Contrariwise to this study, only Hypothesis 2 and Hypothesis 3 are supported while the others are not supported with each β value.

**CONCLUSIONS**

All in all, it is proven that Technology Acceptance Model (TAM) can be employed to explain the acceptance of mobile learning by mobile phone users’. It was bring into being that Malaysian mobile phone users’ intention to positively accept the use of Mobile Learning is due to encouraging factors such as perceived mobility value and perceived usefulness of the Mobile Learning.
Educators need to adapt from a role as transmitters of knowledge to guiders of learning resources. In addition, technology developers need to respond to concerns of security and privacy while designing devices and services that learners both want and will pay for. As for recommendations, room to further analyze the data using multivariate data analysis, such as Structural Equation Modeling, is open to future researchers by covering larger size of sample with additional variables on the acceptance towards M-learning and importance of M-learning. It would be beneficial in future research undertakings.

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**REFERENCES**


## APPENDIX: 1

### RESEARCH VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items</th>
<th>Source</th>
<th>Questions</th>
</tr>
</thead>
</table>
| Perceived Enjoyment (PE)   | 3     | Moon and Kim (2001); Yi and Hwang (2003); Yu et al. (2005)            | (PE1) M-learning would make me feel good.  
(PE2) M-learning would be interesting?  
(PE3) I would have fun using M-learning? |
| Perceived Mobile Value (PMV)| 4     | Newly created                                                         | (PMV1) I know that mobile devices are the mediums for M-learning.  
(PMV2) It is easy to access M-learning anywhere at anytime.  
(PMV3) Mobility makes it possible to get the real time data.  
(PMV4) Mobility is an outstanding advantage of M-learning. |
(PU2) M-learning would enhance my effectiveness in learning.  
(PU3) Overall, M-learning would be useful. |
| Perceived Ease Of Use (PEOU)| 3     | Davis (1989, 1993); Venkatesh and Davis (1996); Yang (2005)         | (PEOU1) Using M-learning would not require a lot of my mental effort.  
(PEOU2) My interaction with M-learning would be clear and understandable.  
(PEOU3) M-learning would be easy to use. |
| Attitude (ATT)             | 3     | Bagozzi et al. (1992); Hu et al. (1999)                              | (ATT1) In my opinion, it would be very desirable to use M-learning.  
(ATT2) I would like to use M-learning.  
(ATT3) I hold a positive evaluation on M-learning. |
| Behavioral Intention (BI)  | 3     | Bagozzi et al. (1992); Hu et al. (1999)                              | (BI1) I intend to use M-learning when it becomes available.  
(BI2) If I were asked to express my opinion of M-learning, I intend to say something favorable.  
(BI3) In the future, I intend to use M-learning routinely. |
THE USE OF MOBILE TECHNOLOGIES IN MULTIMEDIA-SUPPORTED LEARNING ENVIRONMENTS

Assistant Prof. Dr. Suzan DUYGU ERIŞTI
PhD Student Halil Ibrahim HASESKI
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Anadolu University, Faculty of Education, TURKEY

ABSTRACT

The aim of the study is to reveal the students’ opinions about the use of PDAs (Personal Digital Assistant) in learning environment within the context of multimedia based applications. Through purposeful sampling, 17 undergraduate students attending the elective course of BTÖ 323 Character Design in Computer Environment in the Department of Computer Education and Instructional Technology at Anadolu University were involved in the study.

Additionally, the present study was conducted in two phases; in the first phase, within the scope of the course, an interactive Learning content including the subject of “Interactive Multimedia Design” was prepared and installed on PDAs. Then, the PDAs installed with these prepared contents were distributed to the students, and two-hour training on how to use the PDAs was given to the students. In the second phase of the study, a three-week application regarding students’ following the course content via PDAs was conducted. Throughout the application, the students communicated with the instructor for extracurricular feedback by means of PDAs. After the application, semi-structured interviews were held with the students regarding the course application performed via PDAs and its effectiveness.

The interview data collected were examined with descriptive analysis. The results demonstrated that most of the students explained the hardware inadequacies in the use of multimedia environment facilities via PDAs such as visual images, videos, animation particularly in learning content.

Besides this, for the interactive dimension and communication, the students mentioned negativities particularly regarding file sharing. Consequently, it was concluded that the students had negative opinions about the presentation of multimedia-supported Learning content via PDAs.

Keywords: mobile learning, multimedia, multimedia and mobile learning

INTRODUCTION

Technological developments influence every field of educational environments. With recent developments in technology, it has been understood that educational environments are not limited to schools and related institutions.
With the use of computers and the Internet in educational environments, opportunities to access information have changed, and such concepts as e-learning and m-learning have occurred. In recent years, mobile learning (m-learning) has been a crucial component of e-learning.

Although related to e-learning m-learning focuses on the mobility of the learner. Mobile learning is a kind of learning that offered by mobile devices and which offers to learners independent of the time and place. According to Traxler (2009), m-learning (mobile learning) is defined as instruction given in environments supported with such mobile technologies as smart phones, hand-held computers (PDAs) and laptop computers or supported. Pieri and Diamantini (2009) define mobile learning as the presentation of any instructional content to certain target populations via portable tools such as hand-held computers, laptop computers, e-books and mobile phones. According to Quinn (2000), mobile learning is an e-learning activity carried out with the help of such portable electronic tools capable of doing numerical calculations as hand-held computers and mobile phones. Smart phones, hand-held computers (PDAs), portable DVD players, MP3-MP4 players and notebook computers can all be considered as mobile technology tools. As the common features of these tools, they are light, and they allow users to interact with the non-verbal and visual stimulants of multimedia thanks to their rechargeable batteries.

The developing technology has made computers evolved in time in that many of their features have been improved and they have become smaller in size. With the developing technology, desktop computers big in size have been replaced by laptop computers smaller in size, which have now been replaced by hand-held computers (PDA-Personal Digital Assistant) that can be put into a pocket. PDAs can be defined as hand-held computers which allow mobile communication and access to the Internet as well as which can process, organize and store non-verbal materials such as written and musical texts as well as visual and audio narrations such as pictures, animations and video records in multimedia environments. Since PDAs also allow faster access to the Internet with the help of 3G technology, since they are portable and since they have good technical features, PDAs have an important place in mobile learning.

PDAs use operating systems of PalmOs, Symbian and Windows. In addition, these devices also include programs that allow opening multimedia files such as videos, pictures and audios, surfing on the Web, preparing tables and doing calculations. Because these devices support such software development programs as Java, XML and Flash and because they allow transferring data to PCs, they facilitate designing educational software for personal computers. Mitchell & Doherty (2003) stated the advantages of PDAs as high speed of data transfer, independence of time and place for Web access, data storage in their own memory, ability to connect to computers, and ability to open pictures, videos and animations in different formats. In addition to these advantages, PDAs are light and small, which makes it portable.

Georgiev, Georgieva and Smrikarow (2004) emphasized certain disadvantages of PDAs stating that:

1. Due to their physical dimensions, the amount of information to be shown on the small screens of PDAs is limited.
2. The small keypads of PDAs make data input difficult for users.
3. PDAs have limited capacity of memory.
4. It is necessary to charge the batteries of PDAs regularly. In addition, their batteries have certain length of life.
5. Software developed for computers cannot be directly used in PDAs.
6. Due to their slow access to the Internet, it is difficult to open videos and high-resolution images via the Internet by using PDAs.

7. Some users are likely to find the cost of wireless Internet connection high.

Furthermore, the prices of PDAs are higher than those of desktop computers. However, they have similar or lower prices when compared to those of laptop computers.

Purpose of the Study
The overall purpose of the present study was to determine students’ views about the use of PDAs (personal digital assistant) within the context of multimedia-based applications. In line with this basic goal, the present study seeks answers to the following research question: ‘What are students’ views about the use of PDAs in the multimedia-based educational processes.’

METHOD
In this study, which aimed at determining students’ views about the use of PDAs (personal digital assistant) in educational settings within the context of multimedia-based applications, the qualitative research method was applied for the collection, analysis and interpretation of the research data.

Participants
In order to determine the students with whom the present study was carried out, criterion sampling, one of the purposeful sampling methods, was used. In the present study, which tried to determine students’ views about the use of PDAs in educational settings within the context of multimedia-based applications, the students taking a course in which multimedia applications were effectively used, were taken as the basic criterion in the study.

In this respect, the optional course of BTO 323 Character Design executed by one of the researchers in the Department of Computer Education and Instructional Technologies in the Education Faculty of Anadolu University and the content of this course were examined, and it was revealed that the study met the criterion that multimedia facilities were used effectively in the course. A total of 17 undergraduate students taking this course constituted the research sample.

Data Collection
The research data were collected via interview forms including 6 open-ended questions which were based on instructional content presented in a period of 7 weeks and conducted based on an instructional content presented via PDAs and developed within the scope of this study. In this respect, first, a content to be presented via PDAs was developed (See Picture: 1). Within the scope of the study, in the course of BTO 323 Character Design previously determined, the subjects of ‘Design Elements and Design Principles in Character Design’ were developed as appropriate to the multimedia facilities as well as the screen design of PDAs in a way to be presented via PDAs in a period of four weeks. In the content presented via PDAs, certain interactive presentations, examples, videos and applications that could be beneficial for the design process, and the students were asked to develop a project based on the educational content given via PDAs at the end of the process and were asked communicate the feedback regarding the project with the faculty member via PDAs.

Within the scope of the study, the instructional content was presented in a period of four weeks, and the interactions to be conducted in the process of project development were carried out in a period of 3 weeks; in addition, the project developed was regarded as an end-of-term study.
The content presented via PDAs was prepared with the programs of Adobe Photoshop, Adobe Flash CS3 and Adobe Flash Lite. The contents prepared were installed on PDAs, checked by the researchers and made ready for students’ use. As a result, the contents prepared were distributed to 17 students found in the research sample.

![Screen Images of Multimedia-Based Instructional Content Presented via PDAs](image)

**Picture: 1**
Screen Images of Multimedia-Based Instructional Content Presented via PDAs

Prior to the application, the students were introduced to the features of PDAs in 4 course hours - 45 minutes each - regarding the use of features as images, visuals, interactive media designs and videos that could be considered as multimedia facilities; regarding the use of interaction facilities that provide student-faculty member and student-student interactions; and regarding the follow-up of the instructional content.

During the process, the students established direct communication with the faculty member, received feedback regarding their designs, and shared files with the faculty member by uploading them.

The students were asked to reflect their acquisitions on the design development process within the scope of all these interaction facilities. In the study, the subjects determined as ‘Design Elements and Design Principles Character Design’ in the course of BTO 323 Character Design were presented to the students in a period of 4 weeks. Regarding the dimensions of access to the subjects and interaction with the faculty member, there was no limitation for the students; thus, the students themselves determined these periods in line with their own needs.

Following the presentation of the instructional content, the student-faculty member interaction, feedback regarding the design development and application and the evaluation activities were carried out in a period of 3 weeks via PDAs in the project development process based on the instructional content.

In the interview form applied to determine students’ views following the application process, the students were asked to report their positive or negative views about the use of PDAs in the lessons. Within the scope of the presentation and use of the instructional content via PDAs, the students were asked to state what types of problems they experienced and what type of opportunities they had regarding especially interactive applications.

The students were required to evaluate PDA with respect to its contribution to the lessons. Within the scope of the study, they were asked to investigate the effective usability of PDAs especially regarding the applications requiring interaction and regarding the use and design of multimedia opportunities.
Data Analysis and Interpretation
For the analysis of the data obtained in the study, descriptive analysis was applied. In this respect, in line with the research questions and the conceptual framework of the study, the research data were analyzed based on the interview forms of the students.

In the second phase, the findings obtained were presented as frequency distributions, and the written texts and pictures of the students were interpreted.

In the process of the analysis of the research data, first, a framework was prepared in line with the research questions and the conceptual dimension of the study, and in line with this framework, the researchers determined the themes under which they organized and presented the data.

In the study, the data were chosen for description and gathered in a meaningful and reasonable way. Following this, the data organized were defined and presented with the support of direct quotations when necessary.

In the phase of explaining, relating and giving meaning to the findings, for better-quality interpretation made by the researcher; the reason-result relationships between the findings were revealed, and the research findings obtained were compared with those of other studies (Yıldırım and Simşek, 2005).

In the phase of data analysis, for the data obtained from the students based on the interview forms, a form including the parts of descriptive index and researcher’s comment was prepared.

These parts included in the form were filled out by the researchers.

For the reliability of the study, the researchers and field experts examined the forms and determined the items that they agreed and disagreed on.

For the calculation of the reliability of the study, the reliability formula suggested by Miles and Huberman (1994) was used. As a result of the calculations, the reliability of the study was found as 98%.

FINDINGS AND INTERPRETATIONS

The findings obtained in the study and gathered under four main themes such as ‘Access to instructional content’, ‘Use of multimedia-based instructional content’, ‘Technical features’ and ‘Communication and interaction features’ were tabulated in Table 1 as frequency distributions and summarized with the support of direct quotations from the views of the participants in the study.
Within the scope of the main theme of "Access to the instructional content", the sub-theme of 'Effective and rapid access to the instructional content' is obviously striking. The sub-theme of 'Effective and rapid access to the instructional content' was explained by the participants with respect to certain positive sides.

These positive sides were as follows: 'Independence of time and place in accessing the instruction', 'Easy access to the necessary information with the menus and directives in the instructional content', 'Easily receiving feedback', 'Easy interaction with the teacher', and 'Easy share of data'.

The fact that the PDAs used in the application was a portable device might have caused the students to state positive views about the fact that they accessed the instructional material, that they shared information, and that they received feedback by interacting with their teachers. The reason is that the PDA device, with its features, makes learning independent of time and place. Regarding this point, one of the students, 'A3', stated "the biggest benefit of PDAs is that you can communicate with the teacher at any time all day. You receive feedback more quickly. And also learning occurs independent of time and place ...".

Besides the positive views of the students, they also reported views about the limitations created by limited access based on the main theme of,

'Access to the instructional content' and mentioned some problems regarding 'Ineffective use of the menus and the directives in the instruction content' and 'Small dimensions of the menus and directives for effective use'.
The students’ views revealed that the menus and directives that allowed access to the necessary information in the content were too small for effective use, which thus made the use of PDAs difficult. Regarding this point, one of the students, ‘A7’, stated ‘If some of the menu buttons used in the PDA were bigger, it would be better for easy use and recognition’.

In the application process, in line with the students’ views, the sizes of the verbal (texts) and visual stimulants (pictures) of the material presented via PDA could be said to be the factors that determine the effectiveness of the presentation of the instructional content. The reason is that regarding the inefficiency of these features, the users experienced problems in examining the visual and verbal information in the instructional content presented. ‘A6’, one of the students, stated “The font size was small. The pictures are small. And the resolution of the pictures was very low.”

In addition, regarding the inability to play the audio from the instructional material, the participants stated ‘the unity of the instructional material was disrupted’. Regarding this point, one of the students, ‘A1’, stated “The Media Player opens in a separate window for the audio parts. I just want to listen to sounds within the material. In this respect, Media Player disrupts the wholeness”.

In the study, it was found out that within the scope of the main theme of ‘Use of multimedia-based instructional content’, a very few number of students reported positive views about the sub-themes of ‘Effective use of multimedia contents is easy’ and ‘Effective use of instructional material is easy’. On the other hand, most of the students mentioned problems regarding the sub-themes of,

‘Effective use of multimedia contents is difficult’ and ‘Effective use of instructional content is difficult’. According to the students, in general, these problems were ‘Multimedia contents are not presented effectively via PDA’, ‘Font size is small’, ‘Visuals are small’, ‘Visuals are not clear’, ‘Audio is played out of the material and disrupts the wholeness of the material’ and ‘Videos are played out of the material and disrupts the wholeness of the material’.

A majority of the students experienced problems with the technical features of PDAs. These technical problems were mostly related to deadlock, sim-card connection, duration of charge, the weight of PDA, useless menus, small screen and insufficient key-pad and touch-pad screen features.

The students reported few positive views about the technical use features of PDAs. The theme that the students mentioned most was “Technical features”.

The students reported that in the application process, technical features directly influenced especially the presentation of multimedia contents. The reason is that with respect to technical features, there were several limitations regarding accessing multimedia contents, running the contents (audio, animation and video file formats), surfing between and downloading contents and applying the visual and functional features of contents (due to not big enough screens).

All of the students reported at least one negative view about the equipment features of PDAs. Regarding the insufficient equipment features of PDAs, ‘A5’, one of the students, stated “Its charge was not long. It is big and heavy. Since it includes rich content, its touch-pad feature is not useful.”
The photos you take with PDA are bad. Its normal keys are too close to each other and are not useful. It has some problems with the use of sim-card... its battery gets too hot.”

The students also mentioned the positive sides of PDAs as well as its insufficiencies and equipment features.

One of the students, 'A7', stated "the charge duration of a PDA is quite enough for simple applications and you can quickly charge it; however, the more complex the application, shorter the charge duration of the battery. Its tools are useful; like connecting it to a computer, charging its battery and using its headphones...”.

In this respect, it was seen that the students focused more on the equipment features of PDAs than on their technological capabilities. As for the technological capabilities of PDAs, one of the students, 'A3', stated

"...the slowdown and deadlock that occur while using the PDA make me unwilling to use this device... If this study were carried out with more up-to-date PDAs, better results could be obtained”.

With respect to another main theme, “Communication and interaction features”, the students reported views mostly about the sub-themes of “Use of communication tools is sufficient” and “Use of communication tools is not sufficient”. It was seen that the number of students' positive views about the use of communication tools of PDAs was similar to that of their negative views about the use of these tools. Regarding the capabilities and insufficiencies of PDAs with respect to their communication tools, one of the students, 'A17', stated "with PDA, one can receive feedback regarding the projects related to this lesson. Discussions can be made with friends regarding the projects. E-mail can easily be used about the lesson subjects. With respect to receiving feedback, the file size can lead to a problem. Sending an e-mail without using the 3G technology can be a problem in areas with wireless connection."

In addition, under the main theme of "Communication and interaction features", the number of the students' views about the sub-themes of “Their capability of establishing interaction is sufficient” was similar to the number of their views about the sub-theme of “Their capability of establishing interaction is not sufficient” Regarding this point, one of the students, 'A9', stated "Its features that allow establishing interaction between the applications and the user are not very good”, while another student, 'A4', stated "There was a great deal of interaction, so I didn't have any difficulty understanding the content”. In general, the students reported negative views about the presentation of multimedia-based instructional environments via PDAs; however, they stated that with the use of a well-equipped device, applications like this could be more effective.

CONCLUSION AND SUGGESTIONS

In this study, which aimed at determining the students’ views about the use of PDAs (personal digital assistant) in educational environments within the scope of multimedia-based applications, a majority of the students generally mentioned the equipment insufficiencies of PDAs regarding the presentation of multimedia facilities such as visual images, videos and animations found especially in the multimedia-based instructional content. Regarding the communication and interaction dimension, the students mentioned especially the difficulties they experienced in file sharing.
Within the scope of the study, it was concluded that the students had negative views about the use of PDAs in presenting the multimedia-based instructional content.

Based on the findings obtained in the study and gathered under four main themes such as 'Access to the instructional content', 'Use of multimedia-based instructional content', 'Technical features' and 'Communication and interaction features', it was seen that the students mostly mentioned negative sides of PDAs.

The students experienced a number of problems especially with access to the multimedia-based instructional content via PDAs, with the use of the content and with technical features. In order to provide effective multimedia-based instruction via PDAs, PDAs should have better equipment and interaction features.

The students’ positive views about the communication and interaction features of PDAs were parallel to their negative views about the same point yet clearly differed with respect to the other dimensions. In other words, it could be stated that the students found PDAs more effective with respect to the interaction and communication they established with the faculty members in the instructional environment when compared to the other dimensions.

However, these features were not found sufficiently effective. The basic reason for this was the insufficiency of the PDA technology used in the study. The students mentioned various problems related to deadlock, duration of charge, taking photos, uploading files and phone features and other equipment-related problems.

While accessing the instructional content independently of time and place was a positive side of PDAs, the technical problems experienced in accessing the instructional content influenced the students’ views about this feature. The difficulties in accessing the instructional content also influence the use of multimedia-based software, and the students thus reported negative views about this subject. In their study on mobile technologies in Internet-based instruction, Oran and Karadeniz (2007) found out that mobile technologies enable students to study at any time and in any place they want.

This finding reported by the researchers is parallel to the positive views reported in the present study about accessing the instructional content independently of time and place.

The problems experienced in accessing the multimedia content via PDAs were basically regarded as the result of various technical insufficiencies such as the useless menus, small screens, low screen resolution, insufficient file uploading, insufficient memory card and inappropriate key-pad.

The problems regarding the presentation and use of multimedia facilities via PDAs were thought to result from small typographic elements, small visuals, ineffective uploading of audios and videos and the problems with data sharing. The research results differed from those of other studies reported in related literature on the effective use of PDAs in instructional environments (Kenny et. al., 2009; Kuzu, Çuhadar and Akbulut, 2007; Allan, Carbonaro and Buck, 2006; Mutlu, Yenigün and Uslu, 2006).

The reason for this could be the fact that within the scope of the study, the PDAs had many multimedia features yet the qualities of PDAs were not sufficient. In addition, the results of the studies mentioned above were also parallel to the students’ views reported in the present study about the fact that if the qualities of the PDA technology were different, there would be better instructional opportunities.
As a result, especially for the presentation of multimedia applications, PDAs are regarded as effective depending on their qualities. The sufficiency of the qualities of PDAs will place these devices among the technologies that contribute to the educational processes especially regarding the presentation of the instructional content via these devices, access to the instructional content, independence of time and place and effective communication with the faculty member.

REFERENCES


BIODATA and CONTACT ADDRESSES OF AUTHORS

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SURVEY OF BARRIERS AFFECTING THE USE OF INFORMATION COMMUNICATION TECHNOLOGIES (ICTS) AMONG DISTANCE LEARNERS: A Case Study of Nigeria

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ABSTRACT

The use of Information Communication Technology (ICT) to bridge the communication gap between teacher and learner has been identified as a major characteristic of Open and Distance Learning (ODL). In many developing counties, including Nigeria, several barriers prevent OD learners from maximising the potentials of ICTs to enhance their learning. This study seeks to identify these barriers and consequently, strategies to overcome them within the Nigerian context. Subjects of the research are OD learners in three selected distance learning institutions in Nigeria. Responses from administered questionnaires and interviews constitute the data, which were analysed using appropriate statistical instruments. The findings of this study which form part of an ongoing regional research on the use of ICTs by distance learners, show that

- much of ODL instructional delivery is still primarily print based;
- there is some significant progress has been made especially with regard to encouraging the use of some non traditional ICTs through ODL; and
- although Nigeria has embarked on implementing computer literacy at all levels, the issue of affordability, bandwidth, and infrastructural facilities like constant electricity remain barriers.

However, the data that most can afford mobile phones thus providing a unique opportunity to maximize them as support tools for learning.

Keywords: ICTs, Open and distance learning, barriers, distance learners, information dissemination

INTRODUCTION

The use of ICTs to bridge the communication gap between teacher and learner has been identified as one of the most significant features of Open and Distance Learning (ODL) delivery systems. The ICTs which are used for learning can be viewed as a continuum from low end to high end technologies and they include the following: radio, television, audio, video, telephone, computer, Internet, mobile telephony, videoconferencing, and teleconferencing.

The digital divide between many developing countries, Nigeria inclusive, and the rest of world constitutes the background to identifying the several barriers which prevent OD learners from maximizing the potentials of ICTs to enhance their learning.
The digital divide between developing and developed countries in the use of ICTs is evidenced by the statistics showing the number of Internet users in Africa at 3.4% compared with 41.2% for Asia, 24.6% for Europe, and 15.7% for North America. The rate of penetration also follows a similar trend as Africa has the lowest penetration rates of 5.6% compared with the highest at 74.4% in North America. In contrast however, Africa has the second highest growth rate in the number of users with 1,100% as shown in Table 1

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>975,330,899</td>
<td>4,514,400</td>
<td>54,171,500</td>
<td>5.6 %</td>
<td>1,100.0</td>
<td>3.4 %</td>
</tr>
<tr>
<td>Asia</td>
<td>3,780,819,792</td>
<td>114,304,000</td>
<td>657,170,816</td>
<td>17.4 %</td>
<td>474.9</td>
<td>41.2 %</td>
</tr>
<tr>
<td>Europe</td>
<td>803,903,540</td>
<td>105,096,093</td>
<td>393,373,398</td>
<td>48.9 %</td>
<td>274.3</td>
<td>24.6 %</td>
</tr>
<tr>
<td>Middle East</td>
<td>196,767,614</td>
<td>3,284,800</td>
<td>45,861,346</td>
<td>23.3 %</td>
<td>1,296.2</td>
<td>2.9 %</td>
</tr>
<tr>
<td>North America</td>
<td>337,572,949</td>
<td>108,096,800</td>
<td>251,290,489</td>
<td>74.4 %</td>
<td>132.5</td>
<td>15.7 %</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>581,249,892</td>
<td>18,068,919</td>
<td>173,619,140</td>
<td>29.9 %</td>
<td>860.9</td>
<td>10.9 %</td>
</tr>
<tr>
<td>Oceania/Australia</td>
<td>34,384,384</td>
<td>7,620,480</td>
<td>20,783,419</td>
<td>60.4 %</td>
<td>172.7</td>
<td>1.3 %</td>
</tr>
<tr>
<td>WORLD TOTAL</td>
<td>6,710,029,070</td>
<td>360,985,492</td>
<td>1,596,270,108</td>
<td>23.8 %</td>
<td>342.2</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

Source: Internet World Statistics (2008)

This study examines and identifies these barriers as well as strategies to overcome them within the Nigerian context. With a population of over 140,000,000, Nigeria is reported to have had about only 200,000 Internet users in 2000 but now currently has over 10,000,000 users.

In relation to the rest of Africa, Nigeria has the second largest number of Internet users (10,000,000) following Egypt (Internet World Statistics, 2008) and represents 18.5% of Internet users in Africa.

The phenomenal growth of Internet users over an eight year period illustrates the potential of ICTs in Nigeria. The story of growth in the use of other ICTs like mobile telephony is even more phenomenal. From less than 1,000,000 fixed and mobile lines in 1999 to 25,000,000 lines in circulation in 2006 since inception in 2001, and with a projected growth rate of 25% per annum, mobile telephony has the potential of not only for closing the developmental gap (2006:1), but also for providing access to learning for development in Nigeria. With teledensity ratios that stood at 1:165 at inception, present growth rates for 2007 are estimated at 1:10. There has also been appreciable growth in the spread and rural penetration of mobile telephony with 58% coverage of the population (World Bank 2006). This wide margin is not unrelated to the fact that it costs fives times more to access the Internet compared to the mobile phone. In a comprehensive report on mobile telephony in Nigeria (2006) this ICT tool has proven to be successful and sustainable among the rural Nigerian population.
However, according to the report, low levels of education and illiteracy reinforced by poverty are among the factors limiting access to ICT infrastructure in developing countries and especially among women (2006:24). Also, while the above shows an appreciable growth for Nigeria in comparison with Africa, the pace is relatively slow in comparison with the rest of the world. One of the major catalysts that have been identified in literature to address barriers to the use of ICTs is a national policy on ICT.

A National Information Technology (IT) policy was approved for Nigeria in 2001. The National Information Technology Development Agency (NITDA), and the Nigerian National ICT for Development (ICT4D) Strategic Action Plan committee were also established to drive the implementation of the policy. Encouraging the use of ICTs in education is one of the objectives of the policy. One of the key objectives of a ten-year plan for rejuvenating open and distance learning in Nigeria was to encourage technological literacy (Jegede, 2008). The digital divide remains a major threat to achieving mass education through ODL because ICTs increase access to learning as well as enable learning in formal and non-formal environments (Jegede, 2008; Khan, 2008). This study is a survey of how much has been achieved in encouraging the use of ICTs through ODL, and the barriers that militate against achieving this objective. It will also bring to the fore other ‘non-traditional’ barriers which are often not mentioned in literature on use of ICTs, particularly as it affects distance learning.

**LITERATURE REVIEW**

John Daniel (2006) highlights two main advantages that Africa has over industrialized countries in exploiting the use of ICTs for education and which also serve as opportunities to bridge the digital divide. They are “its ability to provide higher quality learning to increasing numbers at lower costs...” and “the habit of leapfrogging into new technologies”. The actualization of these opportunities is however determined by the ability to overcome identified barriers. The amount of available information on barriers to the use of ICTs varies from country to country (COL 2000, COL 2002, Thorpe 2005, PHEA 2007).

In higher education where the use of ICT is currently being introduced, the problems are similar across the continent. ICT infrastructure is still being developed in Africa but has also experienced significant growth over the last decade. In East Africa, higher education institutions in Kenya and Tanzania for example, are introducing distance learning programmes to meet the increased need for access and lifelong learning. Distance education is being offered by Open University of Tanzania, and by the African Virtual University from its Kenyan headquarters. However, the use of ICT to facilitate learning is restricted by various problems including weak ICT infrastructure particularly in rural areas, availability of electricity, computer illiteracy, access to computers outside university campuses, and high capital costs of implementing elearning programmes (PHEA 2007).

South Africa has a similar experience with the rest of Africa with regard to the need for increased access which is one of the main reasons distance education remains an attractive option. At the same time and in contrast to the rest of the continent, South Africa has had a relatively longer history in the use of distance education and in varying degrees across institutions, the use of ICTs in higher education.

Even though ICTs have been an integral part of South African’s higher education for longer than in other African countries, the literature suggests that access cannot be provided through the use of ICTs in the same ways as is done in developed countries (PHEA 2007, 109).

The challenges include adequate deployment of infrastructure, skills and access. Even so, South Africa is ahead of the rest of Africa in the types of ICTs it is currently
exploring such as open source software, m-learning resources. Research on the use of ICTs in distance education in the Nigerian context is relatively new and limited for the simple reason that ICT in distance education in the country is a relatively recent phenomenon. In three separate workshops organized by COL on the use of ICTs in Commonwealth countries, Nigeria did not feature as one of the countries (2000, 2002, 2003). A brief country report is provided below as a background for the present study.

**BRIEF COUNTRY REPORT**

Nigeria, the most populous country in Africa, is located in West Africa between two francophone countries, Benin and Cameroon. Nigeria has a population of 140,003,542 (2006); 51.2% are male and 48.8% are female. The population is distributed between rural and urban as 51.7% and 48.3% respectively while 42.3% are under the age of 15. 68% of the population is literate with higher rates for males 75.7% than for females 60.6%.

The government provides free education at the primary level. Secondary school attendance rate is only 29% (32% for males and 27% for females). Starting with only five universities in 1948, the number of tertiary institutions has multiplied significantly to over 100 higher education institutions. However, the proliferation has not resolved the problem of access as less than 20% of eligible candidates gain placements into these institutions yearly. Gross primary, secondary and tertiary enrollment is 56% of the population (World Bank, 2006). Distance education in Nigeria dates back to early 1960s when it was in the form of correspondence education. Today, there are a number of dual mode institutions that includes the Distance Learning Institute (DLI) of the University of Lagos. Although the institute started with producing its course materials in print format, it currently runs face to face lectures for its students for specified periods in the year. Others are Centre for Distance Learning and Continuing Education (CDLCE) of the University of Abuja; Distance Learning Centre (DLC) of University of Ibadan; and Distance Learning Centre of the Obafemi Awolowo University. The National Teachers’ Institute (NTI) is a single mode institution which was established to provide training and upgrading for primary and secondary school teachers. The institute produces course materials in print format and plans to broadcast them via the radio as well.

The National Open University of Nigeria (NOUN), which was established in 2002 to resolve the problem of access to higher education in the country, is the only single mode distance education tertiary institution in West Africa. Although its course materials have print as the basic format, they are also being produced in other digital format including CDs, web based, and audio formats.

Key aspects of its operations have been digitalized such as admissions, registration, and information dissemination. The university also plans to digitalize the administration of its examinations.

Nigeria is classified as an emerging market and has one of the fastest growing telecommunication markets in the world with a concentration of major players like MTN, Glo, Airtel, Etisalat and Visafone. The telecommunications industry has recorded phenomenal growth over the last decade. The growth is evidenced by an increase from less than 1,000,000 fixed and mobile lines in 1999 to 25,000,000 lines in 2006 since inception in 2001, and a projected growth rate of 25% per annum. There has also been appreciable growth in the spread and rural penetration of mobile telephony from 38% coverage in 2000 to 58% in 2006 (World Bank 2006).
On the average, mobile telephony has overtaken use of the Internet which stands at 6.75 per 100 people (ITU, 2007). This wide margin is not unrelated to the fact that it costs five times more to access the Internet compared to the mobile phone. Access to computers is dismally low and has not increased significantly with 0.8 people per 100 (ITU, 2007). Older ICTs like the television are available only to 32% of the population (World Bank 2006). Table 2 shows statistics for ICT use in comparison to average statistics for Sub-Saharan Africa:

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Phone lines</td>
<td>Number of users per 100</td>
<td>0.4</td>
<td>1.07</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Mobile telephony</td>
<td>Number of subscribers per 100</td>
<td>0.0</td>
<td>27.8</td>
<td>13.5</td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>Number of users per 100</td>
<td>0.1</td>
<td>6.75</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td>PCs per 100</td>
<td>0.6</td>
<td>0.8</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>% of Households with television</td>
<td>26</td>
<td>32</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>


As mentioned earlier, Nigeria has an IT policy in place with the use of ICTs in education as one of its objectives. In this regard, individual institutions are engaging in partnerships to improve their ICT infrastructural base. For example, several universities receive support in this regard, from the Partnership for Higher Education, an initiative funded by seven major foundations in the United States. Other institutions, like the University of Lagos, have received support from major telecommunication service providers like the MTN in providing networked computer laboratories for students. Access to ICTs remains a major challenge to the development of distance education in the country as it is solely dependent on the efforts of government to provide infrastructure.

Available research often cite what has now come to be known as the ‘traditional’ problems or barriers to the integration of ICTs which are namely, erratic power supply, inadequate provision and very high cost of ICT infrastructure, and low ICT and Internet access among the population (2007:82). The objectives of this study are to identify the barriers affecting learners within the context of distance education in Nigeria, their coping strategies, and suggest strategies to overcome them.

**METHODOLOGY**

The study was guided by the following questions:

- What are the various ICTs available to distance learners in their environment?
- What are the barriers to ICTs that distance learners face?
- What strategies do distance learners employ to overcome these barriers?

**Sample**

The population for this study comprised distance learners of three Open and Distance learning institutions in Nigeria. The institutions comprising 2 single, and 1 dual mode respectively are;
National Open University of Nigeria (NOUN),
The National Teachers' Institute (NTI), and
Distance learning Institute (DLI), University of Lagos.

The total population size of the three institutions as at the time of the study stood at about 35,000 with the National Open University of Nigeria accounting for 75%. The questionnaires were distributed according to the population of each institution using a ratio relative to the population of each institution. Out of 600 questionnaires administered on a sample of the population, total of 215 questionnaires were received using random sampling.

Instrumentation and Administration

The survey research method was used for the study. The main research tool used was a structured questionnaire which was administered on the subjects of the study. The questionnaire comprised three sections, A: respondent’s profile; B: access to ICTs; and C: open ended questions. Responses from the administered questionnaires were subjected to analysis using simple percentage distribution to determine the most accessible ICTs, factors affecting access, learners’ needs to facilitate access, the extent to which distance education has motivated the use of ICTs among its learners.

Data Interpretation and Analysis

The data was analyzed and the results are presented in tables 3-9. Questions 1-8 of the questionnaire elicited responses on the profile of 215 respondents. Their responses are tabulated in Table: 3 below.

Table: 3
Respondents’ Profile

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20 years</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>60</td>
<td>29.3</td>
</tr>
<tr>
<td>30-39</td>
<td>79</td>
<td>36.7</td>
</tr>
<tr>
<td>40-49</td>
<td>54</td>
<td>25.1</td>
</tr>
<tr>
<td>50 and above</td>
<td>6</td>
<td>2.8</td>
</tr>
<tr>
<td>Null</td>
<td>6</td>
<td>2.8</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>118</td>
<td>54.9</td>
</tr>
<tr>
<td>Female</td>
<td>97</td>
<td>45.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>96</td>
<td>44.7</td>
</tr>
<tr>
<td>Married</td>
<td>84</td>
<td>39.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>35</td>
<td>16.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highest educational Qualification</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary School leaving Certificate</td>
<td>38</td>
<td>17.7</td>
</tr>
<tr>
<td>Diploma</td>
<td>55</td>
<td>25.6</td>
</tr>
<tr>
<td>First Degree</td>
<td>72</td>
<td>33.5</td>
</tr>
<tr>
<td>Postgraduate, Masters</td>
<td>16</td>
<td>7.4</td>
</tr>
<tr>
<td>Other</td>
<td>34</td>
<td>15.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupational Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>115</td>
<td>53.5</td>
</tr>
<tr>
<td>Self Employed</td>
<td>20</td>
<td>9.3</td>
</tr>
<tr>
<td>Employer</td>
<td>49</td>
<td>22.8</td>
</tr>
<tr>
<td>Student</td>
<td>8</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>23</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Survey: 2008
In table 3, the highest percentage of respondents, 36.7% are in the 30-49 years range followed by 29.3% in the 20-29 years age range, and 25.1% in the 40-49 years range. 54.9% of the respondents were male and 45.1% were female; 44.7% are single and 39.1% are married. Respondents with a first degree as their highest qualification have the highest percentage of 33.5%, followed by 25.6% with diploma, and 17.7% with a school leaving certificate. A greater majority are employed 53.5% followed by 22.8% who are employers, and 9.3% who are self-employed. Question 9 sought to know the kinds of facilities including ICT enabling facilities that are available in the respondents’ area of residence. Their responses are shown in table 4:

Table: 4 ICT facilities available in respondents’ area of residence

<table>
<thead>
<tr>
<th>ICT Facilities</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>152</td>
<td>70.7</td>
</tr>
<tr>
<td>Mobile phone connectivity</td>
<td>123</td>
<td>57.2</td>
</tr>
<tr>
<td>Radio service</td>
<td>112</td>
<td>52.1</td>
</tr>
<tr>
<td>Television service</td>
<td>117</td>
<td>54.4</td>
</tr>
</tbody>
</table>

Survey: 2008

Table 4 shows the ICT profile of respondents’ area of residence. All respondents indicated the availability of one or all four ICT related facilities, 70.7% claim they have electricity, 57.2% have mobile connectivity, 52.1% have radio service, and 54.4 have television service. Section B of the questionnaire elicits responses on the ICT profile of respondents and their institutions.

Table: 5 ICT facilities available at Respondents’ institution

<table>
<thead>
<tr>
<th>ICT Facilities</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>80</td>
<td>37.2</td>
</tr>
<tr>
<td>Television</td>
<td>66</td>
<td>30.7</td>
</tr>
<tr>
<td>Telephone</td>
<td>64</td>
<td>29.8</td>
</tr>
<tr>
<td>Email</td>
<td>57</td>
<td>26.5</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>16</td>
<td>7.4</td>
</tr>
<tr>
<td>Internet</td>
<td>65</td>
<td>30.2</td>
</tr>
<tr>
<td>Audio conferencing</td>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td>Online learning</td>
<td>20</td>
<td>9.3</td>
</tr>
<tr>
<td>Web access</td>
<td>19</td>
<td>8.8</td>
</tr>
<tr>
<td>Fax</td>
<td>20</td>
<td>9.3</td>
</tr>
<tr>
<td>Sms/text messaging</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>7</td>
</tr>
</tbody>
</table>

Survey: 2008

Respondents were asked to tick as many of the options that were available. Table 5 shows the responses to question 10 on ICTs that are available or used by their respective institutions.

Respondents claim that the following ICT services are available at their institutions: Radio 37.2%, Internet 30.2%, television 30.7%, telephone 29.8%, email 26.5%, and text messaging 13%.

Other ICT services indicated include fax, online learning, web access, video conferencing, and audio conferencing. In question 11, respondents were about the channels they use to access information from their institution. Table 6 shows their responses:
### Table: 6 CTs used to access Information

<table>
<thead>
<tr>
<th>Service</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>131</td>
<td>60.9</td>
</tr>
<tr>
<td>Radio</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>Television</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Telephone</td>
<td>37</td>
<td>17.2</td>
</tr>
<tr>
<td>Email</td>
<td>22</td>
<td>10.2</td>
</tr>
<tr>
<td>Internet</td>
<td>47</td>
<td>21.9</td>
</tr>
<tr>
<td>Teleconferencing</td>
<td>8</td>
<td>3.7</td>
</tr>
<tr>
<td>Online learning</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Web access</td>
<td>14</td>
<td>6.5</td>
</tr>
<tr>
<td>Fax</td>
<td>8</td>
<td>3.7</td>
</tr>
<tr>
<td>SMS/text messaging</td>
<td>26</td>
<td>12.1</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Survey: 2008

In table: 6, respondents identify the following as the ICT services they use to access information from their institutions: Print 60.9%, Internet 21.9%, telephone 17.2%, radio 13%, text messaging 12.1%, and email 10.2% Other ICT services used include web access, television, online learning, teleconferencing, and fax. Respondents were asked in question 12 about how they receive instructional learning from their institution. The result of their responses is shown in table: 7.

### Table: 7 ICTs used to access Instructional learning

<table>
<thead>
<tr>
<th>Service</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>130</td>
<td>60.5</td>
</tr>
<tr>
<td>Radio</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>Television</td>
<td>14</td>
<td>6.5</td>
</tr>
<tr>
<td>Email</td>
<td>22</td>
<td>10.2</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teleconferencing</td>
<td>8</td>
<td>3.7</td>
</tr>
<tr>
<td>Online learning</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Text messaging</td>
<td>18</td>
<td>8.4</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Survey: 2008

In table: 7, respondents identified print materials as the most accessible means of instructional learning with 60.5%; and are followed by radio at 13%, and email at 10.2%.

### Table: 8 Lack of access and regular use of ICTs

<table>
<thead>
<tr>
<th>Service</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial constraints</td>
<td>68</td>
<td>31.6</td>
</tr>
<tr>
<td>Equipment</td>
<td>77</td>
<td>35.8</td>
</tr>
<tr>
<td>Electricity</td>
<td>56</td>
<td>26</td>
</tr>
<tr>
<td>Internet</td>
<td>43</td>
<td>20</td>
</tr>
<tr>
<td>Communication network</td>
<td>41</td>
<td>19</td>
</tr>
<tr>
<td>Technical support</td>
<td>36</td>
<td>16.7</td>
</tr>
<tr>
<td>Technical infrastructure</td>
<td>33</td>
<td>15.4</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Survey: 2008
Other ICTs indicated are text messaging, television, online learning, and teleconferencing. In question 13, respondents were asked why they did not have access or regularly use the other ICTs they did not select. Their responses are shown in Table 8. In Table 8, 35.8% of respondents identify lack of access to ICT equipment as the most critical factor, followed by financial constraints with 31.6%, lack of access to electricity with 26%, lack of communication network with 19%, lack of access to the Internet with 20%, lack of technical support with 16.7%, lack of technical infrastructure with 15.4%.

Table: 9 Factors affecting use of ICTs

<table>
<thead>
<tr>
<th>Socio-cultural factors</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>I have heavy domestic chores, I don't have time</td>
<td>16</td>
<td>7.4</td>
<td>51</td>
<td>23.7</td>
</tr>
<tr>
<td>My husband or father discourages me</td>
<td>3</td>
<td>1.4</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td>My religion does not encourage learning skills like ICT</td>
<td>6</td>
<td>2.8</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>I have heavy marital obligations</td>
<td>10</td>
<td>4.7</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>I am busy looking after my children</td>
<td>5</td>
<td>2.3</td>
<td>20</td>
<td>9.3</td>
</tr>
<tr>
<td>I am discouraged by incessant arrests by security operators</td>
<td>9</td>
<td>4.2</td>
<td>19</td>
<td>8.8</td>
</tr>
<tr>
<td>Socio-economic factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am not able to pay for the cost of the programme/course</td>
<td>29</td>
<td>13.5</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>I cannot afford the cost of using the Internet</td>
<td>34</td>
<td>15.8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>I cannot afford to buy a personal computer</td>
<td>37</td>
<td>17.2</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I cannot afford to buy a mobile phone</td>
<td>11</td>
<td>5.1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Environmental factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity is not stable, affects use of the Internet</td>
<td>80</td>
<td>37.2</td>
<td>72</td>
<td>33.5</td>
</tr>
<tr>
<td>The nearest cyber café To my house/office is far</td>
<td>26</td>
<td>12.1</td>
<td>79</td>
<td>36.7</td>
</tr>
<tr>
<td>I do not have access to a computer</td>
<td>29</td>
<td>13.5</td>
<td>65</td>
<td>30</td>
</tr>
<tr>
<td>My study centre does not have computer facilities</td>
<td>48</td>
<td>22.3</td>
<td>64</td>
<td>29.8</td>
</tr>
<tr>
<td>I do not have a mobile phone</td>
<td>12</td>
<td>16</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Other factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not know how to use the computer</td>
<td>16</td>
<td>7.4</td>
<td>38</td>
<td>17.7</td>
</tr>
<tr>
<td>The Internet access is slow</td>
<td>25</td>
<td>11.6</td>
<td>59</td>
<td>27.4</td>
</tr>
</tbody>
</table>

Survey: 2008
Respondents were asked in questions 14 a-d to identify the degree to which socio-cultural, socio-economic, and environmental factors hinder their use of ICT for learning at a distance. Table: 9 show their responses. For socio-cultural factors, the average of a greater majority of respondents disagreed (62.7%) and strongly disagreed (13.8%) that any of the identified factors hinders their use of ICTs. Among socioeconomic factors, 52.5% (46% and 6.5%) of respondents disagreed and strongly disagreed that cost of programmes was a barrier; 48.4% (41.4% and 7%) for cost of using the Internet; 73.1% (63.3% and 9.8%) for cost of owning a mobile phone while 48.2% (41.4% and 7%) of respondents agreed and strongly agreed that they could not afford the cost of a personal computer. Among environmental factors, 70.7% (37.2% and 33.5%) of respondents disagreed and strongly agreed that electricity is a barrier; 48.8% (12.1% and 36.7%) agreed and strongly agreed that the distance of a cyber café to their house or office is a barrier; only a slightly greater percentage of respondents (44.6%) disagreed and strongly disagreed that they do not have access to a computer; 37.2% (30.7% and 6.7%) disagreed and strongly disagreed that their study canters lack of computer facilities; only 24% (16% and 8%) agreed and strongly agreed that they did not own a mobile phone; and a greater percentage of respondents 42.8% and 6% disagreed and strongly disagreed that they have internet access. Only 7.4% and 17.7% of the respondents indicated that they lack of computer skills while only 11.6% and 27.4% indicated slow Internet access as a barrier. n section C, questions 16-19 of the questionnaire are open ended to elicit respondents’ perceptions with regard to what they see as the best channels for information and instructional learning. Table: 10 is a summary of their responses:

Table: 10 Open ended responses

<table>
<thead>
<tr>
<th>Q.16 I prefer to receive or access information from my institution through</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>62</td>
<td>28.8</td>
</tr>
<tr>
<td>Print material</td>
<td>47</td>
<td>21.9</td>
</tr>
<tr>
<td>Telephone/text messaging</td>
<td>21</td>
<td>9.8</td>
</tr>
<tr>
<td>Computer/online</td>
<td>18</td>
<td>8.4</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Email</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Television/Radio</td>
<td>31</td>
<td>14.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q.17 I consider these ICTs facilities most effective for learning</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>68</td>
<td>31.6</td>
</tr>
<tr>
<td>Print material</td>
<td>38</td>
<td>17.7</td>
</tr>
<tr>
<td>Tutorials</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Computer/online</td>
<td>31</td>
<td>14.4</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>22</td>
<td>10.2</td>
</tr>
<tr>
<td>Television/radio</td>
<td>18</td>
<td>8.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q.18 Do you think it is compulsory to know how to use any of the ICTs for learning at a distance? Why?</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>155</td>
<td>72.1</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>4.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q.19 How have you been able to overcome the barriers that hinder learning at a distance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. By reading course materials and attending all tutorials</td>
</tr>
<tr>
<td>2. By participating in peer group discussions</td>
</tr>
<tr>
<td>3. By sourcing for information from other materials</td>
</tr>
<tr>
<td>4. By organizing my time</td>
</tr>
<tr>
<td>5. By personal determination and effort</td>
</tr>
<tr>
<td>6. By using ICTs at cyber cafes and at work</td>
</tr>
<tr>
<td>7. By maintaining contact and obtaining information through the mobile phone</td>
</tr>
</tbody>
</table>

Survey: 2008
For question 16, 28.8% of respondents preferred to receive or access information through the Internet, followed by 21.9% for print, and 14.4% for television and radio. Other ICTs indicated are telephone and text messaging, computer and online, videoconferencing and email. Similarly, for question 17 the Internet was also the most preferred medium by 31.6% of respondents to receive instructional learning, followed by 17.7% for print, 14.4% for computer and online, and 10.2% for video conferencing. The only other preferred ICTs for learning are television and radio. A greater majority of respondents, 72.1% felt that ICTs were compulsory for learning at a distance. The most common reasons for their response include:

- facilitates learning ii) because it’s the computer age
- offers flexible and easy access to information
- its efficient, saves time and money, and
- bridges distance.

For the 4.7% who said no, their reasons include cost and computer literacy. When asked about their coping strategies in question 19, about 7 major responses were given with the most common being responses 1-4.

DISCUSSION

In spite of the fact that most respondents showed a fairly high level of education with a higher percentage having a first degree as their highest qualification, their responses in tables 6 and 7 show that print remains the most accessible means of learning among the OD learners in Nigeria. At the institutional level, there is still a heavy dependence on print. However, the results show that the Internet and email, and text messaging as non traditional ICTs are also being increasingly used, albeit more for accessing information than for learning. The increasing use of these ICTs among distance learners vis a vis conventional learners can perhaps be viewed as ODL’s contribution in encouraging their use. In spite of the phenomenal growth and deployment of mobile telephony in Nigeria however, text messaging still records very low percentages as a tool for learning.

From the results, respondents did not identify any significant socio-cultural factors as barriers. Socioeconomic factors are a significant barrier to ICT use among distance learners in Nigeria. Access to ICTs is largely determined by the ability to afford them. Interestingly, a lack of computer skills is not a significant barrier as only a low percentage of respondents indicated lack of computer skills as a barrier. Public availability and adequate deployment of these facilities is also a crucial factor. However, with a greater percentage of respondents indicating possession of mobile phones and thus greater access to this ICT tool, mobile telephony should be explored and utilized more as a tool for learning as is also the case in South Africa. Information on admission, registration, classes, assignments, feedback, and exam results are some academic activities which could be transacted via the mobile phone. Learners’ coping strategies indicate that contact through communication and motivation are very crucial to the learning experience, hence the need to overcome barriers that discourage these factors.

RECOMMENDATIONS AND CONCLUSION

The data shows that, although much of ODL instructional delivery is print based, some significant progress has been made especially with regard to encouraging the use of some non traditional ICTs through ODL.

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However, while Nigeria has embarked on implementing computer literacy at all levels, the issue of cost remains a barrier. Indeed, as shown in the data most are unable to have continuous access to the equipment. Farrell and Shafika (2007) in a survey of ICT and education in Africa highlight some current trends.

Countries like Nigeria have adopted the use of second hand computers through SchoolNet, Nigeria in partnership with the Education Trust Fund (ETF) to support computer literacy efforts. Another initiative is the One Laptop per Child (OLPC), a non-profit organization established to promote access to technology to support children’s learning experience. Electricity is usually supplemented by using generators, albeit expensive. The data shows that most can afford mobile phones thus providing a unique opportunity to maximize them as tools for learning as has been reported for South Africa and Kenya (2007:21).

Author’s Note
This is a revised version of a paper that was presented at the 2nd African Council for Distance Education Conference and General Assembly which held in Lagos Nigeria, 8-12 July 2008. I also wish to acknowledge the useful contributions of my colleagues, Dr. Olugbenga Ojo (School of Education, National Open University of Nigeria) and Mr. Adewale Adesina (Computing Networking Services, National Open University of Nigeria).

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ABSTRACT

The present investigation was conducted to describe and compare the background variables, personal characteristics and academic performance of secondary teacher trainees in distance education and face-to-face mode. The results indicated that teacher trainees in distance education differed from their counterparts in age, marital status, sex and socio-economic status. Distance trainees outperformed the on-campus trainees on their preference for left-hemispheric styles of learning and thinking, budgeting time, learning motivation, overall study habits, academic motivation, attitude towards education, work methods, interpersonal relations, and on their perception about relevance of course content of theory papers in B.Ed., but on-campus trainees outperformed distance trainees on preference for right-hemispheric learning styles, need for achievement, motivation for sports, attitude towards teaching profession, child-centered practices, teachers, overall attitude towards teaching along with their perception for development of teaching skills and attitude, personality development during B.Ed. course.

In academic performance distance trainees lag behind the on-campus trainee in their marks in theory papers, skills in teaching and in aggregate.

Keywords: Teacher Education, Distance Education, Secondary Teacher Trainees, learning styles, achievement motivation, study habits, attitude towards teaching, academic performance

INTRODUCTION

Enlightened, emancipated and empowered teachers lead communities and nations in their march towards better and higher quality of life. They reveal and elaborate the secrets of attaining higher values in life and nurture empathy for the fellow beings.
Teachers are the torch bearers in creating social cohesion, national integration and a learning society. They not only disseminate knowledge but also create and generate new knowledge.

They are responsible for acculturating role of education. No nation can even marginally slacken its efforts in giving necessary professional inputs to its teachers and along with that due status to their stature and profession (Rajput, 2006). Thus, Teacher, the key factor in all educational development, needs to be professionally equipped with teaching competencies, commitment and determination to perform at their best. The quality of education is a direct consequence and outcome of the quality of teachers and teacher education system.

Teacher preparation must not lose sight of this basic thrust so as to empower teachers to inculcate the same among the students. With the expansion of education, the world needs more teachers, better teachers and more committed teachers. In spite of a large number of formal teacher training institutes, all the teachers catering the needs of expanding education in India are not technically trained. Inadequate supply of trained teachers has made educationist to work out alternatives to face-to-face learning in teacher education. Thus distance mode emerged as an alternative to the face-to-face mode because of the large numbers desiring education. A large number of candidates, for various reasons, are not able to enter educational institutions on a full-time basis and therefore prefer the distance mode of education.

The teacher education through distance mode is for in-service teachers who are either untrained or have degree in primary level teaching. The recipients are treated at par with the regular students to entitle themselves as degree holders. Distance education is also used for catering the needs of teachers who want to improve their qualifications while remaining in the job. It is a cheap and accessible way for the teachers who do not want to fall behind time (Martinez, 2002). Thus Distance education provides a solution for generating more and more trained human resource and has taken the education to even unreachable. In order to provide quality teachers, this alternative system needs to be enriched and strengthened through applications of research based findings.

Distance learning, like any kind of learning, can serve different ends, but it appears mainly to serve those who cannot or do not want to make use of regular classroom teaching. Demanding professional commitments and family responsibilities of many adults often make attending a conventional, full-time, face-to-face course with fixed timetables a rather unrealistic proposition, and the reasons why adults choose distance education are primarily “the convenience, flexibility and adaptability of this mode of education to suit individual students' needs” (Holmberg, 1989, p. 24). Distance education helps lots of adults without discriminating between countries or cities, the young or the old, and the rich or the poor, which other educational systems fail to fulfill. Through increasing access to distance education, students can meet their needs appropriately regardless of the present limitations and border lines (Verduin and Clark, 1994, p.7).

In secondary teacher training course, both distance and on-campus learners take the same course content, are taught by almost the same lecturers, write similar tests and assignments, and sit for the same final examinations.
The major difference lies in their learning mode (mode of course delivery) and background characteristic, that is, all distance teacher trainees are in-service teachers with a teaching experience of two years. The trainees in two modes of education may have their own specific characteristics and these characteristics may affect their academic performance. Every trainee in secondary teacher training programme in distance education like any distance learner brings with him or her, a profile which may be similar or different with other trainees. Holmberg (1995) points out that there is “no evidence to indicate that distance learners should be regarded as a homogeneous group; however as indicated by Gibson (1998:p.10) “...distance learners do share broad demographic and situational similarities that have often provided the basis for profiles of the “typical” distance learner in higher education.” This need to be further investigated.

Learning at a distance is different from learning in the conventional classrooms. In a Distance education setting, the process of student learning may be even more complex than the conventional ‘face to face’ setting because perceived obstacles encountered by the learners may be different from one distance learner to another with varying degrees of complexity (Dazarkia, Razak, Mohammed, 2004). To make the distance learning a success and a powerful alternative to face-to-face mode, the characteristics of the distance learners need to be studied and compared with those in the regular mode.

Generally, there is the belief that adult distance learners are achievement oriented, highly motivated, and relatively independent with special needs for flexible schedules and instruction appropriate for their developmental level (Benshoff and Lewis, 1992; Cross, 1980).

Adults seem to prefer more active approaches to learning and value opportunities to integrate academic learning with their life and work experiences in the context of financial and family concerns. MacBrayne (1995) reported that students who choose to enroll in Distance Education courses are motivated adults, age 18-40, mostly females, who because of their family and work commitments, lack time to participate in on-campus studies.
Most of them opined that lack of time and money, followed by concerns about poor academic preparation, distance required traveling to college courses, and family responsibilities were the barrier in pursuing on-campus education. In Houle’s (as cited in Cross, 1980) logical three-category system, distance education learners are classified as:

- goal-oriented learners, those who use learning to gain specific objectives, such as learning to deal with particular family problems, or learning better business practices, or following an interest,
- activity-oriented learners, those who participate primarily for the sake of the activity itself, or to join a group, or to escape an unhappy situation, and (3) learning-oriented learners, those who pursue learning for its own sake, the lifelong learners.

The differences between distance learners and face-to-face learners in secondary teacher training course may not only exist in respect of their background characteristics, problems in study management but may also exist with respect to their learning styles.

The knowledge of specific learning styles which are preferred by the distance teacher trainees in comparison to their counterparts in face-to-face mode holds important strategic information for everyone interested in student success. If there are no differences in learning styles, the faculty can transfer the same types of teaching/learning activities that have been successful for them in the traditional environment, into the distance setting with similar success.

But if there are differences in learning styles between groups of students, faculty must use learning style information for planning and preparation for instructional strategies. Sarasin (1998) noted that instructors should be willing to change their teaching strategies and techniques based on an appreciation of the variety of student learning styles. Teachers should try to ensure that their methods, materials, and resources fit the ways in which their students learn maximally.

In order to do so, there is a need to examine the learning styles of distance trainees through vigorous researches.

Likewise, information about the trainees’ perception about their course of study, their achievement motivation and attitude towards teaching is to be explored to ascertain in what way these characteristics relate to the success of teacher trainees in distance education.

It seems to be logical to think that these variables are important for learning and success/academic performance of distance learners who have a reduced level of contact with the instructor and course-mates, and who have to rely more on the self in terms of motivation, attitudinal and perceptual development and momentum for continuing the class (Moore, 1989).

Researches therefore need to focus on identification of these characteristics and problems perceived by the distance learners involving comparisons between learners studying at a distance and those studying campus based courses so as to evolve suitable approaches to study for learners in distance education. Whatever evidence (Richardson, 1994; Wong, 1992; Morgan, Gibbs and Taylor, 1980) is available appears to be inconclusive.
Harper and Kember (1986) found no significant difference between distance and campus based learners studying similar subjects. However, some studies have found differences in approach between distance and campus based learners (Thang, 2005, Argon et al, 2001). Moreover, researches into the possible association between the suitability of the approaches and the success of distance teacher trainees are scanty. The comparison of these characteristics between teacher trainees in distance and face-to-face mode may provide an insight into the learners' profiles and perceptions so as to strengthen the teacher education programme through distance mode.

PURPOSE OF THE STUDY

The present investigation has been designed to study the background variables, personal characteristics and academic performance of secondary teacher trainees in distance education and then to compare these with those of their counterparts teacher trainees in face-to-face education. The purpose of this study was to make descriptions of:

- four Background Variables, namely, age, sex, marital status and socio-economic status;
- five Personal Characteristics, namely, styles of learning and thinking (ten learning styles and thinking styles each, related to right and left hemispheres), study habits with its eight areas, achievement motivation and its fifteen factors, attitude towards teaching along with its six areas and perception about B.Ed. course with its seven sub-measures; and
- three variables of Academic Performance of secondary teacher trainees in distance education and also to compare them on these variables with their counterpart teacher trainees in face-to-face education.

It was thought that these descriptions would result in getting a specific profile of the chosen population of distance teacher trainees and further, the comparison between two groups of trainees on each of these variables could help to locate the similarities as well as differences/disparities among the two groups of teacher trainees, which may help when decisions on improvement in distance teacher training programme.

METHODOLOGY

Suited to the nature of the study, the investigation was advanced by using descriptive survey method. This method provides scope for description and interpretation of what exists presently. A sample of 200 distance teacher trainees was extracted from those enrolled in B.Ed. At University School of Open Learning, Panjab University (PU), Chandigarh and 200 on-campus trainees were selected from the three colleges of education affiliated to PU, Chandigarh. Random sampling technique was adopted for selection of the sample.

The instruments used for this study included Socio Economic Status Scale (Bhardwaj, 2001), Styles of Learning & Thinking- SOLAT tool (Venkataraman,1993), Deo-Mohan Achievement Motivation (n-Ach) Scale (Deo and Mohan, 1985), Study Habit Inventory (Palsane and Sharma, 1995), Teacher Attitude Inventory (Ahuwalia, 1978) and Perception about B.Ed. Course Scale developed and standardized by the investigator.
RESULTS

Suited to the nature of the data, t-tests have been used for variables yielding scores that is continuous in nature, and chi-squares were computed out for the variables which were discrete in nature in order to compare the trainees in distance and face-to-face education on these variables.

Age

88% of secondary teacher trainees in distance education were of age 25 years or above. In case of teacher trainees in face-to-face education, only 13% trainees were of age 25 years or above and remaining 87% of them had age less than 25 years.

<table>
<thead>
<tr>
<th>Secondary Teacher Trainees</th>
<th>Mean</th>
<th>S.D.</th>
<th>S.E</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance Mode (N= 200)</td>
<td>27.59</td>
<td>3.53</td>
<td>.789</td>
<td>6.70**</td>
</tr>
<tr>
<td>Face to Face Mode (N=200)</td>
<td>22.13</td>
<td>2.13</td>
<td>.789</td>
<td></td>
</tr>
</tbody>
</table>

Entries in Table: 1 reveal that the average Age (27.59 years) of the secondary teacher trainees in distance education is higher than the average age (22.13 years) of teacher trainees in regular B.Ed. programme (t=6.70, p=<.01).

Sex

<table>
<thead>
<tr>
<th>Secondary Teacher Trainees</th>
<th>No. of Males</th>
<th>No. of Females</th>
<th>Total</th>
<th>ψ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance Mode (N=200)</td>
<td>49 (24.5%)</td>
<td>151(75.5%)</td>
<td>200</td>
<td>7.31**</td>
</tr>
<tr>
<td>Face to Face Mode (N=200)</td>
<td>74 (37%)</td>
<td>126 (63%)</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>277</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

Table: 2 shows the sample of secondary teacher trainees in distance education included 75.5% of females and 24.5% males similar trend was found among on-campus B.Ed. trainees wherein 63% were females and 37% were males.

These differences on the variable of sex were found to be significant (ψ²=7.31, p=<.01).
Marital Status

Table 3
\(\Psi^2\) values for Significance of Difference in Number of Married and Unmarried Secondary Teacher Trainees in Distance and Face-to-Face Education

<table>
<thead>
<tr>
<th>Secondary Teacher Trainees</th>
<th>No. of Married Trainees</th>
<th>No. of Unmarried Trainees</th>
<th>Total (B)</th>
<th>(\Psi^2) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance Mode</td>
<td>124 (62%)</td>
<td>76 (38%)</td>
<td>200</td>
<td>95.5</td>
</tr>
<tr>
<td>Face to Face education</td>
<td>29 (14.5%)</td>
<td>171 (85.5%)</td>
<td>200</td>
<td>**</td>
</tr>
<tr>
<td>Total (A)</td>
<td>153</td>
<td>247</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

62% of distance teacher trainees were married and 38% were unmarried. In case of face-to-face teacher trainees, it was found that percentage of married trainees was low (14.5%) as compared to unmarried trainees (85.5%). The value of \(\Psi^2\) which came out to be 95.52 (vide Table 3) is significant at .01 level. Thus it can be stated that secondary teacher trainees in distance and face-to-face education differ significantly on their marital status.

SOCIO-ECONOMIC STATUS

Socio-Economic Status Scale (Bhardwaj, 2001) determines two types of social and economic statuses as ‘Ascribed’ which means status inherited from/of parents and ‘Achieved’ that indicates the status attained by the individual due to his/her own efforts. In the present study, scores on four type of status, namely;

- Ascribed Social status
- Ascribed Economic Status;
- Achieved Social Status and
- Achieved Economic Status were obtained.

Further, for each type, score were classified under upper, middle and low status categories. The results have been summarized in Table 4,

Table 4
Percentage of Secondary Teacher Trainees belonging to different categories of Social and Economic Statuses

<table>
<thead>
<tr>
<th>Secondary Teacher Trainees</th>
<th>Ascribed Social Status</th>
<th>Ascribed Economic Status</th>
<th>Achieved Social Status</th>
<th>Achieved Economic Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UP</td>
<td>M</td>
<td>L</td>
<td>UP</td>
</tr>
<tr>
<td>Distance Mode</td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Face to Face Mode</td>
<td>17.5</td>
<td>82.5</td>
<td>0</td>
<td>16.5</td>
</tr>
</tbody>
</table>

UP= Upper class, M= Middle class, L= Low class
Table: 5

<table>
<thead>
<tr>
<th>Areas</th>
<th>Type of status</th>
<th>Trainee in Distance mode</th>
<th>Trainees in Face-to-Face Mode</th>
<th>S.E₀</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
</tr>
<tr>
<td>Social Status</td>
<td>Ascribed</td>
<td>175.68</td>
<td>32.44</td>
<td>179.31</td>
<td>26.05</td>
</tr>
<tr>
<td></td>
<td>Achieved</td>
<td>83.6</td>
<td>12.63</td>
<td>71.31</td>
<td>13.56</td>
</tr>
<tr>
<td>Economic Status</td>
<td>Ascribed</td>
<td>7.82</td>
<td>3.12</td>
<td>7.78</td>
<td>2.98</td>
</tr>
<tr>
<td></td>
<td>Achieved</td>
<td>3.7</td>
<td>1.99</td>
<td>.42</td>
<td>.83</td>
</tr>
<tr>
<td>Socio-Economic Status as a Whole</td>
<td>Ascribed</td>
<td>183.50</td>
<td>35.79</td>
<td>187.09</td>
<td>26.76</td>
</tr>
<tr>
<td></td>
<td>Achieved</td>
<td>87.3</td>
<td>13.71</td>
<td>71.73</td>
<td>15.57</td>
</tr>
<tr>
<td>Overall Socio-Economic Status</td>
<td>Ascribed + Achieved</td>
<td>272.5</td>
<td>44.57</td>
<td>258.67</td>
<td>35.03</td>
</tr>
</tbody>
</table>

*t-values for Significance of Differences between Means on Socio-Economic Status of Secondary Teacher Trainees in Distance and Face-to-Face Education*

The results depicted in Table 4 indicates that most of teacher trainees in distance education were in middle class with regards to Achieved social status (81.5%) as well as Achieved economic status (65%).

Likewise most of the distance teacher trainees were in middle class category for their Ascribed social status (78.5%) and Ascribed economic status (86.5%).

Most of the teacher trainees in face-to-face education fell in middle class category on the Ascribed social (82.5%) and economic status (83.5%) and also on Achieved social status (96.5%) but in terms of their Achieved economic status, they are in low class category (92.5%).

Entries in Table 5 revealed that the distance trainees have significantly higher overall socio-economic status (ascribed + achieved) than on-campus teacher trainees (t=3.45, p=<.01, M₁=272.5 and M₂=258.67 respectively).

They were also significantly higher in respect to Achieved socio-economic status than their counterparts in face-to-face education (t=10.59, p=<.01). No significant difference was reported between these two groups of trainees on Ascribed socio-economic status (t=1.14, p=>.05).

**STYLES OF LEARNING AND THINKING**

The learning styles as well as thinking styles of the secondary teacher trainees in distance and face-to-face education were studied with regards dominance of right (R) and left-hemisphere (L) in five dimensions.
Table 6
Comparison on learning styles between secondary teacher trainees in distance and face-to-face mode in relation to hemispheric dominance

<table>
<thead>
<tr>
<th>Dimensions of Learning</th>
<th>Hemispheric Dominance</th>
<th>Distance Trainees</th>
<th>Face-to-Face Trainees</th>
<th>S.E.</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
</tr>
<tr>
<td>Verbal Learning</td>
<td>Non Verbal (R)</td>
<td>1.61</td>
<td>.99</td>
<td>1.92</td>
<td>.87</td>
</tr>
<tr>
<td></td>
<td>Verbal (L)</td>
<td>2.53</td>
<td>.89</td>
<td>1.96</td>
<td>.78</td>
</tr>
<tr>
<td>Content Preference</td>
<td>Open-ended learning (R)</td>
<td>1.65</td>
<td>.76</td>
<td>1.95</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>Structured learning (L)</td>
<td>2.69</td>
<td>.69</td>
<td>2.16</td>
<td>.98</td>
</tr>
<tr>
<td>Class Preference</td>
<td>Concrete (R)</td>
<td>2.39</td>
<td>.95</td>
<td>2.30</td>
<td>.991</td>
</tr>
<tr>
<td></td>
<td>Abstract (L)</td>
<td>2.25</td>
<td>.972</td>
<td>2.13</td>
<td>.881</td>
</tr>
<tr>
<td>Learning Preference</td>
<td>Divergent (R)</td>
<td>3.06</td>
<td>1.02</td>
<td>3.23</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>Convergent</td>
<td>1.7</td>
<td>.91</td>
<td>1.42</td>
<td>.94</td>
</tr>
<tr>
<td>Interest</td>
<td>Inventive (R)</td>
<td>2.73</td>
<td>1.22</td>
<td>2.99</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>Improvisation</td>
<td>1.38</td>
<td>1.20</td>
<td>1.04</td>
<td>1.00</td>
</tr>
<tr>
<td>Overall Learning Styles</td>
<td>Right</td>
<td>11.39</td>
<td>2.89</td>
<td>12.36</td>
<td>3.42</td>
</tr>
<tr>
<td></td>
<td>Left Hemispheric</td>
<td>10.49</td>
<td>2.78</td>
<td>8.71</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Table 9
Comparison on thinking styles between secondary teacher trainees in distance and face-to-face mode in relation to hemispheric dominance

<table>
<thead>
<tr>
<th>Dimensions of Thinking Styles</th>
<th>Hemispheric Dominance</th>
<th>Distance Teacher Trainees</th>
<th>Face-to-Face Teacher Trainees</th>
<th>S.E.</th>
<th>t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
</tr>
<tr>
<td>Logical/Fractional</td>
<td>Holistic</td>
<td>2.95</td>
<td>1.15</td>
<td>2.91</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>Fractional</td>
<td>1.42</td>
<td>1.05</td>
<td>1.1</td>
<td>.994</td>
</tr>
<tr>
<td>Divergent/Convergent</td>
<td>Divergent</td>
<td>2.61</td>
<td>1.24</td>
<td>3.01</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td>Convergent</td>
<td>1.85</td>
<td>1.16</td>
<td>1.39</td>
<td>1.13</td>
</tr>
<tr>
<td>Creativity</td>
<td>Creative</td>
<td>3.04</td>
<td>1.15</td>
<td>2.68</td>
<td>1.18</td>
</tr>
<tr>
<td></td>
<td>Intellectual</td>
<td>1.59</td>
<td>1.05</td>
<td>1.46</td>
<td>1.15</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Optimistic</td>
<td>2.91</td>
<td>1.17</td>
<td>3.71</td>
<td>.945</td>
</tr>
<tr>
<td></td>
<td>Pessimistic</td>
<td>1.7</td>
<td>1.07</td>
<td>1.37</td>
<td>.844</td>
</tr>
<tr>
<td>Imagination</td>
<td>Imaginary</td>
<td>2.49</td>
<td>1.18</td>
<td>2.55</td>
<td>1.19</td>
</tr>
<tr>
<td></td>
<td>Analytic</td>
<td>1.96</td>
<td>1.15</td>
<td>1.57</td>
<td>1.09</td>
</tr>
<tr>
<td>Overall Thinking Styles</td>
<td>Right-hemispheric</td>
<td>14.01</td>
<td>3.38</td>
<td>14.4</td>
<td>3.64</td>
</tr>
<tr>
<td></td>
<td>Left-hemispheric</td>
<td>8.52</td>
<td>2.84</td>
<td>6.9</td>
<td>2.95</td>
</tr>
</tbody>
</table>

As to the overall learning styles, the secondary teacher trainees in face-to-face education exhibited a greater preference for right hemisphere (t=2.39, p<=.05) and lesser preference for left-hemisphere as compared to the trainees in distance education (t=5.04, p<.01).
On overall thinking styles, the teacher trainees in distance education exhibit significantly higher dominance of left-hemisphere as compared to trainees in face-to-face education \((t=5.60, p=<.01)\). The distance teacher trainees were found to have significantly higher preference for verbal, structured, convergent, and improvised styles of learning and fractional, convergent, pessimistic and analytical styles of thinking as compared to face-to-face trainee. Whereas, for non-verbal and open-ended styles of learning and divergent and optimistic styles of thinking, on-campus trainees exhibited more preference than distance trainees.

**STUDY HABITS**

<table>
<thead>
<tr>
<th>Areas of Study Habits</th>
<th>Teacher Trainees in Distance Education</th>
<th>Teacher Trainees in Face-to-Face Education</th>
<th>S.Eo</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Budgeting Time</td>
<td>8.084</td>
<td>1.22</td>
<td>7.272</td>
<td>1.75</td>
</tr>
<tr>
<td>Conditions for study</td>
<td>7.891</td>
<td>1.53</td>
<td>8.079</td>
<td>1.5</td>
</tr>
<tr>
<td>Reading ability</td>
<td>11.23</td>
<td>1.79</td>
<td>11.037</td>
<td>2.38</td>
</tr>
<tr>
<td>Notes Taking</td>
<td>3.832</td>
<td>1.36</td>
<td>3.956</td>
<td>1.6</td>
</tr>
<tr>
<td>Memory</td>
<td>5.45</td>
<td>1.06</td>
<td>5.284</td>
<td>1.29</td>
</tr>
<tr>
<td>Taking Examination</td>
<td>13.34</td>
<td>2.14</td>
<td>13.465</td>
<td>2.29</td>
</tr>
<tr>
<td>Healthy Habits</td>
<td>4.185</td>
<td>0.873</td>
<td>4.193</td>
<td>1.05</td>
</tr>
<tr>
<td>Overall Study Habits</td>
<td>64.16</td>
<td>6.28</td>
<td>61.74</td>
<td>8.19</td>
</tr>
</tbody>
</table>

As far as the Study Habits are concerned the distance teacher trainees were found to possess significantly better study habits (overall) than their counterparts in face-to-face education \((t=2.40, p=<.05, M_1 = 64.16 \text{ and } M_2 = 61.74 \text{ respectively})\). Out of the eight sub-measures of the study habits, the significant differences were noticed on two measures, viz. budgeting time \((t=5.38, p=<.01)\) and learning motivation \((t=6.59, p=<.01)\) between teacher trainees in distance and face-to-face education.

On both of these sub-measures distance teacher trainees \((M=8.08 & 10.15)\) outperformed the on-campus trainees \((M=7.27 & 9.12)\).

On remaining six sub-measures, namely, conditions for study, reading ability, notes-taking, memory, taking examination and healthy habits, trainees of two groups did not differ significantly.

The results lead to conclusion that teacher trainees in distance education are characterized by better study habits, have higher learning motivation and possess the skills of budgeting time better than on-campus teacher trainees.
**ACHIEVEMENT MOTIVATION**

**Table: 9**

<table>
<thead>
<tr>
<th>Factors of Achievement Motivation</th>
<th>Trainees in Distance Education</th>
<th>Trainees in Face-to-Face education</th>
<th>S.E₀</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Academic motivation</td>
<td>13.0</td>
<td>2.41</td>
<td>12.34</td>
<td>2.62</td>
</tr>
<tr>
<td>Need for Achievement</td>
<td>11.96</td>
<td>3.0</td>
<td>12.9</td>
<td>2.81</td>
</tr>
<tr>
<td>Academic Challenge</td>
<td>12.33</td>
<td>2.98</td>
<td>11.83</td>
<td>2.25</td>
</tr>
<tr>
<td>Achievement Anxiety</td>
<td>1.91</td>
<td>1.07</td>
<td>2.05</td>
<td>.99</td>
</tr>
<tr>
<td>Importance of Grades</td>
<td>6.37</td>
<td>1.79</td>
<td>6.64</td>
<td>1.59</td>
</tr>
<tr>
<td>Meaningfulness of Task</td>
<td>12.06</td>
<td>2.92</td>
<td>11.59</td>
<td>3.07</td>
</tr>
<tr>
<td>Relevance of College for Future Goals</td>
<td>5.23</td>
<td>1.57</td>
<td>5.42</td>
<td>1.05</td>
</tr>
<tr>
<td>Attitude towards Education</td>
<td>12.19</td>
<td>2.27</td>
<td>11.11</td>
<td>2.11</td>
</tr>
<tr>
<td>Work Methods</td>
<td>17.02</td>
<td>2.95</td>
<td>15.25</td>
<td>3.86</td>
</tr>
<tr>
<td>Attitude towards Teachers</td>
<td>10.11</td>
<td>2.16</td>
<td>10.19</td>
<td>1.55</td>
</tr>
<tr>
<td>Interpersonal Relations</td>
<td>12.47</td>
<td>3.01</td>
<td>11.62</td>
<td>1.87</td>
</tr>
<tr>
<td>Individual Concerns</td>
<td>6.23</td>
<td>1.89</td>
<td>6.5</td>
<td>1.64</td>
</tr>
<tr>
<td>General Interest</td>
<td>11.77</td>
<td>2.77</td>
<td>11.92</td>
<td>2.99</td>
</tr>
<tr>
<td>Dramatics</td>
<td>5.77</td>
<td>1.23</td>
<td>5.89</td>
<td>1.68</td>
</tr>
<tr>
<td>Sports</td>
<td>13.89</td>
<td>3.67</td>
<td>14.79</td>
<td>3.83</td>
</tr>
<tr>
<td>Overall Achievement Motivation</td>
<td>151.81</td>
<td>10.13</td>
<td>150.54</td>
<td>9.34</td>
</tr>
</tbody>
</table>

In overall Achievement Motivation, the secondary teacher trainees in two mode of education did not exhibit any significant difference (t=1.30, p=>.05). The analytical picture obtained through the comparisons on the fifteen factors of achievement motivation, between two groups of trainees revealed that significant differences existed on six factors. Out of these six factors, the means were in favor of distance teacher trainees on four factors, namely, academic motivation (M₁=13.0, M₂=12.34, t=2.62, p=<.05), attitude towards education( M₁= 12.19, M₂= 11.11, t=4.93, p=<.01), work methods ( M₁= 17.02, M₂= 15.25, t=5.16, p=<.01), and interpersonal relations ( M₁= 12.47, M₂=11.62, t=3.40, p=<.01), whereas trainees in face-to-face education were found superior to their counterparts in distance education on two factors, namely, need for achievement (t=3.23, p=<.01) and motivation to participate in sports (t= 2.14, p=<.05). (c) Non-significant differences were observed between two groups of teacher trainees on the remaining nine factors of
Achievement Motivation, namely, academic challenge, achievement anxiety, importance of grades, meaningfulness of task, relevance of colleges for future goals, attitude towards teachers, individual concerns, general interests and dramatics.

**ATTITUDE TOWARDS TEACHING**

Table: 10

<table>
<thead>
<tr>
<th>Aspects of Attitude towards Teaching</th>
<th>Trainees in Distance Education</th>
<th>Trainees in Face-to-Face mode</th>
<th>S.E.d</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Teaching Profession</td>
<td>41.94</td>
<td>6.13</td>
<td>43.89</td>
<td>6.84</td>
</tr>
<tr>
<td>Classroom Teaching</td>
<td>38.46</td>
<td>5.86</td>
<td>39.61</td>
<td></td>
</tr>
<tr>
<td>Child-centered Practices</td>
<td>40.89</td>
<td>7.64</td>
<td>43.48</td>
<td>7.55</td>
</tr>
<tr>
<td>Educational Process</td>
<td>38.32</td>
<td>5.59</td>
<td>38.55</td>
<td>7.46</td>
</tr>
<tr>
<td>Pupils</td>
<td>41.49</td>
<td>6.87</td>
<td>42.58</td>
<td>8.44</td>
</tr>
<tr>
<td>Teachers</td>
<td>41.29</td>
<td>5.14</td>
<td>44.02</td>
<td>5.53</td>
</tr>
<tr>
<td>Overall Attitude towards Teaching</td>
<td>242.4</td>
<td>30.79</td>
<td>252.13</td>
<td>40.41</td>
</tr>
</tbody>
</table>

Secondary teacher trainees in face-to-face and distance education differed significantly on the overall score of the variable of Attitude towards Teaching (t=2.71, p=<.05).

The on-campus trainees (M=252.13) depicted more favorable attitude towards teaching than trainees in distance education (M=242.4).

The teacher trainees in face-to-face education also exhibited more favorable attitude than distance trainees on three sub-areas of Attitude towards Teaching, namely, teaching profession (t=3.01, p=<.01), child-centered practices (t=3.41, p=<.01), and teachers (t=5.11, p=<.01).

On the basis of these results, it can be inferred that on-campus B.Ed. students are more favorably inclined to the teaching as a profession, to the child-centered practices which focus on the need, interest and development of the child in learning and also to the teacher as a leader of the class than the distance education trainees.
PERCEPTION ABOUT B.ED. COURSE

Table: 11

<table>
<thead>
<tr>
<th>Areas of Perception about B.Ed. course</th>
<th>Teacher Trainees in Distance Education</th>
<th>Teacher Trainees in face-to-face mode</th>
<th>S.E.D</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Relevance of Course content of Theory papers</td>
<td>43.56</td>
<td>6.85</td>
<td>41.23</td>
<td>5.54</td>
</tr>
<tr>
<td>Curriculum Transaction</td>
<td>47.31</td>
<td>7.02</td>
<td>46.61</td>
<td>6.93</td>
</tr>
<tr>
<td>Development of Teaching skills and attitude</td>
<td>31.32</td>
<td>4.79</td>
<td>33.62</td>
<td>4.65</td>
</tr>
<tr>
<td>Teachers' Behavior</td>
<td>33.91</td>
<td>5.62</td>
<td>34.19</td>
<td>5.21</td>
</tr>
<tr>
<td>Relevance of School Experience Programme/Practical work</td>
<td>25.4</td>
<td>3.91</td>
<td>26.09</td>
<td>4.34</td>
</tr>
<tr>
<td>Evaluation Procedure</td>
<td>21.42</td>
<td>4.11</td>
<td>21.22</td>
<td>3.86</td>
</tr>
<tr>
<td>Personality Development</td>
<td>18.53</td>
<td>3.97</td>
<td>19.34</td>
<td>3.76</td>
</tr>
<tr>
<td>Overall Perception</td>
<td>221.46</td>
<td>16.82</td>
<td>223.3</td>
<td>19.01</td>
</tr>
</tbody>
</table>

On the variable of Perception about B.Ed. Course, non-significant difference was reported between secondary teacher trainees in distance and face-to-face education on the overall score of Perception about B.Ed. course (t=1.20, p>.05). (b) The two groups of trainees differed significantly on three sub-measure of Perception about B.Ed. course, out of which distance teacher trainees had more favorable perception on one sub-measure, i.e. relevance of course content of theory papers as compared to on-campus trainees (t=3.75, p=<.01).

The latter group of trainees had significantly superior perception to the former group of trainees on two sub-measures, namely, development of teaching skills & attitude (t=4.87, p=<.01) and personality (t=2.09, p=<.05).

ACADEMIC PERFORMANCE

The academic performance of the trainees was taken on three criteria: first, marks obtained in theory papers, second, marks in skills in teaching and third, overall academic performance in terms of aggregate marks secured in B.Ed. final examination.

Results are presented in Table 12 and 13: Table: 12 Academic Performance (in terms of %age of marks) of Secondary Teacher Trainees in Distance and Face-to-Face Education: The calculated values of t in the Table 13 depict that there exist significant differences between secondary teacher trainees in distance and face-to-face education on all the three aspects of academic performance, namely theory papers (t=11.99, p<.01), skills in teaching (t=14.08, p<.01) and overall academic performance (t=18.63, p<.01).
In all these three areas, the performance of face-to-face trainees is significantly higher than the trainees in distance education.

Table: 12
Academic Performance (in terms of %age of marks) of Secondary Teacher Trainees in Distance and Face-to-Face Education:

<table>
<thead>
<tr>
<th>Secondary Teacher Trainees</th>
<th>Theory</th>
<th>Skills in Teaching</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 60%</td>
<td>60%- 69.9% &gt; 70%</td>
<td>&lt; 60%</td>
</tr>
<tr>
<td>Distance Education</td>
<td>97</td>
<td>101</td>
<td>2</td>
</tr>
<tr>
<td>Face-to-Face education</td>
<td>13</td>
<td>137</td>
<td>50</td>
</tr>
</tbody>
</table>

Table: 13
Comparison on Academic Performance between Secondary Teacher Trainees in Distance and Face-to-Face Education

<table>
<thead>
<tr>
<th>Academic Performance</th>
<th>Trainees in Distance Education</th>
<th>Trainees in Face-to-Face mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Theory Papers</td>
<td>359.30</td>
<td>34.68</td>
</tr>
<tr>
<td>Skills in Teaching</td>
<td>137.69</td>
<td>10.4</td>
</tr>
<tr>
<td>Overall Performance</td>
<td>616.89</td>
<td>38.77</td>
</tr>
</tbody>
</table>

On the basis of these results, it can easily be stated that the regular B.Ed. trainees outperformed the distance trainees not only in their knowledge of pedagogical bases such as philosophical, psychological, teaching learning process, school management and theoretical knowledge of the teaching subjects but do so in their pedagogic practices which include preparing micro and macro lesson plans, observations of lessons, critical evaluation of question papers, delivering of discussion lessons etc.

DISCUSSION OF RESULTS

The results pertaining to the difference in age of trainees in two formats of teacher training are understandable in view of the fact that the trainees in distance education are in-service teachers having a teaching experience of at least two years and some trainees had experience of even more than 20 years, as compared to their counterparts in face-to-face education, wherein most of them have joined the course just after completing their graduation or post-graduation.

These results are consistent with the previous studies on distance and face-to-face learners conducted by MacBrayne (1995), Wallace (1996), Gillard (1997), Guernsey (1998), Diaz and Cartnal (1999) Smith (2001), and Ashby (2002) have shown that the age of distance learners is significantly higher than their counterparts in face-to-face education. Halsane and Gatta (2002) found that 55.8% of distance learners have age more than 25 years whereas only 20% of face-to-face learners were found to be having age more than 25 years.
The findings of the present studies about more female learners than males in the distance as well as in face-to-face teacher education programmes clearly lead to the inference that the teaching profession is more preferred by females than males. In India, the common practice of selecting occupations by women has a consideration of timings of the job. Teaching is also considered to be the safest job for females as it does not require much travelling and out of home assignments.

Result of the present study in respect of the variable of sex are in agreement with the finding of studies by Diaz and Cartnal (1999), Swan and Jackman (2000), and Halsane and Gatta (2002) who found the significant differences in the number of male and female learners in distance and face-to-face education.

The number of females joining the distance education was reported to be higher than the males by Dille and Mezak (1991), Hezel and Dirr, (1991), Owen (1992), and Robinson (1992) in their respective studies.

The findings are related to marital status, when viewed in the light of age, are easy to understand. Most of the secondary teacher trainees in distance education have age more than the marriageable age of 25 years, and in India most of the girls often get marry at age even slightly less than 25 years. Secondly, these trainees are in-service teachers and are professionally settled. The results fall in line with those in earlier studies on distance learners.

Gibson and Graff (1992) and Eastmond (1995) reported 75% of married distance learners. Fjortofts (1996) also reported that majority of distance learners in his study were married, Kumar (1999) indicated that there was an equal number of married and unmarried distance learners in his study. The findings of Ashby (2002), and Qureshi et al (2002) also indicate more learners in distance education as married than the face-to-face learners.

The results of significant differences between the two groups of trainees on Achieved socio-economic status as well as overall socio-economic status, may be due to the fact that all the distance trainees are in job, so have higher achieved economic status; their overall socio-economic status also seems to reflect their income from other members of the family (for example husbands/wives as the case may be) as most of them are married and have families, while B.Ed. regular trainees being a full-time learners are dependent on their parents/guardians. Jansen and Bruinsma (2005) reported that older students use deep information processing strategies (left-brain attribute) more than the younger students. Deep information processing strategies can also be seen as something that goes together with maturation. Van der Jagt et al (2003) reported that preferred hemispheric processing modes among pre-service teachers, trainees from urban areas preferred right hemispheric processing while those from suburban and rural areas preferred left hemispheric processing.

The difference in the overall study habits in distance teacher trainees and their counterparts in the face-to-face education is understandable. It may be due to the reason that distance trainees have reassumed the studies after an interval so they have to be cautious and more careful about their studies to compete with the regular trainees.
It is their high motivation for learning which enables them to have clear goals. Yet they have developed time management skills, some of which they might have learnt as a product of their full-time employment responsibilities. The trainees in face-to-face education have enough time for their studies (with faculty always available to them for guidance), thus may not need to budget their time so strictly. The budgeting of time is very crucial for distance teacher trainees as they have to manage their own studies along with other responsibilities whether at home or at work place (i.e. schools). Their high learning motivation is self explanatory as even after being employed as teachers, they want to improve their academic qualifications and possibly want to become better teachers. The very fact that these distance teacher trainees, inspite of their jobs and family responsibilities (as most of them are married) have chosen to enter into the higher learning and want to be further trained, itself is an indicator of their high learning motivation. Without high degree of motivation to learn, these trainees could have remained satisfied with their existing qualification and job.

According to McKenzie and Schweitzer (2001), part-time students with full-time employment responsibilities are highly motivated to study and have clear career goals. They may have also well developed time management skills as a product of their full-time employment responsibilities which may benefit them in their university studies. In the results of the present study are consonance with finding of Thang (2005) who reported that distance learners have comparatively good study habits and have good time management. Gilliard (1997) opined that distance learners are highly motivated, regular, and mature, disciplined and have good study schedule.

Feasley (1983) observed that distance education students mostly seek to satisfy specific life goals, for example, job-related training, as well as their own intellectual curiosity. It entails that the trainees in distance education employ better techniques or scheme to utilize their efforts and have more liking for social associations, connections, or affiliations with their fellowbeings and teachers than regular trainees. As the distance trainees are mature and have richer experience of life, this may be the reason for their better work methods and their interpersonal relationships. Moreover, the distance trainees come in contact with faculty and peers for a short duration i.e. during personal contact programme, so this may also encourage them to establish good relations with others so that they may get required information from each other after PCPs.

Ostlund (2005) states that the distance learners for the most part of the course suffer from stress and disruption due to the pressure of study requirements combined with obligations in their family life and jobs. Besides that, many of them express that their lack of study experience is a hindering factor. It has an impact on the time they can spend on their studies. He reported that the learners in his study supported each other in private situations as well as in situations directly linked to their studies.

As need for achievement refers to an individual's desire for significant accomplishment, mastering of skills, control, or high standards, or excellence in the chosen field, it implies that the regular trainees have stronger desire to be successful and achieve higher grades in their B.Ed. course than trainees in distance mode.
This is understandable in the light of the fact that these would-be teachers have yet to face the employment market for getting into the job, which would be possible if they achieve high and could compete with others in respect of academic achievement which carries a maximum weightage in the job interview. Whereas the distance trainees though have the higher academic motivation because of which they have entered in to B.Ed. course, but they are not in dire need of achieving higher marks in B.Ed. as they are already employed and thus may be more in need of a degree than grades. Higher motivation of on-campus trainees for Sports than the trainees in distance education (is understandable because these on-campus trainees get a lot of chances to participate and compete in intra and inter college sports competitions which is a regular annual feature in College of Education. Such an opportunity is provided only for a meager period to correspondence students just to give them a feeling of participation in co-curricular activities during PCPs.

The attitudinal differences among face-to-face and distance teacher trainees may be due to the fact that during the B.Ed. course, on-campus trainees have a regular associations and interaction with the teacher-educators who keep on developing their attitudes towards teaching on day to day basis. Even if one agrees that the teaching as a profession has certain constraints and is generally rated lower in economic status as compared to some other professions, these trainees yet have not experienced these factors personally.

In contrast to this, the B.Ed. students of distance mode themselves are teachers and thus well-versed with the strengths and weakness of teaching as a profession and as reflected by the results of the present study, they do not seem to as favorably inclined to the teaching profession as those who have yet to enter in this profession. In consonance with the results of present study, in the earlier studies also, Sidhu, 1983; Som, 1984; Patil, 1985; Dhawan, 1996; Gultekin; 2006 and Richardson and Watt, 2006 found that the prospective teachers have a favorable attitude towards teaching. Ramachandran (1991) reported that regular teacher trainees have significantly more favorable attitude towards teaching than the teacher trainees in correspondence courses.

Perception of distance trainees about the relevance of course content of theory papers than on-campus trainees is better than on-campus trainees, possibly because in-service teachers can relate the theory with practice in respect of their first hand experience in teaching whereas on-campus trainees are still not well-versed with the real teaching situations, therefore may not be able to relate the theory taught during B.Ed. course to actual teaching thus have lesser positive perception of relevance of theory. Moreover, Personal Contact Programmes for distance trainees focus primarily on theory papers which are taught by the best of the experts in their respective fields. Exposure to other aspects is not as strong as on theory papers. Wang (2007) stated that learning among adult learners is relevancy-oriented.

In other words, adult learners tend to focus on learning that can be applied to their work and lives. Adult learners may not be willing to learn anything new if their instructors fail to demonstrate a relationship between coursework and "real life (Bash, 2003). In other words, adult learners want their instructors to address relevancy to learning.
Adult learners may not be interested in knowledge for its own sake. Instead, they focus on the aspects of a lesson most useful to them in their work or personal life. Secondly, the B.Ed. course in terms of the development of teaching skills and attitude aspects have been perceived better by on-campus trainees than distance trainees. As already stated that during regular B.Ed., teachers have the opportunity for interaction with trainees over the year and they consistently and persistently put great emphasis on developing favorable attitudes and skills of teaching in and outside classroom by organizing different activities like daily classes for skills in teaching, special lectures for developing teaching skills, various teaching competitions etc along with their usual efforts of teachers to develop attitude in classrooms. Contrary to this, in case of B.Ed. through correspondence, trainees come in contact with their teachers only for short duration (i.e. PCP), within this period it is not possible to organize such activities and also teachers are more concerned with completing the syllabi. The differences in the third area of perception about the B.Ed. course between the two groups of trainees is in relation to the scope for personality development wherein also B.Ed. regular students submitted better scores than the distance trainees. This may be understood in view of the fact that regular B.Ed. trainees participate in a variety of co-curricular activities that are organized throughout their course along with the classroom teaching that go a long way in development of the personality of the on-campus trainees as a person and as a teacher. These opportunities generally are provided to distance trainees in a very meager form.

The results of academic performance of teacher trainees in the present study as stated above lead one to seek manifold plausible explanations and also confront a few questions such as if the curriculum is same, is it then the mode of transaction of the curriculum in distance education which does not deliver as good as in the face-to-face mode? Or is it the differences in learning styles, learning motivation, attitude towards teaching or perceptions of the trainees about their course? Probably, the reasons may be located in each of these separately and also collectively.

Taking the modes as the first plausible explanation, it can be said that the difference in the academic performance of teacher trainees in two format of education may owe to the fact that the two programmes operate in distinct, different teaching/learning environments. While the on-campus trainees do have their with academic orientations and exposures regularly and for a longer period in a formal educational environment, but their counterparts in distance education have such an exposure only in PCPs that are of very short duration. Thus, teacher-student interaction emerges as a powerful factor which can not be ignored.

Secondly, those who have opted for distance education system have their home and job responsibilities, because of that may not find much time to study whereas on-campus trainees have more quality time to study. Moreover in face-to-face education a continuous feedback is given to the trainees, which in turn is likely to improve their performance, a part of which is lacking in distance education who were examined only at the end of the session (i.e. during second PCP) for internal assessment. Further, the on-campus trainees have more access to library facilities and have more quality time to study than distance trainees, which may enable them to perform better than off-campus teacher trainees.
It can also be recalled that the regular students in the present study were found to have greater need for achievement that is desire to excel, than distance education trainees. These results also are suggestive for the need to strengthen the distance education system along with Personal Contact Programmes.

CONCLUSION

The findings of the present investigation demonstrated that the secondary teacher trainees in distance education are different in many respects from their counterparts from the regular stream (face-to-face education). The results of the study point towards the need to rethink the activities that are to be promoted during personal contact programmes. As the trainees in distance education have high motivation for academic challenges, distance trainees may be encouraged for active participation in activities during PCP by providing the well-organized interactive classroom teaching session, with orientation for practical work and involvement in co-curricular activities. The practice teaching components also needs to be flexible as per the needs of these trainees and they may be provided with full opportunities to exhibit their experiences in the field of teaching.

In view of the results of attitude towards teaching profession as being a potent predictor of academic performance, some kind of seminars, group discussions, workshops need to be organized to nurture the favorable attitude of distance trainees towards teaching.

Attempt may also be made to bring attitudinal changes, if so required. The findings that budgeting time, conditions for study and interpersonal relations serve as strong predictors of success in teacher training may be considered both by the teacher educators and guidance workers in the field to enable the distance trainees to restructure their physical environment whether at home or elsewhere for study rather than to wait for the availability of conducive environment.

They also need to be oriented in the time management skills. Their ability of establishing interpersonal relations can be utilized in building up strong networking with faculty and co-learners.

These efforts may help the mature learners to obtain basic skills and knowledge they need to become rigorous students. The interactivity between the distance learners and faculty could also be strengthened by providing them access to the facilities available at the nodal centers. This will also enable the distance teacher trainees to learn how to access ‘on-campus’ facilities such as library and laboratories at the study centers.

To conclude, as the Teacher Training course like any other course through Distance mode is here to stay, there is a dire need to redefine the various parameters of the learning environment through distance mode as per the needs, background and personal characteristics and attitudinal requirements of distance teacher trainees.

The teacher educators, counselors and the administration must be equipped to help these trainees to achieve success at par with teacher trainees in face-to-face education.
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PROFILE OF SECONDARY TEACHER TRAINEES IN DISTANCE EDUCATION

CHAPTER VI

PROFILE OF SECONDARY TEACHER TRAINEES
IN DISTANCE EDUCATION

Background Characteristics
- Average Age 27.59 years (88% with age 25 years or more)
- 75.5% females and 24.5% males
- 62% married and 38% unmarried
- Most of them are Middle Class in SES

Personal Characteristics
- Prefer verbal, structured, divergent and artistic learning styles.
- Predominantly employ Right-brained in styles of thinking.
- Most of them are holistic, divergent, creative, optimistic and imaginary in their thinking styles
- Have good study habits
- High achievement motivation
- Favorable attitude towards teaching
- Have good perception about the secondary teacher training programme i.e. B.Ed. course.
- Have significantly higher left sidedness for styles of learning and thinking than face-to-face trainees
- Significantly better Study habits than face-to-face trainees
- Equal in achievement motivation to face-to-face trainees
- Less favorable attitude towards teaching than counterparts in face-to-face education
- Equal in their Perception about B.Ed. course to the on-campus trainees

Academic Performance
- Good performance in theory, school experience programme and aggregate marks in B.Ed. examination (most of them obtained between 60-69.9%).
- Obtained lower grades than face-to-face trainees in theory, skills in teaching and in aggregate.
PROFILE OF SECONDARY TEACHER TRAINEES IN FACE-TO-FACE EDUCATION

Background Characteristics
- Average Age 22.13 years (87% are of age less than 25 years)
- 63% females and 37% males
- 14.5% married and 85.5% unmarried
- Middle Class in SES

Personal Characteristics
- Right-sided in styles of learning as well as thinking
- Favor divergent and inventive learning
- Prefer holistic, deductive, creative, optimistic and imaginary in their thinking styles
- Most of them have good study habits
- Have high achievement motivation
- Favorable attitude towards teaching,
- Display good Perception about B.Ed. course
- Have significantly higher right sidedness for styles of learning and thinking than distance trainees
- Study habits not as good as in distance trainees.
- Equal in achievement motivation to distance trainees.
- Have more favorable attitude towards teaching than counterparts in distance education
- Are similar to distance trainees in their Perception about B.Ed. course

Academic Performance
- Very good performance in theory, school experience programme and aggregate marks in B.Ed. examination (most of them obtained more than 70%)
- Obtain higher marks than distance teacher trainees in theory, skills in teaching and in aggregate.
A STUDY OF LEARNERS PERCEPTION AND ATTITUDE TOWARDS BA/BSS PROGRAM OF SSHL OF BANGLADESH OPEN UNIVERSITY

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ABSTRACT

In the present day open and distance education has become a significant way of the development of higher education. Bangladesh Open University (BOU), the only public institution in Bangladesh offers several formal and non-formal programs from secondary to post graduate level through distance mode. The main objectives of BOU’s program is to provide flexible and need based education particularly to the rural and disadvantaged groups like woman, agricultural workers, unemployed youths, uneducated adults, on-the-job people etc. The School of Social Science, Humanities and Language (SSHL) at the BOU offers Bachelor of Arts/Bachelor of Social Science (BA/BSS) to create efficient and skilled manpower in the country.

The focuses of this paper is to find out learners’ views and attitude towards BA/BSS program at BOU. In this study, 187 respondents were randomly selected from 15 tutorial centers of 2 Regional Resource centers (RRCs) of BOU. The study showed that 62% learners were male and the mean age of the learners was 34.05 years (minimum 22; maximum 54). More than 50% learners were married and nearly half (47.6%) of them were private employees and 86.6% were Muslims. Amongst them, 72.2% were come from urban areas and residing around 23.08 km from the tutorial centers. Most (72%) of the learners of BA/BSS program stated that the program was as usual but 24.1% expressed that it was difficult to understand but 97.7% learners responded that text materials were up to the mark. Regarding the media programs, 61% of the learners gave their opinion that TV programs were at the level best but they wanted to watch these at the evening or night schedule. It was surprising that 26.2% of the learners had bitter experience with the services of RRCs. Finally, some measures have been proposed to offer effective and more popular educational program through BOU.

Keywords: Learners, SSHL, Perception, Attitudes and BOU.
INTRODUCTION

Bangladesh is one of the developing countries in the world whose total population is now 156.1 million (up to July’ 2010) and per capita income is $750 annually (BBS, 2010). The growth rate of population is now 2.02 % (CIA World Factbook) and if the growth rate of population exists in this level, then after few years a fearful population figure will be found which will create a dangerous situation in a densely populated country like Bangladesh. The basic needs of human beings are Food, Shelter, Clothing, Education and Health. Education is the backbone of a nation. Education is not only a social and moral imperative; it is also an economic necessity. It has been considered that illiteracy is one of the most important parameters which cause socio-economic backwardness (Numan et al. 2007). In Bangladesh adult literacy rate is 53.68%, i.e. 46.32% population is illiterate (BBS, 2007). If we cannot minimize our illiteracy rate then we cannot create skill manpower. In this situation, a huge number of unskilled populations of Bangladesh will become a burden rather than human resource.

In open and distance education, the focus is on the needs of the people to whom the education message have addressed. The determination of the educational needs of the various groups such as dropouts, out-of-school youth, on-the-job people, farmers, teachers, women, school and university students and illiterate adults is the starting point of distance education (Sharma, 1987). Open and distance education systems give flexibility in choice of program and time for learners as well as for in-service personnel. Bangladesh Open University (BOU) is the only public sector university in Bangladesh that is providing a wide variety of education program by open and distance mode. Through formal and non-formal education programs it gives educational opportunities to the large section of population to help the development of human resource of the country.

BOU has 12 Regional Resource Centers (RRC), 80 Local Centers (LC) and more than 1300 Tutorial Centers (TC) to provide the distance education across the country. BOU has six schools of which the School of Social Science, Humanities and Language (SSHL) is one of them. The main objective of this school is to transform the country’s vast human resources into educated and skilled manpower by extending to them a wide range of academic programs both formal and non-formal. At present SSHL offers BA/BSS, BELT, CELP, and CALP as formal programs which facilitate learners to gather knowledge relevant to their life and career. BA/BSS, BELT, CELP, CALP programs were launched in 2001, 1998, 1997, and 1994 respectively. As well as it also alert the general people by providing Non-formal programs includes Religion, Environmental issues, Ethics & Development; History & Culture, and Women in workforce. Among these program, BA/BSS program is a bachelor in degree program. This program consists of 60 credit hours and 6 semesters. The duration of each semester is 6 months and the total length of the program is three years.

This is the age of competition and to survive in the competition, education is the only way to prepare them. To create efficient manpower by achieving this higher degree is the main aim of BA/BSS program. This paper presents a study amongst the learners’ of BA/BSS program of SSHL in BOU includes the area such as:

- the views of BA/BSS learners on printed text materials,
- learners’ attitude towards the quality of BOU’s TV program,
- Learners’ opinion regarding tutorial service, services of LC and RRC and
- finally, recommend some possible measures for improving the existing program and maintenance of the quality of this program.
METHODOLOGY

This study was carried out in School of Social Science Humanities and Language of Bangladesh Open University.

The total number of learners of BA/BSS program in SSHL was 57,196 whereas the total number of learners enrolled in the BA/BSS program was 18,982 in the academic year of 2008 (SSS 2008). Data was collected from 15 tutorial centers of two RRCs.

The duration of data collection was from August 2008 to October 2008. A cross-sectional study design based on randomly selected tutorial centres from Dhaka and Rangpur RRC of BOU were selected where the learners of BA/BSS program got admitted.

The entire list of learners of BA/BSS program served as sampling frame and the learners were randomly selected for the study. A structured questionnaire prepared in Bengali for the convenience of the respondents was distributed to the learners of SSHL.

The total sample size of the study was 187. In the questionnaire, learners were asked regarding their socio-demographic characteristics. Then respondents were asked about the opinion of the BA/BSS program in which program they were studying and the course fees of that program.

They were also asked about the quality of text materials, TV program and expected on-air time of the TV program. Finally, more or less similar questions related to the services of tutorial class, local centers and regional resource centers were included.

After data collection, it was keyed-in into the computer database and recorded properly. Data analysis was done using Statistical package of Social Sciences (SPSS) version 12.0.

LIMITATIONS OF THE STUDY

Every research has its limitations. Present study was not also beyond of it. Data were collected several tutorial centers covering only two (02) RRC. It would be more accurate and generalized if data were collected from more TCs and RRCs.

FINDINGS

Demographic Profile Of The Learners

The demographic profiles of learners and detail descriptions shows in Table 1 are as follows:

**Gender**

This study showed that majority 62% (n=116) learners of BA/BSS program were male and 38% (n=71) were female.

**Age Group**

Distance education provides an opportunity to students of any age or level to learn at home or at places of work. The statement reflected in this study also. The study showed that the 38% of the learners belonged to the age group of 25 to 30 years and 36.9% learners belonged to the age group of 22 to 25 years. The mean age of the learners BA/BSS program was 34.05 years and ranged from 22 to 54 years.
**Marital Status**
In this study 51.3% of the respondents were married and 48.7% were single.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>116</td>
<td>62.0</td>
</tr>
<tr>
<td>Female</td>
<td>71</td>
<td>38.0</td>
</tr>
<tr>
<td>Age Groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 25 years</td>
<td>69</td>
<td>36.9</td>
</tr>
<tr>
<td>25 to 30 years</td>
<td>71</td>
<td>38.0</td>
</tr>
<tr>
<td>31 to 35 years</td>
<td>33</td>
<td>17.6</td>
</tr>
<tr>
<td>36 to 40 years</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Above 40 years</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>91</td>
<td>48.7</td>
</tr>
<tr>
<td>Married</td>
<td>96</td>
<td>51.3</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>39</td>
<td>20.9</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Govt. Employee</td>
<td>19</td>
<td>10.2</td>
</tr>
<tr>
<td>Private Employee</td>
<td>89</td>
<td>47.6</td>
</tr>
<tr>
<td>Business</td>
<td>16</td>
<td>8.6</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>9.1</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>162</td>
<td>86.6</td>
</tr>
<tr>
<td>Hindu</td>
<td>22</td>
<td>11.8</td>
</tr>
<tr>
<td>Christian</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Location of Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>136</td>
<td>72.7</td>
</tr>
<tr>
<td>Sub-urban</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>Rural</td>
<td>40</td>
<td>21.4</td>
</tr>
<tr>
<td>Monthly Family Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 10000 Tk</td>
<td>75</td>
<td>40.1</td>
</tr>
<tr>
<td>10000 - 19999</td>
<td>75</td>
<td>40.1</td>
</tr>
<tr>
<td>20000 - 29999</td>
<td>26</td>
<td>13.9</td>
</tr>
<tr>
<td>30000 - 39999 Tk</td>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>&gt; 40000 Tk</td>
<td>5</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Survey, August to October, 2008*

**Occupation**
In distance education, learners were came from different backgrounds. Amongst the learners 47.6% were private employees, 20.9% were only students, 10.2% of the learners were government employee, 9.1% learners came from other field and only 3.7% learners were unemployed.

**Religion**
This study showed that 86.6% learners were Muslims, 11.8% were Hindus and 1.6% was Christians.
Location of Residence
In this study, most of the learners were came from urban area (72.7%) and while 21.4% came from rural area. These learners were living and traveling on average 23.08 km (minimum 01 and maximum 100 km) surroundings from the tutorial centers where the tutorial sessions performed.

Monthly Family Income
Amongst the respondents, 80.2% have had total monthly family income within 20000 BD Tk. And 13.9% have had income of Tk.20000 to Tk.30000 and only 6% respondents have had high monthly family income that was Tk. 30000 or more.

Learners Opinion in the BA/BSS Program
Learners were asked to give their opinion on the present status of BA/BSS program where they were studying. The study showed in Fig.1 that near about 72% learners thought that this program was as usual, 24.1% expressed that this program was difficult and 4.3% students expressed it was easy to understand.

![Figure 1: Learners' Opinion about BA/BSS Program](image)

Learners Opinion Regarding Course Fees
Figure: 2 showed that amongst the learners near about 44% learners expressed that the course fees of this program was expensive, 35% thought that it was acceptable, 19% said that it was too expensive and only 2% learners thought that the course fees was cheap. This study also reflected that it was difficult to bear the course fees by majority of the learners.

![Figure 2: Learners Opinion about Course Fees of BA/BSS Program](image)
Learners Attitude Regarding Quality of Text Materials
In the distance education, printed course material constitutes the mainstay of teaching. This would be covered a major part of the required support to the learner. Print material was made available to most of the students of this program through the tutorial centers. Table 2 showed the learners observations regarding the quality of the BOU text materials.

Table: 2
Evaluation of Text Materials of BA/BSS Program

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Low Quality</td>
<td>7</td>
</tr>
<tr>
<td>Acceptable</td>
<td>42</td>
</tr>
<tr>
<td>As Usual</td>
<td>59</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
</tr>
</tbody>
</table>

The study showed in Table 2 that more than 95% of the learners expressed that the quality of text materials was satisfactory, as usual and acceptable whereas only 3.7% of the learners said that it was low quality.

Learners Views on TV Program of BA/BSS Program

Broadcasting by TV is a popular means of communication in distance teaching system because of its universal accessibility (Chander, 1991). By watching educational TV program learners get necessary knowledge and information about their courses.

Figure: 3
Learners Attitudes Regarding Quality of TV Program

The study showed in Fig 3 that 36.4% learners expressed the TV program of BA/BSS program was good, 24.6% expressed that it was excellent and 35.3% said that it was as usual, whereas as only 3.7% stated that TV program was not up to the mark.

Learners Opinion on the Schedule of TV Program
At present, on-air schedule of BOU’s TV program is at morning (i.e. 7.15 am to 8.00 am and 10.00 am to 10.25 am). But this study revealed in Table 3 that 69.5% of the learners desire that TV program of the BA/BSS program should be broadcast at night (6 to 9 pm) and 17.1% expressed that it should be broadcast at evening schedule (3 to 5 pm).
Table: 3

Learners Views towards Suitable On-Air time of TV program

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Morning</th>
<th>Noon</th>
<th>Evening</th>
<th>Night</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Student</td>
<td>5</td>
<td>12.8</td>
<td>2</td>
<td>5.1</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
<td>14.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Government Employee</td>
<td>1</td>
<td>5.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Private Employee</td>
<td>5</td>
<td>5.6</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Business</td>
<td>1</td>
<td>6.3</td>
<td>1</td>
<td>6.3</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>11.8</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>8.0</td>
<td>10</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Learners Attitude towards Student Support Services

The success of distance education system depends on the quality of student support services. Table 4 showed that majority of the learners expressed the quality of the services provided by BOU’s tutorial centers, local centers and regional resource centers was as usual.

Table: 4

Learners Attitude Regarding Student Support Services

<table>
<thead>
<tr>
<th>Items</th>
<th>% distribution of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excellent</td>
</tr>
<tr>
<td>Tutorial Services</td>
<td>16.0</td>
</tr>
<tr>
<td>Local Center's Services</td>
<td>11.2</td>
</tr>
<tr>
<td>RRC Services</td>
<td>15.0</td>
</tr>
</tbody>
</table>

In this study 36.4% learners expressed that tutorial services was as usual, 29.9% said that it was good and 17.7% stated it was not up to the mark. Similarly, the service of local centers and regional centers were good and as usual. But among these three services 26.2% (18.7 and 7.5) of the learners had a bitter experience with the RRC services.

RECOMMENDATIONS

Despite some limitations, the study has an important implication for researcher. For improving the existing program and maintenance of the quality of this program following recommendations could be proposed:

- Printing text materials must be self instructional, activity based and more learner-oriented. As well as easy language should be used in the text materials.
- Audio-visual program which broadcasting by BOU media center could be more attractive and interactive. Besides this, Audio program should be increased.
- BOU can rethink about the on-air timetable of the TV program and at this point further more survey should be needed.
- The attitude of the Student Support Services should be always positive towards the learners and should be more active to promote this program.
Finally, to promote distance learning system as a whole monitoring and evaluation system should be needed.

CONCLUSION

The educational system plays a vital role in a country’s development. In the present day distance education is also an important mode of acquisition of knowledge and upgradation of qualification.

Distance education can be more learners oriented if distance learners are aware of the problems, needs, attitudes and characteristics of their learners (Numan et al 2008). This study revealed learners’ views on BA/BSS program.

It also appeared in this study that the factors related to self-development of learners need more support from student support services. Thus, policy makers and researchers should be needed looking for different ways of providing better and wider service for the learners.

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PLANNING THE NETWORKING OF ODL INSTITUTIONS FOR ESTABLISHING INTEGRATED DISTANCE EDUCATION SYSTEM IN INDIA

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ABSTRACT

It is proposed to establish an Integrated Distance Education System in India by designing modern technology based information communication network, connecting all its ODL (Open and Distance Learning) institutions to the headquarters of the ODL system in India. The principle roles to be performed by such a system have been discussed; according to which it would enable, educate and empower every member of the academic community including distance learners so as to provide them quality distance education. The connectivity between the ODL institutions would be achieved through the use of VPN (Virtual Private Network) involving wireless networking and optical networking. Various benefits of providing VPN connectivity to the ODL institutions in India, such as cost effectiveness, security, and shared applications/services have also been discussed. Thus, the networking of all the ODL institutions in India would provide a national framework so as to build an excellent Integrated Distance Education System necessary for providing equity and quality distance education at national level.

Keywords: Open and Distance Learning, Virtual Private Network, Web Based Information System, Distance Education, Integrated Distance Education System.

INTRODUCTION

The Distance Education System in India serves to the educational needs of millions of its students and is one of the largest educational systems in the world. Presently it comprises 14 Open Universities and about 200 DDE (Directorates of Distance Education)/CCIs (Correspondence Course Institutes) and government managed institutes that are providing education through distance mode. At the apex of the ODL system in the country, the DEC (Distance Education Council) has been constituted which is responsible for promotion, coordination and maintenance of standards of ODL (Open and Distance Learning) in the country.
In pursuance of its objectives, DEC has taken a number of initiatives for the coordinated development and expansion of ODL institutions in the country. As such the council is providing support to these institutions for the development of their infrastructure, quality course materials, proper learner support services, staff development and training, while also adopting modern technology including computerization and above all encouraging them to use ICT in their various operations. However considerations of efficiency and effectiveness demand that all the ODL institutions must mutually share on national basis their physical and intellectual resources rather than each one reinventing the wheel.

The DEC efforts in creating common pool of programmes and standards-setting are the major steps being taken in this direction. However to achieve such types of objectives in totality and systematically it is proposed to establish a modern technology based information communication network connecting all the ODL institutions to its headquarter (DEC). Such a system would help for expeditiously communicating information and for providing IT solutions for academic as well as administrative services involved. More explicitly it may be mentioned that the main objectives to establish this network (of all ODL institutions in India) would be:

- Sharing of resources required for efficient operation of ODL institutions and for the delivery of various academic and administrative services to the students.
- Pooling the courses offered by all OUs (Open Universities) to provide students with a wide range of options in respect of courses and programmes.
- Evolving a common pattern and structure for distance learning programmes throughout the country;
- Avoidance of duplication in production of course materials.

It may also be mentioned that the extension of quality distance education to remote and rural regions has become a Herculean task for a large country like India with multi-lingual and multi-cultural population separated by vast geographical distances and in many instance, inaccessible terrains. In order to meet this multifarious challenge, it is proposed to establish an integrated system at national level which would supplement curriculum based teaching, provide effective teacher training, greater community participation, strengthen educational efforts and provide access to new technologies through a well thought out network of all ODL institutions in the country. Such a network would also establish the connectivity between urban educational institutions with adequate infrastructure imparting quality education and the large number of rural and semi-urban educational institutions that lack the necessary infrastructure. Thus, in spite of limited trained and skilled teachers, the aspirations of the growing student population can be met through the concept of national framework for distance education. As such it may be mentioned that the networking of all ODL institutions in India would pave the road to build an IDES (Integrated Distance Education System). However the proposed IDES would be working to enhance quality distance education in India through the development of e-contents, capacity building, ODL databases, quality instructional processes, quality courses programme content development, IT (information technology) infrastructure and services.

The main purpose of the establishment of IDES would be to encourage regional and cross-sector development of the ODL system on national basis by sharing resources, knowledge and technologies of learning. Such a framework would also have the objective of ensuring connectivity of the learners to the DE network so as to enhance their self-learning skills and develop their capabilities for on-line problem solving.
This network shall work for creation of knowledge modules with right contents to address to the personalized needs of learners, certification of competencies of the learners acquired through formal or non-formal means. It will also develop and maintain the database having profiles of human resources, learning materials, programmes schedules and education delivery systems. Thus establishing the network of all ODL institutions in India would provide the national framework for the distance education in India, which would work for:

- Promotion of ODL System in the country,
- Maintenance of associated educational standards,
- Development of quality assurance framework, and
- Coordination of various activities pertaining to the ODL institutes in India.

In this paper an option for VPN solution has been presented and the proposed IDES VPN network connecting all the ODL institutions for establishing the IDES in India has been discussed. As such the principle roles to be performed by such a system have also been discussed with a view to provide equity and quality in distance education on national basis in India.

**NETWORK DESIGN/IT INFRASTRUCTURE**

As mentioned above, the networking connectivity of all ODL institutions in India is becoming increasingly important for the purpose of establishing integrated distance education system in the country. As such an overview of general needs and main requirements of IT infrastructure/network design for such a system have been presented from the perspective of planning the networking of ODL institutions in India.

**Needs Overview**

For satisfactory and efficient operation of distance education system within the available resources in the country, a cost effective distance learning IT solution is needed which can help to control costs and provide an appropriate IT infrastructure and services on national basis to all the ODL institutions in India. It is believed that the solution would be achieved by providing low cost connectivity along with development of valuable distance learning IT solutions.

However there is an urgent need for improved IT infrastructure in ODL institutions as it is observed that in most of the ODL institutes, IT infrastructure facilities for distance learning do not exist to a satisfactory level.

The different ODL institutions in India are at different levels of IT infrastructure need. Some have fairly developed IT capabilities while others are far less developed. In order to fill up such a gap, it is very much needed to provide access to proper inexpensive modern technology based telecommunication services to as many ODL institutions in the country as possible.

As such with a view to provide recently developed IT based distance learning solutions to academic community on national basis, a the modern technology based methodology is needed to be developed, which would subsequently be made available to them over the Internet.

**Main Requirements for Network Design Parameters**

The main requirements as well as resources are ought to be identified for implementing appropriate IT infrastructure facility for the proposed IDES in India.
This would also include streamlining of the IT networking activities within the member organisations (i.e. all ODL institutions in India) and developing most appropriate network design along with the associated IT network solutions so as to obtain the most cost effective and highly secured system for distance education at the national level. The overall connectivity requirements for the key network design parameters include wide and scalable bandwidth which must also be fully utilized. In addition the networking connectivity is required to be cost effective so that low cost per transaction may be realised.

**Proposed Network Design**

After considering various network designs such as LAN (Local Area Network), WAN (Wide Area Network), VPN etc., it is decided to select VPN architecture as the proposed network model for IDES, since it is the most cost effective network design, with the best probability of long-term sustainability. VPN have also been reviewed in the past by various people working in this area [King, (2000), Malik, (2002), Pooree, (1999), Tiller, (2001)]. In case of adopting VPN networking; the IT infrastructure components such as communication lines, hardware/software; and associated applications and services development including the technical expertise; can be shared among the member organizations of IDES. As such the IT infrastructure capitalization and maintenance cost including the cost per transaction would decrease significantly. Also it would reduce operational cost as compared to traditional WAN and LAN network systems. It would also provide faster ROI (return on investment) than such systems. It may also be mentioned that in addition to providing security, broadband networking capabilities and global networking opportunities, it (VPN) would improve productivity, extend geographical connectivity, and reduce transit time and transportation costs for end users. As such the increase in user satisfaction from the added reliability and convenience, by employing the VPN approach would be achieved.

**Virtual Private Network**

The VPN would link two or more computers through an underlying local or wide-area network while encapsulating the data and keeping it private and secured. Such a network in the organization uses advanced encryption and tunnelling to permit computers to establish secure, end-to-end, private network connections.

![Figure: 1](image)

A schematic view showing the VPN Tunnel established over Internet cloud

A client computer would connect to its local ISP (Internet Service Provider) while providing connection to the Internet. Special client software is provided so as to recognize a specified destination and that would negotiate an encrypted VPN session. Subsequently the encrypted packets wrapped in IP (Internet Protocol) packets would tunnel their way through the Internet (see Figure: 1).
**IDES VPN**

The VPN network may utilize an Internet connection from each member’s organization. All communication would travel through the Internet and the IDES VPN server. As such joint applications and shared access to direct lines to other organisations through the IDES VPN would be obtained.

The following figure illustrates multiple members and remote users connecting to the IDES VPN through the Internet. Access is then provided to multiple IDES VPN applications and services (see Figure 2).

![Diagram of IDES VPN with multiple members](image)

**Figure 2: IDES VPN with multiple members**

**Solution Design and Implementation of IDES-VPN**

The solution design and implementation would follow a systematic planning and implementation methodology. The methodology would seek to enable IT (information technology) systems implementation that are simple and deliver excellent results on time and within budget. The main goal would be to implement a fast, secure, cost-effective means for site-to-site and remote access connectivity among all the ODL institutions so as to gain access to e-mail and file server etc located at the organisation’s headquarters. The various efforts and the major steps to be undertaken by the ODL system for VPN implementation have been described and shown schematically in Figure 3 as follows:
The proposed network should be able to support about 200 member organisations at any given time. Along with this about 10-15 users must also be able to have remote access connectivity simultaneously. The network may be monitored and supported by the help desk team who would also field trouble tickets.

**NETWORKING OF ODL INSTITUTIONS IN INDIA**

The networking connectivity of all ODL institutions in India is becoming increasingly important for the purpose of establishing Integrated Distance Education System in the country.

An overview of the system employing VPN has been presented (see Figure: 4) from the perspective of planning the networking of ODL institutions in India.

The main objective would be to realise cost effective and secured network connectivity solutions along with providing optimum level of operational satisfaction for end-users of such a system.

The capabilities and limitations of various configuration options have been studied and accordingly the most suitable among them has been chosen for implementation. The national network of the IDES VPN architecture (see Figure: 4) with connectivity from the IDES members to the IDES VPN applications and services would be provided through the single scalable Internet access.
As such the member connections with ODL institutes will be accomplished with secure Internet connections through the IDES VPN. The unified connection will allow for IDES members (i.e. ODL institutes) to share resources thus creating the basis for cost savings of the VPN architecture. All members will be able to maximize communication line bandwidth. The IDES VPN server located in the data centre would work as portal to the affiliated and associated organizations, thus eliminating the need for duplicated and under utilized telecommunication lines at each of the ODL institute sites. The IDES portal at headquarters (DEC) would be a central point to the specialised ODL databases and a home for jointly licensed and fully developed distance learning IT solutions.

Thus in all it may be mentioned that the IDES-VPN would provide sharing of direct lines and associated application, services, capital resources and technical expertise among ODL institutions with the head quarters, which is the main underlying factor giving rise to tremendously large amount of advantages and benefits that are obtained with the implementation of such a system as well as during the operation of the Integrated Distance Education System in India.
BENEFITS OF IDES VPN

The original objectives of VPN network is to implement a fast, reliable and cost effective nationwide mean for all ODL institutions of India so as to have easy and convenient access round the clock, to various academic and administrative service including e-mail and file servers etc. located at the IDES headquarters. These ODL institutes also include those located in the remote and rural areas which are not easy to reach physically. Due to sharing of resources, the ODL institutions need not have to make individually much investment in hardware and software, such that the IDES would be able to recoup its project investment in due course of time.

As such more explicitly the general benefits of the IDES-VPN obtained by networking all the ODL institutions in India with VPN (Virtual Private Network) are as follows:

Cost Effective
VPN would provide Cost effective connectivity method for the member organisations. Wide bandwidth connections would be available to all member organization through one Internet connection. As such it would eliminate the need for multiple direct communication lines. Additionally, monthly communication costs would be significantly reduced with increased bandwidth and more efficient bandwidth utilization.

Security
Internet Security capabilities would be provided as mentioned below:

- Authentication: It is the process by which a party exhibits its identity to another. As such it would allow us to verify a user identity, as well as, verify that data is coming from trusted source. This would also include authenticating an individual user, as well as, including authentication of the host from where the information has originated.
- Integrity: Integrity would ensure that the data has not been modified during transmission.
- Privacy: It would protect private information from eavesdropping. Encryption would provide privacy by modifying data; so any other person excepting the intended recipient, cannot view it. The sender and the recipient each would have keys that are used to encrypt and decrypt the information that is being shared.
- Auditing: It would involve the single best methodology for identifying network system failures, mis-configurations or internal/external attacks.

Shared Capital Cost
The IDES VPN implementation would allow for development of one system that can be shared by all members. The alternative is that each individual member would make the same capital investment and acquisition of duplicate resources to implement the same level of networking capability, which obviously is highly undesirable and cannot be recommended at all.

Scalability
It would allow for and can provide the necessary facilities needed for the growing provide number of sites and remote users.

Shared Applications/Services
IT solutions can be jointly purchased and developed by IDES and its members and can be subsequently used/shared by all stakeholders.
**Shared Technical Support**
A group of shared technical IDES staff can be formed which would maintain shared systems, application and associated Web Page projects.

**Remote Access VPN**
It would provide a more reliable and faster connection than dial-up.

**Site-to-Site VPN**
It would allow for connection of headquarter (DEC) to ODL institutes and to associated study centres/branch offices/the concerned stakeholders and end-users. It may thus be mentioned that the IDES VPN is innovative in nature and offers tremendous benefits to distance learners and the academic community at national level.

**GOALS ACHIEVED WITH THE ESTABLISHMENT OF IDES**
With the establishment of IDES, the ODL system would be able to provide significant help required to fulfil the training and development needs of every member of the academic community in India. In terms of the need for openness and flexibility, this would achieve the highly needed developmental goals as mentioned below:

- To provide information that will help policy makers and decision makers formulate policies, develop strategies and plans to efficiently manage ODL programmes.
- To offer current and state of the art information on implementing ODL with reference to teaching-learning methodology, modes of delivery, media for learning, learning technologies and trends in research.
- To serve as a network for collaboration at national and international level by providing a platform for the exchange of information, ideas, experiences, lessons learned, and best practices.
- To provide a gateway for free and fair access to ODL databases and knowledge resources on ODL for the purpose of enhancing educational training and development.

In addition to above it can be said that such a framework would aim for building connectivity and knowledge network pertaining to the activities of teaching-learning; students assessment, evaluation, certification and term-end exams etc. Also it would aim for development of efficient learning modules and knowledge modules for various courses/programmes having the right content to take care of the aspirations and personalized needs of academic community including learners. As such the standardization and quality assurance of e-contents would also be undertaken so as to make them world class as well as cost effective. Support would also be provided for the creation of virtual campus for distance education in the country. In addition the associated databases including the profiles of the associated human resources and other things would be developed and maintained. As a result digital literacy would be achieved for various educational activities of the ODL institutions.

**CONCLUDING REMARKS**
An IDES (integrated distance education system) in India would be established by employing VPN (Virtual Private Networking) of all ODL institutions in the country. Since VPN model has been adopted, so IT infrastructure components such as communication lines, hardware/software and associated applications and services could be mutually shared among the member organisations of IDES.
In addition such a system while providing excellent security features, broadband networking capability and global networking opportunities, would also improve productivity, extend geographical connectivity, reduce transit time and transportation costs for end users. As such the increase in user satisfaction from the added reliability and convenience of employing the VPN approach would be achieved. The IDES thus established would be involved in enhancing the quality of distance learning through the development of high quality e-contents, instructional process, course / programme content development, IT infrastructure and network systems. In addition to this all the associated ODL institutions would be able to share mutually on national basis the available physical and intellectual resources, evolving a common pattern and structure for high quality distance learning programmes all over the country. Thus, it is concluded that the networking of all the ODL institutions would pave the road to build an excellent Integrated Distance Education System in India which would provide equity and quality in distance education at national level.

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REFERENCES


COOPERATIVE LEARNING ENVIRONMENT WITH THE WEB 2.0 TOOL E-PORTFOLIOS

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ABSTRACT

In recent years, the development of information and communication technology (ICT) in the world and Malaysia namely has created a significant impact on the methods of communicating information and knowledge to the learners and consequently, innovative teaching techniques have evolved to change the ways teachers teach and the ways students learn. This study main focuses are directed on developing a cooperative learning environment to promote an active learning environment of smart schools in Malaysia. Within this learning process, multimedia technology and Web 2.0 tools, namely, MyPortfolio were integrated to provide the students to learn on their own as well as to document their progress and experience within this cooperative learning environment. The core purpose of this study is to establish the impact on student learning, their perceptions and learning experiences of the cooperative learning environment using web 2.0 tools among the smart secondary schools students in Malaysia. Surveys were conducted to students to ascertain their reaction towards these learning environment activities. The results of this project were encouraging as the students managed to cope with each other to reach their common goal. The usage of blogs acts as an important tool to enhance team cooperation and to foster a learning community within the class.

Keywords: Cooperative learning, MyPortfolio, blogs, Web 2.0, multimedia

INTRODUCTION

Primarily, traditional lectures have been the form of learning and teaching used in the Malaysian educational system for decades especially in schools. Even though this process of knowledge transfer has its advantage, it has limited benefit on today’s IT oriented system (Motschnig-Pitrik & Holzinger, 2002; Neo, 2005). In recent years, information technology (ICT) has increasingly changed the scenery in the Malaysian educational field from primary, secondary and up until universities. It is thus merely affecting the communication strategies in the education environment and influencing the mode of teaching by the educators and the process of learning by the students. These changes in the Malaysian education field are a form of result from the educational reforms that have been happening in the United States in the past two decades (Lambert and McCombs, 1998).

The reformation has a meaning of focus on student-centred learning relatively than on teaching, pedagogy, instruction and schools curriculum. It is believes to sought and dispute the fundamental assumptions about student learning, where the process of learning is now defined as "the ability to retain, synthesize, and apply conceptually complex information in meaningful ways" (Lambert & McCombs, 1998; Neo, 2005).
Multimedia and technology involvement enables these reforms to be efficiently carried out because in designing multimedia applications, new insights into the learning process of the designer can be discerned, as the learner is forced to represent information and knowledge in new, innovative and creative ways (Agnew, Kellerman & Meyer, 1996; Neo, 2005). Plenty of studies have found that team-based and project-based activities support an active learning environment among students (Hung & Wong, 2000; Bennet, Harper & Hedberg, 2001), and therefore these activities are one of the key elements to search and learn. Currently, with improved emphasis on social constructivism, cooperative learning is partially a reaction to societal changes which focuses more on team work as communication skills are becoming increasingly more important in the knowledge-based society (McWhaw, Schnackenberg, Sclater & Abrami, 2003). Apart from that, cooperative learning also represents a shift from a teacher-centered approach to a more student-centered learning in groups. Thus, it creates an excellent prospect for students to engage in problem solving with the help of their friends and group members instead of solving the problem by themselves (Effandi & Zanaton, 2007; Neo, Neo & Kwok, 2009).

**COOPERATIVE LEARNING**

The challenges in education field nowadays are to teach students effectively the diversity ability and differing rates of learning of each students. Teachers are anticipated to teach in a way that enables students or pupils to learn concepts while acquiring the skills process, positive attitudes and values and problem solving skills. A variety of teaching strategies have been adopted for use in the classroom, ranging from teacher-centered approach to students-centered (Effandi & Zanaton, 2007).

Cooperative learning is believed to be a learning process which is most effective when students are actively involved in sharing their ideas and work cooperatively and helpfully to complete academic tasks (Effandi & Zanaton, 2007).

An instructional method of cooperative learning has been used as both a learning tool at various levels of education and in various subject areas respectively. Johnson, Johnson and Holubec (1994) proposed five essential elements of cooperative learning:

- **Positive interdependence:** It is believed that the success of one learner is dependent on the success of the other learners.
- **Promotive interaction:** Individual can achieve promotive interaction by helping each other, exchanging resources, challenging each other’s conclusions, providing feedback, encouraging and striving for mutual benefits.
- **Individual accountability:** Teachers should assess the amount of effort that each member is contributing. These can be done by giving an individual test to each student and randomly calling students to present their group’s work.
- **Interpersonal and small-group skills:** Teachers must provide opportunities for group members to know each other, accept and support each other, communicate accurately and resolve differences constructively.
- **Group processing:** Teachers and educators must also provide opportunities for the class to assess their group progress. Group processing enables the group to focus on facilitates the learning of cooperative skills, working on good working relationship and ensures that members receive feedback.
Essentially, cooperative learning represents a shift in educational paradigm from teacher-centered approach to a more student-centered learning in small group. It creates excellent opportunities for students to engage in problem solving with the help of their group members (Effandi, 2005). In Malaysia, research on cooperative learning has been carried out since 1990s (Nor Azizah & Chong, 2000). The revised curriculum of the primary and secondary schools emphasized the use of cooperative learning as an alternative to traditional method of teaching. (Kementerian Pendidikan Malaysia, 2001). The effectiveness of cooperative learning is well established by research. Cooperative learning formed many learning opportunities to the students and teachers that do not only typically occur in traditional classrooms. According to Nor Azizah (1996), cooperative learning has the potential in science classrooms because of the following factors:

- science students always work in group during executing the science experiment in the laboratory therefore what they need is the skill to work in group
- the science laboratory is spacious with intact desk and chairs allowing the students to move around freely
- science classes are usually two periods with 40 minutes each which provide enough time for cooperative learning between students and
- during experiment, there are many good values which can be inculcated e.g cleanliness, trustworthy etc. Siti Rahayah (1998) further stated that teachers and educators need to try implementing cooperative learning in order to enhance scientific skills and to increase achievement.

EPORTFOLIO-SMART SCHOOLS IN MALAYSIA

Smart School is a learning institution which has been reinvented in terms of learning and teaching methods and also the school administration system in order to prepare the students for the Information-Based Society and ICT. The form that based this will be put upon the creativity and better management of information that facilitated through the use of technology where the students, teachers, administrators and parents are better equipped for the challenges of the information age nowadays.

Lankes (1995) define the electronic portfolios (eportfolio) as a “purposeful collection of student’s work that exhibits systematically the students’ effort, progress and achievements”. Portfolios are shown to be “purposeful” and “systematic” and they are important for both students and teacher to be aware of the reason and purpose to keep portfolio. Thus, the purpose of maintaining an e-portfolio can be classified into representation reflection and revision. MyPortfolio is another Web 2.0 tools e-portfolio which provides a personal learning environment to record and showcase evidence of achievement, manage development plans, set goals, and create online learning communities.

MyPortfolio provides a student centred and personalised space to bring together formal school learning activity and informal learning experiences. The key benefit of MyPortfolio is that a learner will develop his or her driven environment being on a shared service environment in a way a pan sector learner community may flourish. MyPortfolio also brings together the benefits of the social software and leading education technology in a safe education focused environment. MyPortfolio is also a medium of interaction between teacher and students and also students and students which resulted in the establishment of a learning community where the members of a group cooperated towards a common goal with help of an instructor.
Figure: 1 shows the relationship of teacher, student and school element in MyPortfolio.

Figure: 1
The instructional relationship in the cooperative learning environment

THE STUDY

This study involves two smart schools in Malaysia. Twenty students from these schools participated in the study which comprises of (N=20) students from School A and (N=20) students from School B. The students involved are form 4 science stream students where MyPortfolio was selected as the web 2.0 tool in this research. The class of twenty students were divided into 5 groups comprises of 4 students in one group. Each of the group was given one subject in their curriculum syllabus to work on. Then, these groups will be subdivided into another 2 groups where they were paired and work on the content of their subject. The curriculum subjects chosen in this study is physics. Once a week, they used the school's computer room and execute the work under the supervision of their physics teacher.

The objective of this project is to present an overview of cooperative learning on multimedia as well as content creation. The project is an eight weeks project. The project was to create a physics blog by using the content of Chapter 1: Introduction to Physics. The eight week long project will therefore create a cooperative learning environment for each student in the group. The student was aged 14 years old and almost all of them have no prior knowledge in multimedia as well as skills to complete the course. They will teach basic skills in using the MyPortfolio and how to create the blog. Figure: 2 show the cooperative class structure of the class.
Stage 1: Division of Small Groups
In this project, 20 students were divided into 5 groups.

Stage 2: Sub-Groups Blog Development
The small groups will then be sub divided into 2 pairs where they will work in pair to come out with the content of chapter 1 in their physics subject. Also, they need to use multimedia or web 2.0 tools in order to build a creative and innovative blog.

Stage 3: Class Blog
After turning in their respective proposal, the sub-group will then need to create an overall blogsite for chapter X.

Here, similar sub-groups had to combine with each other and to filter out any similar information as well as to compile more comprehensive theory of their topic.

At the end of the project, each group had to present their blog to the class, and display their blogpages, interactive features as well as their development of the blog.

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Figure: 2
Conceptual Framework of the Form Four Subjects MyPortfolio
Data Analysis and Results

In this survey, two Likert-scale surveys were administered to the students in this cooperative learning environment to obtain their attitudes towards learning environment using MyPortfolio. The Likert scale used in both surveys was from 1 to 5 (1=Strongly Disagree (SD), 2= Disagree (D), 3=Undecided (U), 4=Agree (A) and 5=Strongly Agree (SA). The first survey had 11 items and was used to obtain the students attitudes towards MyPortfolio. While the purpose of the second survey, which has 7 items, was used to obtain the students attitudes towards cooperative learning. It was also important to note that the students have never worked in a cooperative learning environment previously nor have they ever created a blog before this assignment. This would be their first experience to do so.

Table 1 shows the results of MyPortfolio and cooperative learning of form four students from two smart schools in Malaysia. Each of the survey item will be analyze using the table breakdown of the Likert scale items in frequency (f), percentage (%), mean (M) and standard deviation (Std Dev). In order to locate the reliability of the surveys, statistical analysis of a reliability of above 0.6 is deemed to have satisfied the reliability of the survey. The overall reliability or the Cronbach’s Alpha of the cooperative survey and blog survey were 0.973 and 0.847 respectively. Thus, both surveys were deemed reliable. The resulting mean items in both surveys are shown in descending order.

As referred to Table 1, it shows that students give a positive feedback on the experience in using the MyPortfolio in their cooperative learning activities. The mean results of this survey were positive as they are ranged from 3.30 to 4.65. This indicated that they found wring in blog; i.e. MyPortfolio is useful to them especially in their learning process.

MyPortfolio helps them to reflect upon: what they have achieved, where their ambitions are, what they need to get there and how learning can help them do that.

The students also indicated that they had a good experience developing their blog through MyPortfolio as this is their experience in doing so. Overall, it can be seen that the students were able to learn in cooperative disposition and use the web 2.0 tools as their learning medium.
Table 1
Results of the MyPortfolio and Cooperative Learning

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Std Dev</th>
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<tr>
<td></td>
<td></td>
<td>f(%)</td>
<td>f(%)</td>
<td>f(%)</td>
<td>f(%)</td>
<td>f(%)</td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>1</td>
<td>MyPortfolio has made me more interested in my study</td>
<td>0.00</td>
<td>0.00</td>
<td>13.6</td>
<td>59.1</td>
<td>27.3</td>
<td>4.00</td>
<td>0.679</td>
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<td>MyPortfolio consumes a lot of my time in class</td>
<td>0.00</td>
<td>1.50</td>
<td>7.6</td>
<td>66.7</td>
<td>24.2</td>
<td>4.03</td>
<td>0.660</td>
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<tr>
<td>3</td>
<td>MyPortfolio consumes a lot of my time outside of the class</td>
<td>1.50</td>
<td>3.00</td>
<td>4.50</td>
<td>42.4</td>
<td>48.5</td>
<td>4.15</td>
<td>0.949</td>
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<tr>
<td>4</td>
<td>Inform me about my friends’ activities</td>
<td>0.00</td>
<td>0.00</td>
<td>3.00</td>
<td>63.6</td>
<td>33.3</td>
<td>4.23</td>
<td>0.530</td>
</tr>
<tr>
<td>5</td>
<td>Help me organized my work very well</td>
<td>0.00</td>
<td>0.00</td>
<td>3.00</td>
<td>63.6</td>
<td>33.3</td>
<td>4.23</td>
<td>0.530</td>
</tr>
<tr>
<td>6</td>
<td>Give me a new approach of presenting using technology</td>
<td>6.10</td>
<td>9.10</td>
<td>6.10</td>
<td>54.5</td>
<td>24.2</td>
<td>3.50</td>
<td>1.261</td>
</tr>
<tr>
<td>7</td>
<td>Help me to learn better</td>
<td>0.00</td>
<td>1.50</td>
<td>65.2</td>
<td>0.00</td>
<td>33.3</td>
<td>3.53</td>
<td>0.933</td>
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<tr>
<td>8</td>
<td>Help me to be an independent learner</td>
<td>1.50</td>
<td>7.60</td>
<td>42.4</td>
<td>33.3</td>
<td>15.2</td>
<td>3.35</td>
<td>0.949</td>
</tr>
<tr>
<td>9</td>
<td>MyPortfolio help me to learn outside the classroom in an informal manner</td>
<td>0.00</td>
<td>6.10</td>
<td>18.2</td>
<td>39.4</td>
<td>36.4</td>
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<tr>
<td>10</td>
<td>Comments by my teacher were very helpful</td>
<td>0.00</td>
<td>12.1</td>
<td>33.3</td>
<td>48.5</td>
<td>6.10</td>
<td>3.30</td>
<td>0.853</td>
</tr>
<tr>
<td>11</td>
<td>Comments made on my works were very helpful to improve my learning process</td>
<td>1.50</td>
<td>13.6</td>
<td>27.3</td>
<td>33.3</td>
<td>24.2</td>
<td>3.40</td>
<td>1.128</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N=40</td>
<td>Cronbach’s Alpha=0.973</td>
<td></td>
<td></td>
<td></td>
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<tr>
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</tr>
</tbody>
</table>

**Cooperative Learning**

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>MyPortfolio enable me to communicate with my friends</td>
<td>0.00</td>
<td>0.00</td>
<td>3.00</td>
<td>15.2</td>
<td>81.8</td>
<td>4.65</td>
<td>0.580</td>
</tr>
<tr>
<td>13</td>
<td>MyPortfolio enable me to cooperate with my friends</td>
<td>0.00</td>
<td>3.00</td>
<td>16.7</td>
<td>56.1</td>
<td>24.2</td>
<td>3.83</td>
<td>0.813</td>
</tr>
<tr>
<td>14</td>
<td>MyPortfolio is challenging</td>
<td>0.00</td>
<td>4.50</td>
<td>21.2</td>
<td>33.3</td>
<td>40.9</td>
<td>4.08</td>
<td>0.992</td>
</tr>
<tr>
<td>15</td>
<td>It helps me to be independence in completing my work</td>
<td>0.00</td>
<td>0.00</td>
<td>13.6</td>
<td>31.8</td>
<td>54.5</td>
<td>4.23</td>
<td>0.800</td>
</tr>
<tr>
<td>16</td>
<td>I can review my study with my friends at home</td>
<td>0.00</td>
<td>0.00</td>
<td>1.50</td>
<td>43.9</td>
<td>54.5</td>
<td>4.43</td>
<td>0.549</td>
</tr>
<tr>
<td>17</td>
<td>MyPortfolio helps me enjoying my time discussing schools subject with my friends</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>39.4</td>
<td>60.6</td>
<td>4.50</td>
<td>0.506</td>
</tr>
<tr>
<td>18</td>
<td>MyPortfolio helps us to solve our problem as a group</td>
<td>0.00</td>
<td>0.00</td>
<td>7.60</td>
<td>59.1</td>
<td>33.3</td>
<td>4.15</td>
<td>0.622</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N=40</td>
<td>Cronbach’s Alpha=0.847</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

The primary objectives of this study are to discover the students’ experiences in cooperative learning environment using MyPortfolio.
From the study, there were several factors contribution and thus resulted to students working in a cooperative learning environment. It is necessary for the students to cooperate with each other and use multimedia technology namely MyPortfolio as a means to construct knowledge in their learning process. Besides the surveys, an open-ended questionnaire was given to the students to obtain the students’ feedback in this learning environment and from the answers given, an analysis will be done. Comments from the students will be presented as part of the discussion below. From the analysis, the overall findings in this study are as the following:

**Cooperation Among Team Member**

It can be seen from the results, the students indicated that they were able to cooperate with each other. They understood about the importance of cooperating with their teammates in order to help each other to complete the project. The results from this project show that they were able to cooperate with their teammates (Item 12: M=4.65, Std Dev=0.580) and enjoyed working in this cooperative learning environment (Item 13: M=3.83, Std Dev=0.813). The survey also indicated that the students in the groups worked well with each other as the majority of the students responded positively to the items in the survey. The students felt that their group members contributed to the completion of the project and communicated well with each other (Item 17: M=4.5, Std Dev=0.506). They also felt that they worked well together to solve problems (Item 18: M=4.15, Std Dev=0.622).

**Fun and Challenging**

As for working in a cooperative environment, the students found it very much challenging. The results indicated that the project given to them was challenging (Item 14: M=4.55, Std Dev=0.992). This was primarily because it was their first time to learn using MyPortfolio as they had no prior experience using such tool. The students also indicated that they manage to enhance their learning of the subject matter while working in a cooperatively (Item 17: M=4.50, Std Dev=0.506). Since it was their first time doing so, they were not used to working cooperatively on a project. Many were perplexed to what they required to do in the beginning but at the end of their experience they indicated that they had fun learning in such a manner.

**Individual Responsibility**

Apart working in a group, the students have individually understood their role within the group. Results tabulated from the survey showed that each member of the teams knew exactly what their role was in the team (Item 15: M=4.23, Std Dev=0.800). Individually, the students are really satisfied with their contribution in this project. Relevance to the questionnaires, some of the comments from students are presented in Table 2 to 5 when asked their opinion on their individual responsibility when working in a cooperative team and if they are satisfied with their individual contribution.

**MyPortfolios as a Learning Tools**

From the use of blog survey, the results indicated that the students were able to use the blogs as part of their learning process in doing their assignments. They found MyPortfolio as a good experience in their learning and ignite their interest in studies (Item 1: M=4.00, Std Dev=0.679). The students confirmed that by writing in blogs, they were able to organized their work very well (Item 5: M=4.23, Std Dev=0.530). This was an important attribute in the blog as by doing so, it allowed the students to reflect on their work and to learn from them.
In addition, the majority of students liked using the blogs as it help them to learn better (Item 7: M=3.53, Std Dev=0.933) and found that using the blogs can help them learn better outside the classroom in an informal manner (Item 9: M=3.83, Std Dev=0.984). Overall, MyPortfolio served as an important tool in the learning environment. The students enjoyed using it and found it useful in their learning.

To Be an Independent Learner
The results from the usage of blog survey indicate that the students were satisfied to use the blogs as a learning tool in this cooperative learning environment. All the students agree that MyPortfolio helps them to be an independent learner (Item 8: M=3.35, Std Dev=0.949). They found using the blogs made them a more independent student as they could continue to work on their.

The results also determined that the majority of the students thought that MyPortfolio consumes a lot of their time in class and outside the class (Item 2: M=4.03, Std Dev=0.660 and Item 3: M=4.15, Std Dev=0.949).

This indicates that by being independent learner, it also cost a lot of their time during class session and also outside the class during their free time.

Working In a Learning-Based Community
Using MyPortfolio to document the process of developing the students’ blogs in the cooperative learning environment was very helpful to create a learning community in the class room.

### Table: 2
Comment on survey questions from Student A

<table>
<thead>
<tr>
<th>No</th>
<th>Survey Question</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cooperation among team member</td>
<td>It is great to say that the teamwork between me and my group members was a success. We can discuss and communicate without quarrel and considerate one another opinion and situation..</td>
</tr>
<tr>
<td>2.</td>
<td>Fun and challenging</td>
<td>Through the whole process I think it was definitely a very wonderful experience. It was definitely very fun doing all this research and see how others progress. Definitely the project had given us more in depth about how a website is being created.</td>
</tr>
<tr>
<td>3.</td>
<td>Individual responsibility</td>
<td>I am in-charge of festivities in the culture and searched for information and data, design my festivities interface. I am satisfied with my work. With not much time and lack of digital design knowledge, we are still able to produce this good output.</td>
</tr>
<tr>
<td>4.</td>
<td>MyPortfolio as a learning tools</td>
<td>Yes! Able to reflect my understanding of the assignment and challenged my learning process as well as helped me learn outside the classroom</td>
</tr>
<tr>
<td>5.</td>
<td>To be an independent learner</td>
<td>The blogs help me arrange my thought and makes me want to submit my work on the blogs on time</td>
</tr>
<tr>
<td>6.</td>
<td>Working in a learning based community</td>
<td>They help me to learn new skills by viewing other students work</td>
</tr>
</tbody>
</table>

They were capable to see other groups work and designs which the majority of students found this helpful in their learning. Students were also able to compare their work with other groups in the cooperative learning environment.
This feature allowed the students in this cooperative learning environment to form a learning community within the class. Students were able to allocate their work in progress and documentation with other students and the lecturer. Also they were able to leave comments to further enhance their work.

The majority of students found the comments made by their friends peers to be useful to help them improve their work (Item 11: M=3.40, Std Dev=1.128) as well as comments left by their teacher (Item 10: M=3.30, Std Dev=0.853).

To validate the findings, Table 2 until 5 were some of the students’ comments from the open-ended questions based on their view when working in cooperative teams. Overall, the analyses of the results indicated that the students were able to benefit from working in a cooperative environment and to help one another in completing a common goal.

They also are enjoying themselves while using MyPortfolio and pay a full attention throughout this project which they treated it as part of their learning process.

From the results, it can be seen that the students were actively participating in their learning process individually and also as part of a learning community.

Apart from learning, they also develop their skills in the usage of multimedia and Web 2.0 tools which is one of the important elements in this rapid developing country.

Table: 3
Comment on survey questions from Student B

<table>
<thead>
<tr>
<th>No</th>
<th>Survey Question</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cooperation among team member</td>
<td>Cooperation from each group member is the main aspect to succeed. From my overall experience of this project, me and my team had a quite good understanding in each other and give a balance commitment to produce this final output. We have discussed many things to accomplish something and to handle problems during this project. We also have divided works to each other to smoothen the process of creating this project. From this project, I noticed that participation from each group member in accomplish a goal is very important</td>
</tr>
<tr>
<td>2.</td>
<td>Fun and challenging</td>
<td>For me doing this assignment is fun because this task needs me to cooperate with my team for making this assignment successful. So to be honest, I like this project very much. This project gives me a chance to know my team closely</td>
</tr>
<tr>
<td>3.</td>
<td>Individual responsibility</td>
<td>As group leader, I lead my group to the correct direction. I am very satisfied with my work and leadership abilities.</td>
</tr>
<tr>
<td>4.</td>
<td>MyPortfolio as a learning tools</td>
<td>Yes. Able to exchange opinions, communicate with the team mates and learn from each other</td>
</tr>
<tr>
<td>5.</td>
<td>To be an independent learner</td>
<td>I become a more independent on doing my coursework. I can understand more on what I had learn and I can get information on how my friends to their work.</td>
</tr>
</tbody>
</table>
### Table: 4
Comment on survey questions from Student C

<table>
<thead>
<tr>
<th>No</th>
<th>Survey Question</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cooperation among team member</td>
<td>It is great to work in a group as the work can be distributed evenly among the group member. The works given are equally the same and everybody in the group will help each other.</td>
</tr>
<tr>
<td>2.</td>
<td>Fun and challenging</td>
<td>The work that need to be is fun and I can play with imagination on how to make our blog fun and creative. Through that, I learnt a lot about web design. And, it is a lot of fun too.</td>
</tr>
<tr>
<td>3.</td>
<td>Individual responsibility</td>
<td>Personally, I think this work really built up my personal responsibility on the work need to be done.</td>
</tr>
<tr>
<td>4.</td>
<td>MyPortfolio as a learning tools</td>
<td>This tool is not really difficult if you really understand how to use it. It took me about two days to understand the whole process.</td>
</tr>
<tr>
<td>5.</td>
<td>To be an independent learner</td>
<td>MyPortfolio also helps me to revise my studies about certain topics very well as we already sorted out all the subjects in the easiest way.</td>
</tr>
<tr>
<td>6.</td>
<td>Working in a learning based community</td>
<td>Everybody in my class discuss our subjects very well after we have completed our blog on the MyPortfolio. I am glad that we did this assignment. It really helps me a lot.</td>
</tr>
</tbody>
</table>

### Table: 5
Comment on survey questions from Student D

<table>
<thead>
<tr>
<th>No</th>
<th>Survey Question</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cooperation among team member</td>
<td>As a group member, I am very pleased that every person in my group cooperate really well. We help each other if one of us faced any problem. Hence, this atmosphere helped strengthen our relationship as classmates.</td>
</tr>
<tr>
<td>2.</td>
<td>Fun and challenging</td>
<td>Throughout this project, I found it very interesting, challenging and fun as they have been some tools which I never encounter before and when I do know how to use it, I felt really impressed.</td>
</tr>
<tr>
<td>3.</td>
<td>Individual responsibility</td>
<td>I do keep on track of my own task when handling this project. I will make sure that all the part that were given to me will be completed on time. This helped me to become dependable and trustworthy.</td>
</tr>
<tr>
<td>4.</td>
<td>MyPortfolio as a learning tools</td>
<td>This tool does help me in learning the subject in our curriculum. Even though, they are many other tools that can be used, I believe that MyPortfolio do have some good qualities in enhancing the secondary school students learning skills.</td>
</tr>
<tr>
<td>5.</td>
<td>To be an independent learner</td>
<td>It seems that MyPortfolio do help me to become an independent learner as I use it as a medium of reference in order to do my homework when I go back home.</td>
</tr>
<tr>
<td>6.</td>
<td>Working in a learning based community</td>
<td>MyPortfolio allows me to share information with my friend about certain subjects that we have learnt previously in the class. And we can discuss about any problems and solve it together through the web.</td>
</tr>
</tbody>
</table>
CONCLUSION

In this study, students are required to work as a group for a project development of a form 4 physics subject. They were required to cooperatively develop a blog comprises of Physics sub topic Chapter 1: Introduction to Physics. Students constructed their knowledge based and concepts of the subjects in this cooperative learning environment and become active participants in the learning process. In the cooperative learning, the students learn to communicate and socially negotiate with one another and learn from each other in order to achieve their goal, thus providing evidence that learning is a social activity (Vygotsky, 1978). The students were able to enhance team work skill and improve their leadership skills, communication skills and interpersonal skills by which they achieve that through presentation and dealing with their team mates (Archer-Kath, Johnson and Johnson, 1994). Apart from that, the cooperative learning environment has received a positive and encouraging reaction from the students and teacher from the respective schools as shown by the students’ work. It shows on the motivating response to their learning process and their enthusiasm in using multimedia technology to create their projects. The permeation of multimedia technology into the educational world has created an outstanding impact on Malaysian educationalists and teachers as well as to enabling students to use technology in the classroom to create a technology-supported learning environment such as the cooperative learning mode.

This cooperative learning environment also not only displayed many characteristics of the learner, even though some of the learning content and information were prescribed by the teacher. During working cooperatively in the groups, students will share information gathered and offer helping hands throughout this project. They act as a team very well where worked together to achieve group goals successfully. With the use of blogs, team members, peers as well as the teacher were able to comment on their work progress.

As the result indicated, the students liked to develop and used blogs because they served as an effective tool and help to improve learning-space and community in and out of the classroom. In conclusion, the structure of cooperative learning, the instructional relationship between the teacher, students and schools and the technology-supported cooperative learning framework provide the essential and viable constructive guide to support this area of learning.

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REFERENCES


STUDENT PREFERENCES AND EXPERIENCES IN ONLINE THESIS ADVISING: A Case Study of Universitas Terbuka

Suciati
Universitas Terbuka Indonesia
Indonesia Open University, MALAYSIA

ABSTRACT

Online learning and communication requires new perspectives and habits of learning which oftentimes are not readily acquired by students and faculties. The sense of security in the old habits of face-to-face learning may become a hindrance in the development of positive attitude and ease in online communication. This study explored student perceptions of the thesis advising process and the use of online communication for thesis submission, correction and feedback at the Open University of Indonesia (Universitas Terbuka, UT).

This is an exploratory study of Internet usage patterns for thesis advising by students and advisors. The study, which involved thirty graduate students, reveals that in some cases there is a mismatch of perceptions and expectations in online advising between students and advisors. Even though students reported generally positive perceptions of online advising, only half of the students used the Internet for thesis advising.

Only 38 percent of the respondents sent their thesis papers to an advisor using email, and, for various reasons, 61.5 percent preferred that the advisors provide written feedback on the printed draft rather than electronic feedback on the document sent back and forth using the Internet.

Paperless thesis advising is not desirable for the students involved in this study, although they typically use the Internet for other purposes. Reasons for this discrepancy will discuss.

Keywords: Online thesis advising; online feedback

INTRODUCTION

Internet use for education is spreading rapidly due to improved access and capacity for interactivity and flexibility (Osguthorpe & Graham, 2003). For various reasons, such as enlarging student body, many education institutions throughout the world have adopted online systems as a means of instruction, either in part or in whole. Online learning has gained acceptance and popularity among students in North America and Europe (Allen & Seaman, 2005).

Similar trend also occurred in many Asian countries. As observed by Baggaley (2007), regardless of limited infrastructure, Asian educators have been enthusiastic to use ICTs to deliver education to the thousands of disadvantaged learners.

In many distance education programs, such as in the Phillipines and Indonesia, online learning has become an integrated part of the learning system (Ramos, Nangit, Ranga, & Trinona, 2007; Luschei, Dimyati & Padmo, 2008).
However, with the increasing use of Distance education and online learning, questions and issues about many aspects of distance and online education have been raised by practitioners as well as policy makers. Issues such as comparative effectiveness, effect of isolation on learning (Shelley, Swartz, & Cole, 2007) have been hurled back and forth by practitioners and researchers. Noticing the unpreparedness of faculties, many studies addressed issues concerning the capacity of faculty to teach effectively in an online setting (Arabasz, Pirani, & Fawcett, 2003; Alonso Diaz & Blazquez Entonado, 2009). Some research concludes that knowledge of computers and Internet literacy are necessary for faculty teaching online but online teaching competence requires different instructional designs and methods for supporting students. Some studies reported that teachers, or faculties, believe that online instruction is essentially not different from face-to-face classroom teaching (Arabasz, et.al, 2003; Spector & Merrill, 2008). In the lights of effective, efficient and engaging (E3) learning (Spector & Merill, 2008) this perception has grains of truth. In both face-to-face and online learning, quality teaching is the heart of the matter. Faculties should play a facilitative role to allow students actively explore and construct their own understanding.

However, when it comes into how a web-based instruction is constructed, many online instruction is simply a transfer of printed text book to web-based format, and it lost its appeal to students.

Prensky (2001) especially commented on a mismatch of ‘digital natives and ‘digital immigrants’. Young people who are from childhood introduced to using digital gadgets and constantly in contact with digital media (Tapscott, 1988) has different ways of thinking and to operate in daily lives compared to older people. Young people are capable of using the gadgets efficiently and effectively, whereas the faculties who are ‘digital immigrants,’ being introduced to using digital gadgets later in life, tend to behave inconsistently, such as printing articles rather than reading it on screen, or writing plan for activities in agenda book, rather than enter it into the handphone agenda. When expectations of faculties and students are different, students may become impatient and dissatisfied with the ways the faculty communicate and facilitate their learning.

Thesis advising at the Graduate Studies at UT has been a difficult phase for students to go through. The rate of students who complete their magister program on time is relatively low, about 30 percent. Students move fairly easy through the courses, but the process of thesis writing is a bottleneck. Especially for students who live far from the advisors, the advising process does not move smoothly.

The Graduate Studies advice students and advisors to use internet for a more time-efficient and effective advising. Faculty, for various reasons, are hesitant to use online communication, they prefer more common means, such as telephone, headphone or instant messages that they are used to. In graduate study programs, especially during thesis writing, students need intensive thesis feedback which phone calls or short messages hardly adequate for the complexity of responses.

Students from a far distance will have to repeatedly send bales of papers of thesis drafts back and forth to advisors by post which simple email attachment will save them time and cost.

For this reason, the study focus on the use of the Internet in a country where the faculty do not yet intensively use it in education, but many students are pursuing graduate education that requires writing a thesis and the institution recommends using online communication for sending and getting feedback from the faculties.
PURPOSE OF THE STUDY

This study explored student perceptions of the thesis advising process and the use of online communication through the internet for thesis submission, correction and feedback. The study also tries to explain various factors influencing student perceptions and tendencies in completing their theses, such as advisor's attitude and student readiness to embark on thesis writing. Of particular interest are differences in perceptions of students and their advisors with regard to online thesis advising. Relevant factors that influenced perceptions about sending and receiving documents electronically versus paper versions are included.

Theory and Research Review

The term ‘online learning’ used interchangeably with ‘e-learning’ encompassing various meanings. Online learning may refer to a partial component in hybrid or blended learning, in which online components are supplementary or designed to provide enrichment, and ‘fully’ online learning, which does not incorporate any face-to-face components.

Many studies revealed that availability of access to the internet does not necessarily guarantee use. Lacks knowledge of computer and internet and the necessary skills to effectively communicate online can be major hindrances for using the Internet. In the era of information technology, one should have what is called ‘tool literacy’ (Rudestam, 2002), in which one understands and uses practical and conceptual tools. Researchers found that computer efficacy, or an individual's confidence in his or her ability to competently use computers (Peng, 2009), is a significant predictor of computer use. The similar findings may be true for internet use. Understanding individual user differences is important in a computer-assisted education environment such as an online theses writing so that intervention can be designed to increase system use and facilitate students.

Another reason for low use of the internet is the absence of what Rudestam & Schoenholtz (2002) called ‘online communicative competence’. It is a dimension of information literacy, which relates to communication, interaction, and interpersonal behavior in the world of cyberspace, and interpersonal behavior was definitely influenced by common internal factors, such as individual beliefs, preferences and perception (Grasha & Yangarber-Hicks, 2000). Another preventing factor of internet use is complaints from professors distressed by bales of emails from students (Sigrun, 2007). Professors or advisors may have a different perception and preference about email use. Some advisors think emails from students are too demanding of time and energy, the language is disrespectful, or simply inappropriate. Regardless of the negative sides, more and more education institutions are committed to technology-mediated learning. Because of the intense participation that students experience in an online environment, learning is improved. In a study of 52 students in one online class, 27 percent of students felt their learning was the same as in their face-to-face classes, and 50 percent of students indicated more learning in the online class (Palloff and Pratt, 2005).

Nevertheless, the technology readiness of online students should not be overestimated. Students may be competent in online games or social networking tools, but not equipped in online learning to do well in online class obviously requires more than savviness in online technology.
The Indonesia society The tendency to be versatile in online social networking also happens in Indonesia.

Many Indonesians even know how to build pressure groups using short messages and Facebook to correct injustices in the society.

Blog users in Indonesia in 2009 reached 1.2 million, an increase of 900 percents from 2007. However a skill to function well in blogs does not necessarily transfer to the academic skills in online classes.

BACKGROUND: INDONESIA AND UNIVERSITAS TEBUKA

Indonesia is an archipelago of 17504 islands, stretching across 3977 miles area, with a population of close to 237,000,000 people. Internet users in Indonesia in 2008 were 25 million, which was was the fifth largest in Asia. In 2009 the figure increased 40 percent reaching 35 million (Antara, 2009).

However compared to the total population, the rate of internet penetration in Indonesia is low, about 10.4 percent in 2008, compared to 60 percent in India 60 and 65.7 percent in Malaysia. (Miniwats Marketing Group, 2008). Yet the use of internet in Indonesia is predicted to increase sharply in the next 5 years.

The government of Indonesia has made a goal of 50 percent internet literacy, out of 257 million population in 2015 (Antara, 2009).

Universitas Terbuka (UT) is a distance education university in Indonesia, established in 1984 by a presidential decree to meet the needs of higher education for new high-school graduates. In later years, the percentage of younger students became very small, consisting of less than 5 percent of students.

The total number of students in early 2009 was 537,000, 70% of whom are in-service teachers. Since 2004, UT offers three master's degree programs: public administration, business management, and fishery management.

The master's program was initially intended to be a carrier flag for the institution, aiming at providing excellent service to a small number of students. Nonetheless, in four years, the number of students has multiplied fourfold. The Master's in Public Administration has the largest number of students.

STUDENT BODY AND LEARNING SYSTEM AT THE GRADUATE PROGRAM

Many students as instrumental for obtaining a better social status and income view graduate education. A flexible, distance learning system has become a preferred choice for education by many graduate students and especially by those who want to continue to work while completing their studies.

The program policy was administered by the School of Graduate Studies at Universitas Terbuka at the central office in Jakarta.

The Regional Offices hold tutorials, examinations and other learning activities. During the second semester of 2009, the number of registered students was 641, supervised by 12 Regional Office.
For the last two years, the number of students registered each semester is stable. This indicates that students are getting used to distance learning system and move smoothly within the program. Students began graduating in 2006, and since then 187 students have graduated. In general a student takes four to five semesters to complete the program, completing courses in three semesters and working on thesis in the fourth and fifth semesters.

Graduate studies at Universitas Terbuka employs a blended education of independent learning and face-to-face sessions integrated with online communication for courses tutorial, academic and thesis advising. Some courses include video-conference for seminars and general lectures. The general learning process can be described as follows:

- Students study individually using a package of learning materials consisting of printed and multimedia material. Some courses are supplemented with web-based material.
- Students are required to attend face-to-face tutorial sessions four times per course, and access eight units of online material, which serves as triggers for discussions, per course per semester.
- Students access three class assignments online and submit the assignments to face-to-face tutors for marking and feedback.
- A course final grade is determined based on tutorial performance (60%) and final assessment (40%).
- At the final stage of the program students are required to write a thesis and sit for thesis defense.
- To be eligible for certification the students must have a minimum GPA of 3.00 and pass the thesis defense.

From early on, students were exposed to online communication. Figure 3 shows that online component is integrated into the learning system. At the undergraduate programs participation in online tutorials is voluntary, whereas in the graduates program is mandatory.

The learning process represents a blended learning scheme, which combines independent learning, face-to-face tutorials and online tutorials.
Figure: 3
Students’ learning components

Each student is required to use the Internet for different purposes such as sending assignments to the tutor or sending messages to tutors and fellow students. Prior to 2009, student access to the online tutorial is minimal, only 20 percent. After a lot of encouragement and exhortation, the percentage increased to about 50 percent. The non access by students clearly indicates that the intended integrated learning process did not yet materialize. Students often make excuses that internet access in their regions is too slow, or that they are too busy to access the tutorial online.

In early 2009, after many thoughts, the Graduates Studies made a regulation, that any student who does not participate in online tutorial will fail the course, regardless of the course exam score. Surprisingly, this strategy has accelerated students’ participation to 97 percent. It seemed then what spurred students to participate in online tutorials is the consequence of losing grades, or put it mildly, if students believe that success in their course is affected by the use of technology, they will go out to use it (Phipps & Merisotis, 1999).

The admonition of ‘learn to use it and you will love it’ does not bring the expected result. In this instance, intimidation works better than encouragement. The Graduate Studies, then, focus of effort is to ensure consistency and the quality of students’ participation.

Thesis Advising Mechanism
At the end of the third semester students, produce research pre-proposal to be refined and implemented during the fourth semester. Thesis advising is conducted as face-to-face interactions, by email, and by residential intensive advising sessions at the regional office. Students writing should conform to the UT manual for thesis format. After obtaining approval from both advisors, the student is scheduled for thesis defense.

A student will have two advisors; the main advisor will attend to the research substance and methods appropriateness, while the second advisor concentrates more on the technical aspects of thesis writing. As main thesis advisors, UT employs university lecturers with doctorate degrees of relevant field of study from neighboring public universities of the Regional Offices.
The second advisors are mostly lecturers from UT at the central office in Jakarta. The students expected to contact and arrange meetings with the advisors, and they will meet their main advisors at least twice during the residential thesis advising. The rest of the advising will be from a distance, using telephone, SMS, or online. Student submission of drafts of thesis back and forth to the advisors recommended by internet, due to a far distance between the students and the advisors. Residential advising sessions conducted twice during the thesis writing process.

The first session is at the beginning of the semester. In a seminar, students will present their proposals and get feedback from advisors and fellow students. The residential session is a forum for collective advising by advisors as well as input from fellow students. The second residential session takes place after most students collect data and analyzes their findings. In this session students report their findings and initial conclusions, and get feedback from the advisors. Thesis research and writing in a regular semester is planned for 14-16 weeks.

### Thesis advising scheme within a semester

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- **Academic service**
- **Distance and/or online thesis advising**
- **Residential thesis advising**
- **Thesis writing**
- **Thesis Defence**

#### Thesis Defense

Once students obtain thesis approvals from the advisors, they sign up for thesis defense. To maintain objectivity and quality of the thesis, a student will be examined by three examiners, one external examiner, and two advisors acting as examiners. A rubric for marking is used, incorporating components such as: problem formulation, methods, analysis and discussion of findings and recommendation.

In addition, students will also be given marks on presentation skills and agility in handling questions and comments from the examiners. The scores given by the examiners will then be weighted and combined, for thesis final score.

#### Roles of internet in thesis writing process

In distance education system, internet is a medium which shortens the distance between student and instructor and time-efficient. Thesis advising at a distance can greatly benefit from online communication. Students could send drafts to advisors, and advisors could send comments and corrections electronically.

Internet communication is obviously superior to postal communication in terms of speed. At UT, feedback and thesis correction from advisors mostly have been delivered through regular mail.
RESEARCH DESIGN

The study is an exploration of students’ perceptions and experiences in thesis advising, particularly on their perception of online communication with advisors and the in-text feedback. The study was conducted in 2008 to 2009, involving graduates from different years and locations. A questionnaire developed to inquire about students’ experiences in the thesis advising process and their perception of the use of online communication during the advising process. During residential thesis advising, students and advisors were interviewed to probe some issues.

To crosscheck information from the students, focus group discussions with advisors conducted twice in 2009, to discuss their perceptions of the overall conduct of the thesis advising and online communication with advisees. The first discussion was attended mostly by advisors/lecturers from Universitas Terbuka in Jakarta. Lecturers at Universitas Terbuka assigned as the second thesis advisors to students from different parts of Indonesia. Most relied on technology-mediated communication for advising, such as phone, SMS, and email.

The second discussion was conducted at a regional office in Pontianak in the province of Kalimantan, attended by professors at the local university who are the first thesis advisors. During the discussions the advisors offered information on their experiences and suggestion to improve the thesis advising process and results.

A questionnaire of 29 items was used to collect information from the graduates. The questions were divided into three sections. First section, consisting of 12 questions, asked about the general issues of the advising process, such as: ownership and use of the manual for thesis writing developed by the Graduate Studies Program, whether students received notification early of who the advisors were, whether for any reasons they ever wanted to change advisors, and what they perceive as appropriate time length for thesis. The second section, comprising 17 items, asked issues such as: ease at first contacting advisors, having drafts of proposal on time, perception of advisors’ helpfulness and capacity, and usefulness of the first and second residential thesis advising.

The third section asked issues such as: intensity and frequency of advising during a semester, and whether students send drafts of their thesis to advisors by post or as email attachments, whether advisors did in-text editing, and their preference of modes of advising. The questionnaire also incorporated some open questions for their comments and suggestions. The questionnaires were sent by post to fifty graduates. Twenty-nine (29) completed and returned the questionnaires for a response rate of 58%. Two graduates received it by email since they were out of the country, and returned them by email.

FINDINGS AND DISCUSSION

The students’ ages ranged from 27 to 52 years old, with an average of 41. Seventy-two percents are from 27 to 45 years old. Four (13.7%) out of 29 are females. In general, female students constitute not more than twenty percent of the total number of students. All respondents had already graduated.

Fifty eight percent were graduates from Public Administration Program, and 41.4% from Management Program. The respondents were from five Regional Offices on the islands of Sumatra and Java.
Students’ perception of experience in theses advising

Preparation for Thesis Writing

- Use of manual for thesis writing: UT designed a special manual for thesis writing to be distributed to students when they complete the third semester. It is designed as a simple booklet which explains the technical aspects of thesis writing in accordance to UT specifications. In addition to printed format distributed to students, it can also be accessed from the Graduate Study website. When asked if they understood the content of the manual, almost 100% stated that they have one and understand the content. However during the process of advising, some advisors reported that students do not use the manual. Consequently, the theses must undergo heavy re-editing, which is time-consuming. It seems that having the manual does not guarantee use. For this matter, a system of meticulous check and correction is employed by the Graduate Study to enforce adherence to the manual by students and faculties. Even if the advisors already give approvals, the students have to obtain clearance from the Graduate Study office before being scheduled for thesis defense.

- Pre-proposal: Twenty-three respondents (79.3%) claim to have pre-proposals ready before entering the fourth semester. The pre-proposal is the product of independent study at semester three. Having the pre-proposal handy will help the students move on efficiently in their research. However, many will change their topics after the residential theses advising and rigorous discussion with their advisors. In some cases it causes longer time of study which has financial implications for students. Reasons quoted by students for changing the research topics include ‘find a more interesting topic during the seminar session’, ‘my topic lacked focus’, and ‘the advisor directed me for quantitative methods, even though I prefer qualitative.’

Means of Sending Drafts To Advisors

Student’s preference in sending their drafts to their advisors varies. Fourteen students (48.3 percent) prefer to send them as email attachment, and the rest prefer to send the printed form by post. Some students mention repeated failures of uploading parts of their work to be sent online to the advisor, and this condition makes them resort to using the post service.

A student with a computer and telephone line can easily access internet through the service provided by the national Telkom. Most graduate students have access to a computer and the internet either at home or at the office. Sending a package by post from the outer islands to Jakarta may take two weeks by regular mail and three days by special delivery.

Sending a draft of a thesis of about 100 pages as an email attachment will be instantly delivered, and cost less, except for those students who have to travel a long way to find an internet kiosk. It was interesting to note, however, that some graduates stated they did not use email because their advisors did not seem to require it. The advisors preferred to have printed documents to be sent to them for comments and corrections.

Use of Internet For Advising

Out of 29 students, 19 (65%) used internet to contact and interact with their advisors. The reported frequency was between one to 15 times.
The majority (81%) ranged from 2 to 6 times. Students who used internet for communication with advisors reporting it as 'cheaper' and 'faster' to get a response. However, some commented that they had to wait more than a month to have comments from the advisors. Therefore, they used all available means of communication to get messages to their advisors, sent draft by email, sent SMS messages that they already sent the draft by email, and if necessary called the advisors by telephone. The Program required advisors to respond to students within two weeks, but only a few do so. Many advisors have an impression that students put pressure on their time and demanded immediate feedback. While others, understanding the pressures on students to complete the thesis on time, made time for punctual feedback.

**Online/In-Text Correction By Advisors**

Eight students (42.9%) of those who sent drafts of theses to advisors do not prefer in-text or online editing by the advisors, in other words they want the advisors to print the thesis and make corrections on the printed copy. Students used Microsoft Word to type their theses, but many do not know yet how to use 'track changes' and 'comments' in Microsoft Word. Therefore, when an advisor used in-text edit and gave comments on a student thesis using track changes, students missed many corrections and resubmitted drafts which did not change much from the original version, despite the fact that change integration can be done by a simple “accept” or ‘reject.” The Graduate Studies overestimated the word processing capability of the students and did not formally provide training for this skill.

**Advisors Preference of Doing Online Correction**

Out of eight students who emailed their theses to advisors, five of them (62.5%) reported that their advisors conducted in-text comment and editing, this number accounted for only 17.2% of all respondents. Some advisors explain the difficulty of doing in-text editing. Reading and doing in-text editing on screen straining their eyes, therefore they prefer reading and giving corrections in print. Being constantly around information and communication technology, advisors from Universitas Terbuka tend to easily adapt to in-text editing on screen. Compared to advisors from other universities. However, the number of advisors who demonstrated ability and preference to do in-text editing on screen was limited.

**Perceptions on Residential Theses Advising**

When asked if students present findings during the second residential advising, 5 students (17.2%) stated that they were not able for various reasons, such as ‘data collection is not completed’, ‘the operationalization of variables is not yet approved by the advisor’, ‘I’m not ready’, ‘the output of the previous session is unclear to me’, etc. It seemed that students did not or could not make contact with their advisors to resolve their problems.

A student even reported that the seminar turned into a ‘killing field’ for him. His presentation met with ‘difficult’ and ‘harsh’ questions from the external discussant, which shake the theoretical foundation of his research. He become unmotivated and reluctant to further contacting his advisor.

In addition, these students worked full-time while conducting research at the same time. There were time constraints because of other competing responsibilities. This condition seemed to be the main cause for students to have longer study period.
Support and Helpfulness of Advisors
Theses writing can be a hard, winding and lonely road for students, especially for distance learners with less frequent face-to-face interactions with the advisors, compared to students in the conventional university. Therefore they had to have a source of moral support and encouragement from friends, family and advisors.

Almost all students (27 or 93.1%) reported that the advisors actively made efforts to motivate students during the writing process, in the forms of ‘encouragement to complete the theses’, ‘invitation to contact anytime finding difficulties’, ‘psychological support that student will be able to complete the theses’, ‘digging for deeper data’, ‘let students borrow the advisors’ books’, etc.

Some candidates, however, ‘drop-off’ quietly from the process, and pick it up later when they are ready. This phenomenon often occurs, especially for students who consider their present job and responsibility as more important. During the national campaign for the Indonesian presidency in 2006, many students who are public officials were involved in the campaign process, therefore they stopped the research activity and continued the process after the election was over.

Local Content as Research Reference
External examiners frequently mentioned that many of the thesis lacked strong conceptual and theoretical frameworks. Most students who were practitioners in the field, such as the students of public administration, were local government officials or members of the house of the representatives, who were essentially practitioners, and not accustomed to theoretical thinking. Many thesis topics derived from their working place. In many cases they could not separate their thinking as practitioners or academicians. Rather than analyzing and connecting their findings to theory, many will emphasize problem solving interventions. In addition, scientific journals in their respective field were not available in the local university libraries. Since many students, especially from the outer islands, did not have a good mastery of English, subscriptions for reference clearinghouse services such as Proquest was not very helpful. They need online local content in Bahasa Indonesia (the Indonesian language) for free access. Even though in the central library in Jakarta journals and other references in Bahasa Indonesia are available, the center does not provide journals in printed form be distributed to students.

In 2009, Universitas Terbuka initiated collaboration with other universities to digitize their local journals and upload them for access by subscription. Recently, the government for free access by students launched a reference clearinghouse. The challenge then, is then to encourage students to to explore and use the references. The Graduate Program have to integrate the references in the students assignments to trigger students access and active use, moving away from being spoon-fed to active and engaged learners.

DISCUSSION
This study shows that many students did not favor online theses advising and prefer face-to-face discussion with their advisors. They seemed take cues from the advisors. Since advisors did not encourage the students to use online communication, students perceived online communication as not preferable.

Students who sent drafts of thesis online do not necessarily prefer in-text editing on the digital form by advisors.
The ease and time efficiency in sending thesis online outweigh the necessity to learn new skills and change ways of using word processing. This corresponds with Keramidas, Ludlow, Collins, and Baird (2007) that lack skills to adequately operate in new environment cause reluctance to abandon familiar ways.

The unwillingness to change on the part of the advisors is probably also related to lack of skills or in their technophobia (Goodyear & Ellis, 2008) and that expecting face-to-face faculty to begin function well in the online environment requires training of the 'specific skills' due to the lack of pedagogical transferability from the traditional to the online classroom. This is also true for thesis advising. Apart from the skills of using in-text editing, online advising may have a different nature, such as communicating elaborated conceptual feedback to students in a motivating tone, using online mode. Body gestures are missing as clues, and students have to be able to capture the explicit and implicit meaning from what they read. This line of research may benefit online thesis advising to minimize the difficult hurdles faced by students and advisors.

This study is exploratory in nature. Due to some limitations, the findings cannot be generalized to all graduate students at UT. A respond rate of 58 percent of mailed questionnaires was relatively low, and clearly indicated voluntary response by motivated students. Nonetheless, the finding can serve as primary information for further studies in online advising, as well as inputs for improving thesis advising by the Graduate Program at Universitas Terbuka.

CONCLUSION

Use of the Internet for thesis advising theoretically is promising and beneficial to students and advisors. However, in practice potential benefits are not always realized. This study nevertheless shows some empirical evidence that online thesis advising is potential for helping students to overcome problems during the thesis writing process. Given appropriate training in in-text editing, both students and advisors can move more smoothly and effectively for faster delivery and timely response. Both students and advisors need to learn a new habit of collaboration, optimizing the use of word processing tools for a faster thesis correction and feedback. It is yet to see whether paperless thesis advising is realistic. However if we are able to realize it, at least cutting down the number of papers shuffled to and fro is possible; and the best of it all, it reduces the number of trees cut down to produce paper, that we may live in a greener world.

Authors Notes: Some part of this paper has been presented at the 23rd ICDE World Conference on Open and Distance Learning, by the ICDE, 2009, Maastricht, the Netherland.

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Her research interest includes design, development and evaluation of instruction, online learning, and the practice of graduate studies. She presented papers at the International Conference of Distance Education and the Asian Association of Open University.
REFERENCES


UNDERSTANDING OLDER ADULT LEARNERS
IN DISTANCE EDUCATION:
The Case of Universiti Sains Malaysia

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ABSTRACT

World population ageing is unprecedented and pervasive which will affect all countries in the world. According to a United Nation report (2010): “By 2045, the number of older persons in the world will exceed the number of young for the first time in history.” The number of the older adult learners in distance education programs is also expected to increase in tandem with the growth of ageing population throughout the world. As such distance education institutions and instructors should be vigilant to this new emerging group of learners. The objectives of this study were to identify factors related to older adult learners’ participation in the distance education degree programs and their characteristics. Data were collected by using interviews and questionnaires. Respondents for the study were older adult learners age 50 and over who enrolled in degree programs at the School of Distance Education (SDE), Universiti Sains Malaysia in Malaysia. Five older adult learners were interviewed and 72 out of 123 respondents completed the questionnaires. The findings indicated that older adult learners’ participation in the distance education degree programs is mainly due to career advancement and to seek knowledge. The older adult learners’ distinct characteristics are high motivation, eager to learn, health conscious, effective time management, good social skills, no financial difficulties and have strong family support.

Keywords: Older adult learners, Distance Education, Participation, Characteristics

INTRODUCTION

According to a United Nation report (2010): “World population ageing is unprecedented, a process without parallel in human history and the twenty-first century will witness even more rapid ageing than did the century just past. Population ageing is pervasive since it is affecting nearly all countries of the world. By 2045, the number of older persons in the world will exceed the number of young for the first time in history.” In developed countries, 15% of the population are old and will increase to 26% by 2050. Japan and Italy, which currently have the world’s oldest populations, with nearly 20% of their populations above 65 will face greater increase to more than 30% (Hayutin, 2007).

A key indicator of population ageing is the median age (the age that divides the population into two equal parts, one with ages below the median age and other with ages above the median age) at which 50 per cent of the population is older and 50 per cent younger). In 2050, half of the world’s population is projected to be older than 38 years (United Nation, 2010).
The reasons for this shift in demographics have been attributed to several factors such as better healthcare, improved lifestyles, low mortality rate, declining fertility and life expectancy (United Nation, 2010; Ong Fon Sim, 2002).

In view of this development, many sectors such as health, education and economics would be severely affected. For instance, higher education sector including distance education programs will soon have greater number of older adult learners in their programs. Consequently, relevant policies and programs should be planned to cater for this new group.

Distance education is expected to play a greater role in accommodating the needs of the older adult learners to participate in the learning programs. Distance learning has benefitted tremendously from the rapid advancement of communication technology which makes learning and teaching possible to people anytime and anywhere. As distance education programs are more student-centered in nature, thus knowing the characteristics and demographics of the distance learners would help the institutions and distance educators to provide better services and to help older adult learners to overcome potential problems during their studies. Additionally, knowledge about older adult learners’ characteristics and motivations helps us understand who is likely to participate in distance education and how do they study.

As in other developing countries Malaysia’s population may still be considered ‘youthful’ with median age of 27.4 years old (Economic Planning Unit, 2010) but the trend towards ageing society is unavoidable. The percentage of ageing people in Malaysia is rising but slowly and the full impact of an ageing population will not be felt in near future. However, the indications of an ageing population should be recognised and adequate preparations should be considered.

In Malaysia, Universiti Sains Malaysia (USM) has offered opportunities for the older adult learners above 50 years old to enroll in the degree programs either through face-to-face or distance mode with several incentives such as minimum qualification entry and fifty percent discount of tuition fees. At present about 123 older adult learners are enrolled in this program through distance mode which is managed by the School of Distance Education (SDE). Currently, SDE offers academic programs at undergraduate and graduate level. For undergraduate level, degree programs which are offered by the SDE are Bachelor of Arts, Bachelor of Management, Bachelor of Science and Bachelor of Social Science. It is expected that the number of older adult students will increase gradually as the changes occur toward an ageing society.

**LITERATURE REVIEW**

Higher education institutions like universities used to be the home for the young students aged 18-23, who were also known as traditional students. The number of young students, however, began to shrink in the 1980s as more students age over 25 years enrolled in the universities in the USA and other Western countries such as Finland and United Kingdom (CERI/OECD, 1987).

The gradual shift in the student population from young to adult students was attributed mainly to changes in demographics. In the USA and other Western countries, the low birth rate in the 1970s reduced the supply of traditional age students (CERI/OECD, 1987). However, the overall college enrollment did not decrease in the 1980s, primarily because of the participation of older students, women, and minorities (Gade, 1991).
In 1977, 51 percent of all Americans were below the age of 30. In the year 2000, it has been projected that, that group will represent only 42 percent of the population and the largest percentage of increase will be found within the group 65 years or older (Long, 1983).

Several studies have been conducted for the purpose of understanding that the adult learners were. These studies found adult learners evenly divided between male and female, are usually married, 25 years of age and older, have children, usually have full-time jobs outside the home (Johnstone & Rivera, 1965; Aslanian and Brickell, 1980). With these characteristics, the normal method of learning and teaching as practised by the full-time traditional students has been found rather unsuitable for many adults. Consequently, they were not able to enroll or complete the college education. Transitory or situational barriers had delay some adults from attending college and according to Sewall (1984), the top four most cited reasons given for not completing or enrolling in a degree program were that they wanted to or had to work; they had family responsibilities; funds were not available, and they lacked of interest. Family responsibilities were the single most important reason for delaying college entry, especially among women. Job responsibilities and lack of interest were more frequently cited as barriers by men. In another study by Bodensteiner (1989, p.88) similar results were found; “gaining employment, not being able to afford college, and marriage were the reasons mentioned by at least 30 percent of the respondents. Four times more women than men cited marriage as the main reason for not beginning college right away.” Other reasons for delaying college education cited in that study included:

- attending a trade or technical school,
- not yet ready or interested in college and
- didn’t graduate from high school.

A study to determine the reasons for non-participation in continuing education leading to a degree in the United Kingdom revealed that an inability to afford was the top reason followed by a lack of knowledge about courses, lack of entry qualifications and the need to take care of children and other dependents. Among other findings were no suitable courses in the area and too much traveling involved (cited in CERI/OECD, 1987). The various reasons given by American adults for not participating in education were categorized by Cross (1981).

She categorized various factors that prohibit adults from participating in a learning program into three barriers:

- Situational-conditions arising from one’s situation in life at a given time such as lack of money, time, and childcare.
- Institutional-practices or procedures that exclude or discourage working adults from participating in an educational program such as unsuitable class schedules or high tuition, and unfriendly administrative rules.
- Dispositional-factors related to attitudes and self-perceptions such as lack of self-confidence and low self-esteem.

Cost and lack of time were the most common barriers cited by adults (Cross, 1981) that prevented adults from participating in educational programs. For instance, the normal class hours from 8 am to 5 pm do not suit most adults who are working full-time. The most likely suitable time would be evening or weekends, but even then some would be prevented from participating because of schedules and other commitments.
The three categories of barriers were interrelated. For example, the removal of one institutional barrier such as better scheduling to meet the needs of adults would not be effective unless dispositional and situational barriers as mentioned above were also overcome.

Besides knowing the barriers that prevented adults from pursuing a college degree it was also deemed important to understand what motivate them to do so. The reasons were found to be many and complex. Sewall (1984) revealed several reasons why adults choose to pursue a degree:

- to develop a new career;
- just to learn; (3) to have satisfaction of having a degree;
- to achieve independence and a sense of identity; and
- to gain career advancement.

Bodensteiner (1989) also found that career advancement, career change, and salary increase were the most common reasons cited by the respondents. Personal growth and development were also considered as an important reason for attending college. The reasons for seeking a university degree also varied with age and gender. Cross and Jones (1972, p.51) reported, "In 1961 when the study was done, men were more likely than women to express vocational motivations; today, however education for job advancement may play an increasingly important role in the educational motivations of women."

As society became more complex, the individual needed a higher level of education and knowledge in order to be an effective and productive member of society. Post secondary education, particularly at a university level was known to be a major route for increasing knowledge and skills which in turn generally led to a better standard of living for an individual. Most college graduates enjoyed better income, power and status. Altbach (1991, p.300) alleged that "A university degree is a prerequisite for an increasing number of occupation in most societies" and he also added, " indeed it is fair to say that academic certification is necessary for most positions of power, authority, and prestige in modern societies." Workers with more schooling on an average earned higher wages. A study by Kosters (1991) showed that men who completed college earned wages 43 percent higher than those who had completed a high school education in 1973 and in the 1980s. The wage premium for college increased 38 percentage points.

Studies on adults participation in learning activities are considered as the most studied areas in adult and continuing education (Blunt and Yang, 2002) but mostly focused on adults who are below 40 years of age. To date, research on older adult learners (age 50 and above) in higher education is still scarce even in the ageing country like USA (Paulson & Boeke, 2006).

A study done by the American Council on Education had identified the need for higher education to focus more on individuals aged 50 and older (Lakin, Mullane, & Robinson, 2007 & 2008). Research studies on older adult learners in distance education are equally scanty.

Therefore, more research is needed to understand and analyze the characteristics and needs of the older adult learners in distance education programs. This exploratory study attempts to understand the older adult learners in distance education programs at Universiti Sains Malaysia.
RESEARCH OBJECTIVES

The objective of this research is to explore insights and understanding of the older adult learners (age 50 and above) who continue their higher education through distance at Universiti Sains Malaysia. Specifically, the research objectives of this study are as follow:

- To determine the reasons for participation of older adult learners in distance education programs
- To examine the older adult learners’ characteristics in distance education programs

METHODOLOGY

Respondents for this study were older adult learners’ age 50 years old and over who were pursuing degree programs at undergraduate level. Majors offered by the SDE are Bachelor of Arts, Bachelor of Management, Bachelor of Science and Bachelor of Social Science. Data were collected through open-ended interviews and mailed questionnaires. Open-ended interview was used for this exploratory study on older adult learners in distance education in order to gain some insights and understanding of their participation and characteristics. Question guide was used to initiate and redirect interview conversation towards issues related to older adult learners, distance learning, problems and challenges. However, participants were allowed to express freely their opinions and ideas. Five participants had voluntarily participated in the interview and each interview session took about 45 minutes.

In addition to interview, a questionnaire was also formulated. Respondents were asked about personal information and reasons for participating in distance education degree programs. Respondent had to indicate their characteristic based on a given statement using a five-point Likert-type scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Agree to a certain extent, 4 = Agree and 5 = Strongly agree. Higher scores, therefore, indicate the statements reflect very much the characteristics of the respondents. Questionnaires were mailed to all older adult learners who were enrolled during 2010/2011 academic session at the School of Distance Education, USM. In this session, there was a total of 123 older adult learners. Seventy two respondents returned the questionnaires which represented a 58.5% rate of return. This percentage is considered as acceptable as mailed questionnaire generally had a return rate of 40% to 75% (Ary et al., 2006).

RESULTS AND DISCUSSIONS

The demographic distribution of respondents is shown in Table 1. Of the 72 respondents who participated in the study, 69.4% were male and 30.6% female respondents. About 87.5% of respondents were in the age group of 50-54 and 55-59. Only one respondent (1.4%) was over 70 years old.

The majority of the respondents can be considered as belong to a “young” group of older adult learners as 87.5% of them are still below 60 years old. This percentage is consistent with the respondents’ status of employment which show majority of them are still working. Most of the students at the School of Distance Education, USM are government employees that have mandatory retirement age at 58.
Respondents were also asked about their monthly income and most of the respondents earn more than RM3,000 or USD967.74 per month (1USD=RM3.1) and majority of them (about 42.9%) earn between RM3,000-3,999 per month. In Malaysia, this amount of monthly income can be considered as middle income group. Studies on adult learners’ characteristics show that those who were in the middle income group or higher would likely participate in learning activities (Kim & Merriam, 2004).

**Reasons for Participation**

When respondents were asked about the reasons for participating in the distance education degree programs at SDE, a significant proportion (54.2%) said they were motivated to get a degree and for career advancement.

As the majority of the respondents was between the ages of 50 and 60 and still employed, the degree that they would get is still relevant for their career. With limited years of service left (majority of the respondents retire at age 58), many of the respondents still regard the economic value of the degree as an important factor. For those who serve in the government sector the degree would allow them to retire with higher salary grade compared to non-graduate employees. This finding reaffirmed the earlier study by Bodensteiner (1989) who found that career advancement, career change, and salary increase were the most common reasons cited by the adults respondents. About 37.5% indicated that they participated because of seeking the knowledge. This is consistent with many studies on adult participation that view cognitive interest as a great influential factor (Kim & Merriam, 2004; Raghavan & Kumar, 2007).

Through interview, some of the respondents mentioned that by studying they would make their minds more active and alert. Factors like “has free time” and “social contacts” were also cited by several respondents. An interesting reason was shared by an adult learner on his reason of pursuing the degree through distance:

"I don’t have any intention to be somebody, I’m already old (age 73) and retired…. I just want to set a good example for my children and my ethnic group. That’s why I study.” (Respondent M)
Respondents were also asked about who actually motivate them to study through distance mode. About 70.8% of the respondents said they were self-motivated. The spouse (11.1%), children (9.75) and friends (6.9%). This response was consistent with the statement given to the respondents when asked to indicate whether high motivation is their characteristic, about 91.7% said so by choosing “agreed and strongly agreed” scale. They enrolled in the distance learning programs on their own willingness and desire.

Characteristics of Older Adult Learners
From the survey, characteristics of older adult learners in distance education programs can be related to the following areas:

- Learners’ skills
- Internal factors of older adult learners
- Handling learning activities
- Social skills and external support

Frequency, percentage in parentheses, mean and standard deviation for each statement were given in the tables related to each area. With respect to the first area, Table: 2 shows that majority of respondents had a few learners’ skills that would help them in their study.

In this area, skill or knowledge on practicing healthy diet and physical exercise had the highest agreement among respondents (mean=4.53), followed by managing time effectively (mean=3.93), how to use e-mail and forum (mean=3.86), and how to use library (mean=3.5).

The older adult learners should be healthy and fit in order to be able to study effectively especially in the demanding degree programs. At the age of 50 and above, having knowledge on diet and physical fitness would be helpful and beneficial. It is very encouraging to note that majority of older adult learners are health conscious and aware of the importance of proper dieting and physical exercise.

Time management is critical for older adult learners to succeed in their studies. As majority of the respondents were still employed, effective time management would ensure multiple tasks were done properly and on time.

Rapid development in communication technologies has forced adult learners to acquire relevant computer skills. From the data, the respondents were able to use computer or more specifically they knew how to utilize the internet communication like e-mail and forum. At SDE, greater usage of electronic communication is on the increase.

As such more learning materials and information are transmitted electronically to the students. However, a few respondents had expressed their concerns about the use of communication through internet as for them it is still troublesome or beyond their capabilities.

*I know how to use the computer but I’m slow at it. I still prefer for the SDE to send materials or information by print. (Respondent Y)*

*I don’t know how to open the e-mail, portal, downloading materials from internet … just don’t know how to do it. (Respondent K)*
Area related to internal factors of older adult learners is shown in Table 3. Respondents described themselves as highly motivated persons (91.7%, mean=4.42).

They would focus their efforts to achieve the stated goal with valour. This is consistent with their response to the question that had motivated them to participate in the distance education programs at SDE. They had strong desire or love to study (91.7%, mean = 4.50), believe in their ability (93.1%, mean = 4.46) and self-directed learner (82.0%, mean = 4.10). According to Mezirow (1981), self-confidence in one's learning ability is important for adult learners. Love to study, believe in one's ability and self-directed are among desirable characteristics for older adult learners to succeed in completing their studies.

Table: 3
Internal factors of older adult learners

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Do not agree</th>
<th>Agree to a certain extent</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'm a highly motivated person</td>
<td>0 (0)</td>
<td>1.4 (1)</td>
<td>6.9 (5)</td>
<td>40.3  (29)</td>
<td>51.4 (37)</td>
<td>4.42</td>
<td>0.69</td>
</tr>
<tr>
<td>I believe in my ability</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>6.9 (5)</td>
<td>40.3  (29)</td>
<td>52.8 (38)</td>
<td>4.46</td>
<td>0.63</td>
</tr>
<tr>
<td>I'm a self-directed learner</td>
<td>1.4 (1)</td>
<td>0 (0)</td>
<td>16.7 (12)</td>
<td>51.4  (37)</td>
<td>30.6 (22)</td>
<td>4.10</td>
<td>0.77</td>
</tr>
<tr>
<td>I love to learn</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>8.3 (6)</td>
<td>33.3  (24)</td>
<td>58.3 (42)</td>
<td>4.50</td>
<td>0.65</td>
</tr>
</tbody>
</table>

(n=72 and frequency in parentheses)
Table: 4
Handling learning activities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Do not agree</th>
<th>Agree to a certain extent</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’m able to submit my assignments on time</td>
<td>0 (0)</td>
<td>5.6 (4)</td>
<td>19.4 (14)</td>
<td>34.7 (25)</td>
<td>40.3 (29)</td>
<td>4.10</td>
<td>0.91</td>
</tr>
<tr>
<td>I need friends to help me in my assignment</td>
<td>9.7 (7)</td>
<td>19.4 (14)</td>
<td>30.6 (22)</td>
<td>27.8 (20)</td>
<td>12.5 (9)</td>
<td>3.14</td>
<td>1.17</td>
</tr>
<tr>
<td>I will contact lecturers if I had any learning problems</td>
<td>5.6 (4)</td>
<td>12.5 (9)</td>
<td>33.9 (23)</td>
<td>30.6 (22)</td>
<td>19.4 (14)</td>
<td>3.46</td>
<td>1.11</td>
</tr>
<tr>
<td>I’m not embarrassed to ask from younger students</td>
<td>4.2 (3)</td>
<td>0 (0)</td>
<td>13.9 (8)</td>
<td>40.3 (29)</td>
<td>44.4 (32)</td>
<td>4.21</td>
<td>0.95</td>
</tr>
<tr>
<td>I feel stressful with academic works</td>
<td>8.3 (6)</td>
<td>22.2 (16)</td>
<td>34.7 (25)</td>
<td>22.2 (16)</td>
<td>12.5 (10)</td>
<td>3.10</td>
<td>1.15</td>
</tr>
<tr>
<td>I learn without examination in mind</td>
<td>6.9 (5)</td>
<td>11.1 (8)</td>
<td>23.6 (17)</td>
<td>38.9 (28)</td>
<td>29.2 (21)</td>
<td>3.88</td>
<td>0.96</td>
</tr>
<tr>
<td>I read additional reading materials</td>
<td>1.4 (1)</td>
<td>6.9 (5)</td>
<td>23.6 (17)</td>
<td>38.9 (28)</td>
<td>29.2 (21)</td>
<td>3.88</td>
<td>0.96</td>
</tr>
</tbody>
</table>

(n=72 and frequency in parentheses)

Only about 40.3% of the respondents need help from friends to do the assignments and 50.0% would contact their lecturers if they had any problems. Respondents were not embarrassed to ask younger students in academic matters (84.7%, mean=4.21).

Respondents were almost equally divided into three groups with regard to stress; stressful with academic work (34.7%), agree to a certain extent (34.7%), and not stressful (30.5%).

This indicates that some older adult learners are able to cope with the academic programs at SDE without stress and some learners display stressful characteristics.

A total of 52.8% of the respondents indicated that they learn without having examination in mind and about 18% were mindful of examination. May be at this age, respondents were less concerned about examination and majority participated because of seeking the knowledge.

About 68.1% of the respondents read additional reading materials. This figure indicates that the older adult learners are knowledge seekers that would go for extra miles to gain knowledge by reading additional materials beyond the required texts or modules.

Table 5 demonstrates that most respondents were comfortable with younger students (83.3%) and some of them were sought after by younger students for advice (43.1%).

One of the respondent said:

"I interact with younger students... they asked me to edit their writings ... they know I’m a teacher and had experienced in teaching English. I feel happy to help them." (Respondent W)
Older adult learners are more experienced in many aspects of life and they know how to communicate with people easily. For some of these respondents the younger students are just like their children or grandchildren. Financial was not a problem to most respondents (80.5%). They were able to pay for the tuition fees, transportation, room, food and other essential items without many difficulties.

A majority of respondents were also lucky to have family that support their decision to study (88.9%). Family support is paramount during older adult learning period. Words of encouragement and understanding from family members would help them emotionally.

**CONCLUSION**

Distance education institutions are facing a more complex and dynamic group of learners. A new emerging group of the older adult learner population is making its presence felt especially in the developing countries as age structures are changing nations toward ageing societies. Older adult learners are capable to undertake rigorous undergraduate degree programs.

The main reasons cited for older adult learners’ participation were related to career advancement (for the still employed adult learners) and for the sake of knowledge. The study found that the older adult learners have the following characteristics: They are highly motivated, eager to learn, health conscious, have effective time management, have good social skills, no financial difficulties, and have strong family support. Challenges faced by the older adult learners were related to the usage of computer and the stress of study.

Further study of older adult learners demographics, characteristics and motivation are needed to help institutions and distance educators to develop course materials and techniques appropriately. Suitable support services could also be made available. Understanding and mitigating technology problems are important, especially with regard to the rapid expansion of communication technology.

As such greater number of older adult learners would be able to utilize the technology to their advantage.
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DOOR OF HOPE OR DESPAIR:
Students’ Perception of Distance Education
At University of Ghana

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ABSTRACT

Distance Education has globally become one of the important solutions for increasing admission into the universities, decongesting campuses and efficient utilization of time and space. To ensure the sustainability of the programmes’ noble objectives calls for periodic re-evaluation of its modus operandi including the assessment of the perception of its intended beneficiaries. Using exploratory factor analysis, this study analyzes the perceptions of DE students from the University of Ghana.

The results of the study show that students have positive perception on the usefulness, satisfaction and flexibility of the programme but have a negative attitude towards examination related issues. The underlying factors include the untimely delivery and poorly edited modules as well as poor arranged examination schedules.

The study recommends the implementation of electronic mediated services as one of the main ways of making the objectives of DE a reality.

Keywords: Distance education; Student perception; Learner satisfaction; Computer mediated services; University of Ghana.

INTRODUCTION

For the past decade or so, the University of Ghana has had to decline lots of applications from otherwise, many qualified candidates annually as a result of their inability to meet the increasing application. This situation has been partly attributed to the limited and deteriorating infrastructural facilities.

Coupled with this is the rising cost of providing quality education which the government is increasingly finding it difficult to handle all alone. These problems have necessitated the adoption of the distance education (DE) concept as a viable complement to the conventional face-to-face education.

The decision is further inspired by the government’s vision that all Ghanaians should have access to all forms of education and training regardless of where one lives. Distance education is thus uniquely seen as a tool for widening access to higher education (Tagoe, 2007) and bridging the gap between those who have ambition for scholarship but are challenged because of limited infrastructure or their peculiar financial or social or occupational circumstances.
The unique characteristic of DE in bringing education to the door-step of people resonates with government desire to make tertiary education highly accessible to all Ghanaians. This has given opportunity to many public and civil servants to engage in work and study, which is undoubtedly, contributing to the development of the country’s human resource capacity.

Admittedly, some studies have been done in terms of the justification of policy and perhaps benefits for the introduction of the concept (Mensah and Owusu-Mensah, 2002). However, the perception of the students on the current status of the programme seems to have escaped the attention of scholars. In other words, the debate has not engaged students as it does with programme implementers, yet the lack of such data can potentially compromise the programme’s overall objectives and sustainability. The study thus seeks to contribute to the debate by helping to fill this lacuna. It accesses the perception of distance education students from the University of Ghana. The introductory section is followed by an overview of the DE concept in Ghana, with emphasise on the challenges confronting tertiary education in general. This is followed by an analysis of field data on students’ perception of the DE concept and some recommendations for policy considerations.

The challenges of tertiary education in Ghana

Tertiary education is generally seen as a formal, non-compulsory education that follows secondary education (Compbell and Razsnyai, 2002; HEA, 2004). In Ghana a report of a Presidential Committee which reported on the ‘Review of Education Reforms’ defined tertiary education as the education offered after secondary level at a university, polytechnic, specialized institutions, open university and any other institutions to provide training that lead to the award of diploma and degree qualifications. It is therefore not always clear, what tertiary education include. Is it only that which results in a formal qualification or might it includes leisure classes? Is professional upgrading or on-the job training part of tertiary education, even if it does not follow successful completion of secondary? Admittedly, the subject raises some challenges. However, most definitions emphasize certification and continuation from successful secondary education, which may include vocational, post secondary education (leading to a certificate) and higher education (leading to a degree) (Campbell and Raszynai, 2002 p. 133).

The genesis of tertiary education in Ghana dates back to 1948 when the University of Ghana was founded as the University College of the Gold Coast on the recommendation of the Asquith Commission on Higher Education in the then British colonies. The Commission set up in 1943 to investigate Higher Education recommended the setting up of the University College in association with the University of London.

The monopoly of University of Ghana on the country’s tertiary education landscape was broken with the establishment of Kwame Nkrumah University of Science and Technology in 1952, University of Cape Coast in 1962 and within the last two decades the University of Education, Winneba (UEW) and the University for Development Studies (UDS) in Tamale both in 1992. In addition, each of the ten regions of Ghana has a Polytechnic, which has been elevated to tertiary status. It is also instructive to add that, since 1998 a number of private universities (28 as at 2010), have also been given government accreditation.

The above notwithstanding, the realities of access to tertiary education in Ghana today is causing wry amusement because the apparent expansion of tertiary institution is not commensurate with the increasing application by prospective candidates.
Access in this respect is defined as places and facilities available for potential candidates to tertiary education, especially into public institutions (Ghana, 2002). According to NCTE (2006), between 1991 and 2001, on the average only 32% and 54% of qualified applicants for admission into the universities and polytechnics respectively actually get admitted. The report further revealed that for the 2005/2006 academic year, 55% of qualified applicants were admitted into all the public universities and 78% into the polytechnics.

Figure: 1 presents the trend analysis of applicants for admission into the University of Ghana who were not admitted since 1991. The data reveals that apart from 1995, when the University received 5016 applicants and admitted 4996 (only 20 students were not admitted) the rest of the years have recorded a non-admission mean of 51%, with a standard deviation of 15%.

Various reasons have been identified as accounting for this discrepancy. These include, but not limited to the following:

- The rapid growth in population and the expansion in pre-tertiary education, following the introduction of the educational reforms in 1987.
- The mismatch between existing academic facilities and physical infrastructure on the one hand, and the increasing number of students admitted into tertiary institutions on the other.
- The limited (non-existent) opportunities and avenues for working people and those who, for some reasons, have had to terminate their education for a period to re-enter or acquire higher education through other modes.
Public tertiary institutions being originally conceived as residential institutions because of their national character and the model adopted. Limited opportunities for academic and professional progression, especially for those who enter the technical/vocational streams; Limited opportunities for those who end their education at senior secondary school level and decide to re-enter the formal system at a later point in time, and, Inadequate opportunities for life-long learning

These challenges motivated Government to promote the DE concept and the subsequent establishment of open universities as one of the key measures for widening access without depending on traditional space and time. While distance education provides collaborative learning setting (Moars, 2003), it also challenges the designers to develop appropriate educational materials and software (Yang and Cornelines, 2005; Ardito et al, 2006) in which students’ perceptions and needs are fulfilled.

As already stated, much research has been conducted on the operations of DE (Chambers, 2006; Lee et al, 2003; Hong et al, 2005; Liao, 2006; Hagel and Staaw, 2006). In Ghana, the available literature emphasises on the importance (need) of DE (Mensah and Owusu-Mensah, 2002). However, in designing, developing and delivering DE courses, students needs and perceptions should be central (Sahin and Shalley, 2008). Any course failing to meet student’s needs may lead to low levels of student involvement (Hall, 2001). Without interrogating the perceptions of students in DE programmes, it is daunting to appreciate their needs and improve on their participation in the programme.

This study conceptualizes that the outcome of any DE programme (courses) hinges on meeting the needs and expectations of students which in turn affect their level of participation. Indeed, the concept of DE demands a student-centered approach in which the instructor takes the role of the facilitator and the student engages in peer learning (Moar, 2003; Mitchell, Clen and Marcredie, 2005). It is therefore important to appreciate the variables that affect students’ perception on DE programmes. This article reports on the results of a research study investigating predictions of perceptions of students of University of Ghana to the DE programme.

A Historical Perspective of DE in Ghana

The idea of DE is not new in Ghana. According to Ansere (2002) the provision of DE predates the period Ghana attained political independence in 1957. Records show that some prominent political elite like J.B. Danquah and Kwame Nkrumah who were at the center stage of the independence struggle used what was then called ‘Correspondence Courses’ to further their education because there was hardly any higher place of learning at the time. Aggor et al (1992) also note that as far back as March 1964, correspondence education remained one of the main avenue through which a number of workers and professionals upgraded themselves.

However, when the economy of Ghana started deteriorating after independence it became difficult for many student-workers to afford the cost of upgrading themselves through the corresponding education. Their income levels were so low that they could not simply afford to pay their fees.

As a result, many then relied preferably on the public institutions to satisfy their ambition of acquiring a tertiary education. This led to intense competition in the face of limited spaces for the large army of candidates who had sought admission.
As early as the mid-1980s, the universities began to look to the DE concept for a cost-effective solution to the problem of limited access.

In 1986, a sub committee of the Academic Planning Committee of the University of Ghana recommended the adoption of the DE concept as a partial solution to the university’s problems of space and staffing.

From the early 1990s this received government attention (Spronk, 1999). This marked the beginning of exploring the potential of using DE to widening access and help address the excessive demand for tertiary education.

Since then, there have continuous efforts by government and its development partners to expand the DE programmes in all the public universities with the hope of turning them into dual mode institutions.

Among the many information include those listed in Table: 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Intervention</th>
<th>Conducted the intervention</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1992</td>
<td>Survey of DE in Ghana by Ministry of Education</td>
<td>Commonwealth of Learning</td>
<td>Identified the challenges facing tertiary education and as a policy option, made several recommendations for successive implementation of DE</td>
</tr>
<tr>
<td>June 1994</td>
<td>Ghana DE Development project by Ministry of Education</td>
<td>UNESCO</td>
<td>Recommended Systems needed to be put in place for effective implementation of DE</td>
</tr>
<tr>
<td>September 1995</td>
<td>Ghana DE Development project By UPCD*</td>
<td>Simon Fraser University</td>
<td>Developed a 5-year Project for building the national level DE consortium and developing the University-level expertise and programing as recommended in the various DE reports</td>
</tr>
<tr>
<td>April 1999</td>
<td>Mid-term evaluation of the Ghana DE Development project by UPCD</td>
<td>Barbara Sponke</td>
<td>An evaluation study that helped access the progress of implementation of DE and made Recommendation for the way forward.</td>
</tr>
</tbody>
</table>

*UPCD means University Partnership in Cooperation and Development Programme
Despite these interventions, the tertiary institutions continue to be saddled with unacceptably high numbers which makes teaching and learning difficult. At the same time, many more qualified candidates are denied access. The Government of Ghana continues to have faith in the concept as the having the “magic bullet” to widen access to tertiary education, most especially for the marginalised in education. A recent educational reforms report (2002) proposes the establishment of an Open Universities and Open Colleges to help provide work-study programmes using both print and electronic delivery systems. The policy is expected to provide avenues for further studies or-and training for those who may end their education at the JSS/SSS levels, and meet the multiplicity of needs of different learners as well as encourage life-long learning. The University of Ghana degree programme through DE is in its fourth year; this study accesses the perception of students enrolled in the programme concerning its usefulness, availability and flexibility as a way of identifying any challenges for policy consideration.

METHODOLOGY

The study sought to analyze students’ perception of DE programme. To achieve the set objectives, a survey of 150 students each in levels 200, 300 and 400 were conducted. It was believed that after at least, a year in a programme, a student should have had enough experience to be able to share his or her experiences. This section describes the survey design and data collection process. It also reports the descriptive statistics of the variables of interest. Further, exploratory factor analysis was conducted to reduce the number of the attitudinal variables used in the study into a few interpretable factors.

Data Collection Method

To achieve the objective of the study, data was collected through students’ self-reported perception regarding the DE programme. This was captured by their responses to a structured questionnaire, part of which solicited their demographic information such as age, gender, education, employment, income and marital status. The survey also included a set of questions assessing how long a respondent has been in the programme and his/her perception about the flexibility, usefulness and satisfaction. In answering these questions, respondents were asked to indicate the extent to which they agree or disagree with the statements on a five-point Likert-scale ranging from strongly agree to strongly disagree. The questionnaire was pre-tested and improved before conducting the actual survey. The pretest was conducted by interviewing some of the students during their revision period in October, 2010.
The pretest resulted in some wording refinements and re-arrangement of the questions in the instrument. The final survey was conducted for four weeks, between January and February 2011 when the students were taking their end of semester examination. Interviews were conducted at the premises of the examination centers, mainly after a day’s final paper. This strategy was adopted because that was the only time that the nationwide disaggregated students converges at the campus of University of Ghana, and therefore offered greater potential of ensuring unbiased sampling. During the survey, students were randomly approached for interviews. In all, 450 students were approached but 424 managed to complete the interviews given a 68% response rate.

RESULTS/FINDINGS

Table 2
Summary statistics on demographic profile of respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
<td>%</td>
</tr>
<tr>
<td>Level of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>98</td>
<td>23</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td>300</td>
<td>68</td>
<td>16</td>
<td>77</td>
<td>18</td>
</tr>
<tr>
<td>400</td>
<td>70</td>
<td>17</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
<tr>
<td>Previous educational level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSCE/WASSCE</td>
<td>113</td>
<td>27</td>
<td>71</td>
<td>17</td>
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<tr>
<td>'O' Level</td>
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<td>5</td>
<td>1</td>
</tr>
<tr>
<td>'A' Level</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Vocational training institute</td>
<td>10</td>
<td>2</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Polytechnic</td>
<td>26</td>
<td>6</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>Nursing/Teacher/ Agric College</td>
<td>64</td>
<td>15</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>Diploma or non tertiary</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
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<tr>
<td>Unemployed</td>
<td>72</td>
<td>17</td>
<td>50</td>
<td>12</td>
</tr>
<tr>
<td>Employee</td>
<td>144</td>
<td>34</td>
<td>116</td>
<td>27</td>
</tr>
<tr>
<td>Employer</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Self employed</td>
<td>14</td>
<td>3</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 24yrs</td>
<td>53</td>
<td>13</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>25 – 29yrs</td>
<td>85</td>
<td>20</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>30 – 34yrs</td>
<td>54</td>
<td>13</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>35 – 49yrs</td>
<td>19</td>
<td>4</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>40yrs and above</td>
<td>25</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>158</td>
<td>37</td>
<td>77</td>
<td>18</td>
</tr>
<tr>
<td>Married</td>
<td>75</td>
<td>18</td>
<td>109</td>
<td>26</td>
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<tr>
<td>Divorced</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
<tr>
<td>Household Size</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 – 5 persons</td>
<td>191</td>
<td>45</td>
<td>160</td>
<td>38</td>
</tr>
<tr>
<td>6 – 10 persons</td>
<td>28</td>
<td>7</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td>11 – 15 persons</td>
<td>13</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Above 15 persons</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>236</td>
<td>56</td>
<td>188</td>
<td>44</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2010
The summary statistics of the variables (Table 2) indicate that students from levels 200, 300 and 400 were fairly represented in the sample (34%, 34% and 32% respectively). Majority of the respondents (43%) had SSCE/WASSCE qualification while vocational, polytechnic and nursing/teacher training recorded 11%, 12% and 25% respectively. In terms of male/female ratio, the sample recorded 56% against 44% respectively indicating rough gender balance in DE participation. Forty three percent of the respondents were married and the average age or household sizes were 29 and 5 respectively.

The sample also recorded 29% unemployed youth who probably are pursuing the programme because they could not make the grades for admission into the traditional programmes. Only 8% of the respondents indicated that they were self-employed.

Sixty-one percent of the respondents were either civil or public servants. This observation is in tandem with the tenets of the DE programme which primarily seeks to provide opportunities to applicants of tertiary education who cannot access the traditional institutions because they could not meet the threshold grades or due to other socio-occupational challenges.

The exceptionally high percentage of civil and public servants is not surprising in a society where occupational promotion in most government institutions is partly consequent upon one’s academic status.

Thus, many public/civil servants avail themselves to tertiary education primarily to upgrade themselves to facilitate their promotion in their respective workplaces. Figure 3 captures reasons why respondents opted for DE programme. Their views are consistent with literature with 44% attributing their reason to occupational challenges which 28% pointed to household constraints. On the expected outcome of the programme, 39% anticipated an equivalent of a university degree.

Additionally, 18% of the respondents hope the programme will improve their work performance while 20% anticipated on improvement in their income generating opportunities. Only 22% see the programme as helping build the learning capacity.
Description of variables

The list of demographic and other related variables and their definitions that were used in the analysis is presented in Table 2. For example, the variable, level of study, indicates how long a student has been enrolled in the programme, i.e., level 200 means a student in his second year, while previous educational level indicates the highest level of education attained by a student before enrolling into the programme.

Table: 3 shows the statements that were used in the survey to elicit the respondent’s perception about the DE programme. As ready stated, the likert scale of measurement was employed in this study and was defined as (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree and (5) strongly disagree. To ensure consistencies in the interpretation of the mean scores, the following categorization was adopted; strongly agree (1.00-1.490), agree (1.50-2.50), indifferent (2.51-3.50), disagree (3.51-4.50) and finally strongly disagree (4.51-5.00). Based on the mean score, it can be deduced that students’ agree with the perception that DE is as valuable as the traditional education ($M=1.76$ SD= 0.90) and gives requisite knowledge to solving real life situation issues ($M=1.83$ SD= 0.93).

They also agree with the perception that DE provides students with a valuable learning experience ($M=1.86$ SD= 0.80), minimizes the inequalities in educational system ($M=1.88$ SD= 0.85), boost students’ confidence in handling issues ($M=1.90$ SD= 1.10) and aids in solving real issues in life ($M=2.09$ SD=0.91). Students also agree that DE does not only enable students to work comfortably at home ($M=2.51$, SD=1.02), but more importantly, it is appropriate for students with different learning capacities ($M=2.51$, SD=1.06).

An equally important observation is that even though students agree that the available modules help in acquiring relevant knowledge ($M=2.22$ SD=0.84), and the fact that the appearance and layout is attractive and gives comfortable reading ($M=2.38$ SD=0.95), they at the same time agrees that some modules are difficult to understand without the instructors guide ($M=2.12$ SD=1.16),
### Table 3
Descriptive statistics of variables used

<table>
<thead>
<tr>
<th>Variable</th>
<th>Survey statement</th>
<th>Mean</th>
<th>Std. dev</th>
<th>Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>A degree in distance education is as valuable as the traditional education</td>
<td>1.76</td>
<td>0.90</td>
<td>424</td>
</tr>
<tr>
<td>Lifeissues</td>
<td>I now have the requisite knowledge to solve real life situation issues</td>
<td>1.83</td>
<td>0.93</td>
<td>424</td>
</tr>
<tr>
<td>Learnexp</td>
<td>Distance education provides me with a valuable learning experience</td>
<td>1.86</td>
<td>0.80</td>
<td>424</td>
</tr>
<tr>
<td>Inequality</td>
<td>Distance education minimizes the inequalities in education</td>
<td>1.88</td>
<td>0.85</td>
<td>424</td>
</tr>
<tr>
<td>Confidence</td>
<td>Distance education has boost my confidence in handling issues</td>
<td>1.90</td>
<td>1.10</td>
<td>424</td>
</tr>
<tr>
<td>Income</td>
<td>Distance education would increased my income earning opportunities</td>
<td>2.03</td>
<td>1.13</td>
<td>424</td>
</tr>
<tr>
<td>Ownbusiness</td>
<td>Distance education has equipped me to establish my own business</td>
<td>2.05</td>
<td>0.89</td>
<td>424</td>
</tr>
<tr>
<td>Lifeproblems</td>
<td>The course content aids me in solving real life problems</td>
<td>2.09</td>
<td>0.91</td>
<td>424</td>
</tr>
<tr>
<td>Currentwork</td>
<td>Distance education has increased my current performance at work</td>
<td>2.11</td>
<td>0.91</td>
<td>424</td>
</tr>
<tr>
<td>Noguide</td>
<td>Some modules are difficult to comprehend without the instructors guide</td>
<td>2.12</td>
<td>1.16</td>
<td>424</td>
</tr>
<tr>
<td>Knowledge</td>
<td>The contents of the modules help me acquire the relevant knowledge</td>
<td>2.22</td>
<td>0.84</td>
<td>424</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluation of the success in distance education is quite objective</td>
<td>2.24</td>
<td>0.89</td>
<td>424</td>
</tr>
<tr>
<td>Futurework</td>
<td>I perceived to performed better with future work</td>
<td>2.34</td>
<td>0.82</td>
<td>424</td>
</tr>
<tr>
<td>Enjoyreading</td>
<td>I enjoy reading the materials</td>
<td>2.37</td>
<td>0.95</td>
<td>424</td>
</tr>
<tr>
<td>Content</td>
<td>The appearance and layout is attractive and gives comfortable reading</td>
<td>2.38</td>
<td>0.95</td>
<td>424</td>
</tr>
<tr>
<td>Homecomfort</td>
<td>Distance education allows me to work at home comfortably</td>
<td>2.51</td>
<td>1.02</td>
<td>424</td>
</tr>
<tr>
<td>Learncapacity</td>
<td>Distance education is appropriate to students with different learning capacities</td>
<td>2.51</td>
<td>1.06</td>
<td>424</td>
</tr>
<tr>
<td>Learning</td>
<td>Activities presented in the modules makes learning easier</td>
<td>2.58</td>
<td>0.98</td>
<td>424</td>
</tr>
<tr>
<td>Expectation</td>
<td>The content of this class meets my expectations</td>
<td>2.61</td>
<td>0.92</td>
<td>424</td>
</tr>
<tr>
<td>Easy</td>
<td>Activities presented in the modules are easy to comprehend</td>
<td>2.78</td>
<td>1.04</td>
<td>424</td>
</tr>
<tr>
<td>Exams</td>
<td>Examinations are well conducted and arranged</td>
<td>2.78</td>
<td>1.62</td>
<td>424</td>
</tr>
<tr>
<td>Participate</td>
<td>The instructor encourages my participation in class</td>
<td>2.79</td>
<td>1.69</td>
<td>424</td>
</tr>
<tr>
<td>Questions</td>
<td>The instructor responds promptly to my questions</td>
<td>2.89</td>
<td>1.07</td>
<td>424</td>
</tr>
<tr>
<td>Time</td>
<td>More time is spent learning with distance education than traditional sch.</td>
<td>2.95</td>
<td>1.20</td>
<td>424</td>
</tr>
<tr>
<td>Examtime</td>
<td>Time allowed for examinations are adequate</td>
<td>3.03</td>
<td>1.73</td>
<td>424</td>
</tr>
<tr>
<td>Contact</td>
<td>It is easy to contact the instructor</td>
<td>3.49</td>
<td>3.03</td>
<td>424</td>
</tr>
<tr>
<td>Timetable</td>
<td>The examination timetable schedule has always been favorable</td>
<td>3.56</td>
<td>1.73</td>
<td>424</td>
</tr>
<tr>
<td>Edited</td>
<td>Modules are well edited</td>
<td>3.77</td>
<td>1.20</td>
<td>424</td>
</tr>
<tr>
<td>Delivery</td>
<td>Modules are delivered on time</td>
<td>4.09</td>
<td>1.22</td>
<td>424</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2010

The data also show that students are indifferent about the following issues; activities presented in the modules (M=2.58 SD=0.98) and whether an instructor encourages class participation (M=2.79 SD=1.69) and responds promptly to questions and concerns of students (M=2.89 SD=1.07).
Students also showed indifference regarding the ease with which they contact their instructors ($M=3.49$ $SD=3.03$); whether the classes meet their expectation ($M=2.61$ $SD=0.92$) or spend more time in learning ($M=2.95$ $SD=1.20$). They could also not be bothered about the time allowed for examinations adequate ($M=3.03$ $SD=1.73$) and whether examinations are well conducted ($M=2.78$ $SD=1.62$).

On the contrary, the findings reveal that student strongly disagree with the assertion that examination timetable are always favourable ($M=3.56$ $SD=1.73$) and the fact that modules are well edited ($M=3.77$ $SD=1.99$) and delivered on time ($M=4.09$ $SD=1.22$).

Factor Analysis
The Likert-scale variables used in the study were varied and defied easy interpretation to help ascertain the underlying factors influencing the students’ perception. Accordingly, the factor analysis with principal component analysis was employed in grouping the variables that measure the same construct.

The Kaiser eigen value criterion and the scree test were used to decide on how many factors to retain before proceeding with further analysis. According to the eigen value criterion, factors with values greater than one are retained and those less than one are considered insignificant and therefore excluded.

The results of the factor extraction with their eigen values and their percentage of variances are presented in Table 4. Using the eigen value criterion method, six factors were retained for further analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Eigen value</th>
<th>Difference</th>
<th>Proportion</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.71385</td>
<td>4.25610</td>
<td>0.3847</td>
<td>0.3847</td>
</tr>
<tr>
<td>2</td>
<td>2.45775</td>
<td>0.84111</td>
<td>0.1408</td>
<td>0.5255</td>
</tr>
<tr>
<td>3</td>
<td>1.61665</td>
<td>0.23849</td>
<td>0.0926</td>
<td>0.6181</td>
</tr>
<tr>
<td>4</td>
<td>1.37816</td>
<td>0.17702</td>
<td>0.0790</td>
<td>0.6971</td>
</tr>
<tr>
<td>5</td>
<td>1.20113</td>
<td>0.17149</td>
<td>0.0688</td>
<td>0.7659</td>
</tr>
<tr>
<td>6</td>
<td>1.02965</td>
<td>0.15302</td>
<td>0.0590</td>
<td>0.8249</td>
</tr>
</tbody>
</table>

LR test: independent vs. saturated: $chi^2 (861) = 3230.78$ $Prob>chi^2 = 0.0000$
Only eigenvalues greater than 1 where retained (indicated by the shaded portion)
Source: Field Survey, 2010

A graphical representation of the number of appropriate factors retain is represented by a scree test (see Figure 5). It involves plotting the Eigen value magnitudes on the vertical axis against the component numbers on the horizontal axis and noting the point at which the plot becomes fairly horizontal.

The number of factors corresponding to the fairly horizontal point indicates the appropriate number to retain.

From the results, the point where the line becomes fairly horizontal starts at about factor 6, confirming that, six factors, similar to the result of the eigen value criterion method should be retained.
The study also employed the Kaiser–Mayer–Olkin’s (KMO) measure of sampling adequacy and Bartlett’s test of sphericity to assess the suitability of the data set for further analysis (Hair et al., 1998). The sampling adequacy test predicts if data are likely to factor well, based on correlation and partial correlation (see Table 5). The KMO statistic varies between zero and one. A value of zero indicates that the sum of partial correlations is large relative to the sum of correlations, indicating diffusion in the pattern of correlations and therefore factor analysis is likely to be inappropriate. A value close to one indicates that patterns of correlations are relatively compact and therefore factor analysis will yield distinct and reliable factors. Kaiser (1974) recommends accepting values greater than 0.5 and since the data reports 0.743, factor analysis is seen as appropriate tool for this data. Bartlett’s test of sphericity was employed to test the null hypothesis that the original correlation matrix is an identity matrix. At 5% level of significance, the results show that the data is highly significant ($p<0.001$), and therefore factor analysis is appropriate.

Table: 5
KMO and Bartlett’s Test statistics results

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>0.743</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-square</td>
<td>7289</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>946</td>
</tr>
<tr>
<td>Significance</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The Varimax rotation method was used to rotate the six retained factors (Kaiser, 1958) and the resultant factor matrix with its factor loadings is presented in Table: 6. In this study, factor loadings greater than 0.4 was considered high and important to interpret a particular factor. Thus, only variables with loadings >0.4 were extracted although a total of 42 variables were used in the study (see appendix 1).
### Table 6
Rotated component matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
<th>Component 4</th>
<th>Component 5</th>
<th>Component 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectation</td>
<td>0.4019</td>
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<tr>
<td>Contact</td>
<td>0.4126</td>
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<tr>
<td>Questions</td>
<td>0.6163</td>
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<tr>
<td>Participate</td>
<td>0.4242</td>
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<td>Delivery</td>
<td>0.5232</td>
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<td>Edited</td>
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<td>Exams</td>
<td>0.6174</td>
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<td>Examstime</td>
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<tr>
<td>Timetable</td>
<td>0.6660</td>
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<td>Currentwork</td>
<td>0.6122</td>
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<td>Futurework</td>
<td>0.5435</td>
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<td>Lifeproblems</td>
<td>0.6325</td>
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<td>Ownbusiness</td>
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</tr>
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<td>Lifeissues</td>
<td>0.5669</td>
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<td>Income</td>
<td>0.4212</td>
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<td>Noguide</td>
<td>0.4096</td>
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<td>Knowledge</td>
<td>0.4039</td>
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<td>Easy</td>
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<td>Enjoyreading</td>
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<td>Inequality</td>
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<td>Evaluation</td>
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<td>Content</td>
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<td>Homecomfort</td>
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<tr>
<td>Confidence</td>
<td>0.4807</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

| % of variance explained | 0.39 | 0.14 | 0.09 | 0.08 | 0.07 | 0.06 |

Source: Field Survey, 2010

Each factor is assigned a descriptive name based on the variables that fall in that category. From the results, the variables that load highly on factor 1 are Degree, Learnexp, Inequality, Evaluation, Content, Time, Homecomfort, Learncapacity, and Confidence. This factor is labeled as PERCEIVED USEFULNESS. This factor describes the general perceived usefulness of the DE programme. A low score for this factor indicates that the respondents have positive perception about the usefulness of the DE programme.
The variables that load highly on factor 2 are *No guide, Knowledge, Easy, Learning and Layout*. This factor is labeled as FLEXIBILITY because it relates to the apparent ease of the modules and the flexible characteristics of the programme. A low score implies that respondents perceive the modules as quite flexible. Variables that load highly on factor 3 are *Currentwork, Futurework, Lifeproblems, Ownbusiness, Lifeissues and income*.

This factor is labeled as WEALTH OPTIMISM, since the variables that fall into factor 3 depicts the expected influence of DE on respondents' wealth generating opportunities. A low score implies that respondents perceive DE to improve their income earning opportunities and solving real life issues. The variables that load highly on factor 4 are *Delivery, Edited, Exams, Examtime and Timetable*.

This factor is labelled as EXAMINATION. This factor describes the conditions under which distance education modules are prepared and examinations conducted.

A high score indicates that examination conditions are not favourable. Variables that load highly on factor 5 are *Questions, Participate and Contact*.

This factor is labelled as INSTRUCTOR, since the variables that fall within this category depicts the behaviour of instructors towards students' as in for example responding to students' concerns timely class and making themselves assessable to students. A low score implies that instructors' attitude is deemed satisfactory.

Finally, only one variable (*Expectation*) makes up factor 6. This factor is labeled as SATISFACTION. This factor brings to bear the link between what students expects in class and what they are currently experiencing now. A low score implies that respondents are satisfied with the class because their expectations are met.

<table>
<thead>
<tr>
<th>Components</th>
<th>Item variables</th>
<th>Cronbach's α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived usefulness</td>
<td>Degree, Learnexp, Inequality, Evaluation, Content, Time, Homecomfort, Learncapacity, Confidence</td>
<td>0.81</td>
</tr>
<tr>
<td>Modules flexibility</td>
<td>No guide, Knowledge, Easy, Learning and Layout</td>
<td>0.72</td>
</tr>
<tr>
<td>Wealth optimism</td>
<td>Currentwork, Futurework, Lifeproblems, Ownbusiness, Lifeissues and income</td>
<td>0.74</td>
</tr>
<tr>
<td>Examination conditions</td>
<td>Delivery, Edited, Exams, Examtime and Timetable</td>
<td>0.75</td>
</tr>
<tr>
<td>Instructor conduct</td>
<td>Questions, Participate and Contact</td>
<td>0.36</td>
</tr>
<tr>
<td>Students satisfaction</td>
<td>Expectation</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2010
DISCUSSION

The findings from the current study show the importance of DE in meeting the tertiary educational needs of many civil and public servants and the general positive perception students hold on the programme concerning its usefulness, flexibility and satisfactory optimism. The literature supports this finding that DE is uniquely a tool for widening access to higher education (Sam-Tagoe, 2007) and help bridge the gap between those enrolled in the traditional university and the other who have ambition for scholarship but are challenged in one way the other (Mitchell et al., 2005). However, the success of the DE concept is consequent upon maintaining and understanding students’ satisfaction and perceived usefulness (Ardito et al., 2006; Holsapple & Lee-post, 2006; Xie et al., 2006; Zhang et al., 2005).

In fact, “inadequate or incomplete knowledge and awareness of students’ inevitably compromises the quality and appropriateness of the DE programme and learning experiences” (White, 2005, p. 170). The present study has demonstrated that though students generally have very good perception about the DE programme, they nonetheless abhor the current examination procedure in general. Among the factors accounting for this negative perception include untimely delivery and poor editing of the modules. There is also the general feeling that examinations are poorly organized and managed, whilst time allowed for the examinations are inadequate. It is also perceived that examination timetable schedules have always disadvantage students and therefore very unfavourable.

These observations contradict the assertion by an Acting Director of the DE programme that “the DE modules had been carefully edited and validated by the departments concerned and certified as up-to-date” (Oduro-Mensah, 2007). It is also not very clear if his assertion that “students on the programme will be provided with study centers, tutoring and counseling, face-to-face session, library services, information sharing computer mediated services” has been put to fruition. These concerns and setbacks have created doubts as to the validity of the Vice Chancellors’ statement “..... the quality of the DE programme and admission requirements are the same as those offered on campus” (Tagoe, 2007).

It is imperative on the part of the policy implementers to device appropriate measures so that genuine issues relating to examination and modules do not become a barrier to students’ who desire to pursue tertiary education nor compromise the quality of the programme.

Thus, to fulfill the dual purpose of DE; i.e. providing access for qualified candidates who for lack of space on the main campus and financial reasons could not pursue tertiary education and also meet students’ expectations, the programme should be supported both technically and technologically, by actualizing the authority’s dream of implementing electronic (computer) mediated services (Oduro-Mensah, 2007). The University in particular should create opportunities and devote resources to assist students in developing their computer skills and expertise needed for online learning. Indeed, computer literacy should be a prerequisite for enrolling into the DE programme and that conscious efforts should be made to equip students with low level of computer proficiency with the necessary computer skills required for the DE course.

The results of this study highlight the critical role of perceived usefulness; flexibility and satisfaction of students affect DE learning environments and the program as a whole. The fact is if students believe that the DE course is useful, they will be more enthusiastic about the programme.
The literature suggests that perceived usefulness and satisfaction may increase students’ engagement in class activities, and eventually in higher levels of use of distance learning environments (Lee et al., 2005; Mitchell et al., 2005). This study clearly shows that a DE course should provide students with great flexibility and that flexible course structure is a key strategy to overcome the intrinsic and extrinsic barriers to DE concept (Jones et al., 2004). As long as students perceive that DE is a useful and flexible way of learning, communicating, and sharing, their enjoyment in the concept will be promoted. Ultimately, this satisfaction might lead to higher levels of engagement, learning, and success in the setting. However care must be taken to avoid situations where the system is only seen as a conduit of acquiring a specific objective either than genuinely acquiring applicable academic knowledge.

Conclusions

Despite the relative growing popularity of DE among civil and public servants in particular, very little research has empirically examined their perception towards the programme. This study helps to understand the underlying factors that influence students’ negative perception of the DE programme.

Understanding these perceptions is the first step for developing and implementing a successful DE learning environment. The primary contribution of this research is in furthering our understanding of the variables that influence students’ perception of the programme. According to the study, five fundamental factors (flexibility of DE, usefulness of DE, student satisfaction; student perception, and instructor conduct) positively affect students’ perception while matters relating to examination and its conditions negatively impact on their perception.

The findings and implications from the study suggest that students’ perceived usefulness, satisfaction and flexibility of distance education are important indicators of a positive perception of the programme and ultimately for their enrollment into the programme.

Although the findings further suggest that students’ perceived the programme as very useful, satisfactory and flexible, they ironically disagree with all matters relating to examination and its procedure.

This development could be as result of one of two main reasons: probably, the authorities have not instituted the appropriate structures that will ensure the smooth conduct of the programme and the subsequent examination; or the fact that the students themselves abhor the examination in general. Indeed, the latter seems more plausible in view of the fact that most of the participants are civil and public servants with other competing needs for their “limited time” and whose participation in the programme is mainly informed by the need for promotions in their respective places of work.

Thus, there is a need for well-designed and carefully implemented DE learning environments that meet the needs and expectations of students without compromising on quality nor allowing the system to be “exploited” for solely a particular purpose either than promoting the purpose of tertiary education in general.

DE learning and examination environments can be facilitated through activities that increase and emphasize its flexibility and usefulness characteristics. This study recommends the implementation of electronic (computer) mediated services as one of the main policy to help DE courses more intuitive, engaging, and ultimately more didactic.
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INTEGRATING INTERNET PROTOCOL TELEVISION (IPTV) IN DISTANCE EDUCATION: A Constructivist Framework for Social Networking

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ABSTRACT

New communication technologies and constructivist pedagogy have the great potential to build very powerful paradigm shifts that enhance Internet Protocol Television (IPTV) in distance education. Therefore, the main purpose of this chapter is to explore the new concerns, issues and potentials for the IPTV delivery of distance education to multicultural populations.

In this study, the design strategies and principles of how to build social networking based on constructivist learning theory are discussed in order to generate a theoretical framework that provides everyday examples and experiences for IPTV in distance education. This framework also shows the needs, expectations and beliefs, and strengths-weaknesses of IPTV in distance. In short, this framework concentrates on discussing the main characteristics of IPTV in distance education and describes how those characteristics can help build constructivist online communities.

Keywords: Internet Protocol Television (IPTV); distance education; constructivism; social networking.

INTRODUCTION

Interactive Television (ITV) is one of the most effective distance education delivery tools. ITV also helps curriculum designers who draw up curricula in their planning and development and enables them to utilize communicational design principles and pedagogic strategies. One of the major advancements in ITV is Internet Protocol Television (IPTV), through which television and/or video signals are distributed to subscribers or viewers using a broadband connection over the Internet Protocol.

This method of distributing television content over an IP enables customized and interactive user (distance learner) experiences. This different way of using ITV may force organizations, institutions and producers to develop and integrate IPTV applications into distance education better learning outcomes.
Besides, IPTV can provide more collaboration between distance learners, distance educators and interactive content than traditional television applications. IPTV encourages existing passive television learners to become more actively involved in their learning activities.

However, there is limited research and only a few theoretical articles on IPTV in distance education. There is also limited research on new communication styles and abilities and how they might assist lifelong constructivist learning drawing on real-life experiences. This study breaks new ground and addresses key questions about building social networking through IPTV. The authors place a strong emphasis on the way that IPTV can feel the values of diversity and help promote a multicultural communication atmosphere, enhance the educational experience of both adults and the young, support positive and collaborative milieus, advance excellence in democratic partnerships, and develop individual growth and collective action. This chapter also introduces a theoretical approach to help the reader understand effective practices in developing interactive partnerships in social and environmental justice via IPTV. This framework emphasizes how IPTV fosters multi-generational partnerships and mutually beneficial relationships among digital participants to implement collective action.

PURPOSE OF THE STUDY

This paper explores the new concerns, issues and potential for innovation related to the IPTV delivery of distance education to multicultural communities. IPTV is envisioned as a key player in the upcoming convergence of IP networks in view of the fact that the education community, the research community and industry have almost overcome the technical issues of integrating IPTV service into the existing and/or redesigned infrastructures (Won, Choi, Park, Hong, Lee, Hwang, and Yoo, 2008). However, the consequences of introducing IPTV into distance education have not yet been thoroughly studied (Ryu and Wong, 2007; Shin, 2006; Taplin, 2008; Tian, Wu, Sun and Kam-Wing, 2007). A successful distance learning program must not only utilize cutting-edge technology, but should also encourage the development of innovative methods to address the needs of diverse communities.

The changing world demographics force educational organizations to reconsider their existing distance learning programs. In many cases, the development of new models is required to meet the needs of culturally diverse learners. At the same time, institutions should be considering the potential of IPTV and other forms of distance learning delivery to reach completely new lifelong learners.

As suggested by Lagier (2005), the ability to bring together diverse individuals in IPTV provides unique opportunities for innovative constructivist learning milieus. Based on the abovementioned main purpose and concerns of this chapter, the key questions are:

- To what extents can online learners’ skills improve, especially regarding their constructivist communication styles and abilities when IPTV is used in distance education?
- What kinds of online learning experiences are associated with building constructivist social networking through IPTV?
- What are the elements of the constructivist framework for empowering social networking with IPTV in distance education?

In short, the chapter introduces IPTV as a novel technology while the thrust of the argument is around social networking.
We argue the case that using IPTV is more beneficial than utilizing a learning management system that incorporates streaming video and instant messaging or blogging capabilities.

In this context, the authors also argue that social networking can be an important component of constructivist learning;

- to explicate the importance of progressive concepts as defining significant and transformative learning in the higher education context;
- to identify historical and other obstacles to their implementation;
- to raise awareness of the potential of information technology for overcoming these obstacles; and
- to identify those factors which may diminish or impede this realization of constructivist teaching and learning through new technologies.

**THEORETICAL BACKGROUND OF THE STUDY**

It is crucial that consideration is given to generate new distance milieus through IPTV in which learners are able to take greater responsibility for their own learning and constructing their own knowledge (Resta, 2002). For that reason, in this section, we discuss IPTV, social networking and constructivism as the foundations of the framework for IPTV in distance education.

*What is IPTV?*

Research has been continuing into the concept of interactivity in television, since the rise of teletext applications and call-in programs: these were pioneered in the 1990s and have been applied ever since. IPTV is a specific approach to ITV. The early version of IPTV was TiVo, which enabled users to capture television programming on internal hard disks for later viewing (Shin, 2006). Although its predecessor is TiVo, IPTV supplies and serves more applications than TiVo as is below.

Since there are differing approaches and applications in the ITV field, IPTV should first be defined. According to Shin (2006), IPTV is a method of distributing television content over an IP which allows a more customized and interactive user experience. The end consumer receives the content through a set-top box which is connected via a broadband network (Martinsson, 2006). On the other hand, Agrawal, Beigi, Bisdikian and Lee (2007) state that IPTV promises a rich television viewing experience to the customers by delivering digital TV programming.

Burbridge (2006) explains that including two-way capability and providing a truly interactive experience are the key factors of IPTV. In other words, it is possible to define IPTV through the following features, it is a new ITV distribution method which uses broadband IP connections and is capable of producing a high level of communications or experiences to its prospective users.

Because of the IP (Internet Protocol) part, some people may think that IPTV and Internet TV are the same applications; but IPTV is different to Internet TV. One of the main differences is the resolution capability. IPTV uses the whole TV screen for either full motion productions or still images with high resolution while Internet TV mostly uses small display sizes for full motion pictures. If the full screen size of the computer monitor is used for full motion pictures, resolution problems will generally appear, especially in the video-streaming Internet applications. Martinson (2006) discusses the differences between IPTV and open Internet Video Services (IVS) (Table: 1).
Since there is a point-to-point connection, IPTV can provide individual broadcasts for its every user. Video-on-Demand (VOD) applications are one kind of broadcast. Yarali and Cherry (2008) point out that in an IPTV environment everything can be involved in an on-demand stream, in a sense, because of broadcasts to suit the individual. A user can decide to watch a program or a movie from the video store whenever the user wants with VOD application. Moreover, there may be a chance to provide a communication line with a chat-based infrastructure among locally dispersed viewers who choose to view the same movie or program at the same time (Burgoon, Bonito, Bengtsson, Ramirez, Dunbar, and Miczo, 2000). Electronic Program Guide (EPG) and Personal Video Recorder (PVR) are other services of IPTV. EPG will be specialized for the personal needs of the consumers (Martinsson, 2006). Set-top-boxes will also have a feature for saving anything on the screen for future viewings. Because of individualization, people have the choice not to watch any advertisements or commercial presentations, or to choose only those relevant to their interests. This feature explains why budgeting for IPTV is an important issue for potential users. As a result, the argument between using IPTV versus using a computer might be strengthened by a cost benefit analysis between the two delivery modes. Alongside these features and characteristics, IPTV gives access to connect to the Internet.

Table 1
The differences between IPTV and Internet Video Services

<table>
<thead>
<tr>
<th></th>
<th>IPTV</th>
<th>IVS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint</td>
<td>Local (limited operator coverage)</td>
<td>Potentially supranational and worldwide</td>
</tr>
<tr>
<td>Users</td>
<td>Known customers with known IP addresses and known locations</td>
<td>Any users (generally unknown)</td>
</tr>
<tr>
<td>Video Quality</td>
<td>Controlled QoS, broadcast TV quality</td>
<td>Best effort quality, QoS not guaranteed</td>
</tr>
<tr>
<td>Connection</td>
<td>Between 1 and 4 Mbit/s</td>
<td>Generally below 1 MBit/s</td>
</tr>
<tr>
<td>Bandwidth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video Format</td>
<td>MPEG-2, MPEG-4 Part 2, MPEG-4 Part 10 (AVC), Microsoft VC1</td>
<td>Windows Media, RealNetworks, QuickTime, Flash, and Others</td>
</tr>
<tr>
<td>Receiver Device</td>
<td>Set-top box with a television display</td>
<td>PC</td>
</tr>
<tr>
<td>Resolution</td>
<td>Full TV display</td>
<td>QCIF/CIF</td>
</tr>
<tr>
<td>Reliability</td>
<td>Stable</td>
<td>Subject to connection</td>
</tr>
<tr>
<td>Security</td>
<td>Users are authenticated and protected</td>
<td>Unsafe</td>
</tr>
<tr>
<td>Copyright</td>
<td>Media is protected</td>
<td>Often unprotected</td>
</tr>
<tr>
<td>Other Services</td>
<td>EPG, PVR (local or network)</td>
<td>Generally no</td>
</tr>
<tr>
<td>Customer</td>
<td>Yes; onsite support</td>
<td></td>
</tr>
<tr>
<td>Relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complementarily with Cable, Terrestrial and Satellite Broadcasting</td>
<td>Potential common STB, complementary coverage, common metadata</td>
<td>Pre-view and low-quality on-demand services</td>
</tr>
</tbody>
</table>

Users can reach their favorite web pages, forum sites, news bulletins, emails or engage in other common Internet activities. In addition, IPTV is a comprehensive network video streaming process, and delivers TV-quality video programming to desktop PCs by

It can thus be argued that IPTV might make a significant educational difference in that users can easily monitor and understand their own involvement in the learning process to make and reshape their worlds.
Providing broadband connections is a challenging issue for the companies and organizations - or institutions including universities, and whether or not they are profit or non-profit institutions - establishing of technological infrastructures with fiber optics from cable companies will require large budgets for both the organizations and the consumer if the infrastructure is either not in place, or is in inappropriate (This is especially the case in developing countries and in the rural areas in developed countries). Set-top-box production and its supplements is the other technological dimension of IPTV. In addition, producing interactive programs and providing thousands of movies and programs for VOD applications is an important issue.

After these problems are resolved, IPTV can be supplied to its prospective users. User acceptance of this new medium is related to technology, budgeting, extrinsic factors and intrinsic factors. The extrinsic factors refer to interactive services and interoperable applications with other devices and platforms (Shin, 2006).

An important characteristic of IPTV not yet discussed here is its power for creating social networking among its users. Social networking can be explained as interaction among users without a participant limit. A distinguishing characteristic of being human is an ability to be social (e.g. Weaver and Morrison, 2008). This criterion suggests that the social networking concept was latent in people even though it had not been identified. After the Internet revolution, this concept connected with online activities. According to Simpson and Greenfield (2007) social networking is a Web interaction between users which is facilitated by chat, voice, Web pages, the sharing of videos and friend lists, in a collaborative style. It is also explained as information sharing, collegiality, rapidly accessible group information, and a sense of a shared purpose and mission (Weaver and Morrison, 2008). It is possible to explain social networking within the context of IPTV. Social networking is keeping in touch with other users while sharing information and interactions through the mediation of television (screens) with the help of set-top-boxes and IPs.

What is Social Networking?
Building social networking with IPTV as a worldwide player raises some of the same issues as the Internet. People had to travel to interact with different societies, cultures and subcultures before the Internet age. The Internet and IPTV-like applications changed this phenomenon; it became easy to communicate and interact with others without any traveling. The virtual world enables and enhances this potential in a way that no previous technology could. More than two can cultures or subcultures can interact at the same time.

This new situation presents new opportunities. Persons, societies, cultures and subcultures can now understand each other even though they have not had a chance to meet in the real world due to the long distances between them. There is the possibility of a well-mannered exchange. This might be counted as a positive for human interaction. On the other hand, persons, cultures, subcultures and societies can be confronted with bias and stereotyping as well as the differing values and ethics of others. These biases, stereotypes, values, and ethics may be very conservative for other point of views and perceptions.

In spite of this, there is chance for people to better understand the world they live in and the potential for future beneficial collaboration between cultures and societies. IPTV is one of the tools to help users to communicate and interact with each other. IPTV differs from Internet interactions in some situations. People mostly connect to the Internet environment through their personal computers or cellular phones.
Such devices and equipment invite the user to join the Internet environment individually. IPTV has a potential to create different joining styles. Since IPTV uses the big television screen and one of the important characteristics of television that it is often watched with a group, with family or friends, for example, IPTV invites people to engage with the Internet environment either personally or as a group. Group members in one place can interact with group members in another. In this situation, interaction occurs within two different dimensions. First, the members in the same place interact with each other. Second, members interact with the other member users or groups with the help of IPTV. This is one of the unique characteristics of IPTV.

The future distance online learning society will develop from this. Social networking will mean that no matter what discipline and subject area the learner is interested in, and irrespective of their skills level, they will be part of these digital communities. Digital lifelong learners will also be able to drop in and out of learning, join in learning activity from their homes and offices as well as in formal and informal venues to collaborate and socialize with diverse and global learning societies.

According to Holloway (2004), a range of issues related to social networking that must be taken into consideration, include the empowering of staff to take part the integration of professional teams; the developing of project management skills, and the skills to use relevant software; developing a knowledge of pedagogy, and considering how to support users online; considering how to develop and implement content for the online milieu; thinking about how to promote multicultural communities of practice and how to support staff from the bottom up, empowering them to have an input in the development of infrastructures to support online learning. Social networking, therefore, should provide lifelong learners with the design and structure of the flexible learning contexts as well as the strategies and textures and the critical actions associated with the demands and the specific demands and motivations of a multicultural learning society. In this context, information and communication technologies and online learning design principles must focus on developing and delivering a social networking that promotes effective communicative collaboration between diverse online groups from across the world.

What is Constructivism?
Research on learning cultures debates the social, societal and political aspects of the networked society, and considers a range of issues in distance education, such as academic mobility, quality international exchanges, knowledge production, curriculum innovation, leadership roles -especially for women educators, flexible content development, and the defense- of quality in distance education qualifications. Such considerations may provide a good foundation for proposals for knowledge exchange on quality assurance and the accreditation of these learning cultures as well as the identification of any ethical issues.

A constructivist approach can extend the understanding of the structures, policies, trends and developments of learning culture, in research, distance education and knowledge into building social networking through IPTV. Moreover, a constructivist learning culture can provide the digital community and online communication workers with guidelines to connect with existing and ongoing concerns; make visible invisible interaction gaps; encourage interdisciplinary collaborations; bring the current issues and debates together; make available research findings; deliver information on policies, facilitate multicultural real life practices; encourage systematic operational collective activities to emerge and investigate global communication policy related to the delivery of IPTV programs.
There are efforts around the globe to reform online education, progressively considered as a critical action for curriculum change to improve equal access and opportunity, and to strengthen constructivist learning milieus. Knowledge obtained in these settings contributes to the policy and practice in the networked society. Online communication workers including researchers and policymakers increasingly recognize the importance of comparative perspectives on knowledge, which should be adaptive, facilitating both individual and social efficacy, and learning, which should involve social negotiation and mediation and take place in authentic and real-world environments. Moreover, content and skills should be made relevant to the learner and understood within the framework of the learner's prior knowledge (Hicks, Doolittle and Lee, 2002; Jonassen, Howland, Moore and Marra, 2002).

There is an urgent need to plan and conduct online education developments with a systematic approach that includes identifying needs, selecting the best strategies from among known options, monitoring changes as they occur, and measuring the influence of these changes. Assessing the quality of learning, therefore, can provide online communication workers with a constructivist agenda as a formal evaluation process to address various problems, dilemmas and obstacles within a wide variety of learning objectives. Furthermore, this involves online managers and online communication designers in activist curriculum change, which focuses on authentic experiences in critical dialogues.

Understanding the issues and challenges, and the categories, priorities and needs of organizational culture can help online communication workers understand how to manage their roles and tasks to pay careful attention to the diversity of social networking. They must, moreover, understand the importance of their roles and responsibilities in the establishment of global values, norms and ethics by utilizing new communication technologies.

Constructivist theory should be the theoretical and philosophical foundation of IPTV programs. Irrespective of socio-economic, cultural and ethical contexts, this foundation can help online learners recreate, renovate and modify knowledge networks, which follows innovative movements in distance education. Due to an increased cultural sensitivity and a pressure for egalitarianism, IPTV should accordingly place an emphasis on the sharing of creative initiatives in organizational cultures that serve as examples of high-quality practice in multicultural circumstances.

There exists a common consensus on the authenticity of constructivist learning environments and how they can promote interaction and collective action within the sphere of social networking.

Distance education institutions should give urgent priority to dealing with quality empowerment, increasing the relevance of social networking, offering quality for everyone, reforming the online educational system, and constructing better constructivist learning systems. IPTV programs, therefore, can support first class assessments of the credibility, viability and quality of either current and/or prospective learning cultures by providing opportunities for fundamental inquiry and critical reflection.

A better understanding and measurement of the quality of learning cultures in the diverse contexts provides disadvantaged individuals with quality education opportunities, it pays and addresses their needs as well.
Moreover, IPTV programs can provide detailed information on constructivist learning environments, which aim to ensure that education presents ideas and values concerning the building of a sustainable future, giving learners the opportunity to learn about the global world. This can be used to build a deep respect for diversity and differences. In this context, online communication workers can help networked society to rethink learning culture by focusing on the more pressing educational and social problems of our time as well as understand the achievement challenges and assessment concerns of lifelong learning.

Furthermore, constructivist learning can provide lifelong learners with pedagogical knowledge and help in the construction of a comprehensive and culture-oriented education system designed to incorporate a multicultural perspective. By meeting the challenges and expectations with fairness and respect, and offering communications that contribute to the sharing of power and an understanding of cultures, social networking in online learning can encourage a deep engagement in lifelong learning activities that examine, through reflective practice, the dynamics of democratic change. IPTV-based experiences should help online participants to contribute to constructive transformation in a variety of educational and professional as well as social contexts and to move their own lives in innovative directions.

IPTV in Distance Education Utilizing IPTV in distance education is one of the basic areas to build social networking globally. The concept of distance education accepts and easily incorporates IPTV-based communication technologies as it did previous mediums, such as radio, television and the Internet. Moreover, IPTV-based communication technology, in order to build constructivist social networking and reach the best constructivist outcomes, should consider, produce and deliver distance educational programs to a diverse community worldwide. Viewing is a very important concern for educational communication workers when they want to produce an interactive distance educational program for IPTV. Viewing is also the main feature of one-way traditional television. Yuzer and Kurubacak (2006) emphasize that producing two-way-communications in interactive television and computers with the Internet are different from each other. Table: 1 shows these differences and that there are two main zones (Yuzer and Kurubacak, 2006): the active participation zone and the structural changing zone (when comparing traditional television, interactive television, IPTV and computers with the Internet).

![Figure: 1](image-url)

The relationships among TV, interactive TV and computers with the Internet.
Technology, experiences, interactions and communication styles are changing from traditional television to computers with the Internet. IPTV has its place in the interactive TV arena very closely related to the situation of the Internet connected computers. This means that viewing and interaction go together in interactive television applications, with even live or taped broadcasting having their place in the middle. IPTV applications and programs should have this characteristic even if they are very close to Internet connected computers from the IP part. Although the viewing part is inevitable in educational IPTV applications, live or taped video presentation times should be balanced with the interaction times. According to Gang, Lin, Zonkai, Tang, Ming and Rong (2008), producers should avoid lengthy video presentations and opt for shorter segments so as not to annoy prospective distance learners.

The participation of distance learners in ongoing activities is another important subject. IPTV applications facilitate the selection of content to meet the specific course needs and answer the course issues of the distance learners. These content parts can be in a VOD format. In this situation, a learner can watch the whole or a part of the video for a better comprehension and understanding. This distance learner can also interact with educators or other learners at the same time, if they are involved in the lesson (if they are also watching this VOD). IPTV has a capacity to advise distance educators and learners who else is watching this VOD application in a local area, a region or worldwide. Moreover, a distance learner may take tests or ‘answer’ or ‘ask or answer’ questions after watching the relevant video. All learners’ answers can be analyzed and the results can be sent to this learner. It is possible to increase question examples remembering the features and characteristics of IPTV. The most important part of this learning environment is how these distance learners or educators interact synchronously with each other or with a group during the ongoing activity. This activity can be either live or taped; but interaction occurs in the real time in each situation.

Alas, Ryu and Wong (2007) explain that the TV viewing experience is different to using a PC as before mentioned. An IPTV participant does not want to watch TV like using a PC. According to Ryu and Wong (2007) again, it is possible to find new ways, such as adding cellular phone-like keys which have letters on the remote controls. Both remote control and cellular phone keys which have letters are very familiar to a distance learner or an ordinary IPTV viewer, and this situation will not disturb them. There must be a place on the television screens to show these chat-based synchronous interactions. It is possible to use virtual keyboards which appear as a part of the television screen, and are controlled with remote controls, to give another example. Shihab and Cai (2007) stress that the next generation networks will support data, voice and IPTV applications. This means distance learners can interact with microphones and speakers. There may be voice confusion since there will be at least two different voices in the location and all of these may want to be dominant, the voice of continuing IPTV application and the voices of other distance learners and educators.

A good regulatory system of the application, taking into account these different voices, could be a solution to this problem. The way the television element is performed and presented (Ryu and Wong, 2007) is never forgotten in attempts to generate human-to-human interaction in IPTV applications. IPTV encourages group activities among distance learners in front of the television screen, as previously mentioned, when they are in the same location. This important characteristic widens collaborative activity and provides important opportunities to share the knowledge and communicate in different ways from the screen, with face-to-face communication or both for distance learners. Content design in an IPTV program becomes challenging when taking the above factors into account.
Pedagogical issues, technological infrastructure, communication-interaction issues and the topic itself of the distance learning program are the key factors in producing an IPTV application. A group from traditional television production (for the videos), experts on program content (to explain the content correctly), IPTV professionals (for bringing the videos and interactivity together), and distance learning professionals (for controlling the whole process in order to achieve the best outcomes) have to be brought together to create a distance educational IPTV program. Evaluations after the programs help them to provide more collaborative programs in and for the future.

BUILDING CONSTRUCTIVIST SOCIAL NETWORKING THROUGH IPTV

According to DeVries, Zan, Hildebrandth, Edmiaston and Sales (2002), the constructivist stream is an idea which is dialectical or interactive. IPTV provides interactive communications for potential distance learners for them to have different forms of knowledge from diverse sources, societies and/or cultures (based on the infrastructure) in their learning processes. Moreover, distance educators may have knowledge to better facilitate their distance learners.

This situation is very important from the constructivist perspective; Holt and Willard-Holt (2000) state that both educator and learners are involved in learning from each other. IPTV applications provide distance learners, who have unique needs depending on their diverse backgrounds, with several interactive styles and designs. The societal dimension of IPTV restructures distance education as a social network which has the power to impact on a much broader vision and the diverse audience of the digital community.

IPTV can encourage distance learners to discover the unlimited sources of the interactive world to find the answers and to solve real life problems. Moreover, IPTV allows an ease of collaboration between people who can use the different audio-visual communication styles of IPTV to achieve better constructivist learning outcomes. On the other hand, in spite of the tremendous expansion of the IPTV-based applications in building constructivist social networking, the relationships between neighborhood learning environments and global virtual learning milieus is not as yet sufficiently interactive and effective.

As the 21st century begins, online social networking is undergoing profound changes associated with global social, societal, political and economic forces. As a result, IPTV programs may play a leadership role in a global reflection on higher education reform. Although IPTV provides a platform for critical dialogues on how best to adapt education systems to the emergence of knowledge societies in generating and delivering multicultural knowledge, it is often less than responsive to the diverse challenges and obstacles, not always knowing how to utilize cutting-edge communication technology to create active responses with competence and assurance, within a complex context and by utilizing comparative perspectives.

By investigating in various ways, with a wealth of inquiry and a deep focus on the meaning of quality in online accreditation, virtual organizations in higher education will be empowered. To strengthen virtual organization performance, careful efforts must be made to reform the educational system and in knowledge support management to provide stakeholders with an improved equal access opportunity. Although the majority of online communication workers define quality as largely synonymous with better test scores, IPTV in distance education should pay in-depth attention to the diverse aspects of virtual organization quality. Quality in these communities is a multidimensional concept.
Moreover, online social networking should accomplish, through a multifaceted effort, an improved online education policy and practice, one that supports the critical discussion must evaluate the rigor and effectiveness of research to see that it reflects the broadening of perspective in the field. By integrating the basic concepts of reflective practices with the best contemporary knowledge elaborates on the specific of decision making processes.

The critical issues of quality accreditation of IPTV programs, the identification of qualifications and the development of international policies for globalization can merge the service for the international public good, the higher education sectors, the needs of online learners and the worldwide public interest. On the other hand, since today’s world is complex and knowledge is rapidly developing, learning must continue throughout life. Social networking, therefore, should know how to deal with change that requires reformist intervention in the quality of online organizations, in all of its aspects, to accomplish excellence in learning. The main purpose of these online communities should be to identify the issues, challenges, priorities and needs of the global learners for knowledge management.

The major concerns are to enhance the relevance of education by adjusting constructivist learning processes and to devise multicultural curriculum contents and egalitarian knowledge management systems that can embrace online social networking and their qualities. An additional major challenge is to focus on global democratic citizenships, to respect online human rights and social identities by measuring how to build knowledge management systems which are accountable within a capacity-building framework that is able to make critical decisions and construct powerful action plans.

The major priority is to underline the necessary improvements needed to promote the intellectual and scientific collaborations of social networking which can empower knowledge management in regard to a consideration of global societal values. It is imperative to utilize the advantages and potential of IPTV by guaranteeing quality and sustaining high standards for constructivist practices and outcomes and ensuring that online facilities based on local, national and global networks can increase online organizational efficiency as well as preserving their quality and significance. Therefore, the mission of building social networking through IPTV is to integrate collective acts democratically and to bring together a community of people committed to liberatory online communications.

Therefore, IPTV programs must be designed to represent a range of real-life experiences in their community works and critical praxis, including theorists, theater workers, artists and others committed to transformative pedagogy and social equity. Based on these concerns and approaches, online communication workers can provide diverse learners with the background knowledge needed to understand the communication processes related to democratic and multicultural issues, and to elicit the international dimensions of the challenges faced by education. Designing any social networking can be constitutive of contemporary challenges and tensions as in the role of IPTV technology for sustainable development around the world.

Constructivist learning theory should be the philosophical foundation of IPTV programs. This theory also points out that media vary in certain unique ways and that affects a personal ability to communicate rich information. Empowering online programs as richer media can have significantly positive impacts on design quality, and those effects of the degree of participation.
A FRAMEWORK FOR EMPOWERING INTERACTIVE COMMUNICATIONS

The most essential elements needed to design, implement and evaluate an IPTV framework are based on interactive program production and the technological backgrounds and educational issues of the countries which use IPTV for educational purposes in distance education programs. Although positive changes are happening around the world to enable this innovative medium, building up an appropriate IPTV framework for any developed and developing country must be discussed and based on the existing circumstances and the possibilities of meeting the abovementioned needs. Regardless of the developments and improvements over the decade, there are still many challenges and risks in establishing and implementing new applications like IPTV in distance education milieus. Launching IPTV requires not only money, but also well-educated and intellectual human resources. Therefore, the framework discussed in this chapter is helpful to organizations and institutions as well as to the people who are interested in this new interactive medium. Providing unique and diverse perspectives with their own communication strengths and weaknesses enables genuine equal opportunities and democratic participation in building online knowledge networks, which are not characterized by power, dominance, hierarchy and competition.

Figure 2: shows the philosophical foundations of and backgrounds to the concepts, insights and skills needed to accelerate democratic transformations to build social networking via IPTV. Based on the established communication standards of the framework, online communication workers must focus on answering these questions:

1. How do the constructivist learning practices change when people experience distance learning online?
2. How will digital learners receive feedback and achieve their learning goals?
3. How does the role of online learners change in IPTV-based social networking?
4. How will online learner interaction with the educators, people and other learners be sufficient to meet constructivist learning objectives?

Figure: 2
Diamond of IPTV (It is the necessary point of view to generate successful constructivist distance learning environment and social networking in IPTV applications.)
5. How do these learners’ responsibilities change in IPTV-based milieus?
6. What is the online communication worker preparation and training for interacting and communicating with IPTV in distance education?
7. How will digital learners receive feedback and achieve learning goals?
8. How does the role of online learners change in IPTV-based social networking?
9. How will online learner interact with the educators, people and other learners be sufficient to meet constructivist learning objectives?
10. How do these learners’ responsibilities change in IPTV-based milieus?
11. What is the online communication worker preparation and training for interacting and communicating with IPTV in distance education?
12. How do online communication workers change the learning culture by building global social networking?
13. How do online communication workers change the learning culture by building global social networking?

Building large-scale knowledge networks and authentic learning milieus can bring democratic changes in IPTV-based communities, empower critical communication possibilities and potentials for lifelong learning, reconstruct dialogical and democratic forms of pedagogy and community engagement and explore powerful democratic communication practices as well as promote dialogues between online communication workers, learners and society, enhance the cognitive learning skills of the digital community and generate motivation for multicultural participation.

To strengthen online learner performance, therefore, there must be careful efforts made not only to reform the educational system but also to support social networking with ready access to knowledge that provides these digital participants with improving equal access and opportunity within the system.

The framework can help the learners to interact more effectively, and to an extent appraise the quality of online learning and empowers virtual communications through IPTV based on the core of constructivist learning process.

Conclusion

This paper presents the interactive IPTV as a global access network in distance education. IPTV could be the most transformative learning in distance education history and may reform communication and society through a constructivist approach. Online communication workers have to understand the achievement challenges and allay concerns about how they utilize IPTV.

Moreover, online communication workers should provide the digital community with detailed information about their changing needs and responsibilities in online learning. These digital learners can make their learning plans more efficient and accurate by being involved in interactive online communications and by building social networking. However, there are existing powerful relationships between their constructivist learning attitudes and technological competencies. Online learners mentally prepare themselves for collective actions in their communities. This predisposes them towards IPTV learning.

On the other hand, these learners can lack self-confidence due to their poor technological skills and the knowledge that they derived from diverse backgrounds reflected different learning styles, skills, interests, needs, and cultural experiences.
However, as mentioned by Kurubacak and Kilic (2007), online learners are able to make various meaningful connections among their knowledge, practices and skills to integrate and utilize vast amounts of IPTV-based resources in their learning activities. On the other hand, there is still not enough research into how the obstacle of language barriers might be resolved through the use of IPTV.

Future research should therefore focus on whether or not there is a current technology that can help break down social and/or language barriers to help social networking partners understand each another better.

Finally, IPTV-based learning can be an interactive process, the product of learners and community activity within a global social milieu. These collective activities are the essential fundamentals of the constructivist learning process that IPTV can provide for a wide variation in patterns, styles and quality to build powerful social networking worldwide.

One of the most important alterations is that IPTV opens an innovative era by connecting with both television and Internet links. The present authors have named this new age Compuvision.

Compuvision is an emerging technology and it may evolve into a completely interactive experience in the future. In addition, Compuvision can incorporate the philosophy that lies behind the plan, design and implementation of online knowledge networks, and also benefit global, multicultural populations.

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EMERGENCE OF VIRTUAL COMMUNITIES
AS MEANS OF COMMUNICATION:
A Case Study On Virtual Health Care Communities

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ABSTRACT

Like in all areas, virtual communities make their presence felt in the area of healthcare too. Virtual communities play an important role in healthcare in terms of gathering information on healthcare, sharing of personal interests and providing social support. Virtual communities provide a way for a group of peers to communicate with each other. In the health context, they may also be referred to as electronic support groups. They include forums, discussion boards on websites, mailing lists, chat rooms, or newsgroups. This paper provides an overview and discussion of virtual communities in health care. In this paper the state of marketing implications in virtual communities in the health care sector is reviewed. The case study method was used. Data were collected from a web site about health care, as content analysis. CRM, customization, marketing research and database, e-word of mouth, e-services and promotions as marketing tools were used in the virtual community. The findings indicate that members of the reviewed web site used forums heavily as a means of interactivity and gathering of health related and social based information.

Keywords: Internet, Communities, Virtual Communities, Health Care.

INTRODUCTION

Today, like in all areas, the Internet has had an important effect in the area of health as well. With the development of the Internet many new and different applications have developed and one of the most important of these are probably virtual communities. Virtual communities, which are used as a tool for providing information and word of mouth communication, have become a widely used marketing tool in the area of healthcare services in recent years.

A virtual community is a group that does not depend on space and time to maintain ties or participation in the group whose members share the same interest and to maintain closeness, that is based on internet communications and whose membership is based on free will. In these kinds of communities whose services are provided on a membership basis, health services of various kinds are offered to the members. In virtual communities, virtual interactive communications established between the members can be an important determining factor when choosing a product, service or doctor.
Just like in traditional word of mouth communications, the advice given by the members of virtual communities can have a significant effect on other members, since the advice givers are experienced about the product they communicate on for a length of time. Due to this characteristic of theirs, virtual communities have begun to make their presence felt more and more in the marketing of healthcare services (Argan and Tokay-Argan, 2007).

Many people use the Internet regularly to stay healthy or to gather information about their health problems. These kinds of information used to be provided by healthcare professionals and only when they were needed. This situation began to change at the end of the 1990s and digital healthcare information started to become widespread. The biggest power behind the prevalence of digital healthcare information has been the Internet (Homewood, 2004). Even though the Internet, and especially the World Wide Web, is an important source of information about health and illnesses, the quality of the information available is still being argued today (Wallace, 1997).

Demanding more information than they were being offered, consumers of healthcare services started to use interactive mediums. Virtual communities attract attention as the most important tool that provides interactivity. Consumers who interact on a web site obtain information about health through three methods. These are; published online information sources, informal information obtained from other members of the virtual community, and information obtained as a result of interactions with healthcare professionals. For example, in Great Britain MedicDirect (medicdirect.co.uk) offers an interactive health service to its members. The visitors of the web site ask questions to expert healthcare professionals via e-mails and toll free telephone numbers, and get answers to their questions.

**THE CONCEPT OF VIRTUAL COMMUNITY**

Virtual communities are especially prevalent in terms of convincing communications among people who engage in similar activities. Being interested in certain activities; the concept of sharing feelings, opinions and information are among the most distinctive characteristics of virtual communities. Present practices are shaped around the basis of establishing a web site and people becoming members of this site to share their thoughts, opinions and experiences. As virtual communities have started to become popular, different disciplines have started to analyze these areas in detail and obtain administrative inferences from them (Lee, Vogel and Limayem, 2003).

Traditionally the concept of community is thought of as a closed system. With the development of information technologies, the concept of community has also undergone some changes and the concept of community that used to be a closed system has begun to be transformed into an open system. It is possible to come across numerous definitions of virtual communities. However, the elements that these definitions manifest share similarities with each other.

Real communities are based on place and membership is shaped according to norms. But in virtual communities there are no place and time limitations and status is determined in accordance with ideas and duties. Virtual communities are formed on the basis of needs (Johnson, 2001). Virtual communities exist due to inclinations, shared interests, the general practices of a professional discipline and values.

Cyber communities such as web based forums and mailing lists reveal themselves via social interaction, natural sharing of thoughts and feelings, membership and friendship, commitment and attachment (Nguyen et al., 2006).
According to Ericson (1997) virtual community is defined as a long-term computer aided discussion environment between large groups. Carver (1999) defines virtual community as people coming together and interacting by sharing real thoughts in an environment shaped by trust. Virtual community can be defined as a group of people coming together at an independent place and time because of a general interest, problem or duty and interacting with each other (Leimeister, Daum and Krcmar, 2002). This definition puts a stress on the limitlessness of virtual communities in terms of time and place. So virtual communities allow their members to interact at any time and at any place.

In the light of these explanations it is possible to list the characteristics shared by virtual communities under the following headings regardless of their purpose, subject or location (Bagozzi and Holakia, 2002; Odabasi, 2005):

- Most virtual communities organize around a different area of interest.
- Just like in real social communities, the members of virtual communities have a sense of closeness and maintain truly deep feelings towards the other members.
- Most virtual communities create shared rules and a communication language and put them into use.
- In contrast with individuals who passively consume the content offered by communication tools, in virtual communities the content is created with the active contribution of the members.
- Because most virtual communities use web based chat rooms, newsgroups, bulletin boards or e-mail lists, communication mostly happens through written texts.

Howard (1993) stresses that to be able to talk about a virtual community, three factors need to exist. These are:

- web or cyber space,
- public discussion and
- personal relationships.

Web or cyber space indicate more the internet or a web site, as different from real communities, public discussion indicates the sharing of experience, interests, opinions and information in a virtual environment, and personal relationship means the members of contributors build and develop relationships between themselves. Virtual communities are classified in various forms. The most widely used classification is the one developed by Hagel and Armstrong (1997). This classification is shaped on the basis of needs and is divided into four groups: interest, relationship, fantasy and procedure. The need for interest indicates the coming together of a group of people who share an interest and experience in a special subject. The need for relationship is about experience that provides the opportunity to build meaningful personal relationships and to get together with other people. The need for fantasy symbolizes the discovery of a new world of fantasy and fun by people who have come together. And the need for procedure indicates getting together as a result of the exchange of information between participants (Lee, Vogel and Limayem, 2003). According to the classification made by Carver (1999), a distinction is made in terms of interest, relationship, fun and commerce.

And Jones and Rafaeli (2000) have made a detailed classification in the context of purpose of use, social structure and technological basis and have classified virtual communities as it was put forward by Hagel and Armstrong (1997).
VIRTUAL HEALTHCARE COMMUNITIES

Nowadays it is possible to see that in the area of healthcare services too interest and attention is given to internet based communications studies. And in terms of practice many virtual communities that are emphasized and that have the characteristic of being the first have emerged in the area of health. The forum called Cancerforum is one of the most popular forums in the literature (Hagel and Armstrong, 1997). Professionals operating in the area of public health have seen the advantages provided by the Internet in terms of the sharing of information and the presentation of services and have started to use it extensively. Health statistics and data about illnesses are convenient information sources for both healthcare professionals and for the general public. In this sense, virtual communities are an important Internet medium used by healthcare institutions and establishments to reach their target audience (Cassel, Jackson and Cheuvront, 1998).

The area of interactive health communications is an area that has shown an important growth in recent years and also contains virtual communities. Interactive health communications that are founded on Internet based technologies reach new levels with virtual communities. Virtual communities that also have the function of informing and guiding patients and the function of being a sociological and psychological support tool, also offer unique opportunities to organizations in terms of management and marketing. Interactive health communications have more potential advantages when compared with traditional face-to-face communications.

One of the most important of these is the financial efficiency brought about by using Internet based technology. Interactive technology allows millions of people to reach health materials, practices and information at the same time. The other important advantages are the openness of the communications and access speed. Instant interaction, the opportunity of personalization and the extremely low distribution cost can also be given as other important advantages. Interactive health communications offers flexible and extensive options in terms of preventive healthcare services. Due to these technologies, the consulting services between doctors and related parties will also be affected. Thanks to online interactive sites healthcare professionals will be able to serve even more members of the general public (Fotheringham et al., 2000). One of the most important effects of the use of electronic environments in the distribution of healthcare services has been the electronic prevalence of P2P (Peer to Peer) communities and virtual communities. People use healthcare related virtual communities in accordance with their personal interests to share their experiences, to ask questions, to obtain or provide emotional support and to obtain useful information that will help those (Eysenbach et al., 2004).

A virtual community in the area of healthcare services means a group formed as a result of the getting together of people for the purpose of obtaining activities about health care and education (a collectively formed social structure).

The activities in the virtual community include the distribution of health services, the education of patients or staff, a platform that provides support, health and treatment related discussions between the members about certain subjects and problems, the sharing of documents and information, the continuation of relationships beyond face to face events and the consultation of experts. (Demiris, 2006).
Today there are many virtual communities within the health care services industry. For example in Germany there are virtual communities about more than 60 kinds of cancer (Dannecker and Lechner, 2004). Everyday 12.5 million health related searches are being made on the World Wide Web. By 2004 Yahoo Groups had 25,000 electronic support groups listed in the area of health (Eysenbach et al., 2004). 40-50% of patients access medical information via the Internet and the information they obtain effect their choice of treatment (Meric et al., 2002). Electronic health professionals provide medical databases to patients but patients also want to obtain information about their treatment and problems by taking other patients as a reference. In terms of the concept of interaction, which is a priority in virtual communities, of the 268 Web sites scanned in Germany, only 18% offer cancer patients the opportunity of interaction (Arnold, Daum and Krcmar, 2004). In recent years the amount of research about the studies of patients getting support has started to increase. Studies have been conducted about the benefits obtained by people participating in Patients’ online Communities (POC) (Ferguson, 2000) and the process of obtaining personalized support (Finn, 1999). Other studies in this area have focused on the quality of medical information (Eysenbach and Diepgen, 1999) and the transformation of the role of the patient as a result of online participation (Hardey, 2001).

Virtual communities that only cover patients and family members contain people who are getting the same treatment or who have been diagnosed with the same illness. In a study conducted by Finn (1999), it has been shown that virtual groups that help themselves implement most of the process of getting face-to-face help. The most striking aspects of these kinds of communities are mutual problem solving, information sharing, expressing of feelings and the creation of mutual support and empathy. Virtual communities that contain both health care providers and patients contain practices that enable alternative communication methods between providers and patients and enhance illness management. Lastly, virtual communities that are open to the general public contain education services, discussion forums and other activities that do not require an official diagnosis or the necessity of a treatment to provide health care services. Technologies related to virtual communities include online message boards, automatic mailing lists for asynchronous communication, video conference systems, internet relay chat, groups, special chat rooms for synchronous communication. While some virtual communities have a moderator, others may not. The messages sent by the members of the virtual communities have to fit the norms of the virtual community and the normative processes of the group are mostly based on informal rules (Demiris, 2006).

Interactive health communication that uses Internet technologies has an important effect on the mediation options in preventive health services. These kinds of technologies can have an important effect on the consulting services of doctors and other practitioners and for large numbers of the general public proactive mass access strategies are becoming new options. These developments create both new opportunities and challenges. It is possible to talk about a number of advantages provided by Internet based technologies. These advantages are characteristics such as the convenience and ease of access of computer aided communications, flexibility, interactivity and automatic processing (Fortheringham et al., 2000).

Among the virtual communities in the area of health the largest in number are communities about chronic illnesses. Since the progress of chronic illnesses takes a long time and they require interaction, chronic illnesses have a more suitable structure for getting together electronically. Thus chronic illnesses differ from other health-related communities in terms of long term relationships and being continuously face to face with patients.
Most chronic patients join virtual communities to satisfy the need for information. For this reason, patients tend to prefer virtual communities where they can access expert information. At least 40% of Americans have a chronic disease, two thirds of all medical spending is on chronic diseases and about 20% of these are made on twenty special illnesses (Winkelman and Choo, 2003). One-third of patients hospitalized in Turkey are hospitalized for chronic illnesses and the top three causes of death are chronic diseases (Onal, 2001). The information needs of a chronic patient include detailed information about his/her illness, the side effects of treatment, treatment plans, professional relationships, communicating with other groups that have the same illness and supportive subjects for family and friends (Winkelman and Choo, 2003). Since chronic patients are exposed to all levels (drugs, treatment, side effects etc.) of the illness for a long period of time, they constitute a real reference group. Chronic patients within the social web use virtual webs to fulfill their needs and the needs of health care providers, therapists, health organizations and other patients with the same disease. While it is easier for healthy people to become a reference group in physical environments, those with a certain disease do not go out into physical environments much and so they present their experiences through different tools like virtual communities. About 39% of cancer patients use the Internet and 2.3 million cancer patients interact online (Eysenbach, 2003).

RESEARCH OBJECTIVES AND METHOD

The objective of this study is the case study of a frequently visited virtual community about babies in Turkey. For this purpose the case study method has been used. In this study the case of a virtual community in the area of health in Turkey has been analyzed. Case studies can be said to be the observation of uncontrolled real life situations. The aim of a case study understands present and complicated social phenomena. The questions asked by case studies are “how” and “what.” Case studies use a combination of qualitative and quantitative evidence. Also, multiple evidence sources are used within the frame of method triangulation. The reasons behind the choice of site to be analyzed as a case study are these: Because it is in the area of health, because of its popularity, because of the high level of awareness, because the information perceived and the site’s image is comprehensive and good, because of the number of members and the categories of the site and their scope. When choosing the site to be analyzed within the context of virtual communities, it has been aimed to take as basis sites that mothers are inclined to visit, and for this purpose after interviewing 14 mothers who use the Internet, www.bebekkokusu.com was chosen. The number of members of the site chosen to be analyzed was 58.965 (Argan and Tokay-Argan, 2007) at 15 May 2007, by 3 November 2007 this number had become 64.363 and the average number of visitors per day is 450-500. The number of messages sent one week ago (27 October 2007) was 15.788, and the number of people becoming members was 231.

The purpose of this case study is to put forth a descriptive analysis of virtual communities in the area of health and by doing so to shed light on quantitative and qualitative studies that might be undertaken in the future. It was aimed to carry out a descriptive content analysis in the virtual community chosen on the level of theme in relation to the level of knowledge, marketing practices, the establishment of forums, and the messages posted in the forums. For this purpose the web site called www.bebekkokusu.com was subjected to a content analysis within the context of virtual communities. The methods used were site analysis, descriptive content analysis and metrics about the forums within the context of a case study. The basic aim of content analysis is to identify notions and relations that would define the collected data (Yıldırım and Simsek, 2006; Argan et al, 2006).
For this reason, the content analysis starts with the coding of data. In our study, the coding scheme includes fourteen measurement themes.

These themes aimed to put forth the services and practices at the website. The themes of measurement used in the content analysis included information services, personalization, interaction services, marketing practices, the number of messages and subjects at the main forums, the number of messages and subjects and the content of the sub-forums connected with the four main forums (doctor, just us, from me to you and top secret) and the most read and answered messages and themes.

Two ways of coding could be employed in content analysis: traditional coding and interpretive coding. While the coding themes in this study were mostly suitable for traditional coding, for the evaluation of the 25 most read messages in related forums, interpretive coding was used.

In the coding stage, two coder groups were formed and there was one person in each coder group.

For maintaining the accuracy of coding, the results of coding for each measurement theme were negotiated. After the negotiations, a pilot coding study was realized on the website. Each coder group coded the measurement themes independently.

Then a consensus on the disagreed coding was achieved and the reliability of the themes was calculated. The analyses were based on the final coding scheme.

FINDINGS AND RESULTS

Reliability of the Coding

Before presenting the findings of the research, reliability of the coding stage of the content analysis should be put forth.

In studies using content analysis as a methodological approach, coding reliability is an important issue (Argan et al, 2006). Like it is in the movies and television films, it is important to achieve inter-coder reliability in the coding of separate coder groups on specific themes about the health based virtual community (Kassarjian, 1977; Argan et al, 2006).

It could be said that most of the coding themes are nominal variables, and therefore agreement measures are employed for calculating the reliability of nominal variables (Avery and Ferraro, 2000).

For any specific theme, the agreement ratio for nominal variables is determined according to 0.80 acceptance level (Lerman and Callow, 2004). For the fourteen pre-determined measurement themes 326 coding were made and 92.8% agreement was achieved for the overall coding process.

It was calculated that the agreement ratio of for all the fourteen themes was above 95.3% which is above the minimum acceptance level of 0.80. Kappa (agreement measure) and correlation analysis are also used in determining the inter-coder reliability as supportive tools.

The calculations showed that Kappa and correlation values proved significant relations for all themes at .01 significance levels (See Table: 1).
<table>
<thead>
<tr>
<th>Coding Themes</th>
<th>% of Agreement</th>
<th>Kappa (p)</th>
<th>Correlation (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Services</td>
<td>87.6</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Customization Services</td>
<td>86.8</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Interactivity Services</td>
<td>94.9</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Marketing Applications</td>
<td>98.6</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Forums and Numbers of Message and Subjects</td>
<td>100</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Numbers of Message and Subjects of Doctor Forums</td>
<td>100</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Message Contents of Doctor Forums</td>
<td>97.8</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Numbers of Message and Subjects of Just Us Forums</td>
<td>100</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Message Contents of Just Us Forums</td>
<td>92.3</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Numbers of Message and Subjects of From Me to You</td>
<td>100</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Forums</td>
<td>94.6</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Message Contents of From Me to You Forums</td>
<td>100</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Numbers of Message and Subjects of Top Secret Forums</td>
<td>87.3</td>
<td>.000**</td>
<td>.000**</td>
</tr>
<tr>
<td>Message Contents of Top Secret Forums</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most reading and replaying Message Themes</td>
<td>94.8</td>
<td>.000**</td>
<td>.000**</td>
</tr>
</tbody>
</table>

*p< .05; ** p< .01

Services Categories
In terms of basic headings, there are a total of 22 subject headings or categories in the home page of the site. 14 (63.6%) of these subjects have sub-subjects or constitute of headings that present the opportunity for information or experience. It can be said that these 14 areas that remain outside subjects like searching the site and contact us can be said to constitute the main building blocks of the site since they constituted the most decisive subjects of the site in relation to subjects like health information, chatting, sharing of experience (Table 2).

Table 2.
Areas in the Web Site About the Sharing of Information and Experience

<table>
<thead>
<tr>
<th>Information and Experience Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s health</td>
</tr>
<tr>
<td>Psychology</td>
</tr>
<tr>
<td>Nutrition</td>
</tr>
<tr>
<td>Your selections</td>
</tr>
<tr>
<td>Forums</td>
</tr>
<tr>
<td>Writers</td>
</tr>
<tr>
<td>Disable children</td>
</tr>
<tr>
<td>Our other children</td>
</tr>
<tr>
<td>Chat rooms</td>
</tr>
<tr>
<td>Baby diaries</td>
</tr>
<tr>
<td>Birth stories</td>
</tr>
<tr>
<td>Playground</td>
</tr>
<tr>
<td>Promotion</td>
</tr>
<tr>
<td>Quiz</td>
</tr>
</tbody>
</table>

At the end of the site analysis services were dealt with according to the classification put forth by Leimeister, Daum and Krcmar (2002) and were categorized as information services and interactive services. And information services were examined under the two categories of general and personalized.
The site was analyzed as a general information services site and it can be seen that there are informative news items and reports as well as links to other sites. Bulletins and activities are also present at the site that was analyzed as general information services. In terms of personalized information, the name of the member is placed at the right side of the site, and information such as e-mail notification services and the list of other members are being offered. With the settings link members can make the changes they wish to get personalized information and e-mail messages.

Under the category of interactive services there are boards and forums. Also, members are able to chat in the chat rooms and follow developments through the bulletin area. To attract interest in the site, multi player or single player games are used to offer an experience to visitors. Ratings are determined with a scoring system based on stars that represent the quality and trustworthiness of the information being offered. There is the opportunity to interact with members or site administrators via e-mail.

Detailed information is being offered to members and the other participants of the site under five main categories. These main categories are nutrition, children’s health, psychology, development and pregnancy and birth.

There is detailed sub-categorical information under each main category. For example, under the category of nutrition there are general children’s nutrition, the effects of nutrition on the mental development of children, mother’s milk and formulas, the nutrition of babies and supplementary foods, vitamins and minerals. The ratings (voting with stars) of the site’s participants are noticeable when each information category is clicked.

**Forums**

There were four main forums by the date of this study (3 November 2007). These forums are “Doctor Forums” “Just Us Forums”, “From Me to You Forums” and “Top Secret Forums.” The number of messages sent the number of subjects and the ratios of the forums analyzed within the context of this study have been given in Table 3.

When the ratio of messages sent to the four main forums is analyzed, the number of messages sent to the Just Us forums was 1.318.484 and their ratio is 93.6%. The second one is the top secret forums with a ratio of 2.7%, the third is doctor forums (2.5%). Similarly, in terms of the number of subjects the Just Us forums have the highest ratio with 64.6% and the doctor forums come second with 30%.

<table>
<thead>
<tr>
<th>Forum Name</th>
<th>Number of Messages</th>
<th>Message %</th>
<th>Number of Subjects</th>
<th>Subject %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor Forums</td>
<td>34.348</td>
<td>2.5</td>
<td>15.133</td>
<td>30.0</td>
</tr>
<tr>
<td>Just Us Forums</td>
<td>1.318.484</td>
<td>93.6</td>
<td>32.616</td>
<td>64.6</td>
</tr>
<tr>
<td>From Me to You Forums</td>
<td>17.452</td>
<td>1.2</td>
<td>1.023</td>
<td>2.0</td>
</tr>
<tr>
<td>Top Secret Forums</td>
<td>38.356</td>
<td>2.7</td>
<td>1.727</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.408.640</strong></td>
<td><strong>100</strong></td>
<td><strong>50.499</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 3.
The Number of Messages and Subjects in the Main Forums
Doctor Forums

The number of messages sent to the sub categories of the "Doctor Forum" and their ratios are extremely important in terms of obtaining information about health because the messages sent here are being answered by the consultant doctors of the site and these answers usually contain medical information. Members interact with 5 sub categories under the Doctor Forum. 80.1% of the messages sent to the forums under the Doctor Forum are about children's health and childcare and 7.5% focus on internal diseases (Table: 4). Five sub forums can be seen under the children's health and childcare forum. These sub forums are child diseases, nutrition, vaccination, approaches to children and other. When we analyze the percentages of the messages sent to the sub forums under the children's health, "children's diseases" come first with 45.4 % and the second one is "nutrition" with 25.4%.

Table: 4.
The Number of Messages Subjects in the Sub-Forums Under the Doctor Forums

<table>
<thead>
<tr>
<th>Forum Name</th>
<th>Number of Messages</th>
<th>% Within the Category</th>
<th>Number of Subjects</th>
<th>% Within the Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s Health and Childcare</td>
<td>27.513</td>
<td>80.1</td>
<td>12.082</td>
<td>79.9</td>
</tr>
<tr>
<td>Internal Diseases</td>
<td>2.576</td>
<td>7.5</td>
<td>1.094</td>
<td>7.2</td>
</tr>
<tr>
<td>Children’s Development and Education</td>
<td>1.368</td>
<td>4.0</td>
<td>560</td>
<td>3.7</td>
</tr>
<tr>
<td>Mouth and Dental Health</td>
<td>911</td>
<td>2.6</td>
<td>393</td>
<td>2.6</td>
</tr>
<tr>
<td>Women’s Health, Pregnancy and Birth</td>
<td>1.980</td>
<td>5.8</td>
<td>1.004</td>
<td>6.6</td>
</tr>
<tr>
<td>Total</td>
<td>34.348</td>
<td>100</td>
<td>15.133</td>
<td>100</td>
</tr>
</tbody>
</table>

One of the forums used interactively and actively is the doctor forums. When 25 messages in the sub category where the most messages are sent are analyzed, it can be seen that a total of 12.463 messages were sent to the one called children’s health under the category of children’s health and childcare. When the last 25 messages sent to the sub category called children’s health are analyzed it can be seen that mostly questions aimed to obtain medical information are asked to the doctors.

According to the classification made to see on which subjects the last 25 messages are concentrated, 28% are about colds (7 messages), 16% are about urinary tract infections (4 messages), 12% are about diarrhea (3 messages and the other 44% are about blood, sleeping, heart and tonsils (11 messages). It is also possible to determine how often the messages in the forums are read and answered.

In the analysis to determine this, it was seen that the message about urinary tract infection was the most read message. This message was read 146 times (9.6%) and was answered 6 times (14.7%). It can be easily stated that in terms of the qualitative characteristics of the messages sent to the doctor forum, they have the purpose of obtaining information from an expert who is taken as a reference. As an example of these messages the answer given to a message sent by a mother can be analyzed. The mother who is a member of the site asks a question about her daughter's urinary tract infection and gives her daughter’s test results for the doctor to respond. The answer given to this question by the doctor is exactly so:
"Hi,
There could be various reasons for the discharge. Even if at first there is no infection, an infection may develop afterwards. The test results look normal. Reproduction and urine tests are not always parallel to each other but the colony number of the reproduction is important. Sincerely yours”.

Similarly a message sent by a mother under the subject of urgent and the answer given by the doctor are as follows:

"Mother:
My 6 year old daughter got chicken pox. I have premature baby who was born on the 33rd week who is 15 days old now. I am scared that the baby will catch the disease please help me what should I do”.

Doctor:

"Hi, If the mother is immune to chicken pox it is not expected that 15 days old baby will catch the disease. The preventive that pass from the mother are effective for about 6 months. If your older child had been immunized she would not have caught the disease at all. Best regards”

Just Us Forums
There are eight sub forums of the just us forums. When the number and ratio of the messages sent to these sub forums are analyzed, the “games-surveys-quotes” forum comes first with 22.8%, and the last one is the forum called “meetings, mutual aid-consumer corner” with a ratio of 2.6%. In terms of the ratio of the number of subjects, the forum called “the experience pool” comes first with 25.4% (Table 5).

<table>
<thead>
<tr>
<th>Forum Name</th>
<th>Number of Messages</th>
<th>% Within the Category</th>
<th>Number of Messages</th>
<th>% Within the Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hello Friends</td>
<td>126.535</td>
<td>9.6</td>
<td>2.680</td>
<td>8.2</td>
</tr>
<tr>
<td>Experience Pool</td>
<td>142.027</td>
<td>10.8</td>
<td>8.259</td>
<td>25.4</td>
</tr>
<tr>
<td>Travels to the Baby</td>
<td>188.420</td>
<td>14.3</td>
<td>3.180</td>
<td>9.8</td>
</tr>
<tr>
<td>By the Fountain</td>
<td>232.164</td>
<td>17.6</td>
<td>8.238</td>
<td>25.2</td>
</tr>
<tr>
<td>Us and Our Babies</td>
<td>204.379</td>
<td>15.5</td>
<td>2.792</td>
<td>8.6</td>
</tr>
<tr>
<td>Meetings-Mutual Aid-Consumer Corner</td>
<td>34.348</td>
<td>2.6</td>
<td>2.613</td>
<td>8.0</td>
</tr>
<tr>
<td>Smell of Food</td>
<td>90.019</td>
<td>6.8</td>
<td>2.051</td>
<td>6.2</td>
</tr>
<tr>
<td>Games-Surveys-Quotes</td>
<td>300.592</td>
<td>22.8</td>
<td>2.803</td>
<td>8.6</td>
</tr>
<tr>
<td>Total</td>
<td>1.318.484</td>
<td>100</td>
<td>32.616</td>
<td>100</td>
</tr>
</tbody>
</table>

A total of 219.629 messages were sent to the “for fun” forums under the “games-surveys-quotes” category within the just us forums. When 25 messages sent to the said forum were analyzed, it was seen that these messages expressed subjects too varied to be categorized.

For example, one of the members of the site asked “what did you last purchase?” and the answers given were Nescafe, syrup, pajamas etc.
Similarly, when the messages sent to this forum were analyzed it was seen that the members of the site do not only sent messages about their babies and children or to have fun, but that they also send messages about current events in Turkey in October 2007. Other than these messages, there are messages containing fun subjects and chitchat like games, questions, and riddles. One message sent by a member is as follows:

"When the water rises the fish eat the ants
When the water recedes the ants eat the fish
No one should rely on the dominance and power they have today
Because who will eat whom is decided by the water’s flow..."

From Me to You Forums
There are two sub forums of the from me to you forums. When the distribution of the percentages of the messages sent to these sub forums is analyzed it is seen that the forum called “from me to you” comes first (81.1%) (Table: 6).

<table>
<thead>
<tr>
<th>Forum Name</th>
<th>Number of Messages</th>
<th>% Within the Category</th>
<th>Number of Subjects</th>
<th>% Within the Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Me to You</td>
<td>14.154</td>
<td>81.1</td>
<td>846</td>
<td>82.7</td>
</tr>
<tr>
<td>Special Folders</td>
<td>3.298</td>
<td>18.9</td>
<td>177</td>
<td>17.3</td>
</tr>
<tr>
<td>Total</td>
<td>17.452</td>
<td>100</td>
<td>1.023</td>
<td>100</td>
</tr>
</tbody>
</table>

A total of 6,991 messages were sent to the sub forum called “from life” under the from me to you forums. When the last 25 messages sent to this category were analyzed, the most read message (10.242) was the message of a mother whose daughter had died. In this message which is one of the most read and answered messages the mother wrote the following lines:

"My princess, my dear daughter my Rana
I put my longing on the clouds
I flashed my love with lightning
I rained my tears with rain drops
I sent little angels to kiss you
Did they come?"

In the messages within this category there are those of death and sadness (24%), happy news (24%), sharing of experience (12%), diseases and help (20%) and other subjects (20%).

Top Secret Forums
Lastly, there are two sub forums under the top secret forums. Of these forums, the ratio of the messages sent to the forum called “openly secret” is 96.5% (Table: 7).
Table 7.
The Number of Messages and Subjects in the Sub Forums of the Openly Secret Forum

<table>
<thead>
<tr>
<th>Forum Name</th>
<th>Number of Messages</th>
<th>% Within the Category</th>
<th>Number of Subjects</th>
<th>% Within the Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openly Secret</td>
<td>37.032</td>
<td>96.5</td>
<td>1.334</td>
<td>77.2</td>
</tr>
<tr>
<td>From the Heart Forums</td>
<td>1.324</td>
<td>3.5</td>
<td>393</td>
<td>22.8</td>
</tr>
<tr>
<td>Total</td>
<td>38.356</td>
<td>100</td>
<td>1.727</td>
<td>100</td>
</tr>
</tbody>
</table>

The most messages were sent (36.816) to the forum “about life” under the sub-forum called “openly secret” which is located under the top secret forums. As it can be understood from the name of this forum, members share their special and private information with each other.

When the last 25 messages sent to this forum are analyzed it can be seen that members have sent messages on various subjects from divorce to contraception methods. Since each of the subjects within this form has a different characteristic, they can be said to be very difficult to categorize. The following message contains the sharing of a private problem by a female member with other women:

"Hello ladies
In my problem the jealousy and grumpiness of my husband is very unfavorable to me. For example when I tell him should we go out honey he says what do you want to do outside sit where you are. He breaks my heart... I wonder did he come down from a mountain or something? Also he does it when we're with other people..."

When the ratio of the number of times the last 25 messages were read and answered is analyzed, the high reading ratio (34.7%) and the high response ratio (23.3%) of the message written by the mother who had lost her child are noticeable. While the message about bronchitis under the doctors’ forums which have the purpose of obtaining information was read with a ratio of 9.6%, its response ratio (14.7%) is higher. Ratios about other subjects can be seen in Table 8.

Table 8.
The Most Read and Answered Messages and Their Themes

<table>
<thead>
<tr>
<th>Forums</th>
<th>Message Themes</th>
<th>Reading %</th>
<th>Response %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors Forums</td>
<td>Bronchiti</td>
<td>9.6</td>
<td>14.7</td>
</tr>
<tr>
<td>Just Us Forums</td>
<td>Information on a Special Site</td>
<td>16.5</td>
<td>14.4</td>
</tr>
<tr>
<td>From Me to You Forums</td>
<td>The Mother Who Had Lost Her Baby</td>
<td>34.7</td>
<td>23.3</td>
</tr>
<tr>
<td>Top Secret Forums</td>
<td>About the Member With a Malign Purpose</td>
<td>14.8</td>
<td>14.8</td>
</tr>
</tbody>
</table>
DISCUSSION AND IMPLICATIONS

In the evaluation carried out within the context of the case study being discussed, it is seen that many people use virtual communities extensively to obtain health information, share their experiences and to complete their socialization process. Even though virtual communities about health are established basically to obtain health information, the members of virtual communities used these communities not only to obtain information about health, but also as a part of the socialization process.

It is possible to obtain information in two ways within the context of health-based information. The first of these is to make use of information put on the site and on the database, the other is to interactively ask for the opinion of the experts of the site or community. In the case study examined, it was seen that both methods were used extensively.

Within the context of the analyzed site and in terms of virtual communities related to health in general, it can be stated that the members not only make use of the information given by the site about the general subject it covers, but also the participation of other members to obtain support about private subjects. When the site whose content analysis is made is examined, it was seen that more than obtaining information about health, the members share private subjects and subjects about shopping with each other.

In this sense, virtual communities are seen to reflect an important part of real life. These situations that contradict the idea that the internet is isolates people can be evaluated as proof that this tool can play an active role in patients finding social support.

In health based virtual communities most marketing practices (sponsorships, banner ads, e-services, promotions) should be carried out in a conscious manner. One of the most important things to be considered when doing so is the appropriate segmentation of the target audience. For this purpose, a database on the users of the site should be developed and the questions asked during registration should be designed to put forth the profile of the member. Also, special services for members can be offered by making careful personalization arising especially from the characteristics of health services. With all these marketing practices, professionals working in healthcare can use virtual communities as important tools for providing services.

LIMITATIONS AND FUTURE RESEARCH

The number of messages and subjects analyzed in the forums within the context of a thematic analysis are as of the date of this study. The virtual community dealt with in the context of this study is not enough to make a generalization. Extending the scope of this study to include sites containing similar categories would yield more generalized and useful results.

To supplement this thematic study, carrying out ethnographic studies on the messages in the future would yield more useful results. Ethnographic studies connected with the theoretical framework and on themes that will be determined in the context of the subject of analysis would present more detailed information about virtual communities both sociologically and as consumer groups. Comparative cultural studies would also give profound insights about groups that use virtual communities.
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AUGMENTED REALITY
THE HORIZON OF VIRTUAL AND AUGMENTED REALITY:
The Reality of the Global Digital Age

Publisher: InTech, 230 Pages, January 2010

Reviewed by Yasin OZARSLAN
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Virtual Reality (VR) is 3-D spatial environment in which users can participate in real-time. VR is a computer-generated interface that involves real-time simulation and interactions through multiple sensorial channels. Although virtual reality replaces the real world with a simulated one, Augmented Reality (AR) mixes or overlaps computer-generated virtual objects with real-world scenes or objects. AR enhances one’s current perception of reality by integrating virtual objects into a physical scene. AR technology provides a facility to overlap real video images with virtual computer graphics images. This generated virtual objects become, in a sense, an equal part of the natural environment.

Nowadays Augmented and Virtual Reality technologies are increasingly being used in fields such as: entertainment, military; medicine; education; engineering design; robotic; telerobotic; manufacturing, maintenance and repair applications; consumer design; psychological treatments.

This book collects the case studies of AR and VR technologies and applications, new techniques, theory and standards. This book gives information about potential, a continued strength, and penetration of AR and VR technologies in various application domains. It also addresses challenges facing the development of the technology. The book’s broader audience is anyone who is interested in the field of AR and VR and the deployment of the technology in various novel applications.

The book is edited by Soha Maad who is an Associate member of HRB Centre for Primary Care Research, Royal College of Surgeons in Ireland. It is consisted of 230 pages covering 13 articles and provides information about potential applications of AR and VR technologies. It is divided into three categories.

The first category considers novel approaches for the development AR and VR technologies. Chapter 1 presents some tools that apply multiple coordinated views or augmented reality to different fields in information visualization.
Chapter 2 explores major challenges associated with AR and addresses the latter of these challenges. Chapter 3 presents a hardware/software co-design strategy based on Field Programmable Gate Array (FPGA) devices and Electronic System-Level (ESL) description tools as an alternative to the traditional software-based approach. The objective of this chapter is to provide a clear vision of the possibilities of FPGA devices and the new development methodologies for embedded AR systems.

The second category considers the penetration of AR and VR technologies in various application domains including healthcare, medicine, assembly, entertainment, etc. Chapters 4 and 5 are covering the penetration of AR and VR technologies in medical and healthcare applications. In Chapter 4 a realistic virtual harp was created to assist individuals with disabilities for their rehabilitation therapy using augmented reality technology and a haptic device. Chapter 5 focuses on activity to facilitate minimally invasive treatment: the development and application of augmented reality (AR) technologies for guidance and navigation during surgical procedures. On the other hand chapters 6, 7, 8, and 9 are covering the penetration of AR and VR technologies in assembly and industrial applications. Chapter 6 speculates the issues and discrepancies involved in the present practice of assembly task, recommend a novel utilization of AR animation technology in this area, and discusses the potentials of using AR animation in guiding product assembly task. Chapter 7 investigates tangible interfaces and AR. A novel and efficient interaction paradigm was developed with the digital master for better perceive, understand and add contents to Engineering Data Management (EDM) knowledge. Chapter 8 gives suggestions for smooth and effective introduction of AR technology to industries. They review how the performance of workers using AR-based manuals is changed by differences in the workers themselves, the work environment and the information presented by HMDs, based on behavioral, physiological and psychological data. In chapter 9, a novel non-rigid registration method for augmented reality applications with the use of AAM algorithm and factorization method which can obtain the 3D shape basis, object configuration and 3D pose simultaneously is introduced. And finally chapters 10 and 11 are covering the penetration of AR and VR technologies in entertainment and service oriented applications. Chapter 10 evaluates the effectiveness of augmented reality (AR) user interface for playing card games and chapter 11 studies on the visualization techniques of geographic information in augmented reality environment.

The third category considers the horizon of emerging new potential applications of AR and VR technologies. Chapters 12 assesses the potential of Virtual Reality and Augmented Reality technologies in supporting the dynamics of global financial systems and in addressing the grand challenges posed by unexpected events and crises. Chapters 13 covers the potential support of AR and VR technologies for social application domains and activities and it presents a framework for multi-disciplinary collaboration.

Finally this book presents applications and case studies that provide useful information about challenges, pitfalls, and successful approaches in the practical use of AR and VR technologies. The book is ideal for understanding the potential of those technologies. As a result, the implementations and recommendations are provided about AR and VR technologies in detail could be a good point of view for practitioners and researchers.

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MARKETING ONLINE EDUCATION PROGRAMS
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Online and distance education institutions need a communication that should differentiate and separate them from the other counterparts not only in their own category but also in the category of traditional educational institutions. That kind of communication is one of the tools of integrated marketing communication. In this book, authors discuss marketing issue related with distance and online learning concept under the integrated marketing communication perspective. It gives very rich content about marketing for distance and online education programs, new technologies, social media, cross-cultural applications written by many authors from different countries around the world.

Topics of the book is cover on building corporate identity for educational institutions, cultural and regional issues in educational product development, Defining the role of online education in today’s world, individualization of open educational services, integrated marketing communications, measuring the impact of educational promotions, new customers and new demands, open and Distance education, reputation issues in online education and sustainable communication before, during and after enrollment

The book divvied in to 5 sections.

Section 1 mentioned that "The Role of Marketing and Communication in Online and Distance Education (DOL) which provides a framework to explain the importance of educational marketing concept. The role of brand management, advertising and other integrated marketing communication tools for the online/distance education programs are explained adequately."
The second section entitled as “Social Media and New Technologies”. This section focused on mobile learning that is the latest stage information society has which is reached. On the other hand, the useful vehicles such as Facebook, Youtube, and twitter, Flickr, LinkedIn and Second Life are examined in the case studies concerning the online and distance education institutions. With technology, institutions need to make sure that they are not too far ahead of the customer’s needs. A distance and online learning should be monitoring market and industry developments to determine whether global economic or domestic shifts warrant the use of technologies not only for effective e-learning but also for marketing purposes.

The section on the role of pedagogy and related concepts in marketing online and distance education programs includes e-pedagogy, health care communities as distance and open learning environment and health education.

The fourth section definitely offers cross-cultural implications of distance learning in Turkey, Africa, India and Spain. Web page is very important marketing communication tools for DOL institutions. It seems as storefront for the institutions. Every institution has to put most unique specialty on that storefront.

The last but not least, section fifth focuses on individualization, finance, leadership, other related concept in online and distance education.

Overall, this book is useful information source for online and distance education practitioners and academicians who are eager for learning this discipline.

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