From the Editor-in-Chief

Articles

USING MOBILE PHONES TO PROMOTE LIFE SKILLS EDUCATION

Dear TOJDE Readers,

Welcome to the Volume 14 Number: 3 of TOJDE!

In this issue, 17 articles of 28 authors from 9 different countries around the world have been published. These published articles are arrived to the TOJDE from, Greece, India, Iran, Malaysia, Pakistan, Thailand, Turkey and USA.

The 1st article is arrived from Greece and written by Evangelia MANOUSOU, Tutor-Counselor and Antonis LIONARAKIS. Their article deals with a documented research in order to create a pedagogical framework for the application of a supplementary distance learning program in the field of environmental education for pupils of primary education, in remote and multi-grade schools of Greece. This prospect has been considered as an interesting idea with multilateral, socio cultural and democratic dimensions, as it could enrich the school and learning environment of children of the outermost regions. In this paper, there are described the planning criteria and the development of a polymorphic pedagogical material for distance learning, under the title: 'Captain SOS, His Bunch and the Moving Island', the needs according to the characteristics of the target group, the choice of learning theories and the determination of the teaching techniques, the specific teaching techniques and the teaching methodology, the structure of the learning material, the characteristics and the structure of the educational software, the categorization of activities, the supplementary learning material. Moreover, there are described the pilot application and the ways of the evaluation.

In the 2nd article is mentioned in context, he emergence of video sharing technology and high-speed broadband connectivity initiative offers a great choice for users throughout the world to share videos online. However, most of the video sharing sites are not primarily educational. Therefore, this study intends to introduce a framework in choosing and installing open source products for teachers and students in developing specialized online video sharing platform for open education. The paper also reports a comparison study on four most credible open source video management systems (VMS) and titled as "OPEN SOURCE VIDEO MANAGEMENT SYSTEM (VMS) FOR OPEN EDUCATION: A Comparision Study", which is written by Ahmad Zamzuri MOHAMAD ALI, Faculty of Art, Computing and Creative Indusrty, Universiti Pendidikan Sultan Idris, 35900, Tanjong Malim, Perak, Malaysia.

The 3rd article from Turkey which is written on "EXAMINING UNIVERSITY STUDENTS' COGNITIVE ABSORPTION LEVELS REGARDING TO WEB AND ITS RELATIONSHIP WITH THE LOCUS OF CONTROL", written by Cem CUHADAR, from Trakya University, Faculty of Education, Department of Computer Education & Instructional Technologies, Edirne, Turkey. This current study investigated university students' cognitive absorption levels according to several variables, and presented the relationship between cognitive absorption and locus of control. Study resorted to a descriptive model. Participants were 374 undergraduate students. The Cognitive Absorption Scale and Locus of Control Scale were used to collect the data. Independent samples t-test, one-way between-groups ANOVA, correlation and regression analyses were used to analyze data. Findings suggested that university students had above average cognitive absorption.

Moreover, the higher the general internal control/personal control was, the lesser the cognitive absorption level. It was plausible to infer that information and communication technologies served as sources of pleasure and curiosity for university students. However, for students with a higher internal locus of control, levels of pleasure and curiosity dropped.

The fourth article written on "STEPP: A Grounded Model to Assure the Quality of Instructional Activities in e-Learning Environments" by Hamdy AHMED ABDELAZIZ who is Associate Professor of e-Learning and Training Arabian Gulf University, Bahrain & College of Education, Tanta University, Egypt. The present theoretical paper aims to develop a grounded model for designing instructional activities appropriate to e-learning and online learning environments. The suggested model is guided by learning principles of cognitivism, constructivism, and connectivism learning principles to help online learners constructing meaningful experiences and moving from knowledge acquisition to knowledge creation process. The proposed model consists of five dynamic and grounded domains that assure the quality of designing and using e-learning activities as social, technological, Epistemological, psychological and pedagogical Domain. Each of these domains needs four types of presences to reflect the design and the application process of e-learning activities. These four presences which are cognitive, human, psychological presence and mental presence. Applying the proposed model (STEPP) throughout all online and adaptive e-learning environments may improve the process of designing and developing e-learning activities to be used as mindtools for current and future learners.

The 5th article is arrived from Iran which is written on "THE RELATIONSHIP BETWEEN CHARACTERISTICS OF GOOD LANGUAGE LEARNERS AND THE ESPECIAL EMPLOYED LEARNING STRATEGIES DURING EDUCATIONAL CONTEXT" written by Fateme BEHABADI, Islamic Azad University, South Tehran Branch, Palestine Square, Department of Persian Literature and Foreign Languages and Behnam BEHFROUZ from Applied-Science University, Motahary Martyr Street, Joghatay City, Khorasan Razavi Province, Iran. They emhasis in their study that most of the early studies in the field of language learning strategies focused on identifying the characteristics of good language learners. Identifying and discussing the strategies used by good language learners were considered as a good way to make the learners aware of the notion of language learning strategies. The present study was an attempt to collect and classify the characteristics of representative good language learners, developing English as a foreign /second language in Iran; specifically those who had achieved high scores in the IELTS General Module. And also this study aimed at identifying the characteristics associated with a good language learner in one area: learning strategies. Thirty-four Iranian IELTS candidates receiving 6+ band score were selected to participate in this study. They were interviewed and asked to write down their own reports of the experiences they had in developing their second language. They were asked to report their preferred strategies while studying English as well. They were also requested to fill out the learning strategy and learning style questionnaires. The results of interviews and open ended questions were specifically organized and classified via employing both descriptive and explanatory methods. The learners' responses to the standardized questionnaires also were analyzed by SPSS system Version 20. The findings of the present study although revealed that there is a high correlation between IELTS scores, strategy taking inventory scores. This revealed that the learners recording high scores in IELTS use appropriate learning strategies.

6th article is again from Malaysia. Article is titled as "ATTITUDE TOWARDS THE USE OF LEARNING MANAGEMENT SYSTEM AMONG UNIVERSITY STUDENTS: A Case Study" written by Fuad A. A.TRAYEK and Sharifah SARIAH SYED HASSAN from Institute of Education International Islamic University Malaysia. Learning management system (LMS) is a learning platform for both full time and distant learning students at the International Islamic University in Malaysia (IIUM). LMS becomes a tool for IIUM to disseminate information and learning resources to the students. The objectives of this study were to investigate students' attitudes toward the use of LMS, to verify the impact of perceived usefulness and perceived ease of use on attitude towards use of learning management system, to examine the differences in attitudes toward the use of LMS between distance learning and full time students. The results of the study showed that perceived ease of use and perceived usefulness determine students' attitudes toward the use of LMS. However, this study did not find any significant differences between distance learning and full time students. According to the findings the study recommended that the University should continue using LMS because it is useful for both distance learning and full time students. Further suggestions are made to customize and upgrade the LMS suitable for innovative teaching and learning.

7th article is from from Turkey and titled as "WEBFOLIO APPLICATION IN PRIMARY EDUCATION: Qualities and Usability of Webfolio System", written by Dr. Sayım AKTAY, as thesis from Giresun University, Faculty of education, Department of Primary Education, Classroom Teaching, and Mehmet GULTEKIN, from Anadolu University, Faculty of Education, Department of Primary Education, Classroom Teaching, Eskisehir, Turkey. They metion that in today's world, educational establishments should follow and utilize technological developments in order to improve the quality of educational activities. One of the fields that technology can be integrated into educational establishments is evaluation. There is a tendency of process evaluation in today's evaluation field, and portfolios are among these process evaluation tools. In order to provide a faster and easier process, portfolios have been prepared in electronic settings and transformed into e-portfolios. Moreover, in time, e-portfolios had to be moved into web to improve their efficiency, and web-based-portfolio (Webfolio) emerged.

The aim of this study is to identify the qualities of products, which came up as a part of webfolio application applied in primary education, and to determine the use of webfolios both by students and teachers. In this study, which aims to determine how effective webfolios are, one of the qualitative research designs, Natural Inquiry Approach was preferred. In this study, one of the purposeful sampling methods, criterion sampling was used was held in a private school connected to National Education Directorate of Eskisehir in 2008-2009 academic year spring term. Webfolios prepared by students, assignments given by the teacher, and other digital data available in webfolio system were used as data collection tools.

When student webfolios were examined concerning their quality, most webfolios prepared by the students were found to be qualified enough in terms of readability, authenticity, timeliness, and the use of media sources. However, most of the student webfolios do not have a systematic design. The assignments given by the teacher was determined to be readable, clear, and has no misspelling. It was also observed by them that the teacher urged students to deliver their webfolios in time, suggested the use of class book and the Internet. Students, in their webfolios, preferred using text, picture and tables, but did not prefer to use video sources.

The 8th article is titled as "SWOT ANALYSIS OF MA EDUCATIONAL PLANNING AND MANAGEMENT PROGRAMME OF ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD" written by Dr. S. Manzoor Hussain SHAH and uazzam Ali SAQIB from Allama Iqbal Open University Islamabad, Pakistan. Their major objectives of the study were to explore various internal aspects of the MA Educational Planning and Management (EPM) programme of Allama Iqbal Open University (AIOU), Islamabad to find its strengths and weaknesses, and to look into external aspects for identifying the opportunities and threats to the programme. Based on the study, a number of strengths, weaknesses, opportunities, and threats were found which provided a basis for reviewing and revising a number of components of the programme. The study explored the various aspects of MA EPM programme of AIOU in the light of programme objectives as well as the national and international needs with special considerations to a distance education programme.

The finding of the study revealed recognition of a number of strengths and opportunities of the programme related to enrolment, workshops, examination, job placement, job satisfaction, and performance of the graduates in a competitive environment. At the same time, the study reflected few weaknesses and threats to the programme associated with the written assignments, tutors, study material, study tours, relevance of the curriculum to local needs, need to update the content, and revision of the curriculum. Recommendations of the study include periodically revising the curriculum, upgrading the courses books, improving the evaluation methods of assignments, introducing more activities for both learning and evaluation, and including study tours in the workshops.

The study also recommended the EPPSL department to induct part-time/visiting faculty members in emergency situations to achieve the programme objectives. The researcher further recommended the EPPSL department to maintain the record of the graduates for prompt access to them for research purposes and to train the students for offering more cooperation with the researchers. More follow-up studies may be conducted to determine the viability and impact of EPM programmes of AIOU on the society.

The 9h article is from Turkey and titled as "ASSESSING CONCEPTUAL UNDERSTANDING IN MATHEMATICS: Using Derivative Function to Solve Connected Problems", written by Nevin ORHUN, from Anadolu University, Science Faculty, Eskisehir, Turkey. According to the author open and distance education plays an important role in the actualization of cultural goals as well as in societal developments. This is an independent teaching and learning method for mathematics which forms the dynamic of scientific thinking. Distance education is an important alternative to traditional teaching applications. These contributions brought by technology enable students to participate actively in having access to information and questioning it. Such an application increases students' motivation and teaches how mathematics can be used in daily life. Derivative is a mathematical concept which can be used in many areas of daily life. The aim of this study is to enable the concept of derivatives to be understood well by using the derivative function in the solution of various problems. It also aims at interpreting difficulties theoretically in the solution of problems and determining mistakes in terms of teaching methods. In this study, how various aspects of derivatives are understood is emphasized. These aspects concern the explanation of concepts and process, and also their application to certain concepts in physics. Students' depth of understanding of derivatives was analyzed based on two aspects of understanding; theoretical analysis and contextual application.

Follow-up interviews were conducted with five students. The results show that the students preferred to apply an algebraic symbolic aspect instead of using logical meanings of function and its derivative. In addition, in relation to how the graph of the derivative function affects the aspect of function, it was determined that the students displayed low performance.

The 10th article from Thailand which is written by Orachorn KITCHAKARN from Bngkok University, and titled as "PEER FEEDBACK THROUGH BLOGS: An Effective Tool For improving Students' Writing Abilities". This study is second part research of the autor. The first part was published previously again in TOJDE sı that we publish it to compete eachother. Study is investigated the effects of peer feedback activity through blogs on students' writing ability and examined their attitudes towards peer feedback activity. The research was conducted using a single group pretest-posttest design. Blog, the website, was used as a medium for peer feedback activity. Participants were 34 second-year students who studied EN 013 course (English for Expressing Ideas) in the first semester of the academic year 2012 at Bangkok University. Two writings tests and a questionnaire were used as instruments for data collection to acquire information. The results revealed that students' writing scores on the pretest and posttest were significantly different. It can be concluded that peer feedback activity through blogs had a significant role to play in improving students' writing skill. The students also expressed positive attitudes towards the value of peer feedback activity.

11th article from Uludag University, Turkey and written on "PRE-SERVICE SCIENCE TEACHERS' PERCEPTIONS ABOUT EFFECTIVE DESIGN OF BLENDED UNIVERSITY CHEMISTRY COURSES" by Zehra OZDILEK and Sehnaz BALTACI-GOKTALAY, Faculty of Education Department of Computer Education and Instructional Technologies.

The aim of the study is to examine how blended learning can be used more effectively for university chemistry courses, based on the perceptions of students. The sample included 179 pre-service science teachers in year one through year four who had taken a university chemistry class. Qualitative data were gathered through open-ended questions and semi-structured interviews. The data were analyzed by using descriptive statistics and thematic content analysis. The results revealed necessary design characteristics for an effective blended chemistry course from students' point of view regarding content of online instruction, the teaching methods, interface design, use of media and other visual elements, usability, design techniques, and facilitator role.

The 12h article is experienced as a case study from India. Written by Moumita DAS and Chinmoy Kumar GHOSH, Director National Centre for Innovations in Distance Education (NCIDE) Indira Gandhi National Open University, New Delhi, India on "INNOVATION IN OPEN AND DISTANCE LEARNING SYSTEM: The IGNOU Experience". Authors are discusse a new innovations for the IGNOU by mentioning that The Indira Gandhi National Open University (IGNOU) occupies a prominent position in the academic world by way of shouldering the responsibility of providing quality education to the growing numbers of learners. Its journey of achieving its objectives is marked with the problems of efficiency, equity, quality and benchmarking of the ODL system. The IGNOU had established the experience that there are several impediments to innovation, most of which are of bureaucratic nature. In this paper we present our experience of nurturing innovations with an aim to sensitize the ODL functionaries towards creativity and innovation.

Next and 13th article is about "DIGITAL "TSUNAMI" IN HIGHER EDUCATION: Democratisation Movement towards Open and Free Education" written by Jean D. COMEAU from Segi University, and Penang, and Tung Lai CHENG from School of Business & Administration, Wawasan Open University, Penang, Malaysia. They mentioned and dicussed in their article that results of the digital "Tsunami" changes in education in the 21st has been huge. Recall that in the year 2000 there was no such thing as internet broadband, Facebook or iTunes which is now a daily commodity. No doubt changes in technology will continue to accelerate. Education is about learning. Learning happens everywhere and technology creates a platform of almost limitless opportunities for better learning. With the recent digital development of Open Education Resources (OER) and Massive Open Online Courses (MOOCs), these emergence towards free and open resources and courses has a tremendous potential to democratise education. There is no denying that it's one of the biggest discussions being had in education and around the world. Will the digital 'tsunami' phenomenon revolutionise the landscape of education? Some believe that this new medium will revolutionise both online and conventional education. This paper attempts to explore the hype issues that surround the notion of democratisation movement that gears towards open and free education. This paper looks into the impact and the types of evidence that are being generated across initiatives, organisations and individuals in order to make a summative analysis and recommendations. Finally, this paper hopes to provide some insight into the dynamics of the evolution of digital 'tsunami' in present higher education.

The 14th article is from USA, and entiled as "WHAT'S IN A NAME: The Amateur's View of Good Practices in Naming an Online Educational Program" written by Michael J. ROSZKOWSKI, PhD, Assistant Provost for Evaluation Services, from La Salle University, Philadelphia, USA. He mentioned that branding is considered to be particularly important in the marketing of online educational programs. A critical step to establishing the brand is naming the product appropriately. To this end, one can secure the services of professionals or to rely on a do-it-yourself approach. The research reported here aimed to identify the features that non-professionals (graduate students) consider to be important in the name for an on-line educational product, and to compare these to the recommendations made by naming professionals (as reported in the literature). A survey directed at current and prospective graduate students at a traditional university asked about the desirability of 16 characteristics in the name of a new line of online courses. The six characteristics that were deemed most critical are (in order of importance): self-explanatory, memorable, easy to pronounce, has appealing associations, suggests/hints at the key features, and short. These are the same features that professionals in the business of creating new product names generally consider as best practices in creating a name. The results show that contrary to the concerns expressed by some practitioners in the naming industry, college-educated individuals who do not create names for a living nonetheless demonstrate an awareness and appreciation for the features of a good name in an Internet-based course delivery system.

The 15th article titled as "USING MOBILE PHONES TO PROMOTE LIFE SKILLS EDUCATION AMONG OPEN SCHOOLING STUDENTS: Promises, Possibilities, and Potential Strategies", and written by Pradeep Kumar MISRA, Associate Professor (Educational Technology), Faculty of Education and Allied Sciences, M. J. P. Rohilkhand University, India. Across the globe, life skills education has been usually developed as part of a school initiative designed to support the healthy psychosocial development of children and adolescents.

In other side, formal education system not always provides young people with good opportunities to become confident and realize their potentials. In this back drop, the biggest challenge is to identify the best strategies for providing effective life skills education to those many children who never attend secondary school or reach an age of high vulnerability and risk taking behaviour in the years immediately before reaching secondary school. Considering the situation that in different parts of the world, majority of the youths is having a mobile or will have a mobile soon, the researcher is of the view that mobile phones can be a viable option to offer life skills education to open schooling students coming from different cultural and social settings and backgrounds. Following this approach, present paper mainly discusses about: promises offered by mobile phones for life skills education; possibilities for using mobile phones as an effective, efficient and economical option for offering life skills education; and potential strategies to offer mobile phones supported life skills education to open schooling students.

Next article from again Iran written on SURVEY OF DISTANCE EDUCATION ROLE IN UTILIZATION OF ENVIRONMENT COMPONENTS IN HIGHER EDUCATION by Seyedeh Zahra SHAMSI PAPKIADE, Seyed Mohammad SHOBEIRI and Mohammad Reza SARMADIfrom Peyam-Noor University, Tehran, IRAN. The aim of their research is survey of distance education role in utilization of environment components in higher education. This research in phase of goal is applied and in base of research method is a descriptive survey. Statistical society in this research is student of TEHRAN PNU university in 2010-2011 that research method is in base of stratified sample .this selection has been done among ten provinces that had the most frequency at these universities. It has done with MORGAN formulation for four hundred people. Gathering instruments of information is questioner, which is in base of the research purpose. ALFA Cronbach،s was used for durability and validity (α=0.86).in this research statistical method is descriptive and inferential with SPSS (one-sample T Test). Results illustrated that students believed distance education does not have any role in effect ions of environmental education and Independent-samples T-test shows that distance education instruction will change the environmental behavior of student to achieve goals. Also in view of responders, there are barriers in distance education utilization for performance of environmental education.

The 17th article is from Tuekey conducted on "SUPPORT AND SOCIAL ACTIVITIES IN INTERNET-BASED DISTANCE EDUCATION" and written by Dr. Aslı TIRNOVALI and Assist. Prof. Dr. Figen KILIC from Education Faculty, Department of Educational Sciences, Mersin University Yenisehir, Mersin, TURKEY. In this study, it is aimed to propose practical suggestions through determining the state of support activities and social activities among internet-based educational programs in distance education. In line with this aim, students' and instructors' views related with support activities and social activities practiced in the programs within internet-based distance education models applied in Mersin University Mersin Vocational Schools were gathered. 502 students and 30 instructors participated in the study. The quantitative data was collected through surveys, and the qualitative data was gathered through interviews. Frequencies and percentages were used to analyze the categorical data. Moreover, the qualitative data was analyzed via content analysis.

According to the findings of the study, students needed to get support about education directives, career guidance, technical equipment, and personal problems.

In this issue we published two book reviews. The first issue on "UNIVERSITY TEACHING IN FOCUS:A Learning-centred Approach" which is edited by Lynne HUNT and Denise CHALMERS and reviewed by S. K. PULIST from india. He empasises about the book that The book as the name depicts, focuses on different aspects of university teaching from learner-centred point of view. A wise range of issues has been highlighted and properly addressed by the authors in a very diligent manner. It will help the teachers in constructively engaging the students in effective learning. It is a step forward towards empowering the upcoming teachers with necessary strategies and stand point so that they are able to help the students in enhancing their quality learning. The book would be helpful not only to the novice teachers who have just stepped in the teaching profession but also other stakeholders of higher education system.

2nd book review is on "TRENDS AND ISSUES IN DISTANCE EDUCATION: International Perspectives, Second Edition", edited by Lya Visser, Yusra Visser, Ray Amirault & Michael Simonson and Reviewed by Dr. Dilek ALTUNAY from Mustafa Kemal University, Hatay, TURKEY. She mentioned about the book that this book makes a contribution to the field of distance education by offering a comprehensive overview and analysis of the current trends and issues in distance education.

In addition, the book is well-organized and coherent in terms of presentation. The reader is guided by section editors who provides introduction to the section and an overview of the chapters in the section, which makes the book reader-friendly.

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 meet in our next Issue, on 1st of October 2013.

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DESIGN AND DEVELOPMENT OF A POLYMORPHIC PEDAGOGICAL MATERIAL FOR SUPPLEMENTARY DISTANCE LEARNING IN PRIMARY EDUCATION IN THE FIELD OF ENVIRONMENTAL EDUCATION IN GREECE

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ABSTRACT

This article deals with a documented research in order to create a pedagogical framework for the application of a supplementary distance learning program in the field of environmental education for pupils of primary education, in remote and multi-grade schools of Greece. This prospect has been considered as an interesting idea with multilateral, socio cultural and democratic dimensions, as it could enrich the school and learning environment of children of the outermost regions.

In this paper, there are described the planning criteria and the development of a polymorphic pedagogical material for distance learning, under the title: 'Captain SOS, His Bunch and the Moving Island', the needs according to the characteristics of the target group, the choice of learning theories and the determination of the teaching techniques, the specific teaching techniques and the teaching methodology, the structure of the learning material, the characteristics and the structure of the educational software, the categorization of activities, the supplementary learning material. Moreover, there are described the pilot application and the ways of the evaluation.

Keywords: **Distance learning, pedagogical material, environmental education, primary education.**

INTRODUCTION

Distance learning in primary education is a form of education, which on an international level has an important history, as there are countries such as New Zealand, Australia, Canada and the USA, in which it is been applied from the end of the nineteenth century, and up to the beginning of the twentieth in other countries (Vassala, 2005, Manousou, 2002, 2004). Distance education for schools has been developed to address the difficulties and gaps in the conventional system of education (Chatziplis, Vassala & Lionarakis, 2007, Olcott, 2013).

Given the nature and the framework which operates from within, throughout history it has been in line with technological developments, which reclaim in an appropriate way for the adequate communication educators-pupils and for the qualitative creation of the learning material (Lionarakis, 2006). A particular emphasis has been given on the quality characteristics of distance learning, in which the distance is no longer a decisive factor, and the exploitation of various means of education, and forms of communication, the pluralism of the learning principles determine the versatility, shaping the definition of polymorphism (Lionarakis, 2001). In Greece distance learning is at an early stage, as it is little more than a decade old and mostly used at a higher education level.

THE PLANNING CRITERIA AND THE DEVELOPMENT OF A POLYMORPHIC PEDAGOGICAL MATERIAL FOR DISTANCE LEARNING 'CAPTAIN SOS, HIS BUNCH AND THE MOVING ISLAND'

The quality of the pedagogical material depends on the general learning design, in the context in which it sets out the learning theories to be developed, the degree of interaction with the pupils, the means to be used and the method of exploitation so as to be effective (Makrakis, 2000 Raptis, 2001, Lionarakis, 2003). The design of the learning material is a complex process which in addition to all other parameters has as its main angle the statement that "it relates to anything that takes place in order to facilitate the learning process" (Holmberg, 1995, Winn, 1997, Reigeluth, 1997, Lionarakis, 2001).

In this present context the general purpose was to create a comprehensive program of distance learning and training entitled (Holmberg, 1995) 'Captain SOS, his bunch and the moving Island'. The content of the learning material has been chosen to focus on environmental education and sustainability, in other words it concerns the environmental development of values and ethos (Flogaiti, 2006). The content and the philosophy which underpins the learning material is its trademark in leading to the development of a material which combines the characteristics of the scientific fields for distance and environmental education and sustainability in the context of primary education. It is thus a distance polymorphic material for schools relating to education for the environment and sustainability (Flogaiti (2003). This material must create considerations about the management of the environmental problems both at local and international level, to highlight the complexity of socio-economic and environmental issues, to provide an interesting learning environment in which innovative, discovery research learning approaches and strategies etc. are exploited.

The specific learning material was based on the theory of constructivism, primarily to activate the pupils towards autonomous learning (Lionarakis, 2001). The Basic principles-assumptions which support the creation of the material and the teaching framework of the application are:

- **The support of an auto regulated learning,**
- **The reaction towards learning as an active construction procedure for knowledge.**

Within this context, the role of the learning material concerns the creation of a pupil-oriented interactive teaching environment rich in stimuli from the direct and indirect environment, which will contribute to an autonomous and discovery learning and promote awareness of all complexed relations (Matsagouras, Chelmis, 2003, Matralis, 1998, Kapsalis and Charalabous 1995, Holmberg, 1995).

Figure: 1
The three points of the pedagogical material

An outline plan of the learning material is shown in Figure 1, which reflects the three points underpinning its creation.

We have attempted to take into account, as equally as possible, those points without having a quantitative evaluation of this attempt.

The polymorphic material is in both paper and digital form and consists of four different sections:

- **Learning software (digital format)**
- **The Notebook/activity notebook (printed and digital edition)**
- **Digital library (digital format)**
- **Supplementary learning material by the Hellenic Marine Research Centre (HCMR) (paper and digital form)**

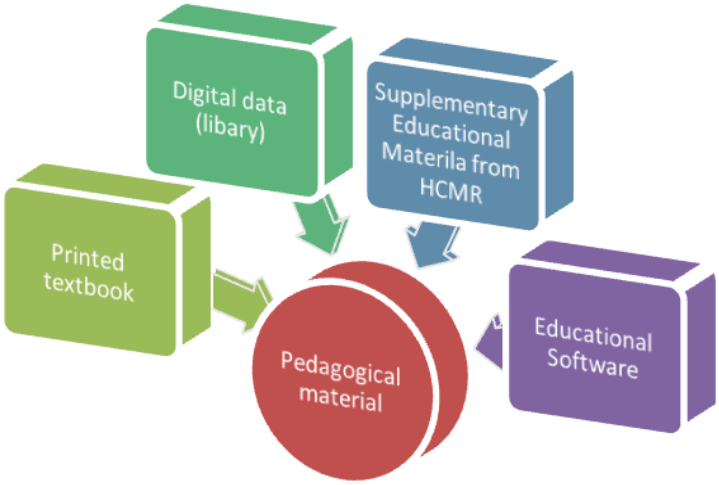

Figure: 2
The parts and forms of the Pedagogical material
"Captain SOS, his bunch and the moving island"

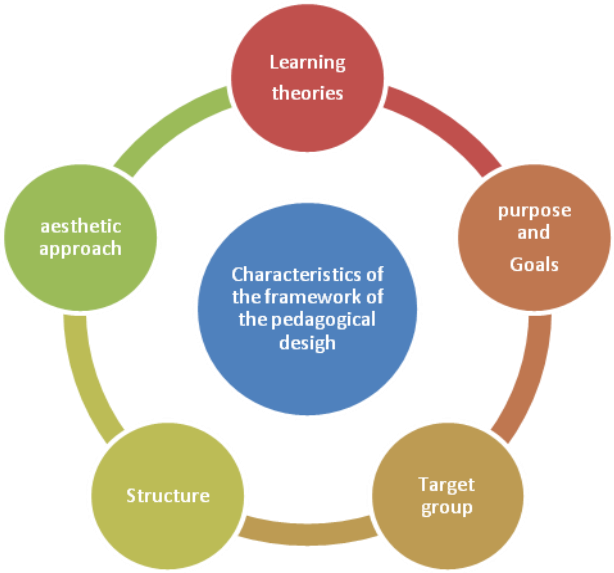

Figure: 3
The general characteristics of the framework of the pedagogical design

Figure: 3 shows the general characteristics of the framework. The same learning theories, common aesthetic approach, structure, purpose, objectives and of course the same target group, have been applied to all segments of the learning material.

The pedagogical material 'Captain SOS, his bunch and the moving island' (http://www.mesogeios.antthais.net/) provides pupils multiple representations of knowledge in order to facilitate learning. A key feature is the polymorphism (Lionarakis, 2001), which is achieved with the use of multimedia and audiovisual language, among others.

The design of the material was based on a combination of the common characteristics, as proposed in the model IDDE Amy M.Carr & Chad S.Carr (2000):

- **Dick & Carey (1990), models**
- **Robert Gagné (1985), models**
- **The progressive understanding of Charles Reigeluth (1997),**
- **The taxonomy of West-Lionaraki 2001, but also**
- **To the characteristics of the learning material for environmental education, as defined by Flogaiti (2003) and the North American Association for Environmental Education (2000)**

More specifically, the design was achieved as follows:

- **Identification of learning needs according to the characteristics of the target group**
- **Setting objectives**
- **Selection of learning theories and determination of teaching methodology and teaching techniques**

- **Organization of the structure**
- **Choice of forms of the learning material**
- **Development of the first edition of the learning material**
- **Pilot application and evaluation of the learning material**
- **Development of an upgraded version of the material**

The planning stages, as described above, are not so distinct and defined, and between them there is a relationship of interdependence.

The determination of the objectives, for example, does not precede the determination of fully learning theories and teaching methodology, because the objectives are subordinated to the theory learning and vice versa.

Also, the organization of the content does not precede the choice of forms and means but is in direct relation with it. Furthermore, the choice of forms and means has a direct relationship with the characteristics of the target group. Generally speaking, there is a direct relationship between objectives, content, and teaching methods (Matsagouras, 2001), forms and means.

NEEDS ACCORDING TO THE CHARACTERISTICS OF THE TARGET GROUP

The target group of this research were the pupils of the 5th and 6th grades of the primary multi-grade schools, remote schools and schools in degraded areas, where the possibilities to cover all learning and cultural needs were not provided (such as participation in an environmental education program, etc.) by conventional education (Chatziplis, Vassala, Lionarakis, 2007, Vassala, 2003).

The possibilities of grouping the school population have been highly valued, and based on the similarity of the biological and psychological development per class region, sex and nationality (Newson and Newson, 1976, Piaget, 1979). The specific target group was chosen because of characteristics related to skills in written and oral communication, to the use of information and communication technologies (ICT), to the specific characteristics of the intellectual level of the pupils (Piaget, 1979), to the possibility of autonomy and cultivation in psycho-social and moral development of children of this age group (Paraskevopoulos, 1982).

The above characteristics were a general framework, as well as taking into account that all pupils are not simultaneously at the same evolutionary stage in terms of knowledge or moral development and maturity, given that the physical changes are not consistent with the psychological changes (Greene, 1997).

The Setting of Targets

The determination of the objectives in the formulation of the learning material is one of the key points in the process of the design as it lays down all subsequent stages in the design of the learning material (Holmberg, 1995, Lionarakis, 2001, Laurilland, 2002, Pantano-Rokou, 2001).

The objectives of the material 'Captain SOS, his bunch and the moving island' are based, on constructivism, the creation of a pupil oriented and exploratory learning environment, in order to contribute to the development and creation of knowledge by the pupils themselves (Raptis, Rapti 2007).

In all distance learning material, the authors must always justify with accuracy and clarity the content, the activities and their requirements.

In addition, they must also provide the possibility to learners to know the reasons for which they are asked to do things and control the results of their actions (Rowntree, 1994, Holmberg, 1995, Matralis, 1999, Race, 2001).

According to Race (1999), a clear definition of the objectives creates the desire for their involvement required in the learning process. With particular emphasis in the cultivation of critical thinking, in the design of the objectives the targets have been created according to:

- **Bloom's taxonomy**
- **SOLO (Structure of the Observed Learning Outcomes)**
- **Critical thinking**

Special emphasis is been given to target forms in critical thought (Matsagouras, 2001) concerning:

- **The formulation of ideas**
- **The formulation of critical thinking, generalizations and forms of understanding of the world.**
- **The plan and automation skills which acquisitions organize knowledge on nature.**
- **The development of knowledge skills and strategies of productive thinking**
- **The development of procedural knowledge.**
- **The capacity in acquiring social and ethical attitudes and skills.**
- **The metagnostic thinking.**

According to a combination of the above target forms' development and to the selection criteria according to Matsagouras (2001):

- **the significance, referring to what is an important element of education in general and the issue specifically in order to contribute to the development of learners and to facilitate learning,**
- **The enlarged academic content, referring to the content of the scientific knowledge and**

The aspirations of the analytical program, referring to the individual and social aspirations of education, the objectives of the learning material the "Captain SOS his bunch and the moving island" is as follows:

The formulation of a basic conceptual framework on the Mediterranean and more specifically:

- **To learn some of the main characteristics of the marine ecosystems in the Mediterranean**
- **To describe the geomorphological characteristics of the Mediterranean**
- **To identify animals threatened with extinction and to describe the risks they face**

- **To be able to recognize the Mediterranean key elements of the culture and their environment**

The Cultivation and Development Of Cognitive Skills So That:

- **to observe systematically, to record and to organise their observation in integrated descriptions relating to human activities and interventions carried out on the coast and to reflect on the effects of these activities**
- **to seek information about the Mediterranean, to collect and handle it**
- **to analyze information and make their comments at their disposal**
- **in a single whole understanding the interrelations between the Economic and Social-ecological factors and to create generalizations**
- **to compare the information and their comments on issues relating to marine ecosystems, pollution in the Mediterranean countries**
- **to classify and to appropriate information at their disposal about the population, religions and languages of the Mediterranean countries**
- **to become familiar, observe and interpret the visual material (pictures and photographs) related to the sea**
- **to be encouraged to design, recommend solutions and organize actions relating to the problems of the Mediterranean**
- **to implement the solutions and actions planned**
- **to become familiar with the use of technologies so that they can use them to support learning through research and methods of communication**
- **to cooperate with fellow pupils of other schools, by broadening the learning and social framework, by exchanging views and by creating common work**
- **to develop skills which will enable them to participate in the design and implementation of operations relating to the sustainable management of coastal areas**
- **to be sensitive, to reflect and to be activated in tackling the problems relating to the coastal ecosystems**
- **to recognize the cultural wealth of the Mediterranean**
- **to familiarise them with various art forms such as music, theatre and painting**
- **to express artistically in all forms of art creating projects with importance and significance on the environment and cultures of the Mediterranean**
- **to be alert in matters of peace in the Mediterranean**

The Development of Critical Thinking In Order To Be Able

- **to seek and process many different aspects of one issue and to organise an argument.**
- **to interpret data and information about pollution in the Mediterranean and the endangered species to explain the causes and to describe the consequences**
- **to develop criteria for evaluating information provided to them, solutions and the proposals concerning the Mediterranean and the whole of learning process in which they participate.**

The Choice of Learning Theories and The Determination of The Teaching Techniques

The pedagogical material was created based mainly in the theory of social constructivism. The new knowledge is the product of the continuous interaction between the previous and the present.

The main characteristics of such a constructive environment are (Anderson & Dron, 2011, Rapti, 2007, Barr 1988) the facilitation of the pupils to participate in the defining process of the objectives, the cognitive activities and the construction of a learning process within authentic environments, which makes sense to them.

It encourages them to take initiative, the experimentation, in the process of different knowledge approaches, the management of primary energy sources, the processes of critical thought and deeper understanding.

In particular, constructive reason environments contribute to the development of pupils' self esteem, the constructive use of different cultural environments as learning fields, the opening of schools in society, and to provide opportunities of cultivation of metacognitive skills, and not only to broadcast information but give emphasis to the same learning process as the reconsideration, the self-analysis, the critical self-evaluation and the self-regulation.

Also there are opportunities for cooperation with specialists for the creation of genuine work, the cooperative learning favours the collective action, the interactive confrontation, the flexibility in knowledge and in empathy, supplied "Scaffolding learning" (participating intermediaries) in order to assist pupils in the enlargement of cognitive capacities and abilities.

The assessment is determined as a genuine process, which is involved in the process of learning and for its carrying out there is an evaluation of multiple criteria for qualitative and quantitative analysis of the behaviour and of the work of pupils, as well as self-evaluation.

Teaching Techniques

In the pedagogical material 'Captain SOS, his bunch and the moving Island',many teaching techniques have been used with the objectives being the establishment and strengthening of the constructive nature but also the achievement of environmental issues of education and sustainability.

The kind of techniques and methods were selected in order to encourage learning and to lead to

- **an active participation of pupils,**
- **the cooperation among them and**
- **the promotion of activities with meaning (Vosniadou 2001, Walberg & Paik 2001).**

The choice of appropriate techniques is a difficult process and the teacher must actively involve all the learners.Some of the teaching techniques which were selected and evaluated in the formulation of the learning material were: conceptual mapping, work plans and projects, case studies, role playing, problem solving, learning visits, interviewing, debates and group work.

The Structure of the Pedagogical Material

One of the most discussed issues in the learning process is the question of an adequate structure which can facilitate the learning process: Dewey, 1902; Rugg, 1927; Tyler, 1950; Taba, 1962, Ausubel, 1964; Bruner, 1960; Suppes, 1966; Gagne, 1970; Popham & Baker, 1970; Posner, 1974 as referred to Posner & Strike, 1976).

The creation of an adequate structure is one major issue in the organization of information, for the facilitation of the learning process and can significantly affect the final result (Marton and Booth 1997, Ramsden 1998, Laurriland 2002).

The determination of the structure of the learning material is concerning:

- **The sequence of various parts,**
- **The ranking of information within the learning material,**
- **The changes to the presentation form of the information,**
- **The schedule for the study of all the above.**

The organization of the structure is a difficult process, and depends on the characteristics of knowledge, the characteristics of the distance learning material and the specific needs of the pupils.

In distance learning it's been considered as a requirement a "strict" and consistent, coherent structuring of the 'courses', which offers learners safety, reliability and flexibility (Peters, 1998).

The objective is that the pupils, with the support of the learning material, will operate autonomously, held responsible for their choices and should define their own independent learning process. The basic structure of the learning material is shown in figure: 4.

The main component of the learning material is the learning software, which is in constant interaction and cooperation with the notebook of activities, the supplementary learning material and the digital data base.

The Educational Software

The learning software which is the core of the learning material is divided into two parts. The first part is entitled "We Travel... ' (figure: 5) is an introduction.

In this study the pupils (animation figure: 1 'The Captain SOS') learn the history of Captain SOS, get to know the heroes, demonstrate their intention to participate to the program, get to know the objectives of the program, subsequently determine their own objectives and lastly they are informed of the expected results.

The structure of this chapter has a proposed conceptual continuity in its design and organization, but it is neither absolute nor rigid, so that in case that the pupils will not follow it as designed, it will maintain its cohesion and will not lose its meaning, (namely the introduction to the issue of the program and the pupils' commitment for participation).

The second part is entitled: 'The Journey Begins' consists of four units (figure: 4: Mediterranean", "inspiration", "and Mediterranean problems "," animals threatened"). Each unit is autonomous, and in each it is presented an issue with a brief information material, which pupils are invited to elaborate achieving the activities.

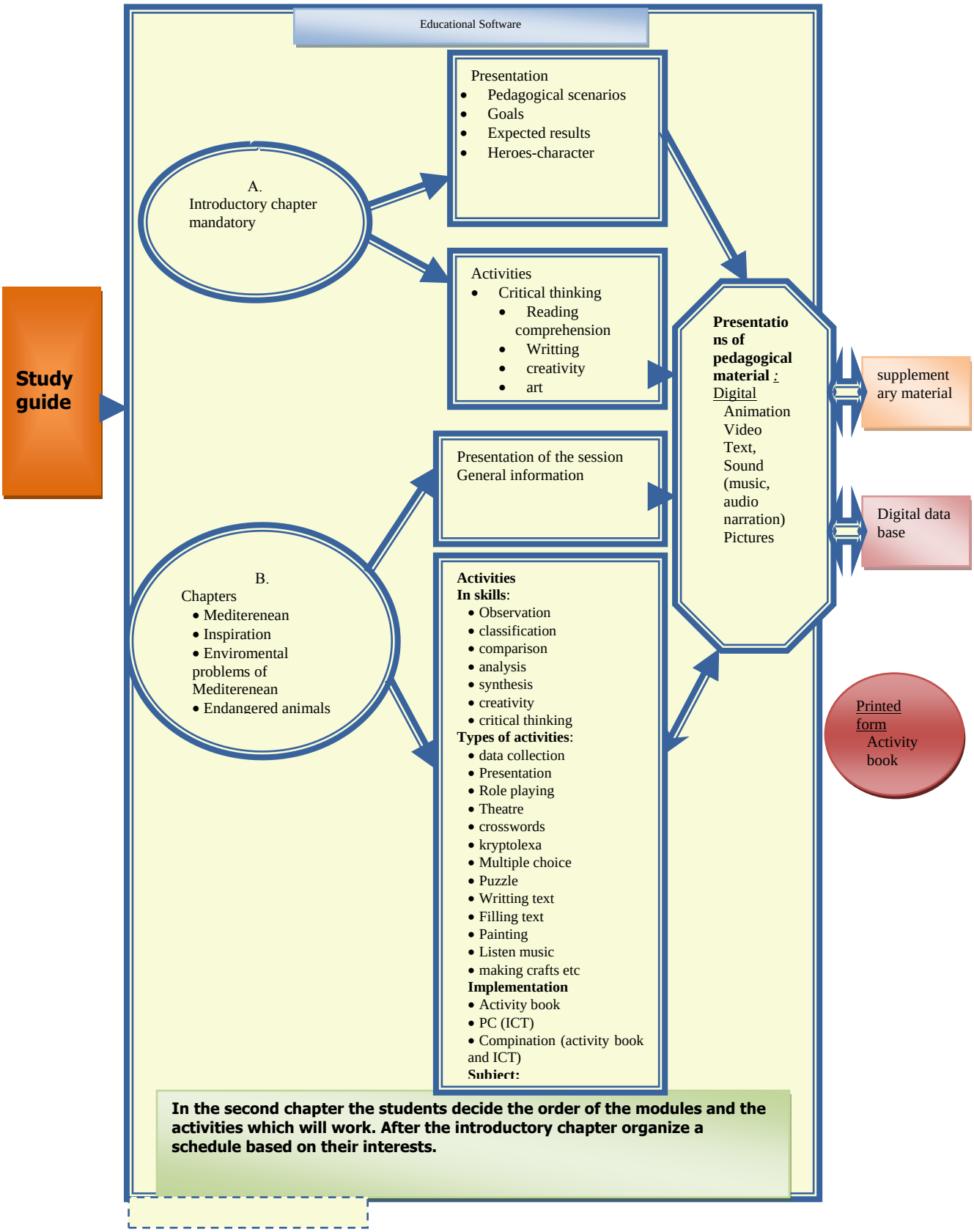

Figure: 4
The structure of the pedagogical Material

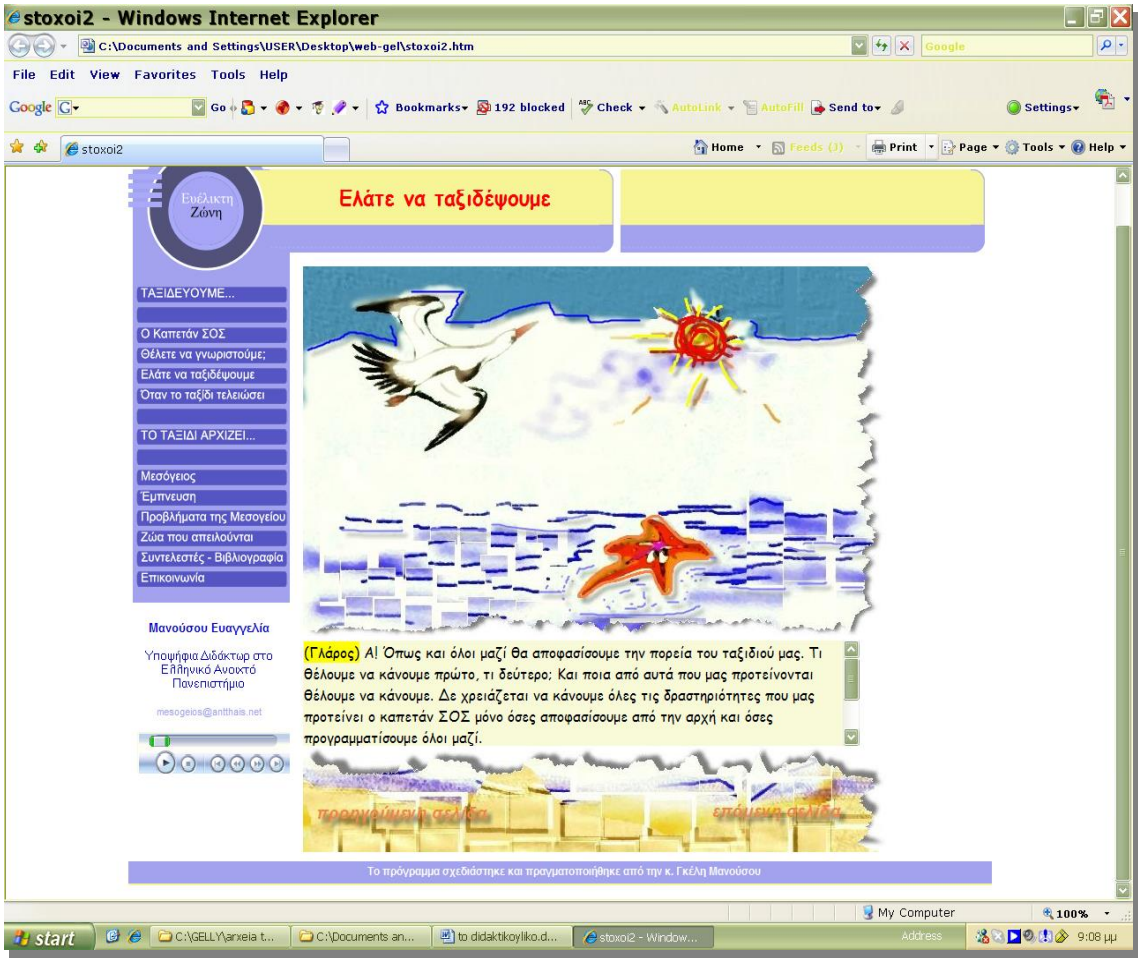

Figure : 5
Let's travel

The activities constitute a key component of the learning material, as well as through these they harness and process information, apply their knowledge, reconstruct the existing knowledge, connecting the new information with the existing knowledge. (Vosniadou, 2001). The pupils have the opportunity to choose, to define and organise:

- **what activities they will carry out based on qualitative criteria relating to their interests**
- **the order in which they want to implement (Figure: 2).**

The activities are in printed form in the 'notebook of activities', with which there is a constant interaction and interdependence with the software, as the software refers and requires the notebook, in order to achieve the most activities, but without the software there are few activities which can be implemented solely with the use of the form. It is necessary to be noted that, for research needs, all the activities have been printed in a notebook of activities, which the pupils have received at the beginning of the program, so that all the activities assembled, would be easy to access.

However, all activities exist in the software as a PDF, which may also be printed. In each module there are links and references to additional information material included in total learning material and delivered to pupils, providing opportunities implications and opportunities of deepening the subject.

An approach of the structure of the learning material directly connected to the organization and form is the categorisation of West and Lionarakis (2001). This is a classification of learning material based on constructivism and qualitative criterion of polymorphism (Giosos, Koutsouba, 2005).

According to the classification, there are three main strands, connected to an organic tied and functional whole, which reflects the structure and coherence of a polymorphic distance learning material (Lionarakis, 2001). These strands are roughly the following:

- ***First package*: text, co-text, metatext, which includes the history of Captain SOS, and the basic texts of each unity, activities, exercises, defining titles, contents, general and specific objectives, activities/exercises verification cognitive skills, literature, references, operating (in printed form), glossaries**
- ***Second package*: retro-text which consists of activities/exercises self-evaluation mechanisms recharge, mechanisms of understanding/application, definitions, clarifications, glossaries, texts bridges, binder texts, photographs printing peculiarities, fonts, etc.**
- ***Third package*: multi-text and multimedia, namely, the audiovisual material, the main software, the guide for the work notebook, evaluation, skill devices development, printed forms of communication material consisting of a form (paper directives, notebook activities etc) and a digital section (software, website, digital data collection) located in interrelationship between them.**

According to Raptis and Rapti (2007) but also to Harel (1991 as ref. Komis, 2005), the best option for the design of the learning software as well as of the learning and teaching activities is the constructive theories and socio-cultural views for learning. From this combination the objective is to achieve the creation of an environment, which will provide opportunities for individual construction of knowledge (individualistic constructivism) but also the use of language in the context of social interaction and cooperative activities. In this particular learning material the pupil is treated as an 'active' organism who takes its decisions on the 'What' and 'How' of learning (Makrakis, 2000).

The choice and configuration of the content for learning material, "the captain SOS, his bunch and the moving island", was based on certain criteria, related to:

The Compatibility of the Pedagogical Material With The Curriculum

***The design* of the learning material falls on one hand on a flexible zone program. As a consequence its choice is not subject to the strict framework of the analytical program and on the other hand the teaching methodology, with which it is approached, is related for the biggest and most important section to the environmental education program and for the smaller part to the cultural program. In addition through this material, because of its multi-subject nature, many direct or indirect objectives are achieved and pursued in geography in 6th grade, and in Language 5th and 6th grade etc.**

The Epistemology of the Content

The information is presented appropriately, structured, scientifically precise, clear and free from the unnecessary and the well-worn and at the earliest possible objective (Matsagouras & Chelmis, 2003).

In this particular learning material, the knowledge is established, mostly by forms of activities, as well as by the emphasis in the cultivation of critical reading of simple scientific texts, with the active involvement of pupils and the functioning of the material as 'a learning tool' and not as 'fund corner retailer information'. The process of "simplification" of the information is organized carefully in the learning material so as the pupils can understand the unity and the continuity of the environment and culture of the Mediterranean and not just to participate in unrelated actions, which do not favor the learning activation process (Matsagouras & Chelmis, 2003).

TEACHING METHODOLOGY

In this particular learning material it has been used a plethora of teaching methods and strategies, which are depicted in a variety of activities. In accordance with the criteria of the teaching methodology of Matsagoura and Chelmis on the learning material (2003: 98-101) 'The Captain SOS, his bunch and the moving Island':

As To the Goal

- **The teaching objectives are clear and unambiguous**
- **The material is suitable for the pupils' age**
- **There is balanced promotion of knowledge, emotional and psychokinetic objectives.**

As To the Methodological Approaches

- **the ideas of pupils are valued**
- **The exploration search, data processing procedures are promoted.**
- **There is a supply of possibility of choices**
- **The strategy of 'digressive guidance' has been adopted**
- **There is diversification of activities according to the interests of pupils**
- **Combined individual learning and group work has been supported**
- **Various learning techniques and methods such as conceptual mapping, work plans (projects),case studies, role playing problem resolution, learning visits, interview of a specialist**

As To the Activities And Exercises

Within this learning material particular emphasis was placed on arousal of the interest of pupils within an authentic learning environment and in order to nurture the possibilities of self-learning, developing knowledge and cognitive and metacognitive skills and to this regard many types of activities have been exploited.The activities of the learning material emphasize mainly the mobilising of the superior knowledge functions and the search of meaning in data according to Dewey, (1916) and not in aggregate increase and reproduction of information.

They put emphasis on correlations, reconstructions, reorganization of the information, in order for pupils to create generalisations, interpretative figures, to assess, to provide cases, to increase their autonomy (Matsagouras, 2001).

As the various strategies are revealed from the activities and disseminated to those in the formulation of material a complex system of categorisation of activities has been created as to:

- **The degree of difficulty (easy, moderate ease etc.)**
- **The type of activities (group, individual)**
- **The types of skills required and developed in relation to the learning levels in order to achieve the cultivation of critical thought and creativity (Matsagouras, 2001:95, Lionarakis, 2001).**
- **The form of expression/speech required (written expression, verbal expressions, artistic expression)**
- **Their objectives in relation to education about the environment and sustainability in accordance with the characteristics of a holistic and systemic approach Flogaiti (2006), in multidisciplinary and interdisciplinary work but also in critical thinking.**
- **As to the pedagogical material to which the content and in particular: (language, mathematics, geography, etc.)**

The Digital Data Collection

Within the learning material of "Captain SOS" there is a digital data collection, which was conceived and created specifically for this program.

The specific data collection consists of digital addresses of organizations that can provide information to pupils, images of all Mediterranean countries, paintings with sea themes, musical pieces of all the Mediterranean countries, electronic literary records relating to matters for the sea.

Supplementary Learning Material

In addition, for the pupils involved, there is accompanying material available, which could be a source of additional information.

This material was selected after investigating various materials from the learning material of the Hellenic Centre for Marine Research (HCMR.), entitled: 'Knowing the Aquatic Environment and its Inhabitants', which is considered appropriate as a supplementary material according to the pedagogical criteria of the learning material.

Usability Criteria of the Learning Material

During the design there have been some issues regarding the criteria of usability of the material (Matsagouras, 2003).

- **The time required for the teacher to devote to this.**
- **The necessary equipment.**
- **The knowledge and skills required**
- **The time required to train teachers and pupils**

Pilot Application of the Learning Material

After the completion of the design and creation of the learning material, a pilot implementation was organized for pupils of the 5th and 6th grade, in order on the one hand, to evaluate the learning material, and on the other hand to investigate the problems that may arise during its implementation.

THE EVALUATION

The evaluation which was designed for the drawing of an environmental distance learning program through the learning material 'the captain SOS, his bunch and the moving island' concerns the adoption of alternative assessment methods (Zigouri, 2005), which include quality methods, such as interviews of the participants (pupils and teachers), the direct observation of activities of the program and the evaluation of their portfolio (Kouloubaritsi, 2003).

The socially critical model has been followed, which concerns a participatory evaluation process, which puts emphasis on the words reveal and change.

During the design of the learning material the main axes and assessment criteria of pupils were created with qualitative alternative methods relating to:

- **Their cognitive skills**
- **The preparation of operations (the pupils' portfolio)**
- **The analytical framework of the assessment but also the results presented**

CONCLUSIONS

The design and development of this polymorphic learning material has been a long and difficult procedure which lasted for nearly 18 months of systematic work.

The stages, which have been followed in the design and the creation of this material were as follows:

- **Review of the literature, research and exploration of various models of design of the learning material**
- **Target group choice**
- **Identification of needs, regarding our target group**
- **Setting of objectives**
- **Selection of applied learning theories and determination of teaching methodology**
- **Organization of the structure**
- **Choice of forms of the learning material and the instruments to be used**
- **Development of the first issue of the learning material.**
- **Pilot application of the learning material.**
- **Development of the upgraded version of the material**
- **Implementation and final evaluation of the learning material In six multi grade and remote schools and one classical urban school**

The result of the above design process was the development and creation of a constructive, polymorphic learning material, in which cooperation, social interaction and the promotion of the learning process was cultivated.

The learning material has been implemented and assessed systematically with the exploitation of many different methods of collecting data (semi-structured interviews, questionnaires, observation, etc) and combined levels, triangles, (evaluation by pupils, teachers, outside observers, etc.) both of the material and its implementation.

The results of the assessment showed that they meet the objectives and the needs of the additional distance learning and can contribute to improving the quality of education particularly in remote regions and single-grade schools (but not only), as it is designed and constructed in such a way, so as to support independent learning, to connect schools with many open resources, to familiarize pupils with new technologies,

to support the implementation of environmental education programs, by removing factors preventing their implementation (Michaelides, Kimonis, 2000), to enhance creativity, active learning, cooperation, to exploit methodological approaches which meet the specific needs and interests of pupils, and to familiarise pupils with a lifelong learning process.

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OPEN SOURCE VIDEO MANAGEMENT SYSTEM (VMS) FOR OPEN EDUCATION: A Comparision Study

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ABSTRACT

The emergence of video sharing technology and high-speed broadband connectivity initiative offers a great choice for users throughout the world to share videos online. However, most of the video sharing sites are not primarily educational. Therefore, this study intends to introduce a framework in choosing and installing open source products for teachers and students in developing specialized online video sharing platform for open education. The paper also reports a comparison study on four most credible open source video management systems (VMS).

Keywords: Open source, online video, video management system, video sharing

INTRODUCTION

With today's online video sharing technology, users have tremendous opportunity to study virtually anything, anywhere. Users can now find an online video on any topic, and learners are beginning to utilize it as a reference tool too (Helft, 2009; Iskold, 2008). However, most of the video sharing sites are not primarily educational (Snelson, 2008). Undeniably, there are millions of short video segments available online applicable for education, but challenges do arise in allocating and identifying them from these sites.

Therefore, the development of specialized video sharing sites with educational values is important. Specialized video sharing sites can improve learning by eliminating any distractions from irrelevant contents. Developing an online video sharing site from scratch is complex; meanwhile, outsourcing the development is also costly.

Therefore, open source products can be the potential substitutes for organizations lacking adequate funding.

There are dozens of open source video sharing application that can be downloaded for free from the Internet, for instance, phpMotion, ClipBucket, VidiScript and more. Furthermore, there are even free hosted ready choices such as BoostCast.

DEVELOPMENT STEPS

As a guide line, consider the following five steps suggested by Ahmad Zamzuri (2009) in deciding and installing a suitable open source video sharing site:

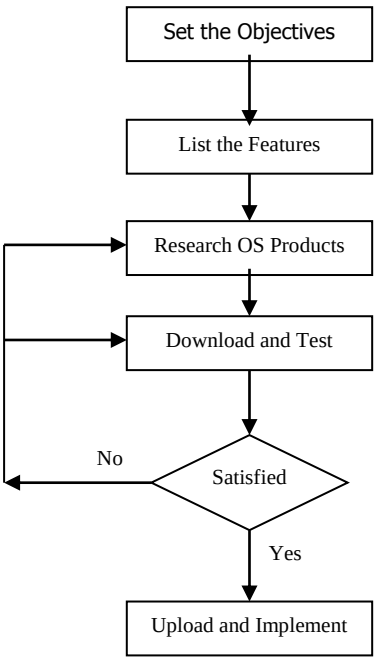

Figure: 1
Process Flow of Choosing Open Source Product
Source: Ahmad Zamzuri (2009)

Set the Objectives

Selecting the appropriate open source product starts with identifying and developing the learning objectives. Identifying the learning objectives is important in order to find the right open source product that will suit the initial and subsequent requirements. In deciding the objectives, consider the size of the institution, the target learners, their learning preference, their location, the resources available, assessment method and so on ("How to", n.d.).

List the Applications

Once the objectives have been formulated, decide the applications or modules needed in order to fulfill these objectives. Among common applications or modules which are generally referred are such as Users Enrolment, Privilege Settings such as Admin, Moderator and User, Communication, Announcements, Upload, Download, e-Mail and so on. It is also important to prioritize the modules' requirements in a range from high to low.

High-priority requirements are absolutely necessary for the open source product to function effectively in the initial implementation. Low-priority requirements are 'nice to have' and can be delayed indefinitely ("How to", n.d.).

Research Open Source Products

Based on the modules listed, do research on profiles of each potential open source products. Information can be gained from their official or support web sites. Additional information can also be gained from research and comparison reports. Along the process, any open source product that does not fulfill the high-priority requirement should be dismissed from consideration.

Hardware and additional Software requirement, Operating System platform, Storage capacity, Programming language and Database supported also need to be considered throughout the process. From the research done, short-list the entire potential open source product for the following testing process.

Download and Test

It is important to thoroughly examine and test multiple open source products before making the final decision. Among the important aspects that need to be tested are simplicity, stability and processing speed of the open source product.

The open source product can be downloaded from their official or any other download websites. It is recommended to do the testing on a personal computer configured to work as a web server.

It is also necessary to test them in a local network. From the testing processes, users can also explore and familiarize the features of the open source product that surely will be helpful in the implementation phase.

Upload and Implement

Once the decision has been made from the testing process done, the final implementation is often easier.

The first requirement is to have a hosting space available either on a web server available in the institution or on an outsourced web server hosted by any Internet Service Providers (ISPs). Ensure that the hosting service come with FFMPEG module, which contains application such as MEncoder, MPlayer, FFMPEG, FFMPEG-PHP, PHP4 & PHP5, LAME MP3 Encoder, libOGG, libVorbis, MySQL 5 and CGI-BIN support.

Figure: 2
Hosting service with FFMPEG module

The second step is uploading the open source product to the server, and the final step is setting up and fine-tuning the application accordingly based on the knowledge gained from the testing process carried out.

POTENTIAL OPEN SOURCE VIDEO MANAGEMENT SYSTEM

Five potential open source video sharing platform will be introduced in this section namely PHPmotion, ViDiScript, ClipBucket, MediaCore and PLUMI. The screenshot and some important features documented in the official script providers' site are as follows:

PHPmotion (http://phpmotion.com)

Initially free to download and use, cost is incurred when the user wishes to remove certain branding units displayed. A growing user base of over 100,000 webmasters had already downloaded this application. Templates based on nature allow a user to change the look and feel of the digital environment. PHPmotion has a full-featured admin area to manage the site such as viewing, deleting and approving videos. Among the features available are easy uploading, support for many video formats, edit or delete video at anytime, making video public or private, annotating video comments and creating group.

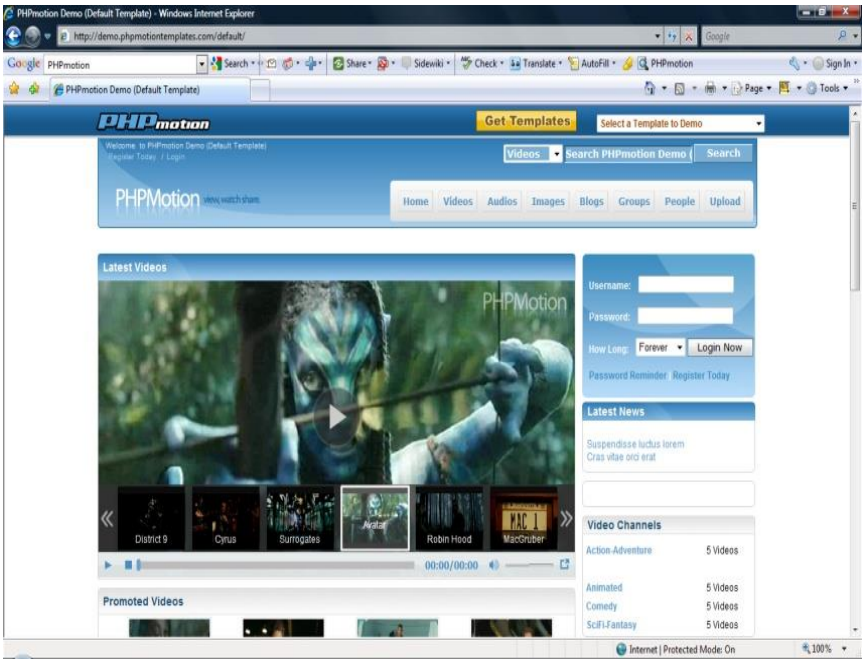

Figure: 3
PHPmotion demo site

ViDiScript (http://www.vidiscript.com)

A 100 % free open source application, *VidiScript* is packed with features that can only be found in major sharing communities such as YouTube, Meta Café and Break. Some of the features available are members can upload, manage and share their own video files, bundled with the most powerful open source video player, members can create group, video commenting system, add categories and sub-categories, converts video to flv, thumbnail creation and admin are able to approve, modify and delete video.

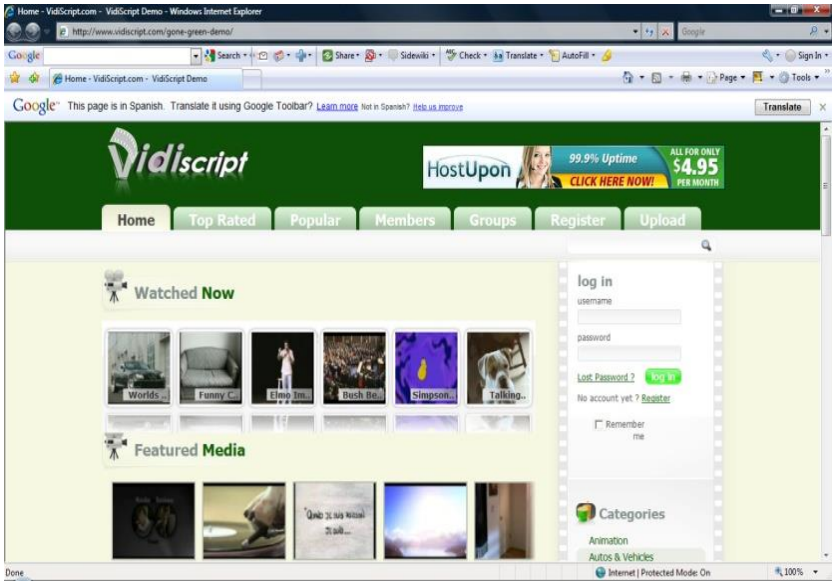

Figure: 4
VidiScript demo site

ClipBucket (http://clip-bucket.com)
ClipBucket is the fastest growing script with many interesting video sharing and social networking features.

The video script uses the latest in web 2.0, Ajax and JavaScript libraries that bring the user to experience the features found on most of the high end commercial video sharing scripts.

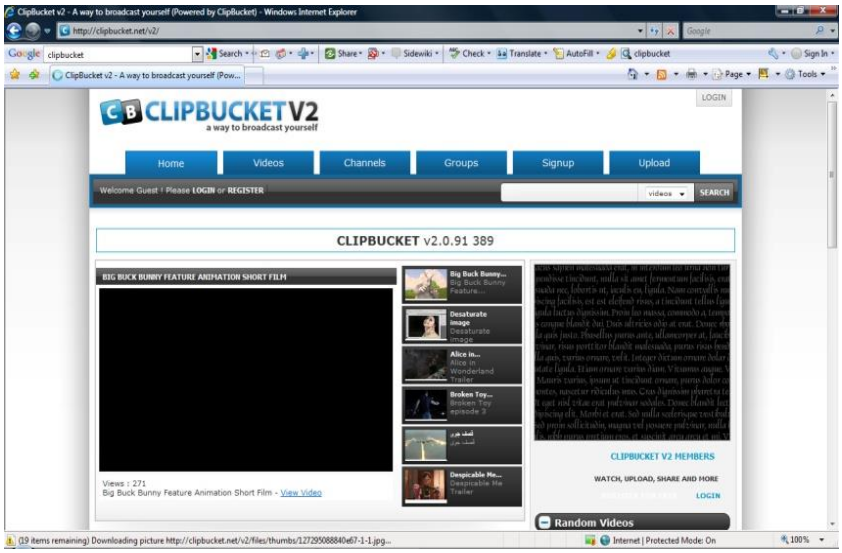

Figure: 5
ClipBucket demo site

MediaCore (http://getmediacore.com)

MediaCore is an open source video CMS for centralizing all of users' video and podcasting needs. Users can browse through video added to the CMS from any devices, store the video anywhere: YouTube, GoogleVideo or any server, categorize the video, comment and share videos, admin can manage all video, podcast and comments through a beautiful control panel. Every aspect of MediaCore can be controlled; user can upload video via the upload interface. An admin will be notified and can review and approve new content.

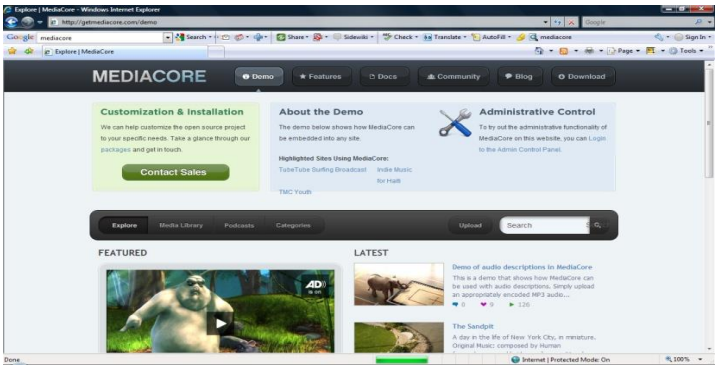

Figure: 6
MediaCore demo site

PLUMI (http://blog.plumi.org)

PLUMI is a free software content management system designed for video-sharing, based on PLONE and produced by EngageMedia. By installing PLUMNI on web server, user can use a wide array of functionalities to facilitate video distribution and community creation. Capabilities include publishing videos in diverse formats, auto conversion to flv, attaching of open content license - including thumbnails, social networking; embedding a video from PLUMI on another website or blog, uploading video via FTP; managing users and their roles, and moderating contents - featured videos, news and events on the front page and site language using site manager administration tools. Apparently, all the capabilities or features available can be used in proper contexts for learning purposes.

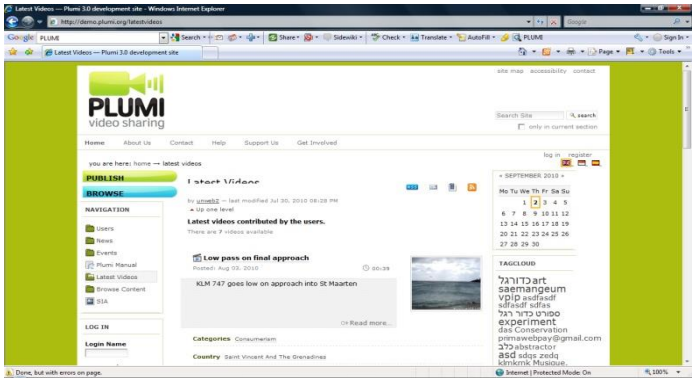

Figure: 7
PLUMI demo site

COMPARASION STUDY

From the five open source video management system introduced in the previous section, a comparison study was conducted on four products that provide demo sites. In summary, the outcome of the study is as in the table below. The conclusion was made based on experience gained from exploring the demo site and information in the official web site.

Table: 1
Comparison Between VMS

Features		PhpMotion	Clipbucket	VidiScript	Mediacore
General					
1	Media Type				
	Video	✓	✓	✓	✓
	Imej	✓	✓	✓	×
	Audio	✓	✓	✓	✓
	Flash Game	×	×	✓	×
2	Blog	✓	×	×	×
3	Group	✓	✓	✓	✓
4	Channel	✓	✓	✓	✓
5	Free download	✓	✓	✓	✓
6	Free hosting	×	×	×	✓
Installation					
1	Documentation	✓	✓	✓	✓
2	List of requirements	✓	✓	✓	✓
3	Step by step instruction				
	Clear			✓	✓
	Unclear	✓	✓		
4	Certified hosting integration	✓	✓	✓	✓
Uploading					
1	Video file format stated	✓	✓	×	×
	WMV	✓	✓		
	MPG	✓	×		
	AVI	✓	✓		
	MPEG	✓	✓		
	MP4	✓	×		
	3GP	×	✓		
	FLV	✓	✓		
	MOV	✓	✓		
	MOOV	✓	×		
	DIVX	×	✓		
2	Edit Video	✓	✓	n/f	✓
3	Delete Video	✓	✓	✓	✓
Editing Videos					
1	Description	✓	✓	✓	✓
2	Tagging system	✓	✓	✓	✓
3	Category	✓	✓	✓	✓
4	Media Privacy	✓	✓	n/f	✓
5	Comment	✓	✓	✓	✓
6	Embedding	✓	✓	✓	✓
7	Rating	✓	✓	✓	✓
8	Report	✓	✓	✓	×
9	Search	✓	✓	✓	✓
10	Filter searching	✓	✓	n/f	×
11	History	×	×	✓	×
12	Favorites	✓	✓	✓	×
13	Playlists	✓	✓	×	×
14	Featured	✓	✓	×	✓
15	Most Viewed	✓	✓	✓	✓
16	Most Recent	✓	✓	✓	✓
17	Most Commented	✓	✓	×	×
18	Top Rated	×	✓	✓	×
19	Statistics	✓	×	×	×
20	Social Bookmark	✓	✓	✓	×
21	Sharing				
	Through email	✓	✓	✓	✓

	Through social networking	×	✓	×	✓
Users					
1	Register New	✓	✓	✓	✓
2	Register with social networking	✓	×	×	×
3	Profile Customization	✓	✓	✓	✓
4	Avatar	✓	✓	✓	✓
5	Member searching	✓	✓	✓	✓
6	Email systems	✓	✓	✓	×
7	Friend request	✓	✓	✓	×
8	Subscribe	×	✓	✓	×
9	Close account	✓	×	×	✓
Support on website					
1	Live Help	×	✓	×	✓
2	Forum	✓	✓	✓	✓
3	Live Demo Site	✓	✓	✓	✓
4	FAQ	✓	✓	✓	✓
Plugins					
1	Free API	✓	✓	✓	✓
2	Others free plugin	×	✓	×	✓
3	Paid plugins/addons on website	✓	✓	×	✓
Themes					
1	Free Themes	×	✓	×	×
2	Websites example	✓	✓	✓	×

n/f – not functioning

CONCLUSION

Information discussed on the highlighted open source video sharing sites in the preceding section demonstrates that there are a number of low cost, but powerful products available online that can be tapped on for learning purposes. However, installing these products can be technically demanding entailing expert advice or assistance. On a positive note, some product developers do provide installation services but with minimum charges that lends technical support to users lacking the experience and/or skills. Further study on installation and implementation are needed before concluding the first-rate video management system product.

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EXAMINING UNIVERSITY STUDENTS' COGNITIVE ABSORPTION LEVELS REGARDING TO WEB AND ITS RELATIONSHIP WITH THE LOCUS OF CONTROL

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ABSTRACT

The current study investigated university students' cognitive absorption levels according to several variables, and presented the relationship between cognitive absorption and locus of control.

This study resorted to a descriptive model. Participants were 374 undergraduate students. The Cognitive Absorption Scale and Locus of Control Scale were used to collect the data. Independent samples t-test, one-way between-groups ANOVA, correlation and regression analyses were used to analyze data. Findings suggested that university students had above average cognitive absorption.

Moreover, the higher the general internal control/personal control was, the lesser the cognitive absorption level. It was plausible to infer that information and communication technologies served as sources of pleasure and curiosity for university students. However, for students with a higher internal locus of control, levels of pleasure and curiosity dropped.

Keywords: **Cognitive absorption, locus of control, information and communication technologies, internet use.**

INTRODUCTION

Information and communication technologies are becoming more and more widespread in every field of life. In parallel with this common use, various studies have emerged which analyze the interaction between users with possibly different individual, social and psychological characteristics and these technologies on the basis of a number of variables, such as interest, expectation, competency and level of use. The focal point of these studies is to arrive at some conclusions that suggest more effective and efficient use of the technology in different fields regarding certain tasks and purposes.

A number of models and approaches, such as the Technology Acceptance Model and Diffusion of Innovations have been developed to examine human-technology interaction, and existing ones have been updated in parallel with developments in science and technology.

One of the afo rementioned approaches is the theory of "Cognitive Absorption" (CA) developed by Agarwal and Karahanna (2000). Agarwal and Karahanna set forth the link between technology use and acceptance and perceptions and expectations in reference to theoretical models, such as the Technology Acceptance Model (Davis, 1989) which aimed to understand and explain individuals' technology use-related behaviors. Agarwal and Karahanna (2000) further state that previous studies conducted on the subject concentrate more on beliefs within attitudes and individual user cases, and less on how these beliefs have come to exist. From this point forward, it can be concluded that it is vital to look into the source and reference point of socio-psychological variables such as interest, attitude and self-efficacy, rather than the acquirement of knowledge and skills, in order to further explain individuals' technology use.

Other elements such as an individual's past experiences, interaction with the environment, and age group shape individual outcomes of the said variables. Thus, the meanings individuals attach to events and phenomena, sources of motivation and perception of what is right and real continuously changes on the basis of these elements, and their interaction with technology differentiates in the context of this changing contextual framework.

CA accepted as a motivation related variable in essence serves as a key to information technology related beliefs in studies on technology use (Agarwal and Karahanna, 2000). This study which was conducted on the basis of the mentioned structure aimed to explore the interaction between CA and the use of information and communication technologies and web technologies for both educational and social purposes. It also looked into the relationship between locus of control considered as a variable that steers concepts such as motivation, attitude, interest and concern on the basis of meanings individuals attach to events and phenomena and CA from the perspective of university students. A review of the relevant literature in Turkey shows that the concept of CA has been handled in only few studies (Usluel and Vural, 2009; Vural, 2007). In addition, there has been no study about the relationship between locus of control and CA sampling in Turkey. Given the situation in Turkey, this study analyzed university students' technology use related behaviors from the point of view of CA and puts forth the relationship between CA and locus of control and serves to contribute to the literature at the national level. The purpose of this study was to analyze university students' levels of CA according to various variables and present the relationship between CA and locus of control.

Review of Literature

The term CA was coined by Agarwal and Karahanna (2000) and said to be based on cognitive and social psychology. It is defined as a "state of deep involvement with software". This theory handles individuals' experiences with their interaction with technology (Usluel and Vural, 2009). Agarwal and Karahanna (2000) state that the theoretical bases of CA have been influenced by three different approaches, namely "absorption" (Tellegen and Atkinson, 1974), "flow" (Csikszentmihalyi, 1990) and" cognitive engagement" (Webster and Ho, 1997). The CA theory is frequently referred to along with the Technology Acceptance Model, which projects and explains predictors of users' behaviors (Liu, Liao and Pratt, 2009) within a certain system (Chandra, Theng, O'Lwin, and Foo, 2009; Lee, Yoon and Lee, 2009; Saade and Bahli, 2005; Zhang, Li and Sun, 2006). The CA theory constitutes a structure of five different dimensions (Agarwal and Karahanna, 2000; Usluel and Vural, 2009).

The first of these dimensions is time, which translates into not being able to control time when interacting with software or technology in general. Another dimension of CA is focusing of attention, which means an individual's focusing merely on the actual experience without any attention to other stimuli.

Other dimensions are pleasure experienced during interaction, the feeling of being in control of over what happens during interaction and curiosity that drives an individual on a sensorial and cognitive basis to continue with the actual experience or extend it. Agarwal and Karahanna (2000) relate the concept of CA to two main dimensions, namely perceived usefulness (PU) and perceived ease of use (PEU) of the Technology Acceptance Model.

It is also related to positive attitude and exploration driven use of technology as much as it is to PU and PUE (Scott and Walczak, 2009). Similarly, Zhang, Li and Sun (2006) mention the role of CA on cognitive beliefs such as PU and PEU and experientially validate its role in their research.

However, according to the findings of their research, Saadeand Bahli (2005) note that CA has a higher variance on PU than on PEU and point to the importance of CA for PU in the web based learning system in higher education. Elmezni and Gharbi (2010) state that CA exerts a strong effect on web users in relation to how they spend their time and the pleasure they derive. In their studies on students' e-learning related acceptance, Lee, Yoon and Lee (2009) present PU as one of the most significant predictors of e-learning usage intentions.

Similarly, another study on the virtual world puts users' trust as an important factor in the development ofCA and suggests a significant relationship between CA and user trust. The same study also states that there is a relationship between CA and amusement perceived in use of the virtual world (Chandra, Theng, O'Lwinand Shou-Boon, 2009).

Another variable which affects individuals' experiences while using technology is locus of control, which is described asthe "degree to which a person believes in their ability to control events and behavioral results that occurin their lives"(Joo, Joung and Sim, 2011).

According to Akın (2007), locus of control is not a reinforcer on its own; it also involves the beliefs and expectations which control the frequency of an individual's behavior and is concerned with what reinforcers result in.

In term of locus of control being discussed as two dimensions, those generally being internal and external, it is possible to deduce that – by its definition – it is a variable which determines in which way a person's belief in being in control of events and the results of this belief would work.

A person's having an internal or external locus of control may influence his point of view on events and phenomena and how they behave.

Akın (2007) states that people have more internal locus of control when they succeed and more external locus of control when they fail, and they tend to establish a sensory and cognitive balance based on this.

Joo, Joung and Sim (2011) note that students with internal locus of control have a more positive approach to behavioral results that occur as a result of their own efforts than those with negative control of locus. Locus of control has been subject to quite a few technology based studies. For instance, Chak and Leung (2004) suggest that there is a negative relationship between internet addiction and internal locus of control and people who believe that they can be in control over what happens in their lives are less likely to develop internet addiction. Joo, Joung and Sim(2011) note that locus of control is an important factor for creation of flow during the learning process for cyber learning environments and that internal locus of control and flow influence continuity in the learning of cyber university students. Koo (2009) states that people with an internal locus of control have a lesser tendency to play online games than those with an external locus of control.

The same study suggests that people with an external locus of control like the imaginary power or pleasure they gain while playing online games. Rotsztein (2003) refers to findings which suggest people with an external locus of control have more problematic internet usage. According to a study carried out on social self-efficacy, academic locus of control, and internet addiction, students with low levels of self-efficacy and an internal locus of control are more vulnerable to internet addiction.

METHOD

This study was conducted with a descriptive model. Studies conducted according to this model aim to describe a past or present case as it is (Karasar, 1999).

Study Group

The survey population consisted of a total of 12915 students - 57% females and 43% males-studying at seven different faculties of Trakya University during the 2010-2011 spring semesters.

The sampling of the research was carried out according to the multistage sampling technique. While selecting the sampling of the research, two-stage stratification was performed according to faculty students' attendance and their gender. Stratified sampling ensures both representation of sub-groups of the population in the sampling and a decrease in costs (Balcı, 2004, 85).

This study made use of Cochran's (1962; in Balcı, 2004, 95) formula, widely used in stratified sampling, to determine the sample size of the research which was 374 according to a .05 confidence level.

Data Gathering Instruments

The *Cognitive Absorption Scale and Locus of Control Scale* were used to collect the research data. Personal information forms were also utilized to gather students' personal data. The CA Scale is a 17-item scale first developed by Agarwal and Karahanna (2000) and adapted to Turkish by Usluel and Vural (2009).It is a 1 to 10 Likert type rating scale where 1 refers to "strongly disagree" and 10 to "strongly agree". The Cronbach alpha coefficient for internal consistency was measured to be (α) .92. The CA Scale is made up of four factors, which are "*time*" [(α) .88], "*curiosity*" [(α) .90], "*pleasure*" [(α) .90]and "*focusing of attention*" [(α) .82]. Scores attained from the scale vary between 17 and 170 (Usluela and Vural, 2009).

Another scale used in the research is Locus of Control Scale developed by Dağ (2002). Out of 47 items of the scale, 22 are reverse scores. It is a 1 to 5 Likert type rating scale where 1 refers to "strongly unfavorable" and 5 to "strongly favorable".

The Cronbach alpha coefficient for internal consistency was measured to be (α) .92.

The Locus of Control Scale consists of five factors, which are "*general internal control belief/personal control*" [(α) .87], "*belief in chance*" [(α) .79], "*meaninglessness of effortfulness*" [(α) .76], "*belief in fate*" [(α) .74] and "*belief in an unjust world*" [(α) .61]. Scores attained from the scale vary between 47 and 235 and the rise in the score reflects the belief in external locus of control (Dağ, 2002).

Data Collection and Analysis

The research data were gathered from students-survey population and sampling of the research – who attended the above mentioned faculties during the 2010-2011 spring term.

After deciding on the departments and classes where the sampling and research data would be collected, the relevant instructors teaching at these departments were contacted and informed about the research. Then the research data were gathered on the set date.

The data collected were computerized and then analyzed by means of SPSS software. t-test and single factor ANOVA were used for independent samplings in the analysis of university students' levels of CA according to various variables and correlation, and regression analyses were used for the analysis of the relationship between university students' levels of CA and locus of control.

FINDINGS

The research first looked into the university students' general levels of CA. Table 1 below presents findings of the analysis performed.

Table: 1
CA levels of the university students

Variable	Item Number (k)	Score Interval	n	$\overline{X}$	$\overline{X}$ /k	SD
time	5	5-50	374	30.70	6.14	12,863
pleasure	4	4-40	374	26.58	6.64	8,663
curiosity	4	4-40	374	25.60	6.40	9,670
focusing of attention	4	4-40	374	23.78	5.94	8,655
CA	17	17-170	374	106.66	6.27	28,936

According to Table 1, university students attained above average scores for level of CA and each of its sub-dimensions. The order of sub-dimensions that constituted CA as a result of the average scores' being divided by the number of items was(1) *pleasure*, (2) *curiosity*, (3) *time* and (4) *focusing of attention.* The research then compared university students' levels of CA and sub-dimensions to the gender variable. Table 2 shows the results of the t-test conducted for independent samples in this framework.

Table: 2
CA scores according to the gender variable

Variable	Group	n	$\overline{X}$	SD	t	df	p<
time	Female	214	30.93	12.42	.40	372	.685
	Male	160	30.39	13.46			
focusing of attention	Female	214	23.06	8.61	-1.88	372	.060
	Male	160	24.76	8.64			
curiosity	Female	214	25.81	8.46	-1.99	372	.047
	Male	160	27.61	8.84			
pleasure	Female	214	24.36	9.62	-2.88	372	.004
	Male	160	27.25	9.50			
CA	Female	214	104.16	28.27	-1.93	372	.053
	Male	160	110.01	29.56			

p<.05

According to Table: 2, there was no significant difference between university students' levels of CA in terms of the sub-dimensions of *time* and *focusing of attention* and the gender variable.

Table: 3
CA levels according to the faculty they attend

Variable		Intra-group	df	MS	F	p<
time		Total	6	156.696	.946	.462
	Intra-group	60778.284	367	165.608		
	Total	61718.460	373			
focusing of attention	Inter-group	992.777	6	165.463	2.253	.038
	Intra-group	26948.680	367	73.430		
	Total	27941.457	373			
pleasure	Inter-group	1332.114	6	222.019	3.056	.006
	Intra-group	26658.816	367	72.640		
	Total	27990.930	373			
curiosity	Inter-group	1168.715	6	194.786	2.121	.050
	Intra-group	33707.319	367	91.846		
	Total	34876.035	373			
CA	Inter-group	9279.775	6	1546.629	1.873	.084
		303027.775	367	825.689		
		312307.551	373			

p<.05

On the other hand, there is statistically significant difference between female and male students in the *curiosity* (t=-1.99, p<.047) and *pleasure* (t=-2.88, p<.004) sub-dimensions. Mean scores of the male students seem to be higher than those of female students for both sub-dimensions.

Another variable used in the research to determine university students' levels of CA is the faculty these students attend. Table: 3 presents results of the single factor ANOVA test.

According to Table: 3, there was no significant difference between university students' levels of CA and the faculty they attend (p<.05). However, there was a significant difference between the faculty and sub-dimensions of *focusing of attention* (F=$_{(6,367)=}$2,253, p<.038), *pleasure*($F_{(6,367)}$=3,056, p<.006) and *curiosity*($F_{(6,367)}$=2,121, p<.050). Since the variances were not equal, Tamhane's T2 multiple comparison test was used in order to determine the source of the difference. As a result of the test, it was concluded that the level of significance in the *curiosity* and *pleasure* sub-dimensions as a result of the single factor ANOVA test did not represent a real significant difference. The difference derived from the ANOVA test may be attributed to non-equal variances. In the sub-dimension of *focusing of attention,* a difference in terms of faculty was found in the Faculty of Science ($\overline{X}$=21.13) and Faculty of Literature ($\overline{X}$ =26.44).

The research compared university students' levels of CA and its sub-dimensions to the frequency of internet use. Table 4 demonstrates results of the single factor ANOVA test carried out within this framework.

Table: 4
CA levels' according to frequency of internet use

Variable	Source of the variance	SS	df	MS	F
time	Inter-group	494.870	2	247.435	1.499
	Intra-group	61223.590	371	165.023	
	Total	61718.460	373		
focusing of attention	Inter-group	73.189	2	36.595	.487
	Intra-group	27868.268	371	75.117	
	Total	27941.457	373		
curiosity	Inter-group	288.100	2	144.050	1.545
	Intra-group	34587.934	371	93.229	
	Total	34876.035	373		
pleasure	Inter-group	386.914	2	193.457	2.600
	Intra-group	27604.017	371	74.404	
	Total	27990.930	373		
CA	Inter-group	2561.908	2	1280.954	1.534
	Intra-group	309745.643	371	834.894	
	Total	312307.551	373		

p<.05

According to Table: 4, there was no significant difference between university students' levels of CA in terms of the sub-dimensions and the frequency of internet use.

The research compared university students' levels of CA and the sub-dimensions to their use of user accounts with social networking sites. Table 5 shows results of the independent samples t-test conducted for in this framework.

Table: 5
CA levels with having user account with social networking sites

Variable	Group	N	$\overline{X}$	SD	t	df	p<
time	Yes	330	31.25	12.626	2.256	372	.025
	No	44	26.61	14.010			
focusing of attention	Yes	330	23.42	8.567	-2.228	372	.026
	No	44	26.50	8.927			
curiosity	Yes	330	25.84	9.555	1.350	372	.178
	No	44	23.75	10.422			
pleasure	Yes	330	27.05	8.609	2.893	372	.004
	No	44	23.07	8.337			
CA	Yes	330	107.56	28.769	1.646	372	.101
	No	44	99.93	29.632			

p<.05

According to Table 5, there was no significant difference between students' levels of CA in terms of the *curiosity* sub-dimension and their having or not having a user account with social networking sites. However, there is a significant difference in the *time* (t=2,256, p<.025), *focusing of attention* (t=-2,228, p<.026) and *pleasure* (t=2,893, p<.004) sub-dimensions. While students with user accounts with social networking sites attained a higher mean score in terms of *time* and *pleasure*, students without a user account with such sites attained a higher mean score in terms of *focusing of attention*. The research analyzed whether there was any relationship between university students' levels of CA together with the sub-dimensions and locus of control and the sub-dimensions. Table 6 presents the findings of the correlation analysis conducted within this framework.

Table: 6
The relationship between CA and locus of control

	CA	general internal control belief/personal control	external locus of control
general internal control belief/personal control	-.201**	-	-
external locus of control	.061	.187**	-
Locus of control	-.087	.755**	.785**

** Correlation is significant at the .01 level (2-tailed).

The above mentioned analysis did not suggest any statistical relationship between CA and locus of control and *external locus of control*. However, it presented a negative and low level of relationship between CA and *general internal control belief/personal control*. The simple linear regression analysis looked into whether *general internal control belief/personal control* variable is one of the variables which predicts CA.

According to results, *general internal control belief/personal control* variable was one of the variables which predicted CA and explained 4% of the total variance [R=0.201, R^2=0.041, F=15.720, p<.01].

The research also looked into the relationship between CA sub-dimensions and the *general internal control belief/personal control* variable. Table 7 presents the findings of correlation analysis conducted within this framework.

Table: 7
Relationship between CA's sub-dimensions and general internal control belief/personal control

	general internal control belief/personal control	time	focusing of attention	pleasure
time	-.109*	-	-	-
focusing of attention	-.122*	.189**	-	-
pleasure	-.194**	.492**	.301**	-
curiosity	-.175**	.299**	.305**	.634**

*** Correlation is significant at the .05 level (2-tailed), ** Correlation is significant at the .01 level (2-tailed)**

Findings of the correlation analysis suggested a negative and low level of relationship between *general internal control belief/personal control* variable and each sub-dimension for CA. According to correlation coefficients of the analysis, the order of the said relationship is (1) *pleasure(r=-.194; p=.01)*, (2) *curiosity (r=-.175; p=.01)*, (3) *focusing of attention(r=-.122; p=.05)* and (4) *time(r=-.109; p=.05).*

DISCUSSION

This study analyzed university students' levels of CA according to a number of variables and looked into the relationship between CA and locus of control. The research primarily examined university students' levels of CA on the basis of a number of variables. Given the findings, it is possible to say that students have over moderate level of CA. Considering the average scores, sub-dimensions of the CA are seen to be ranked in the order of *pleasure, curiosity, time* and *focusing of attention*. A study conducted by Vural (2007) suggested similar results where CA levels of candidate teachers turned out to be high and the order of relevant sub-dimensions was found to be *time, pleasure, curiosity* and *focusing of attention*. Another study conducted by Elmezni and Gharbi (2010) shows that CA exerts a strong effect on web users in relation to how they spend their time and derive pleasure. Another study states that there is a relationship between CA and amusement perceived in the use of the virtual world (Chandra, Theng, O'Lwin, and Foo, 2009). Accordingly, it is possible to conclude that Web use leads to a rise in their levels of CA by stirring university students' feelings of pleasure and curiosity.

There was no statistically significant difference in comparisons of variables having been subject to the sub-purposes of the research and total CA scores. However, some factors listed as sub-dimensions of the CA could present statistically significant differences according to certain variables handled. The gender variable stands out as one of these, and there is a significant relationship between the gender variable and the two sub-dimensions, namely pleasure and curiosity. Male students attained higher scores in both sub-dimensions.

In other words, it is possible to say that male students take more pleasure in web use and their levels of curiosity are higher compared to female students. Some research in the relevant literature states that males could be more active than females in their experiences with information and communication technologies. For instance, Ceyhan (2008) notes that males have more difficulty than females with problematic internet usage, and Gündüz and Özdinç (2008) suggest that males have higher perception levels of self-efficacy while using the internet.

Considering the social environment and characteristics imposed by social roles affected by gender, it is possible to conclude that males have easier access to technology regardless of time and space, thus have the opportunity to gain more experience in technology use.

Thus, findings of the research support those of similar research. However, a study carried out by Vural (2007) did not suggest a statistically significant difference in the CA's sub-dimensions according to candidate teachers' genders. This finding is likely to have resulted from characteristics of samples in both studies. As the number of studies conducted in Turkey on university students' CA will increase, it will be easier to generalize the relationship between the said variables and this concept.

There emerged a significant difference between faculty students' attendance and the focusing of attention sub-dimension. The study conducted by Vural (2007) did not suggest a significant difference between CA's sub-dimensions and the departments at which the candidate teachers studied.

In this research, the Faculty of Literature's score turned out to be higher than that of the Faculty of Science in terms of focusing of attention. Both faculties are representatives of different scientific fields, and students of these departments receive education based on paradigms in line with the faculties' cognitive contexts.

Thus, areas of interest that students own and have developed within the framework of their social and cognitive characteristics, and their social characteristics and perceptual structures may explain the difference having resulted in focusing of attention.

This research did not suggest any significant difference in students' levels of cognitive absorption with the sub-dimensions according to frequency of internet use. However, Vural's study (2007) put forth a significant difference in teacher candidates' time, curiosity and pleasure sub-dimensions according to their internet use frequency.

According to this research, the longer the duration of use is, the higher the curiosity and pleasure sub-dimensions become. Frequency of use is a variable treated in a number of studies (Cakır Balta and Horzum, 2008; Odacı and Kalkan, 2010) in the literature which suggest that the increase frequency of use might result in problems such as internet addiction or problematic internet use.

Contrary to these studies and findings, this study did not present a significant difference between university students' levels of CA and their frequency of internet use. It is likely to be linked to university students' experiencing a healthier virtual environment due to their positive social interaction with friends and the environment on and off campus, social opportunities, and their personal choices and characteristics.

This study discussed students' having user accounts with social networking sites within the framework of their levels of CA and the sub-dimensions. Though the research did not suggest any significant difference between students' having or not having accounts with such sites and their scores of CA, it presented a statistically significant difference in the time, focusing of attention and pleasure sub-dimensions. Redecker, Ala-Mutka and Punie (2010) state that social networks encourage users to be more active and interactive in internet use. Another study suggests that one of the primary intentions of individuals who use Facebook, being among the popular social networking sites, is to sustain their existing relationships (Mazman and Usluel, 2011).

In the light of similar findings, it is possible to assume that the web environment leads to an increase in the level of CA, as social networking sites offering students the chance to socially interact regardless of time or space and social sharing realized through the use of multimedia elements attract students' attention.

This research looked into the relationship between university students' levels of CA and locus of control. The research, in a general sense, presented a significant but negative relationship between university students' levels of CA and general internal control belief, that is, personal control.

It also analyzed the relationship between the sub-dimensions of CA and internal control belief/personal control and suggested a negative relationship with each sub-dimension, pleasure, curiosity, focusing of attention and time respectively. Accordingly, the more personal control students have, the lower their level of CA.
Some studies which were carried out on the locus of control and the Internet suggested similar findings.

For instance, Chak and Leung (2004) and Rotsztein (2003) state that there is a negative relationship between internet addiction and internal locus of control and Koo (2009) notes that people with an internal locus of control have less tendency to play online games. Çelik, Atak and Başal (2012) state that need for internet use is lower level for extraverted people when compared to other personality types.

Further, Joo, Joung and Sim (2011) state that the internal locus of control has an effect on the continuity of learning for cyber university students. Within the framework of these findings, and as mentioned in similar studies in the literature, it is possible to deduce that having a higher internal locus of control, in other words having a higher level of personal control results in a decrease in the level of CA.

CONCLUSION

The research suggests that university students have over moderate level of CA and the higher the general internal control/personal control is, the lesser CA. It is possible to conclude that information and communication technologies serve as sources of pleasure and curiosity for university students, but for students with a higher internal locus of control, levels of pleasure and curiosity drop.

Use of information and communication technologies in learning and teaching processes and online applications' becoming widespread, as well as e-learning and social networks in particular, have made it important to understand and explain at what levels, how and why users interact with the said technologies.

CA now stands out as a variable which may help to determine university students' technology related perceptions and their sensory and cognitive choices in technology use in online learning applications and in classes supported information and communication technologies. In this context, CA is a concept which may help define students' characteristics in the process of developing technology based teaching practices that will attract students' attention, ensure motivation, and offer individual and social pleasure while learning. However, from the opposing point of view, it should be considered that the relationship between CA and internal locus of control may indicate misuse and the negative impacts of technology.

It is possible to put forth some recommendations within the framework of the findings of the study. First, future studies conducted with different samples to determine university students' levels of CA may contribute to the enrichment of the relevant literature and accordingly technology based teaching practices developed at university level may become more efficient. In addition, research which will cover variables such as locus of control that is likely to be related to CA may help present the link between CA and students' individual and social characteristics and its effect on the use of technology. Using the scales to determine CA levels in the research as the basis of web technology having the potential to be widely used among all information and communication technologies and the population's and sampling's being made up of students of a single university should be acknowledged as limitations of the research. Research carried out with different samples and focused on different technologies may suggest different findings.

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STEPP:
A Grounded Model to Assure the Quality of Instructional Activities in e-Learning Environments

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ABSTRACT

The present theoretical paper aims to develop a grounded model for designing instructional activities appropriate to e-learning and online learning environments. The suggested model is guided by learning principles of cognitivism, constructivism, and connectivism learning principles to help online learners constructing meaningful experiences and moving from knowledge acquisition to knowledge creation process. The proposed model consists of five dynamic and grounded domains that assure the quality of designing and using e-learning activities:

- **Social Domain;**
- **Technological Domain;**
- **Epistemological Domain;**
- **Psychological domain; and**
- **Pedagogical Domain.**

Each of these domains needs four types of presences to reflect the design and the application process of e-learning activities. These four presences are:

- **cognitive presence,**
- **human presence,**
- **psychological presence and**
- **mental presence.**

Applying the proposed model (STEPP) throughout all online and adaptive e-learning environments may improve the process of designing and developing e-learning activities to be used as mindtools for current and future learners.

Keywords: **e-Learning, online learning, instructional activities, instructional design, mental models, web-based activities, e-learning activities models.**

INTRODUCTION

Educational practices through the ages have been shaped by the dominant forms of communication, and the transitions from one age to the next age have caused great anxiety among educators of the time (Thornburg, 1996). While communication was an important skill in the industrial age, it has become the most important skill during the current age – the digital age.

Digital age learning began with a poor initial pedagogical model of e-learning, based on a behaviorist and page-turning approach to learning.

The reality is that digital learning is becoming integrated into portals and work flows, even though it is not necessarily labeled as e-learning. The lines are increasingly blurred between learning and working, and many aspects of learning that occur online are not being measured as such (Driscoll, 2008). Today's learners live in a global-knowledge-based age. They deserve educators whose practices embrace the best that technology can bring to learning (International Society for Technology in Education (ISTE), 2002).

The Internet and the Web are the driving force of the future of the educational delivery, in which learners are allowed to choose and change not only the location and people, but also the time and context that learning takes place. The instructional environments became non-linear and concurrent than ever before. Therefore, it is questionable whether new instructional activities will support the non-linear and concurrent features of Web-based instruction and learning to educate our students to be life-long learners and successful contributors to other students learning. Such holonomic view will make student not only responsible for his own learning but also other students' meaningful learning as well.

Meaningful learning that can take place in virtual and e-learning environments is not reflected only in the preparedness of learning environments and state-of-the-art teaching strategies. It also reflects the extent of trust in the learning outcomes. Learners need to get convinced that learning in virtual and e-learning settings will be meaningful, and that they will acquire self-learning skills.

For meaningful learning to take place in virtual and e-learning environments, there should be, as conceived by the researcher, well-developed comprehensive instructional activities models to guarantee that meaningful learning is actually taking place. Such models are expected to build bridges of trust in the outcome of virtual and e-learning.

Virtual and e-learning are now facing challenges of the nature as challenges faced by Web-based learning. Such challenges are not related to weaknesses in software, apparatus or management of learning. Rather, they relate to the quality of learning activities from the learner's perspective (Downey, 2011).

With face-to-face teaching the educator receives continuous feedback from the students. Several non-explicit messages tell him if the speed of presentation is correct, and send other information which make possible to evaluate in real time the level of understanding, and tune properly the delivery (Corso, Forno, Morrone, & Signorile, 2006). This is not possible for e-courses and Web-based learning activities. They are prepared without an audience – or audience at delivery is different from the audience at preparation. Therefore, they must be designed very carefully and effectively with specific methodology to coach and train learners' minds (Corso, Forno, Morrone, & Signorile, 2006).

The holonomic concept is shifting Web-based and e-learning environments from ordinary one into an adaptive and effective learning environment.

According to the National Research Council (NRC), effective learning environments are consisted of four basic components:

- **knowledge-centered wherein the emphasis is on understanding rather than remembering;**
- **learner-centered, wherein individual learners' personal and cultural backgrounds and learning styles are valued;**
- **community-centered, wherein learning activities are collaborative and foster a community of practice that involves legitimate peripheral participation; and**
- **assessment-centered, wherein formative assessment is used to make students' thinking visible to them and evaluation is performance-oriented (Rhodes, 2011).**

The author may add one more components to the previous ones. This component is that effective learning environment is activity-guided in which instructional activities is the capital of any e-course delivery.

The researcher believes that currently available instructional activities models for e-learning environments need to be evaluated and enhanced in order to assimilate the continuous change in adaptive and e-learning environments, and social communication channels that are recently increasing in number and spreading everywhere.

In this regard, Heide & Henderson (2001) reported that there are a number of important reasons for adaptive models of instructional activities, and they are:

- **our students live in a world of technology;**
- **new technologies can enrich and expand learning, increase the productivity of teachers and students, and enhance their lives beyond the classroom;**
- **research continually provides us with new information on how we learn and how technology can be of assistance in the teaching/learning process;**
- **there is an ever-widening diversity of student needs in every classroom and these students have different learning preferences, and**
- **the workplace demands a new repertoire of skills and competencies.**

Based on his experience in e-learning, managing e-learning centers and teaching e-courses, the researcher noticed that instructional activities in virtual and e-learning environments continues to be based on traditional methods such as online chat, discussion forum and e-mail that do not enhance knowledge creation, especially when learners are exposed to situations requiring the application of what they have learnt.

In such a context, the learner focuses on passing courses and not on self-promotion. Retention of learnt experiences is based on learners' ability to construct and organize meaningful cognitive structure, which helps them to self-generate new experiences in the future.

Even though e-learning management systems make available tools and programs that can be used in learning activities, they focus on the use of varied traditional methods through media. Traditional activities don't extend to cover the depth of learning and meaning making.

Thus, this paper attempted to suggest a grounded model for designing e-learning instructional activities based on the non-linear and interactive features of the digital learning and instruction through the Web and the Internet. The premise of this grounded model was based on the belief that adaptive learning environments are important medium in teaching and learning process and need to be integrated into Web-based instruction more than ever before (Abdelaziz, 2012 A). Adaptive learning environments introduce another source of knowledge, skills and values. The introduction of an adaptive and interactive activities of learning means that instructors may spend less time presenting knowledge to groups of students and more time facilitating small groups work and guiding students to appropriate resources of curriculum. This shift will more likely involve a change in all instructional practices and delivery of Web-based education. This shift will also keep our learning with the Internet and the Web more holonomic than ever before.

Nowadays, students are learning in a technology-rich environment that is collaborative and knowledge building. Thus, technology-rich environment requires a special type of holonomic and adaptive instructional activities. The main features and components that can be used to visualize, direct, and manage the process of e-learning activities according to this new model are presented in thin paper. A *STEPP* is needed to move e-learning and instructional activities from stand-alone physical benchmarks to multitask mental benchmarks.

THEORETICAL BACKGROUND

Improving The Quality of E-Learning Instructional Activities

What shall we do when information is doubling every 73 days or less? One rational answer is to train students to learn how to learn and contribute to other students learning in an ever-changing society. In order to develop such training/learning activities, we need to adopt a student-centered activities and materials where students can become adept to new information in light of their own needs based on their academic and culture background (Gillani, 2003). According to Merrill (2008, p. 397), "many of current e-learning models could be characterized as e_3 –learning (e sub-three learning): enervative, endless and empty".

- ***Enervative*** **means that learning is focusing in knowledge acquisition not in generating ideas and innovative solutions.**
- ***Endless*** **means that learners are passive receiver of knowledge; they avoid interaction and engagement in meaning making situations.**
- ***Empty*** **means that current learning e-learning models fail to apply new instructional strategies that promote active feedback and feed forward.**

Many of educational literatures and studies pointed out several characteristics to assure the quality of Web-based instructional activities. One of these studies is Merrill's study (2008). Merrill pointed out three characteristic of e-learning activities.

"E-learning activities according to Merrill's model should be: effective, efficient, and engaging (e^3 learning-e to the third power learning activities) (p. 398)."

The National Research Council (NRC) has also reported that there are five ways that e-learning activities can be used to help meet the challenges of establishing effective learning environments:

- **Bringing authentic problems into classroom through the use of videos, games, simulations, and Internet connections to concrete data;**
- **Providing "scaffolding" support to augment what learners can do and explain about on their path to understanding;**
- **Increasing opportunities for learners to receive feedback from software tutors, teachers, and peers;**
- **Building local and global communities of teachers, administrators, students, parents, and other interested learners or groups; and**
- **Expanding opportunities for educators' learning. (NRC, 2001).**

"The effective teaching of Web-based courses requires knowledge of both the activity structures/types that are appropriate for teaching specific content and the manners in which particular technologies can be utilized as part of the lesson, project, or unit design" (Harris, Mishra, & Koehler, 2009, p. 406).

To assure the quality of designing and applying e-learning activities in online and Web-based learning environments, several factors should be considered. These factors are discussed below. These factors are also representing the main domains of the proposed model in current research, which could be called *STEPP* model. Where, *S* refers to the social and human domain, *T* refers to the technological domain, *E* refers to the epistemological domain, *P1* refers to the psychological domain and *P2* refers to pedagogical domain.

The Social/Human Domain

With the increasing demand of e-learning and Web-based and online teaching nowadays, the educators' roles are decreasing and the technology and pedagogy roles are increasing. To face this issue and guarantee the quality of e-courses delivery, we should develop effective instructional activities that substitute the absence of educators.

According to social constructivism theory, there are different views in the surrounding world. It is rare to find two learners having the same experiences and perceptions as each constructs meaning in his/her own way. This explains differences in our views that we can share with others (Lefrancois, 1999). Is diversity in views reflected in e-learning activities?

One of the main principles of learning according to social contructivism theory is that meaning can be shared with others. Thus, meaning construction can result from discussion with others. Because we share the world around us, we can also share meanings constructed through it.

The learner is a human being who is affected by the changes made by others. Hence, meanings can be constructed through effective social/human interaction.

This interaction results in what is called "Communities of Inquiry and Practice". These communities enhance the concept of collective learning versus individual learning. Unfortunately, individual learning is still used in Web-based learning even though its value is lower than the value of collective learning (Conrad & Donaldson, 2011).

In addition, Harris (1998) stated that interpersonal exchange is a helpful strategy to engage online learners from a distance. This strategy gives students an opportunity to interact with others from a distance. By doing so, they come to appreciate how differently people see and make sense of their world. They also have opportunities to reinforce literacy skills through extended reading and writing activities. Harris (1998) cites several examples of interpersonal exchanges activities: "*Keypals, Global classrooms, Electronic appearances, Electronic mentoring, and Impersonations.*" (p. 83)

Salmon (2004) agreed with Harris (1998) regarding the importance of online socialization matter. In her model of e-Tivities, Salmon (2004) presented a five stages model for e-Tivities:

- **access and motivation;**
- **online socialization;**
- **information exchange;**
- **knowledge construction; and**
- **development.**

In online and Web-based learning environments, meaning can be communicated through tools, culture and society. When we interact with others in communities of inquiry, our knowledge and beliefs are affected by knowledge and values of the surrounding community. This constitutes what can be termed "Collective Memory". Participation is collective memory makes learning societies dynamic. The quantity and quality of collective memory vary according to the quantity and quality of individuals' knowledge (Abdelaziz, 2012).

Online and Web-based teaching is great gates to develop a culture of learning that promote global mind and collective memory. Online educators should be guides and directors of online students' activity without forcing their will on students. Hence, online teaching should be collaborative process to increase the Zone of Proximal Growth among learners (Lefrancois, 1999).

Social and human factor is the feel that online learners communicate with people instead of technological objects. When social presence is high, each online learner has the feeling of engaging in meaningful actions. Cobb (2009) agrees with this. He concluded that social presence is one concept that has been explored in relation to the quality of online learning experience.

To sum it up, the author believes that online socialization and interpersonal exchanges can increase the probability of shifting online learning from being just a community of inquiry to a community of practice. Community of practice is a future theme for collective, collaborative and global mind which reflects the capabilities and skills of 21st century learners.

The Technology Domain

Designing adaptive e-learning activities needs a specific type of integration between asynchronous and synchronous technology to reflect the diversity of learning styles among online learners. Using variety of asynchronous and synchronous activities can support most of the interactions taking place in e-learning and Web-based learning environments (Anderson, 2008).

Asynchronous activity-type fits only with the lowest level of interaction such as, learner-interface interaction, learner-content interaction and learner-learner interaction. Whereas, synchronous activity-type is appropriate for highest level of interaction such as, learner-support interaction, learner-instructor interaction and learner expert-interaction. Using asynchronous or synchronous activities alone is not promoting the 21st century skills among online learners which are depending mostly on context of learning not on content of learning.

In this regard, Anderson (2008) stated that "there should be strategies to promote learner-context interaction, to allow learners to apply what they learn in real life so they can contextualize the information. Learner-context interaction allows learners to develop personal knowledge and construct personal meaning from the provided information". (p.33)

Table: 1
Learning Activities Facilitated by Different Levels of Computer Networking Technologies

Levels of Interaction in e-learning	Description	Enabling Technologies	Learning Activities
Learner-interface; Learner-content (One-alone)	Individual can access information resources stored on the World Wide Web. These resources can also be used by groups.	On-line databases and journals , Software libraries, Tutorials and job aids and Other Web resources	Independent Inquiry Research and writing Browsing
Learner-support Learner-learner Learner-teacher Learner-expert (One-to-one)	Individuals can communicate to other individuals using e-mail, and can arrange for individual learning experiences such as internship or independent studies.	E-mail Chatting technologies using text, audio, and/or video	Apprenticeships and internships E-mail posts, private consultations One-on-one chats
Learner-support Learner-context (One-to- many)	Individuals can broadcast information to entire groups, information can also be published at Web sites to allow others access.	Distribution lists Web Pages as a source of text and multimedia displays, Web pages as links to outside resources.	Lectures and symposiums Publishing results of research and inquiry activities, Convenient access and dissemination of resources
Learner-context (Many-to-any)	Groups of people can engage in open communication, through various discussion and activity forums, both real-time and synchronously.	Listservs Chat and conferencing technologies MUD and MOO systems	Debates, Discussion and support groups, Group exercises and projects MUD and MOO learning activities

It could be noticed from the previous paragraphs that using a variety of communication technologies and interactions is one of the most important factors to assure the quality of instructional activities of e-learning.

Thus, both level of interactions and enabling technologies should be reflected while designing e-learning activities. For this reason, the researcher has emerged and integrated the level of interactions with enabling technologies that were stated by both Jonassen, Peck, & Wilson (1999, p. 123) and Anderson (2008, p. 32). Table: 1 matches the levels of e-learning activities with enabling communication technologies. As the World Wide Web (WWW), the Internet, and telecommunications have become the common tools of instruction in the digital age, the linear features of the traditional models no longer fit or meet the "learning focused" instructional activities. Perhaps the most important of all implications is that much of the designing should be done by the learners while they are learning, with help from a computer system and/or the teacher and other students generating options (Horton, 2011). In this regard, Harris (1998) has developed a list of activity structures suitable for the adaptive classroom, demonstrating the variety of activities that telecommunications enables (p. 83). Harris's telecommunications activities are summarized on the following:

Information Collection

The focus of these activities is on collaborative, distributed collection, analysis, organization, and presentation of information. Students can participate in every step of this process. Information activities may help students internalize scientific methods. They may also strengthen students' information literacy skills. Examples include: Information exchanges, Database creation, Electronic publishing, Electronic field trips, Pooled data analysis.

Problem-Solving Projects

These projects focus on individual, small group, or multi-group problems. They often require higher levels of collaboration and organization between sites. Students have opportunities to learn task-management skills in addition to content objectives. Examples include: Information searches, Parallel problem solving, Electronic process writing, Serial creations, Simulations, Social action projects.

Psychological Domain

Learning styles are yet another quality factor that should be considered while designing e-learning activities. For better activity design, online educators need to pay attention to this factor if they hope to engage every member of the group, from a solid and successful learning community, and achieve the objectives of the e-course (Palloff & Pratt, 2003). A variety of e-learning activities and materials should be included in online instruction to accommodate individual differences and learning and cognitive styles (Anderson, 2008). Cognitive style refers to a learner's preferred method of processing and understanding information. It represents the person's typical mode of thinking and problem solving. Learning and cognitive styles also reflect the psychological domain of learning. The central theme of psychological factor in e-learning activities is that learner can transfer the knowledge-based content into real and authentic actions. Authentic actions are very important to guarantee skill building and acquisition. One of the main characteristics of psychological domain is that it gives the student a read on how people learn. Thus, psychological interaction focuses on body language and its impact on convincing learners who are having ideas to learn from.

It's a mistake to assume that every online learner receives and processes information the same. Online learners learn best when they approach knowledge in way they trust (Palloff & Pratt, 2003). The ability to transfer and generalize learning outcomes is depending mostly on the degree of trustworthiness that learner's mind gets from e-learning activities and materials. It could be concluded that psychological domain is one of the most important factor that should be considered while selecting or designing e-learning activities. Learner's psychological characteristics empower online learners to develop multiple pathways to learn and to build their own meaning of learning. Table: 2 provides a matrix to match students' learning style and appropriate online instructional techniques and activities (adopted with permission from: Palloff & Pratt, 2003, p. 37-38).

Epistemological Domain

The content structure and knowledge type is yet another important factor to consider while selecting or designing e-learning instructional activities. It's so critical for online educators to understand knowledge type and level of online materials. Knowing the knowledge type will enable educators to design the most effective instructional materials and interactions. Schone (2007) stated that the content can be classified into four types of knowledge: *Factual Knowledge, Conceptual Knowledge, Procedural Knowledge and Metacognitive Knowledge* (p. 8).

Table: 2
Online Instructional Techniques and Activities to Address Various Learning Styles

Learning Style or Preference	Instructional Techniques and Activities
Visual-verbal: Prefers to read information.	Use visual aids, such as PowerPoint or whiteboard. Provide outlines or lecture materials in written form. Use written materials, such as textbooks and Internet resources.
Visual-nonverbal or Visual-Spatial: prefers working with graphics or diagrams to represent information.	Use visual aids, such as PowerPoint, video, maps, diagrams, and graphics. Use Internet resources, particularly those that contain graphics. Use videoconferencing.
Auditory-verbal or verbal-linguistic: prefers to hear material being presented.	Encourage participation in collaborative and group activities. Use streaming audio files. Use audio conferencing.
Tactile-Kinesthetic or bodily-kinesthetic: prefers physical, "hand-on" activity.	Use simulations. Use virtual labs. Require outside fieldwork. Require presentation and discussion of projects.
Logical-mathematical: prefers reasoning, logic, and numbers.	Use case studies. Use problem-based learning. Work with abstract concepts. Use virtual labs. Encourage skill-based learning.
Interpersonal-relational: prefers working with others.	Encourage participation collaborative and group activities. Use discussion board. Use case studies. Use simulations
Intrapersonal-relational: Prefers reflection and working with others.	Encourage participation in collaborative and group activities. Use discussion board. Use case studies. Make use of activities requiring self-and group assessment.

Content structure reflects the epistemological bases that each learner in both face-to-face and e-learning environments should know and be able to use throughout his personal or career life. Breaking e-content into small and sequenced chunks during designing e-learning activities helps to prevent cognitive overload during processing in working memory. To assure the quality of e-learning instructional activities, online activities should be organized and presented to reflect content structure and levels of knowledge.

In this regard, Horton (2008) reported that Web-based learning activities are providing creative solutions to qualify and quantify learning through the following five strategies:

- **Increasing knowledge, by making it more accessible to people;**
- **Capturing knowledge, by making it easier for people to record what they know;**
- **Refining knowledge, so it is expressed in a way that's useful to others;**
- **Sharing knowledge, which involves making knowledge accessible. Keeping knowledge chunks small and easy to find and quick to use and reusing knowledge; and**
- **Applying knowledge, which is, acting on the messages in the content.**

Chunking e-learning activities is yet another approach to train online learners' mind to encoding knowledge without extra load. It helps motivating learners and keeping them active, which facilitates the creation of personalized meaning. The chunking and sequencing e-learning activities could take the form of simple to complex, known to unknown, knowledge to application, and factual to procedural knowledge (Anderson, 2008).

Pedagogical Domain

Cognitivism, constructivism and connectivism perspectives were adopted as pedagogical frameworks for this dynamic model. The underlying theme of cognitivism learning is that learning is a method to model the process of interpreting and constructing meaning from understanding. As learners' performance becomes more expert-like and fluent so the component skills become automated (Mayes & Freitas, 2012). Constructivism has a substantial impact on views pertaining to the conditions and instructional strategies and activities essential to build and organize learners' knowledge. Increasingly, mainstream cognitive approaches to learning have emphasized the assumptions of constructivism that understanding is gained through an active process of creating hypotheses and building new forms of understanding through activities (Mayes & Freitas, 2012).

In the meanwhile, constructivism gives a considerable attention to the social culture of learning. This view of learning focuses on the way knowledge is distributed socially.

When knowledge is seen as situated in the practices of communities then the outcomes of learning involve the abilities of individuals to participate in those practices successfully (Mayes & Freitas, 2012).Both cognitivism and constrcutivism are sharing some learning principles about effective instructional activities, which can be summarized in the following (Driscoll, 2002):

- **engage learners in activities authentic to the discipline in which they are learning,**
- **provide for collaboration and the opportunity to engage multiple perspectives on what is being learned,**
- **support learners in setting their goals and regulating their own learning, and**
- **encourage learners to reflect on what and how they are learning**

Barab & Duffy (1999) pointed out that there are at least two 'flavors' to situated learning. One can be regarded as a socio-psychological view of situativily. This emphasizes the importance of context-dependent learning in informal settings. This activity-guided view of situated learning led to the design of what Barab & Duffy call 'practice fields' this authentic to the social context in which the skills or knowledge are normally embedded in the situation (In: (Mayes & Freitas, 2012).

Constructivism has also a substantial impact on views pertaining to the conditions and instructional approaches essential to build and organize learners' knowledge and authentic experience (Savery & Duffy, 1995). Constructivism has considerable pedagogical views regarding how to contribute and support other people learning through a process of collaboration and social inquiry. The collaborative social inquiry is important for learners in that it maintains good rapport with team and fostering open communication, collaboration, creativity, initiative, and appropriate risk taking (Corcoran et al. 1995; Loureiro & Bettencourt, 2010).

From previous two paragraphs we can say that both congnitivism and constructivism gave a great attention to cognitive and social presence while designing e-learning activities. Those two presences are important to visualize and manage the knowledge making process among online learners.

In the meanwhile, connectivism has considerable views regarding how to contribute, delve and support other people learning. It emphasizes on neural network learning. This approach sees knowledge states as represented by patterns of activation in a network of elementary tasks. In a networked world, the very manner of information that we acquire is worth exploring. We derive our competence from forming connections (Siemens, 2004). This perspective addresses learning that occurs outside of people (i.e. learning that is stored and manipulated by technology). A network can simply be defined as connections between entities. Computer networks, power grids, and social networks all function on the simple principle that people, groups, systems, nodes, entities can be connected to create an integrated whole.

Principles of Connectivism (Siemens, 2004)

- **Learning and knowledge rests in diversity of opinions.**
- **Learning is a process of connecting specialized nodes or information sources.**
- **Learning may reside in non-human appliances.**
- **Capacity to know more is more critical than what is currently known.**
- **Nurturing and maintaining connections is needed to facilitate continual learning.**
- **Ability to see connections between fields, ideas, and concepts is a core skill.**

- **Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.**
- **Decision-making is a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality.**
- **While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.**

It could be noticed from connectivism principles of learning that both psychological presence and social presence are main components of networked learning. Thus, e-learning activities should give an emphasis on those two kinds of presence.

In summary, the quality of e-learning activities can be assured by the following indicators:

- **Understanding how our students learn (*theoretical and pedagogical indicator*).**
- **Awareness of the issues that affect students' lives and learning and how they bring them into the e-learning classes (*psychological indicator*).**
- **Understanding what virtual students need to support them in their learning (*technological and human/social presence indicator*).**
- **Understanding how to assist virtual students in their development as reflective practitioners (*psychological indicator*).**
- **Finding a mean to involve virtual students in e-course design and assessment (*pedagogical indicator*).**
- **Respecting students' rights as learners and their role in the learning process (*Mental and cognitive indicator*).**
- **Understanding how to develop e-courses and programs with an eye to continuous quality improvement so that students stay in the learning process and move smoothly in the direction of their goals, objectives, and values (*epistemological indicator*).**

It could be noticed that previously mentioned Harris's model (1998) and Salmon's model (2002) gave a great attention to information exchange and knowledge construction activities. But the proposed model *STEPP* of e-learning activities is giving great attention to the pedagogical, epistemological, social, and mental activities.

In this paper, the author introduces a grounded model to assure the quality of selecting and designing e-learning activities based on learning principles of educational perspectives and quality factors above mentioned. This model goes beyond technocentric strategies and emphasizes the importance of helping both educators and online learners develop and apply integrated and interdependent understanding of e-learning activities that fit with technology, pedagogy, learning styles, content, and context of e-learning. The proposed model of designing e-learning activities is consisted of five domains that guide both online educators and learners' teaching and learning context.

Based on the quality factors and theoretical perspectives previously mentioned, the author represents the domains of e-learning activities model (*STEPP*) in Figure: 1.

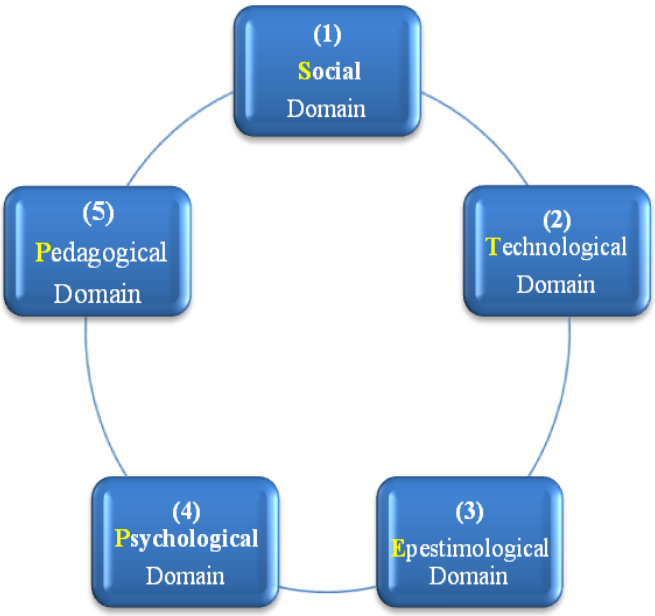

Figure: 1.
The domains of STEPP model for e-learning activities

To ensure effective application of each of the previous dimensions, each dimension needs four types of presence: Social presence, Cognitive presence, Psychological presence and Mental presence. These four types of presence are reflecting the importance of community of inquiry and practice model while selecting and /or designing e-learning activities for Web and Internet based learning.

The community of inquiry was developed in the late 1990s in response to the emergence of text discussion forums and the constructive generation of distance education pedagogy (Garrison, Anderson, & Archer, 2000).The central characteristic of the community of inquiry is that effective learning and educational experience occur at the confluence of three distinct types of presence; social, cognitive and teaching (Garrison, Anderson & Archer, 2000).

Lessiter, Freeman, Keogh, & Davidoff (2001) defined presence as a user's subjective sensation of "being there" in a mediated context. There are three types of presence: social presence, educator presence and cognitive presence. Social presence can be defined as the extent to which a student's true self is projected and perceived in an online course (McKerlich, Riis, Anderson & Eastman, 2011). Educator presence is the direct and indirect role and influence of the educator and perhaps senior students in the design, direction and facilitation to ensure a meaningful educational experience (Anderson, Rourker, Garrison & Archer, 2001). Cognitive presence is defined as the extent to which a learner can construct and confirm meaning through dialogue in a critical community of inquiry (Garrison, Anderson & Archer, 2000).

According to what is previously mentioned, e-learning in a virtual world is often perceived as a rich educational experience that includes elements of all three types of presence in the community of inquiry: social presence, educator presence and cognitive presence. The researcher believes that these three types could be the focal point for the new model of e-learning activities (*STEPP*).

The author also believes that these three types can be adjusted to be four types with some major changes to create adaptive and active e-learning activities for online and virtual learning environments. These four presences activities are: social presence, cognitive presence, psychological presence and mental presence. In the following, the author presents shortly each type of presence and its importance for designing e-learning activities.

Social Presence Activities

In social presence, online learner is presenting his position on virtual worlds as role model for other students. As part of his presentation, the learner wants to show his fellow learner how additional activity can be used to achieve interpersonal skills needed in learning situations. Dacko, (2006) concluded that giving strong interpersonal skills is essential to strong everyday comradeship, thus, there is a clear need for strengthening interpersonal skills among learners' practitioners to speed the generating and transfer of knowledge within and across organizational boundaries.

Richardson & Swan (2003) stated that teacher immediacy behaviors and the presence of others are especially important issues for those involved in delivering online education. In online learning environments, students with high overall perception of social presence scored high in terms of perceived learning and perceived satisfaction with the instructor.

Computer-mediated communication tools are important tools to increase the effectiveness of social presence in online learning environments. E-mail, bulletin board and real-time discussion are found to be effective tools to influence the level of online social presence and privacy (Tu, 2002). To maximize the social presence in online and Web-based learning environments according to STEPP model, the following e-learning activities listed in Table 3 are suggested.

Table: 3
The E-learning Activities Types Compatible with Social Presence.

Presence Type	Examples	Compatible e-Learning Technologies*
Social presence activities	1. Group discussion	Discussion forum, blogs, wikis, chartrooms.
	2. Debate	Discussion forum, e-mail. Chat.
	3. Simulation	Virtual reality Web sites, simulation software, animations.
	4. Answer questions	Discussion boards, wikis, whiteboard, e-quiz and polling software.
	5. Create a game	
	6. Do a presentation	Word Processors, imaging tools, Web authoring software, specialized game-making software.
	7. Engage in role play	Presentation software, multimedia capture/editing software.
	8. Create a diary	Presentation software, multimedia capture/editing software. Wikipedia.

*Some of these Compatible Learning Technologies were adopted from Harris, Mishra, & Koehler (2009).

Cognitive Presence Activities

In cognitive presence, students are presented with theoretical statements via the "opinionator", a free virtual world tool that animates a Likert-like questionnaire scale.

This provides an opportunity for students to position themselves and then ask questions about the theoretical point, and engage in an exchange of ideas as they explain their decisions to each other. Students display their positions by virtually placing their avatars on the opinionator. During the discussion, some students may change their position, due to the arguments of fellow students. Some students favorably compare the engagement and presence of this experience as opposed to having a similar discussion in a conventional, text-based LMS (McKerlich , Riis, Anderson & Eastman, 2011). A deep approach to learning must consider cognitive presence since social presence alone is not enough to measure meaningful learning outcomes. Cognitive presence reflects the interaction among ideas that online learners get from online learning context. Garrison & Cleveland-Innes (2005) concluded that neither social presence nor the surface exchange of information can create the environment and climate for deep approaches to learning meaningful education exchanges. To facilitate higher levels of learning in online settings, a combination of social and cognitive presence e-learning activities is needed (Kanuka & Garrison, 2004).

Furthermore, the cognitive presence activities were found to be an effective element to help online learners in both online and blended courses reach high level of learning outcomes and processes (Akyol & Garrison, 2011). To maximize the cognitive presence in online and Web-based learning environments according to STEPP model, the following e-learning activities listed in Table: 4 are suggested.

Table: 4
The E-learning Activities Types Compatible with Cognitive Presence.

Presence Type	Examples	Compatible e-Learning Technologies
Cognitive Presence activities	. Read online text . View presentation . View Images . Research . Artifact-based inquiry . Data-based inquiry . Answer questions . Complete charts/table . Take a test	1. E-books, Web browsers, CD-ROM, document view. 2. Presentation software, e-note taking tools, audio/video, whiteboards, concept mapping software. 3. Image/animation/video editing and display software. 4. Traditional and online books, encyclopedia, Wikipedia. 5. Artifact kits, online books and journals, Wikipedia. 6. Web sites, online databases, WebQuest. 7. Discussion boards, wikis, whiteboard, e-quiz and polling software. 8. Excel or other data processing software, concept mapping. 9. Quiz software, survey software.

Psychological Presence Activities

In psychological presence, learners are virtually emulating an observable behavior for a person (coach) who is dealing with others in a learning situation.

The central them of psychological presence activities is that learner can transfer the knowledge-based content into real and authentic actions.

Authentic actions are very important to assure skills building and acquisition.

One of the main characteristics of psychological presence is that it gives the student a read on how the learners are responding.

Thus, psychological presence focuses on body languages and its impact on convincing learners who are having different opinions. Psychological presence activities give online learners a sense of *being there*.

They motivate learners to stay engaged for as much as they could in online learning context (Abdelaziz, 2012 A).

Psychological presence activities also sustain the engagement of online learners through e-coaching activities.

E-coaching activities play an integral role in the community of online learning. They can play the following roles (Abdelaziz, 2012 C, p. 8):

Motivator

E-coaches increase their ability to serve this role by making themselves available by e-mail, and instant messages.

Integrator

To serve as an integrator who connects the responsibility to useful people, tools and resources.

Several coaches can use e-mail to share useful resources such as links to online articles or videos, or to send documents, spreadsheets, and templates.

Trainer

By identifying professional development opportunities and suggesting learning and development paths using assessment tools such as personality inventories or 360°-assessment feedback.

Performance Monitor

Provide just-in-time support and advice for higher ranking individuals where the e-coach facilitates self-reflection and discovery.

To maximize the psychological presence in online and Web-based learning environments according to STEPP model, the following e-learning activities listed in Table: 5 are suggested.

Table: 5
The E-learning Activities Types Compatible with Psychological Presence.

Presence Type	Examples	Compatible e-Learning Technologies
Psychological presence activities	Listen to audio Group discussion Field trip Debate Design an exhibit Engage in role play Do a performance Engage in team actions	1. Web sites, MP3 Players, podcasts, radio, tape players, CD players. 2. Discussion forum, blogs, wikis, chartrooms. 3. Video, virtual reality systems, online museums, galleries, and exhibitions. 4. Discussion forum, e-mail. Chat. 5. Presentation software, word processing, Web authoring tools, graphic tools. 6. Presentation software, multimedia capture/editing software 7. Word processing, storyboarding software, video/audio editing tools. 8. Word Processing, Web site design, blogs, wikis.

Mental Presence

Mental presence refers to learners' ability to construct meaningful knowledge and skills. It can be defined as "meaning building or making" in which learners are having new lines of knowledge applications. In mental presence process, learner is coaching her/himself to emerge knowledge and skills. Jonassen, Peck, & Wilson (1999) used mental presence as synonym to *"mindtools"* in which learner are constructing knowledge bases that represent personally relevant and meaningful knowledge while learning from virtual world.

Table: 6
The E-learning Activities Types Compatible with Mental Presence

Presence Type	Examples	Compatible e-Learning Technologies
Mental presence activities	. View images . Simulation . Artifact-based inquiry . Data-based inquiry . Answer questions . Create a map . Complete a review activity . Create a diary . Develop a metaphor 0. Build a model	. Artifact kits, online books and journals, Wikipedia. . Virtual reality Web sites, simulation software, animations. . Artifact kits, online books and journals, Wikipedia. . Web sites, online databases, WebQuests. . Discussion boards, wikis, whiteboard, e-quiz and polling software. . Cartographic software, Google Maps, Drawing software. . Courseware, quiz polling software, wikis. . Word Processing, concept mapping, e- documents, Wikipedia. . Image banks, graphics editors, multimedia authoring tools. 0. Modeling, simulation construction, graphic software, multimedia production tools.

The main product of mental presence is new and creative and adaptive techniques to deal with future requirements of learning situations. These new techniques can be distributed and shared as mental images with other learners through a line of community of inquiry and practice. To maximize the mental presence in online and Web-based learning environments according to STEPP model, the following e-learning activities listed in Table: 6 are suggested.

SUMMARY

The previously mentioned four main types of presence of effective e-learning activities might be used as grounded elements of any instructional approach or strategy for teaching in virtual or e-learning environments. In virtual world, learners and teachers can actively create, use and re-use learning objects through a process of interaction and coaching, where their presence is created and enhanced. It is through this lens that the researcher focuses on virtual and electronic activities in this paper as a grounded model that has the potential to create rich sense of e-learning activities to develop online learners' abilities and values.

To put this model into action, online educators should emerge the four types of e-presence to allow online learners to apply what they learn in real life so they can contextualize the information and build meaningful learning experiences.

To facilitate meaning making process in online and Web-based learning contexts, a combination of social, cognitive, psychological and mental presence e-learning activities is needed. Online educators should rotate and interchange all types of e-presence activities.

For example, online educator can design online learning tasks to include: group activities (social presence), research and information collection and analysis (cognitive presence), make online debate through online role play (psychological presence), and develop personal metaphor based on previously mentioned tasks (mental presence), and so on.

RECOMMENDATIONS FOR FURTHER STUDIES

To validate the proposed e-presence activities mentioned in STEPP model, there exists a real need for examining the effect of using this model on learning subject matters in several online and blended contexts. Online educators may also need to investigate the impact of using e-presence activities on developing the 21st century skills among students in all educational settings and levels.

This could be done through a qualitative inquiry to explore the best practices of using e-presence activities in developing creative and critical thinking skills for example. Both subject matter experts and instructional designers in e-learning environments need an in-depth training program to maximize using of all e-presence activities while designing, delivering and assessing online, Web-based and blended courses. In addition, there exists a real need to develop e-rubrics list to measure the effect of e-presence activities mentioned in STEPP model to assure the quality of teaching blended, online and Web-based courses.

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THE RELATIONSHIP BETWEEN CHARACTERISTICS OF GOOD LANGUAGE LEARNERS AND THE ESPECIAL EMPLOYED LEARNING STRATEGIES DURING EDUCATIONAL CONTEXT

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ABSTRACT

Most of the early studies in the field of language learning strategies focused on identifying the characteristics of good language learners. Identifying and discussing the strategies used by good language learners were considered as a good way to make the learners aware of the notion of language learning strategies. The present study was an attempt to collect and classify the characteristics of representative good language learners, developing English as a foreign /second language in Iran; specifically those who had achieved high scores in the IELTS General Module.

And also this study aimed at identifying the characteristics associated with a good language learner in one area: learning strategies. Thirty-four Iranian IELTS candidates receiving 6+ band score were selected to participate in this study. They were interviewed and asked to write down their own reports of the experiences they had in developing their second language. They were asked to report their preferred strategies while studying English as well. They were also requested to fill out the learning strategy and learning style questionnaires. The results of interviews and open ended questions were specifically organized and classified via employing both descriptive and explanatory methods. The learners' responses to the standardized questionnaires also were analyzed by SPSS system Version 20. The findings of the present study although revealed that there is a high correlation between IELTS scores, strategy taking inventory scores. This revealed that the learners recording high scores in IELTS use appropriate learning strategies.

Keywords: **Language learners, learning strategies.**

INTRODUCTION

Research in the area of characteristics of good language learners has been the home of choice for SLA researchers since mid 1970. In this regard, both learning and learner variables have been researched (see Griffiths, 2008).

Yet, one of the features almost left intact in this scope is the relationship between the characteristics of good language learners and their achieved scores and results in the standard proficiency tests such as IELTS and TOEFL.

Most of the early studies in the field of language learning strategies focused on identifying the characteristics of good language learners. Identifying and discussing the strategies used by good language learners were considered as a good way to make the learners aware of the notion of language learning strategies. The findings provided insight into how successful learners learn, and, subsequently, teachers tried to teach the strategies used by successful learners to those who were unsuccessful with the hope the strategy training could help them become successful.

Rubin' seminal article (1975) is considered as one of the early studies in pursuing the characteristics of good language learners. She stated that "if we knew more about what the "successful learners" did, we might be able to teach these strategies to poorer learners to enhance their success record" (p. 42). She also noted that the employment of these strategies was affected by a number of factors such asL2 proficiency, age, situation, and cultural background. Later, these characteristics were extended by Rubin and Thompson (1982, cited in Brown, 2007).

Learning a second language involves variety of social, cognitive, affective and educational setting factors. A lot of individuals develop a very well-organized L2 experience and a lot more are not successful second language learners. Rubin (1975) implies that the successful second language learners enjoy specific characteristics which might be helpful, providing us with strategies and insights which probably could be helpful for the poorer learners of the second language.

Iranian learners develop English as a foreign language and for many of them learning English is a burden and one of the most important and demanding tasks they will need to accomplish. That is why an awareness of how to learn a language, not just what to learn, is very important for these learners. Knowledge of the characteristics of a good language learner can help students increase their language learning efficiency. Additionally, recognizing the features of good language learners might provide the teachers and ELT educators with a vehicle to help the poor learners of the second language to improve their learning.

The results of the study might be found intriguing enough to shed some lights for the researchers to investigate the application of specific strategies the good language learner makes use to pave the way for the ones who have not been successful in this respect. It is hoped that the result of this study can help the ELT educators and second language teachers to provide the poor learners with a tentative way of success.

REVIEW OF RELATED LITERATURE

The Good Language Learner

A number of recent studies on language learning strategies have attempted tried to define the "Good" language learner. During the 1970s, teachers and researchers reached conclusion that no single method of language teaching and research findings would end to the universal success in teaching a second language (Brown, 2007). It seems that learners would be successful in language learning regardless of methods or teaching techniques.

In this regard, Brown (2007) says that, "Certain people appeared to be endowed with abilities to succeed; others lacked those abilities" (p.132). Many observations and research studies (Rubin, 1975; Stern, 1975; Rubin and Thompson, 1994) tried to describe "good" language learners in terms of personal characteristics, styles, and strategies. In this regard, Zare (2012) believes that good language learners:

- **Find their own way, taking responsibility for their own learning,**
- **Organize information about language,**
- **Are creative, and try to feel the language by experimenting its grammar and words,**
- **Create opportunities for practice in using the language inside and outside the classroom,**
- **Learn to live with uncertainty by not getting confused and by continuing to talk or listen without understanding every word,**
- **Use memory strategies to bring back what has been learned,**
- **Make errors work for them and not against them,**
- **Use linguistic knowledge, including knowledge of the first language, in learning a second language**
- **Use contextual cues to help them in comprehension,**
- **Learn to make intelligent guesses,**
- **11. Learn chunks of language as wholes and formalized routines to help them perform "beyond their competence",**
- **Learn to use certain tricks to keep conversations going,**
- **Learn certain production strategies to fill in gaps in their own competence,**
- **Learn different styles of speech and writing and learn to vary their language regarding the formality of the situation. (p. 1-2)**

The studies on defining the good language learner provide a basis for the understanding of what good language learners do in order to learn a second language. Finding and clarifying the strategies of successful language learners helps the teachers and researchers to teach these strategies to less successful learners. On the other hand, the methods and criteria of determining a good language learner is unclear and under question.

It seems easy to classify a language learner as a good one: if s/he has developed the four basic skills and can use them successfully, she/he is considered as a good language learner.

The problem is to decide about a learner who has only learned one or two of these skills. Speed of acquisition, learner's previous exposure to English, learner's goal, and student's level of proficiency should be taken into account in determining the good language learner (Sewell, 2003).

However, understanding and knowing the strategies and techniques good language learners' use, can help them enhance learning efficiency.

Learning Strategies & Classifications

Wenden and Rubin (1987) described learning strategies as "any sets of operations, steps, plans, routines used by the learner to facilitate the obtaining, storage, retrieval, and use of information" (p.19).

Also, Richards, Platt and Platt (1992) state that "learning strategies are intentional behavior and thoughts that learners make use of during learning in order to better help them understand, learn, or remember new information" (p.209). Learning strategies were also illustrated by O'Malley and Chamot (1990) as "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1).

One of the most noticeable definitions which have been referred to a lot in the literature has been provided by Oxford (1990). She defines language learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8).

It is, in fact, a reflection of what the learner intends to do and the specific actions he can take. Also, Oxford (1990) includes how context plays a crucial role in the language learning process.

O'Malley *et al*. (1985) divided language learning strategies into three main categories: Metacognitive Strategies, Cognitive Strategies, and Socioaffective Strategies.

Metacognitive Strategies

O'Malley *et al*. (1985) state that metacognitive is an expression to indicate an executive function; in fact, such strategies "… involve planning for learning, thinking about the learning process as it is taking place, observing one's production or comprehension, correcting one's own mistakes, and evaluating learning after an activity is completed" (Zare 2012, p. 4). Based on O'Malley's classification, advance organizers, directed attention, selective attention, self-management, functional planning, self-monitoring, delayed production, and self-evaluation are included among the major metacognitive strategies.

Cognitive Strategies

It has been stated (Brown, 2007) that "Cognitive strategies are more limited to specific learning tasks and they involve more direct manipulation of the learning material itself" (p. 134). Repetition, resourcing, translation, grouping, note taking, deduction, recombination, imagery, auditory representation, key word, contextualization, elaboration, transfer, and inferencing are considered as the most important cognitive strategies.

Socioaffective Strategies

Socioaffective strategies are highly related to social-mediating activity and interacting with others. The main socioaffective strategies include cooperation and question for clarification (Brown, 2007).

Learning strategies which are divided into two main types (cognitive learning strategies and metacognitive learning strategies) make a direct contribution to the development of the language system created and used by the language learner. According to Rubin (1987), cognitive strategies refer to the steps or measures which are taken in learning or problem-solving that involves direct analysis, transformation, or synthesis of learning materials. Also, Rubin (1987) identified six major cognitive learning strategies highly related to language learning as: clarification/verification, guessing/inductive inferencing, deductive reasoning, practice, memorization, and monitoring.

Metacognitive strategies are used to supervise, control or self-direct language learning. They involve different procedures as planning, prioritizing, setting goals, and self-management.

Communication Strategies

Communication strategies are not as much of directly related to language learning since their emphasis is on the process of communication through conversation and getting meaning across or clarifying what the speaker intended. Communication strategies are employed by the speakers when they are faced with some troubles regarding their communication and conversation or when they are misunderstood by another speaker. Communication strategies benefit from the speaker's linguistic or communication knowledge in order to remain in the conversation.

Social Strategies

Social strategies are considered as the activities in which learners grasp the opportunities that can be a great help to practice their knowledge. Even though these strategies offer exposure to the target language, they contribute to learning indirectly since they do not lead directly to the obtaining, storing, retrieving, and using of language (Rubin, 1987).

Learners Variable Motivation

It is no doubt that good language learners are motivated. Experienced teachers believe that high achievers are highly motivated as well. The personal motivation has been the source of success during the life. Without motivation, success will be hard to come by, and the case of learning a second or foreign language would be different. Motivation is listed by Rubin (1975) among the three essential variables on which good language learning depends.

Also, Gardner and Lambert (1972) cited in Ushioda (2008) believe that motivation has a social-psychological perspective on learner attitudes and is related to the language cultures and the native speakers. Gardner and Lambert (1972) saw language learning motivation qualitatively different from other forms of learning motivation.

Also, Gardner and Lambert (1972) cited in Ushioda (2008) found out that learners' attitudes to the new culture and people had a great influence on their motivation leading to their success in learning a new language.

Age

The role of age in development of second language acquisition and the relationship between age and other affecting variables in learning a new language has been hotly debated. There are different ideas about the impact of age on language development and different research studies add to this controversy.

According to Brown (2007) young language learners are better language learners than adults. Some of these research studies are about the analogies between the process of first language acquisition and second language learning. In this regard, Brown (2007) believes that this is a big mistake.

If we consider language learning as a cognitive process, the age of the language learner will play a great role in being successful in this process.

METHOD

Participants

A group of 56 IELTS candidates (both male and female) taking part in the IELTS preparation courses in the TEFL research center, Tehran, Iran were given a version of a standardized IELTS test (documented as specimen Materials, 2003EMC/1667b/3y01UCLES 2003) which consisted of 25 listening comprehension items, 35 reading comprehension items, and 2 types of writing. The test was administered for purpose of selecting the appropriate candidates for the study. The 34 participant selected to take part in the study were the ones receiving6 + band score. It is worth mentioning that the scientific background, major, gender, age, and other individual differences of the learners were not taken into consideration in the present study.

INSTRUMENTATION

Interviews With Participants

Both controlled and open ended (free) types were employed. The interviews with the participants were recorded, listened to, and analyzed for their main points.3.2.2.

Free writing of the participants

Then the participants were asked to answer the questions in the essay type form. This ensured the researcher if they had missed a point in the interview session.

IELTS General Module

A Standard version of the IELTS General Module test (documented as Specimen Materials, 2003EMC/ 1667b/ 3y01 UCLES, 2003), the reliability of which, based on K-R 21, was reported to be .78 and its construct validity based on the Cronbach's alpha was acceptable (α= .74).
Strategy Inventory for Language Learning (SILL), Version 7.0, developed by R. Oxford (1989), available atricharddpetty.files.wordpress.com/2010/03/sill-english.pdf
Learning Style Questionnaire developed by Barsch (2009) available at
http://www.engr.ncsu.edu/learningstyles/ilsweb.html

Validity and Reliability Of The Data Collection Instruments

The *interview items* for both styles and strategies were developed based on the prominent concepts reported in the literature (Barsch, 2009; Ehrman, 2008; Felder& Henriques, 1995; Griffiths, 2008; Reid, 1987; Ting-Hui, 2006)

Procedures

56 IELTS candidates taking part in the preparation courses of IELTS General Module in the TEFL research center, Tehran, Iran took part in a standard version of IELTS General Module. They were tested against the criteria set for the four skills in the IELTS General Module. The experienced IELTS examiners dealing with the job administered the test specifically in the speaking part. 34individuals whose overall scores were 6+ were selected for the study. They were interviewed and asked to write down their own reports of the experiences they had in developing their second language.

They were asked to report their preferred strategies while studying English as well. They were also requested to fill out the55learning strategy and learning style questionnaires.

The results of interviews and open ended questions were specifically organized and classified via employing both descriptive and explanatory methods. The learners' responses to the standardized questionnaires also were analyzed by SPSS system Version 20.

DATA ANALYSIS AND DISCUSSION

Qualitative Study

Which learning strategies are mostly employed by good language learners of English in the Iranian context?

To answer the question 34 participants of the study were interviewed and then they were asked to answer the questions in the essay type form and write their own self reports concerning the strategies they use while studying their lessons or throughput their general process of learning English as a second/foreign language. This ensured the researcher if they had missed a point in the interview session and also allowed the participants to feel free to present whatever they thought in a less stressful situation and correct their own writings and present their ideas the best way possible. The interviews with the participants were recorded, listened to, and analyzed for their main points. The self reports of the learners also were analyzed through axial and open coding methods (Creswell, 2008).

Through the interview and report results, frequency of each and every style related description was pursued. To do so participants' proposed items were transcribed, coded, and categorized. The most prominent points represented by the participants of the study were as follows:

Analyzing the interviews, observations and writings of the participants presented the researcher with the following results which represented good language learners' characteristics in two domains of personality features and the strategies they mostly use:

- **Personality features: Language learners of the study showed to be1. Tolerant, 2. Extrovert, 3. Responsible for their own learning, 4. Intuitionists, 5. Feeling type, and 6. Mostly perceiving**
- **Strategies used: The strategies the participants mostly employed were as follows:**
  - **Using monolingual dictionaries.**
  - **Listening to tapes, news, and stories in English.**
  - **Watching films attentively and looking up the new words in case needed.**
  - **Speaking in English with friends and practicing the new things learned in various contexts.**
  - **Being very interested in talking to the native speakers whenever possible (in the meetings, seminars, and conferences or while travelling abroad.**
  - **Concentrating on what other successful learners say.**
  - **Being open to criticisms to minimize their problems and also eradicate them.**
  - **Consulting teachers of English and putting to application the suggestions made.**

- **Reading a lot of issues in English, specifically the books and articles in their majors.**
- **Trying to write in English and asking teachers of English or friends to check their writings.**
- **Keeping a portfolio of their notes to be reviewed in case required.**
- **Seeking for the differences between British English and American English accents.**
- **Creating an imaginary interlocutor to talk to.**
- **Trying to say everything in English, including whatever observed in the immediate environment.**
- **Transcribing news, dialogues, short stories, etc…to improve listening comprehension.**
- **Concentrating on the content of films, narrations, and books and discussing them with friends.**
- **Being interested to work with the foreign companies, the claimed reasons are social prestige as well as well paid jobs.**
- **Concentrating on the articulation of sounds through watching films, listening to the tapes and asking for help from teachers of English.**
- **Discussing the English words with friends and comparing it with the native culture.**
- **Using English vastly in their jobs.**
- **Using the internet, tutor, face book, chat rooms, and the like to get connected to the new friends or be in contact with the world around.**

Quantitative Study

In order to investigate the strategies used by the Iranian students taking part in IELTS preparation courses in TEFL research center 34 students with different backgrounds received the Strategy Inventory for Language Learning (SILL), Version 7.0, developed by R. Oxford (1989). This version of the strategies inventory for language learning has been designed for students of English as a second/ foreign language. There are statements about learning English including Memory, Cognitive, Compensation, Meta-cognitive, Affective, Social strategies. Based on their real situations of English learning, participants were required to choose the answer. Participants were also briefed that the survey was not a test so they did not need to be worried about the results affecting their academic performance.There are fifty questions being categorized into six main strategies. *Memory Strategies* contain nine questions.

***Cognitive Strategies* contain fourteen questions. *Compensatory Strategies* contain six questions.**

***Meta-cognitive Strategies* contain nine questions. Affective Strategies include five questions. Social Strategies include seven questions. This questionnaire takes about 20-30 minutes to complete.**

The questionnaires were gathered and analyzed based on the scales presented in the manual and the average frequency of the language learning strategy use of the learners was reported. ccordingly the frequency of language learning strategies use was also computed. Table 1 (See Appendix A) represents the frequencies thereof.

Table 1 shows the results of the survey. In this questionnaire, the highest grade in Memory strategies is 4.0, the lowest grade is 2.1, and the average grade is 2.9.

Table: 1
Frequency of Language Learning Strategies Use

	Memory	cognitive	Compensation	Meta-cognitive	Affective	Social
Highest grade	4.0	4.0	5.0	4.1	4.4	4.7
Lowest grade	2.1	2.5	2.3	2.0	2.4	2.4
Average grade	2.9	3.1	3.7	3.1	3.3	3.4

In the chart, we can see learners get lower grade than other strategies. The highest grade in Cognitive strategies is 4.0, the lowest grade is 2.5, and the average grade is 3.1. Obviously, the participants do not get high grade in these strategies either.

From this, we know people use the two strategies not often. The highest grade in Compensation strategies is 5.0, the lowest grade is 2.3, and the average grade is 3.7. Compared with other strategies, it gets the highest grade.

The highest grade in Meta-cognitive strategies is 4.1, the lowest grade is 2.0 and the average grade is 3.1. The highest grade in Affective strategies is 4.4 the lowest grade is 2.4, and the average grade is 3.3. The highest grade in Social strategies is 4.7, the lowest grade is 2.4 and the average grade is 3.4. It seems that the frequency of the three strategies is in the middle part.

According to the average grades, the researcher ranked the six main learning strategies and found out that Compensatory strategies were the top choice for participants. The second top main strategy was Social strategies and was closely followed by the Affective strategies. Then, Cognitive and Meta-cognitive strategies got the same grades and are equally used by the students. Surprisingly, Memory strategies were the least one to be used by the participants.

DISCUSSIONS

The findings of the present study in terms of strategies assert that acceptable insights into describing a good language learner may come from strategy research that seems to suggest that those who can employ more strategies effectively are better language learners. The very point has been certified in the quantitative and qualitative researches accomplished in the SLA domain (Amiri & Jalilzadeh, 2011; Griffiths, 2008; Kohonen, 2006; Lund & Pedersen, 2001; Sewell, 2003).

CONCLUSION

The findings of the study revealed that there is a high correlation between the good language learners' scores in the IELTS test and their obtained scores in strategy inventories.

The study findings also reported the most significant strategies employed by the Iranian highly proficient learners of English (IELTS 6+ band scores).

Although, on an individual level, there are exceptions, in general, the results of this study indicate that the most proficient students (IELTS 6+ band scores, who are called good language learners in the present study) report frequent use of a large number of language learning strategies, defined as specific actions consciously employed by the learner for the purpose of learning language.

This finding accords with the conception of language learning as a cognitive activity in which the learner is an active participant, capable of processing linguistic information and affecting learning outcomes.

Upon the findings, a pattern of strategy use emerges from the questionnaires which enable a strategy profile of the highly proficient student to be suggested. Based on the results of this study, the most proficient groups of students appear to use strategies which enable them to work consciously on their general second language ability and to interact frequently with others (both native and non-native speakers) in English. The learners emphasize employing strategies enabling them keep more vocabularies in mind and activate them.

The learners report using strategies related to reading and strategies such as avoiding literal translation which facilitate the tolerance of ambiguity. They seem to have effective techniques for understanding the systems of the new language (for instance by looking for relationships and patterns and by studying grammar) and to use affective strategies to manage their feelings so as to remain relaxed and positive.

Successful learners also report the use of strategies which enable them to manage their own learning and to utilize effectively available resources (such as TV, songs and movies).

Pedagogical Implications

Employing a mixed research method the present study attempted to elicit the most prominent strategies Iranian good language learners of English employ in their journey of second language development.
Both teachers and learners of English in the EFL context of Iran and similar contexts could be benefitted from the findings of the present study as the strategies reported are the familiar and easy-to-do ones which could be employed by the second language learners in various levels.

Suggestions for further research

This study, although producing some interesting findings regarding the relationship between proficiency and the language learning strategies reportedly used by EFL learners of English, has also raised questions which might provide fruitful areas for further research. Among these might be:

- **Although (according to the results of this study) this profile may characterize the most proficient students in overall terms, learner variables (such as nationality, sex, age) must be considered when investigating reported language learning strategy use. In the context of the current study, such variables were not taken into consideration.**

Another study therefore could be designed to investigate the relationship between the aforementioned variables of the learners and their strategy preferences.

- The same hypothesis can be formulated for Iranian language learners at different levels of language proficiency. It is worth investigating whether providing learners at various proficiency levels with the strategies investigated in the present study could have the same effects on the learners' general proficiency.
- Work needs to continue on the grouping of strategies, on investigating the degree to which students report using one group or another and the relationship with proficiency.

Authors' Note: There was no grant in order to do this study, but this study has been done in 2012 in Iran.

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ATTITUDE TOWARDS THE USE OF LEARNING MANAGEMENT SYSTEM AMONG UNIVERSITY STUDENTS: A Case Study

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ABSTRACT

Learning management system (LMS) is a learning platform for both full time and distant learning students at the International Islamic University in Malaysia (IIUM). LMS becomes a tool for IIUM to disseminate information and learning resources to the students. The objectives of this study were to

- **investigate students' attitudes toward the use of LMS,**
- **to verify the impact of perceived usefulness and perceived ease of use on attitude towards use of learning management system,**
- **to examine the differences in attitudes toward the use of LMS between distance learning and full time students.**

There were 120 (70 full time and 50 distance learning) students at the Institute of Education responded for the study. The collected data was analysed using descriptive statistics, t-test and Multiple Regression Analysis (MRA). The results of the study showed that perceived ease of use and perceived usefulness determine students' attitudes toward the use of LMS. However, this study did not find any significant differences between distance learning and full time students. According to the findings the study recommended that the University should continue using LMS because it is useful for both distance learning and full time students. Further suggestions are made to customize and upgrade the LMS suitable for innovative teaching and learning.

Keywords: **LMS Acceptance, TAM Model, e-learning.**

INTRODUCTION

The rapid innovation in mobile and computer technology has triggered the vast development in Internet applications. The Internet has been used from different perpectives and usage to accomodate the needs of the social community. In Higher Institutions, the Web 2.0 Internet technology has been utilised to provide resources, information and interactivities.

According to Bransford (1999), there are many benefits gained from the integration of ICT in education, such as active learning, collaborative learning, creative learning, integrative learning and evaluative learning.

Active learning is referred to any instructional method that engages students to involve in the learning process. In active learning, the students have to take the responsibility for learning besides the teacher (Bonwell & Eison, 1991). Collaborative learning has been championed by the constructivist theorist such as Vygotsky (1998). In collaboration work, the emphasis is given on interaction (Vygotsky, 1998) and knowledge sharing and discovery (Smith & MacGregor, 1992) in order to fulfill a task. Thus, students work with in a group for the same task at the same time to search for meaning, understanding and solutions of problems defined.

Collaboration is here seen as the act of shared creation and/or discovery). In creative learning, students are able to connect previous knowledge from unmeaningful to ways that are new and meaningful to the individual concerned. Thus, students are able to equip themselves with the knowledge and skills they need to succeed in their lives. Tim (1010) refers creative learning to the nurturing ways of thinking and working that support imagination which materialise the ideas and imagination to a real thing.

The recent technology development has led to the existence of participation and communication methods in traditional university classrooms to change. Realizing the pedagogical benefits from the Internet technology, the use of electronic learning (e-learning) management system continues to increase in Malaysian universities. International Islamic University in Malaysia (IIUM) is responding to all the benefits resulting from the use of e-learning management system in education and it is taking initiative to upgrade information technology infrastructure and improve the system in order to accommodate the needs of students and lecturers to achieve the vision of the University to fulfill the Islamization of knowledge. Many studies have been conducted on Learning Mangment System Acceptance, including the factors that influence technology acceptance model among lectures and students (Coates, James & Baldwin 2005; Landry, Griffeth & Hartman 2006; Ma & Liu 2004; Yuen & Ma 2008; Yunus 2007). Despite Ustati and Syed Hassan (2013) 's study on the student satisfaction of distance education program in IIUM, there is still lack of studies to provide information on students acceptance of learning management system. In this present study, the researcher examined IIUM students' attitudes towards the use of learning management system, and investigate the impact of perceived usefulness and perceived ease of use on attitude towards use of learning management system in IIUM. Furhter, it will reveal the differences between distance learning and full time students in terms of attitude towards LMS.

THE RESEARCH TESTED THE FOLLOWING RESEARCH QUESTIONS

- **To what extent do students accept LMS in their learning?**
- **Do perceived usefulness and perceived ease of use affect students' attitude toward use of LMS?**
- **Is there any statistically significant difference between distance learning and full time students' acceptance of LMS?**

Learning Management System (LMS)

A learning management system (LMS) is a software application enable users or learning manager to diseminate information from systematic planning by adopting appropriate pedagogical approach. It allows users to share information and collaborate online.

In Learning management system (LMS), instructor or learning manager can monitor student involvement, and assess their ongoing performance. Thus, in any LMS whether customised or a purchased system from vendor must include interactive features for instance, video conferencing and chat or group discussion tools. Ellis (2009) relate LMS as one location for students to obtain a large number of resources online. While Brown and Johnson (2007) include LMS as a vehicle for training, evaluation, and tracking results, Al-Khalifa (2010) percieves LMS as a platform for students to complete the task quickly, uploading various types of files into its environment, enabling users to access the information at anytime and anywhere, and allowing users to communicate with other students in the course and the tutor electronically.

The use of LMS in education will save the time for both lecturers and students as well as making the learning content easier to be accessed, presented which enhance self regulated learning (Gudanescu, 2012).

Theoritically, the LMS provides students with the ability to use interactive features such as; threaded discussions and discussion forums, getting comments from their lecture, submit their assignments, getting extra resources for lectures, make the connection with their lecture easily as well as help them to organize their lecture materials. However in practice, many LMS platforms have a lot of setbacks. These included lack of financial budget, compatibility of software and hardware, technical stuffs and etc.

Previous Research Related To the Integration of Internet Technology In Education

Many of recent studies by Chen and Huang, (2010), Chuttur, (2009), Liu, Liao and Pratt (2009), Teo (2009) and Schaik and Teo (2009), van Raaij and Schepers (2008) and Venkatesh and Bala (2008) strengthen the findings related to positive effect of information and communication technologies on students' outcome. These include terms of their academic performance and activities, increasing the number of students that excel in science, improve student's understanding of subjects, effectively reinforce active learning process for student and enhance higher-order thinking and problem solving skill development. The study environment may take advantage of information and communication technologies which are being recognized by many previous studies. In actual fact, there is a need to accelerate the implementation of information and communication technologies to improve student performance. In order to do this, it is important to measure the key factors driving the growth of information and communication technologies and providing appropriate recommendation on this study.

Iwasaki, Tanaka and Kubota (2003) investigated on the use of LMS to teacher epistemology and course characteristics. The suggestion made was to ensure the development of learning model to suit the courses and instrutors in order to facilitate the utilisation of LMS. They also include suggestions of case study is needed to foster collaboarative learning.

In a study related to Moodle as open source learning communities, Dougiamas and Taylor (2003) also utilised case study as a component of research methodology in revealing the effectiveness of Moodle as a course management system platform for reflective inquiry learning. In underpinning the present study, the researcher further highlights the theortical framework as a model for the utilization of LMS in the learning process.

Theoretical Framework

Electronic-learning (e-learning) has contributed to the benefits for students, teachers and education if they accepted it and use it in their academic life. Therefore, the acceptance of LMS among learning communities provides the success of both distance and regular learners. Regarding this issue, as e-learning system part of communication technology, it is important to define the term "technology acceptance" to determine the factors that affect the actual use of educational technology in university environment. There are several existing models that have been used to investigate acceptance of technology. This study is focusing on Technology Acceptance Model (TAM) originally proposed by Davies in 1989 (see Figure 1.0). Davis (1989) defined significant factors affecting technology acceptance in their Technology Acceptance Model (TAM) that lead to the actual usage of an information system such as the perceived ease of use of technology (PEOU), the perceived usefulness of technology (PU) and the attitudes toward the use of technology (ATU). In this study, perceived ease of use is defined as the degree a person believes that using LMS requires less effort to learn on how to use the system. Perceived usefulness is defined as the degree to which a person believes that using LMS would enhance his or her learning performance, and attitude toward using is defined as the degree to which individual associates and evaluates the target system with her or his job, whether her or his reaction is positive or negative.

Perceived usefulness and perceived ease of use are considered distinct factors influencing the user's attitude towards using the technology, which ultimately determine the accept system use. The model examines the factors which could possibly affect the LMS acceptance. The Technology Acceptance Model (TAM) is shown in Figure 1.0.

The schematic diagram of the theoretical framework is shown in Figure 1.0 reveals the relationships between the dependent and independent variables. Essentially, it is the foundation on which the entire research is based upon.

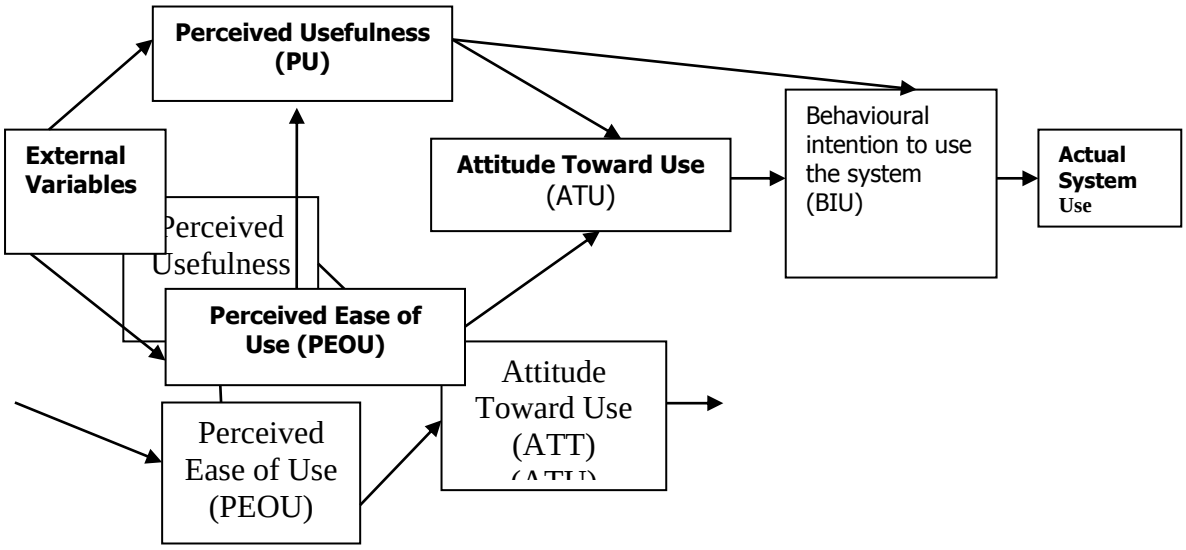

Figure: 1
Technology Acceptance Model TAM, (Davis, 1989)

Figure: 2 shows the conceptual model used in this study. It is a modified TAM model, excluding actual system use, external variables constructs and Behavioural Intention to use. The main variables in this study are Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Attitude Toward Use (ATU). This model has been simplified according to the analysis procedure (MRA) selected for the research.

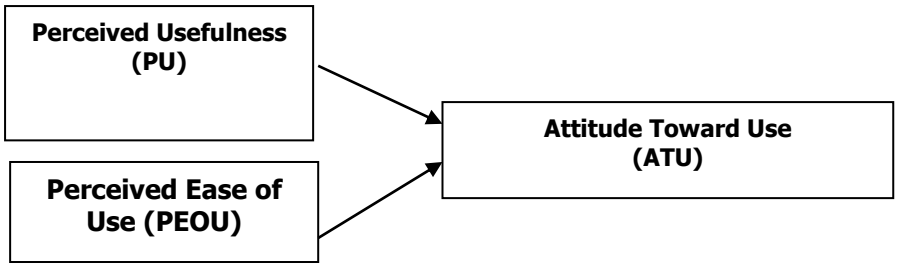

Figure: 2
The research model (Conceptual framework).

The dependent variable analysed in this study was to find out the level of LMS acceptance among students. Two independent variables; perceived ease of use (PEOU) and perceived usefulness (PU) were believed to have some influences towards the dependent variable (attitude towards the use of LMS). These three variables explain the level of acceptance in using LMS.

Perceived ease of use denotes to how easier the user will perceive the using of technology. Based on many previous researches, the perceived ease of use can be the determining factor to influence the use of technology. According to Shroff, Deneen and Eugenia (2011), perceived ease of use had a significant influence on both attitudes towards usage and perceived usefulness which will lead to the effect on the acceptance.

Educational technology with a high level of ease of use is more likely to induce positive attitudes towards acceptance (Davis, 1989). On the other hand, Liu et al (2009) found in their study that perceived ease of use was significant predictors of attitude towards use that will lead affect the acceptance.

Thus, perceived ease of use was an indirect factor on the use of technology. In other words; even when the user perceived technology as very easy and no need any effort to use it, he or she does not use it unless there is enough knowledge and competence to direct positive attitudes towards computer (Teo, 2009). In addition, Kiraz and Ozdemir (2006) believe that the perceived ease of use alone cannot determine the use of technology in education.Perceived usefulness refers as to how much the user believes that he or she can get help and benefits his or her performance from the use of technology. Related to many previous studies, the perceived usefulness is a direct determinant of technology use.

Klopping and McKinney (2004) found in their study that the perceived usefulness will influence directly the intention and actual of use of technology. Moreover, perceived usefulness can influence students' intention to use technology strongly, also it is a major determinant of students' intention to use technology (Davis; Bagozzi & Warshaw, 1989).

The attitude toward use defined as the positive or negative feeling of individuals in performing and how this feeling can affect the particular behaviour of use. The attitude toward use is one of the main factors that can effect on the behavioural intention; it is directly influence the frequency of use of technology (Teo, 2009; Kiraz & Ozdemir, 2006).

RESEARCH METHOD AND DESIGN

This research design has been designed with a focus to answer the research questions raised from this study. This study has utilized the quantitative research, specifically a cross sectional survey as the method of data collection. It was designed to identify the level of acceptance of learning management system among IIUM students in Malaysia through measuring the attitude towards using LMS.

Research Participants

The participants in this study were 120 students from IIUM in Malaysia (70 full time and 50 distance learning students). They were recruited from two different study programmes: Distance learning students and Full time students; both were undergraduate students from Institute of education. The participants were selected according to the availability of their presence in classroom. A total population of 800 distance learning students and 2000 full time students were registered. Thus a small percentage of full time students (3.5%) and 12.5% distance learning students were drawn from real population.

Measures

A survey instrument was developed based on previous research to measure the three factors in the research model. Comprising two sections, the first required participants to provide their demographic information and the second contained 20 statements on the three factors in this study.

- **Demographic information, including gender, age, programme of study and computer experience.**
- **Perceived usefulness (PU),**
- **Perceived ease of use (PEU) and**
- **Attitude toward use (ATU) were measured using 6 items for each construct.**

The items were adapted based on the literature reviews. All the items were ranked according to 5 likert scale from strongly agree (5) to strongly disagree (1). Undecided was used as the middle point (3).

ANALYSIS PROCEDURES

After the data was collected, the researcher assigned numbers to all the questionnaires when entering the data. The questionnaires data were analysed using the SPSS (Statistical Package for Social Science) 16.0 software package.

The procedure of analysing the data obtained in this study was made in three different techniques, namely; the descriptive statistics percentage, Multiple Regression Analysis (MRA) and independent sample t-test.

The first technique, is the descriptive statistics involving percentage and frequency counts were presented.

It was used to analyse the demographic data of the respondents in order to determine missing values and to ascertain the percentages of the level of students' acceptance of LMS system.

The second technique, which was the Multiple Regression Analysis (MRA), which was used to determine the effectiveness of Independent Variables on Dependant Variable.

The last technique, which was the independent sample t-test, which was used to confirm whether there is a statistical significant difference among distance and full time students in the level of acceptance of LMS system.

RESULTS

Sample Characteristics

The respondents of the study were 120 undergraduate university students, where more than half of them were full time students (70 students, 58.3%), and just 50 students were distance learning (41.7%).

In this study, there were 79 female students divided into 2 groups; 49 full time students (62.0%), and 30 distance learning students (38.0%). However, the number of male full time and distance learning students was almost the same (21 students, 51.2%) and 20 students 48.8% respectively. The respondents' characteristics are shown in Table 1.

Table: 1
Sex of the Respondents and Programme of study.

			Programme of study		
			Distance Learning	Full time	Total
Sex of the Respondents	Male	Count	20	21	41
		% within Sex of the Respondents	48.8%	51.2%	100.0%
	Female	Count	30	49	79
		% within Sex of the Respondents	38.0%	62.0%	100.0%
Total		Count	50	70	120
		% within Sex of the Respondents	41.7%	58.3%	100.0%

Item Analysis

Table 2 presents the mean and standard deviation for the variables that define Perceived usefulness, Perceived ease of use and Attitude toward use.

Table: 2
Descriptive Statistics

	Mean	Std. Deviation
Using LMS would enhance my effectiveness in learning	3.67	.832
Using LMS would improve my course performance	3.72	.812
Using LMS would increase my productivity in my coursework	3.79	.819
Using LMS enables me to have more accurate information	3.70	.875
Using LMS makes it easier to do my tasks	3.73	.877
Using LMS useful in my study	3.74	.855
LMS is easy to use	3.73	.952
It is easy to get LMS to do what I want it to do	3.50	.907
My objective for using LMS is clear and understandable	3.69	.838
Interacting with LMS does not require a lot of mental effort	3.73	.896
LMS is convenient to use	3.68	1.053
It is easy to find information on LMS	3.60	.982
LMS allows easy return to previous display pages	3.48	1.021
I like using LMS	3.56	.968
I use LMS to get more information about my subjects	3.77	.912
I know about e-learning, and i believe it is useful	3.78	.963
LMS provides an attractive working environment	3.63	.917
Using LMS has been a pleasant experience	3.63	.899
I believe it is would be a good idea to use this LMS for my course work	3.64	.887
I have a generally favorable attitude toward using LMS	3.55	.897

Note: number of participants were 120.

Based on the 5-likert scale, the mean of all items is above of anchor point (2.5). The highest mean (3.79) with the SD of .819 is found in item 2, Perceived usefulness (Using LMS would increase my productivity in my coursework). This result shows that the students believe using LMS in their academic life will enhance their efficiency in their coursework. Regarding to this, IIUM should use LMS to disseminate knowledge and islamic values to the students.

On the other hand, the lowest mean (3.48) with SD of 1.021 occurred in item 7 of Perceived ease of use (LMS allows easy return to previous display pages). This result shows that the students were facing problems whenever they return to previous pages through using the LMS.

Multiple Regression Analysis (MRA) was used to expose the relationship between independent Variables (Perceived usefulness and Perceived ease of use) and dependent variable (Attitude toward use). The relationships between independent variables and dependant variable are shown in Table 4. The variance explained is shown in Table 3.

Table: 3
3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873[a]	.762	.758	.40291

a. Predictors: (Constant), MPEU, MPU

Table: 4
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.125-	.200		-.622-	.535
	MPU	.524	.066	.470	7.919	.000
	MPEU	.502	.061	.492	8.290	.000

a. Dependent Variable: MATU

Table 4 shows that Perceived usefulness and Perceived ease of use significantly affect Attitude toward use at level of $p<0.05$.

Perceived ease of use has affect on the attitude toward use with $\beta = 0.492$. Whereas, Perceived usefulness has influenced the attitude toward use with $\beta = 0.470$. This model is explained by 76.2%.

The difference of attitude to use LMS between distance learning and full time students are showed in Table 5.

Table: 5
The differences between distance learning and full time students.

Group Statistics

	Programme of study	N	Mean	Std. Deviation	Std. Error Mean
MATU	Distance Learning	50	3.5371	.87091	.12317
	Full time	70	3.7327	.77674	.09284

The main difference has been further confirmed through the t-test analysis (see Table: 6).

Table: 6
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MATU	Equal variances assumed	.549	.460	-1.292	118	.199	-.19551	.15131
	Equal variances not assumed			-1.268	98.026	.208	-.19551	.15424

The results show there is no significant difference between distance learning and full time students; F (118) =.549, t= -1.292, p > .05 in their attitude toward use of LMS. Thus, it shows that the level of acceptance according to their attitude are similar across full time and distance learning students.

DISCUSSION AND CONCLUSION

This study examined student acceptance of e-learning technology using TAM to underpin the conceptual framework. Overall, TAM is an effective model to understand the behavior of people to utilise technology specificallly LMS. Based on the case study, the results reveal that perceived ease of use is more important in determining attitude toward use than perceived usefulness.

The result of present study showed that the student had low level of acceptance of LMS as all items had means bellow 4 "agree". This result is not supported by other studies such as Liu, Liao and Pratt (2009); Shroff, Deneen and Eugenia (2011) who found that students favoured the use of e-learning technology with high level.In addition, the study revealed that perceived usefulness and perceived ease of use significantly affect attitude toward use of LMS. This is is supported by other studies such as Teo (2009); Kiraz and Ozdemir (2006) who claimed that perceived usefulness and perceived ease of use can be the determining factors to influence attitude toward using LMS.

The main purpose of this study was to determine the students' perceive toward the use of Learning Management System in IIUM, and explore the relationship between perceived ease of use (PEOU), perceived usefulness (PU) and attitude towards use (ATU), also to study the difference between distance learning and full time students' acceptance of learning management system.

The results of this study have shown that perceived usefulness perceived ease of use have a significant effect on attitude towards use. In other words, when students perceive learning management system as one that is gain more benefits and can improve their performance through use it as well as it is easy to use and free effort, they will have positive attitude toward the system. These findings support Chen and Huang(2010); Liao et al, (2009) ; Schaik and Teo, (2009); and Teo, 2009) studies.

Moreover, this study did not find a significant relationship between programme of study (distance learners and full time) and attitude toward use (ATU). Thus, the implications of the findings indicate that a case study is needed to ensure effectiveness of each or any LMS in the learning communities. As every learning community has its own needs and different characteristics of courses and lecturers (Iwasaki,; et.al,2003). This research will be a bench mark for future studies related to LMS and computer integration.

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WEBFOLIO APPLICATION IN PRIMARY EDUCATION: Qualities and Usability of Webfolio System

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ABSTRACT

In today's world, educational establishments should follow and utilize technological developments in order to improve the quality of educational activities. One of the fields that technology can be integrated into educational establishments is evaluation. There is a tendency of process evaluation in today's evaluation field, and portfolios are among these process evaluation tools. In order to provide a faster and easier process, portfolios have been prepared in electronic settings and transformed into e-portfolios. Moreover, in time, e-portfolios had to be moved into web to improve their efficiency, and web-based-portfolio (Webfolio) emerged.

The aim of this study is to identify the qualities of products, which came up as a part of webfolio application applied in primary education, and to determine the use of webfolios both by students and teachers. In this study, which aims to determine how effective webfolios are, one of the qualitative research designs, Natural Inquiry Approach was preferred. In this study, one of the purposeful sampling methods, criterion sampling was used was held in a private school connected to National Education Directorate of Eskisehir in 2008-2009 academic year spring term.

Webfolios prepared by students, assignments given by the teacher, and other digital data available in webfolio system were used as data collection tools. When student webfolios were examined concerning their quality, most webfolios prepared by the students were found to be qualified enough in terms of readability, authenticity, timeliness, and the use of media sources. However, most of the student webfolios do not have a systematic design.

The assignments given by the teacher was determined to be readable, clear, and has no misspelling.

It was also observed that the teacher urged students to deliver their webfolios in time, suggested the use of class book and the Internet. Students, in their webfolios, preferred using text, picture and tables, but did not prefer to use video sources.

Keywords: **Web-based portfolio, webfolio, student webfolios, classroom teacher**

INTRODUCTION

When electronic portfolios were prepared for the web and customized, and uploaded to the web, they were named as webfolios (Web-based electronic portfolios) (Watkins, 1996, cited in Avramamidou and Zembal-Saul, 2006). Webfolio is defined as integrated collection of educational program standards, assignments given by the teacher, products by the students in accordance with the assignments the teacher gave, and web-based multimedia documents where evaluation and comments about student works are placed (Gathercoal, Love, Brydeve McKean, 2002).

Webfolio is a special structure where modern communication technologies are used (HTML, word processor programs, Adobe Acrobat, etc.), where all kinds of electronic materials can be kept, and where students, teachers, advisors and managers can function in a harmony. Webfolio, enables all partners to cooperate in terms of academic improvement of the students (Kendus, 2002; Bartell et.al., 2001 cited in Gathercoal et.al, 2002). As a system, webfolio provides significant benefits for students, teachers, schools and other participants by integrating a series of various "best" educational activities in one place (Gathercoal, Love, Bryde and McKean, 2002). Webfolio is a system where all works produced by students and teachers can be kept. Student gains, summaries of classes and projects, and assignments can be collected in their portfolios which is available to be reached at all times (Campbell and Moore, 2003). Webfolio system, provides knowledge and needs analysis to improve and utilize the program along with reflective and result analysis by integrating evaluation and reporting in web-based portal (Karayan and Gathercoal, 2006).

Problems like physical space, transportation and access can be easily overcame with the help of webfolios; however, uploading portfolio files on a web space does not necessarily mean to be a webfolio system. All the information concerning the portfolio (student products, assignments given by the teacher, evaluation about student products, viewer comments, program standards and assignment classifications etc.) should be placed in database and an effective interaction system should be formed (Herner et.al., 2002). In order to benefit from webfolios, all the partners should attend to the process.

Moreover, educational program standards, assignment, responses of the students to portfolio studies, feedbacks provided by the teacher related to student works should be integrated effectively (Gathercoal, Love, Bryde and McKean, 2002).

Various studies conducted on webfolio system proved that webfolio system provides many benefits since it increases learning performances of the students (Chang, 2008), provides convenience (Driessen et. al., 2007), enhances student collaboration (Hastie and Sinelnikov, 2007), and facilitates student-centered teaching method (Avraamidou and Zembal-Saul, 2006). Although webfolio system is used in various education levels commonly, there are not many studies concerning its use especially in primary education.

Thus, there is a need for determining how effective webfolios used in primary education both by students and teachers, and evaluating the quality of the products emerged. In this respect, this study focuses on how effective teachers and students use the webfolio system, and the quality of the products emerging from the use.

THE AIM OF THE STUDY

The main aim of this study is to determine the quality of the products emerging from a webfolio application in primary schools, and to define the level of the use of webfolio system both by students and teachers. In this respect, the following questions were asked:

- **What quality does students webfolios and teachers assignments has?**
- **What is the usability level of the webfolio system by teachers and students?**

METHODOLOGY

Research Model

In this study, which aims to determine how effective webfolio application is used, and the quality of the webfolios, naturalistic inquiry approach, one of the qualitative research designs, was implemented.

Naturalistic inquiry approach is a paradigm, which determines the examination type of a research, and directs the research in one way, and held in a totally natural environment (Gubaand Lincoln, 1982). In this approach, researcher can collect data by utilizing various data collection sources. Interviews, observation, document analysis, etc. can be the sources for data collection, and then the data collected are analyzed by the researcher (Erlandson, Harris, Skipper and Allen, 1993; Lincoln and Guba, 1985).

Participants of the Study

In this study, a purposeful sampling method, criterion sampling was used. The study was conducted in 2008-2009 academic year with fourth grade students and their teacher in the primary school within MAT-FKB Private Gelisim Schools connected to Eskisehir provincial Directorate of National Education. Among 10 male and 8 female students who took part in the study, 14 of the participants had Internet connection in their houses. Although 4 students did not have an Internet connection in their houses, these students were able to take part in the study by connecting to the Internet in the school and other environments, and the experiences that the students had about the webfolio system were also mentioned in the study.

The teacher had necessary qualifications that would be needed in the study, thus she was chosen to be a participant of the study. Along with these, the teacher improved herself in computer use by attending computer courses, and had an educational materials development certificate. Moreover, that the teacher prepared his own web site, and was the administrator of her website made him the perfect participant since such qualifications would add a lot to the study in terms of the use of webfolio system.

The Application of the Study

The webfolio application was held in 2008-2009 academic year and lasted for one term. Students and the teacher were informed through a seminar on the use of webfolio system before the application of this study. Then, a two-week pilot study was held so that flaws of the system were defined and updates were made in the light of suggestions. After the pilot study, the main study started. The study was conducted on four main classes provided in the fourth grade, which are Science and Technology, Mathematics, Turkish, and Social Sciences.

The webfolio system consists of two main modules. These are "student panel" and "teacher panel". According to this, when a student logs on to webfolio system, she is directed to student panel; likewise when a teacher logs on, she is directed to teacher panel. Teacher panel consists of "giving feedback to student webfolios", "answering student questions", assignment management", "personal information", and "personal web page". Student panel, on the other hand, consists of "webfolio management", "asking questions to the teacher", "giving peer-feedback", "personal information", and "personal web page".

Data Collection Tools

Webfolios prepared by the students, assignments given by the teacher and other digital data available on webfolio system are used as data collection tools. The digital data used in the study consist of questions and answers formed by teacher and the students, feedback, evaluation process, personal information, and personal web page.

Teacher data in the webfolio system are assignments given to the students and other data collected throughout the teacher's use of the system. Student data, on the other hand, webfolios that students prepared, peer feedback that students provided for their peers, and data formed by the use of webfolio system.

Data Analysis

Along with the data gathered in research scope, data formed by feedback and questions between teacher and students were also analyzed in terms of the aims of the study.

An evaluation form was formed for the researcher and an expert in the field to use in order to make document analysis of student webfolios and assignments given by the teacher. In this respect, qualities that portfolios should have were examined by reviewing the literature. Then, these qualities were used to create an evaluation form to create a standard in the analysis of the qualities of webfolios. In the next step, these themes that appeared form the study were shown to experts on the field and document analysis and their opinions were asked. Necessary corrections were made according to expert opinions and the form was shown to the experts the second time. The final form was given to the evaluation form after the corrections.

Student and teacher data were examined and collected by the researcher with the aims of the study. Then, these data were digitized and themed. In terms of reliability, both the processes of digitizing, and the process of forming themes and placing data on these themes were done by the researcher and another independent researcher; later an agreement was reached, and the analysis were finalized.

RESULTS AND DISCUSSION

In order for findings and discussion to be systematic, they are discussed under four headings parallel to research questions; qualities of the student webfolios, qualities of assignments given by the teacher, the use of webfolio system by the students, and the use of webfolio system by the teacher.

Qualities of The Student Webfolios

After the application of the study, student webfolios were converted into documents and analyzed through document analysis.

Webfolios prepared by students were evaluated by the standards created by the researcher after webfolio application. Webfolios were reviewed qualitatively according to these qualities; not only that, but also assignments given by the teacher and other specifications that might have an effect were also associated. The standards used in the analysis of webfolio qualities were given in the following table.

Table: 1
The Standards Used in the Analysis of Webfolio Qualities

Standards Used in the Analysis of Qualities	Sub-Standards	Evaluation
Readability	• Readable font use • Readable font color choice • Readable background color choice • Readability	If at least one of the mentioned standards were not met, the student was considered unsuccessful.
Authenticity	• The student should not copy out of sources like books, the Internet etc. • The student should not copy from his friends	If at least one of the authenticity issues is broken, the student was considered unsuccessful
Up-to-dateness	• Making use of up to date information sources	If the mentioned standard was not met, the student was considered unsuccessful.
Systematicity	• Providing the content of webfolios systematically	If the mentioned standard was not met, the student was considered unsuccessful.
Use of Media Sources	• Pictures • Photo • Video • Sound file • Other media sources	If at least one of the standards was met, the student was considered successful
Media sources-content suitability	• Visualizing the content • Diagraming the processes • Explaining a process	If media sources were used in terms of at least one of these standards, the student was considered successful
Punctuation and Spelling	• Turkish Language Society Standards	The content of webfolios not matching the standards determined by the Turkish Language Society was considered to be unsuccessful.

At the end of the webfolio application, there emerged 97 portfolios belonging to students.

As for the first control of the portfolios, 22 of them excluded in terms of not starting at all, or starting but did not continuing, since they did not have the qualities to make a document analysis. The remaining 75% of the portfolios were taken into consideration.

In the step where the quality of student webfolios is evaluated, webfolios first evaluated in terms of *readability.* When student webfolios were examined, it was seen that while some students made mistakes that reduce the readability, others did not make those mistakes. The sample related to the correct use of colors to improve readability was given in figure 1.

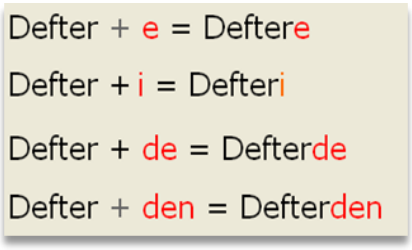

Figure: 1
Sample Related to the Correct Use of Colors

While adding font colors, some students, actually accidentally, chose unsuitable font colors making their webfolios unreadable. Related webfolio sample was illustrated in figure 2.

Figure 2:
A Webfolio Sample Related to Insignificant Font Color Choice

Among other mistakes that students made in terms of readability are unreadable font or background color choice, unsuitable font use, writing the words next to each other, unsuitable font styles use etc. in the analysis it was found that 79% of the student webfolios were readable.

In evaluating student webfolios according to quality, secondly, *authenticity* standard was taken into consideration.

While evaluating student portfolios in terms of authenticity, whether the student copied from the Internet sources or his friends' webfolios was taken into consideration. Although there are a lot of different search engines, since Google is the most commonly used one, Google search engine is used to compare students' webfolios with websites on the Internet.

Thus, this gave an opportunity to researcher to decide whether the content in the student webfolio was taken from an Internet source or not. When student webfolios are analyzed in terms of authenticity, it was seen that 76% of the portfolios were authentic.

The evaluations revealed that web sites providing assignment, forums, blogs and other related sites were used. Moreover, some contents were found more than one forum, blog, or homework sites. Furthermore, it was also found that some of the students who prepared unauthentic webfolios copied the same content. This reveals that either the students were affected by each other, or used the sites that appear in the first lines at a search engine.

When webfolios of the students who copied content from the Internet, it was seen that their peers realized that the content was a copy.

They warned their friends by providing peer-feedback. Thus, it is obvious that peer-feedback application in webfolio system increased the authenticity of webfolios.

Another standard to evaluate the quality of student webfolios is the *up to dateness*. In this standard, whether webfolios have up to date and true information or not was taken into consideration. When webfolios are considered according to whether they have current information, it is seen that all the webfolios present up to date and true information.

The fourth standard concerning student webfolios is *systematicity*. When student webfolios were evaluated in terms of systematicity, it was evaluated whether the content was presented in a specific order or not. In the evaluation in terms of systematicity; making an introduction after the title, and then giving related examples, and supporting the content with media sources were taken as the basis.

The analysis showed that 36% of the student webfolios met the systematicity standard. When webfolios, which were not suitable in terms of systematicity, analyzed it was seen that there was no introduction or explanation to the topic, and there were direct examples and explanation of these examples followed.

The qualities of student webfolios were also evaluated in terms of *the use of media sources.* First, the webfolios were evaluated in terms of whether they used some kind of media sources or not, then, the webfolios which were determined that they used media sources were analyzed to find out what kind of media sources were used. When student webfolios were analyzed in terms of the use of media sources, it was seen that 72% of the webfolios used at least one type of media sources.

When media sources found in webfolios were analyzed, it was also seen that students did not prefer to use sources like videos and sound files, but frequently used pictures and photos.

The analysis of the pictures showed that students used a lot of animation pictures along with photos.

After webfolios including media sources were identified and analyzed, a re-analysis was applied to find out whether media sources were used in accordance with content.

This re-analysis revealed that the content and the media source used are in accordance in 89% of the student webfolios.

When reason of the use of media sources were analyzed, it was observed that students used media sources to "visualize the content", "schematize a calculation", and "explain a process". A sample concerning this point is presented in figure 3.

Figure: 3
A Webfolio Sample Related to Schematizing a Calculation

Some students, while preparing their webfolios, used media sources, which were unrelated to the content.

When these media sources were analyzed, it was seen that appealing but unrelated pictures like "smilies" were used to improve attraction.

Lastly, Student webfolios were analyzed in terms of *punctuation and spelling rules.* As a part of spelling and punctuation rules; standards concerning correct use of punctuation marks, following spelling rules, and writing the words correctly were taken into consideration.

When student webfolios were analyzed in terms of punctuation and spelling rules, it was seen that 89% of the webfolios were suitable.

When webfolios which did not follow punctuation and spelling rules were analyzed, the mistakes that students made were defined as "punctuation errors", such as starting a sentence in lower case", and "spelling mistakes".

Qualities of Teacher Assignment

Table: 2
Standards Used in the Analysis of Qualities of Assignment

Standards Used in the analysis of Qualities of Teacher Assignment	Substandard	Evaluation
Clarity	The use of clear language	If the language used was clear, it was considered successful
Richness of the Sources	• Internet • Course book • Magazines • Experts • Library • Other Sources	If , at least, three sources were used in giving assignment, it was considered successful
Evaluation Standards	• Making use of various sources • Adding up to date information • Completing in time • Following spelling rules • Writing Systematically	If, at least, three evaluation sources were used in giving assignment, it was considered successful
Punctuation and Spelling	Standards determined by Turkish Language Society	The uses not matching the standards determined by the Turkish Language Society were considered to be unsuccessful.

The qualities of assignments given by the teacher were defined in webfolio application, and features and factors that broke the quality, if applicable, were determined. Standards used in the analysis of teacher assignments are presented in Table: 2.

Title, beginning and due date of the assignment, explanations about the assignment, information sources, and evaluation criteria are the compulsory fields to be filled by the teacher in the webfolio system.

During webfolio application, the teacher gave ten assignments. All these assignments were analyzed, and were investigated in terms of readability, richness of the sources, evaluation standards, and punctuation and spelling rules. Because there was not a rich text editor in the field where the teacher uploaded assignments, no mistakes like wrong text or background color use, wrong font characteristics use, etc. moreover, when the explanations made by the teacher were analyzed, it was seen that the teacher made clear and concise explanations that all the students could clearly understand. When *readability* of teacher's assignments was analyzed, all the assignments were found to be appropriate.

Teachers given assignments were also analyzed in terms of *richness of the sources*. In the analysis of this aspect, richness standard was accepted to be at least three sources be provided by the teacher. The analysis revealed that, the assignments given by the teacher provided at least three sources for each assignment.

In the scope of the study, the sources that the teacher suggested were also evaluated. The sources that the teacher suggested are presented in Table: 3:

Table: 3
Sources Suggested in Teacher Given Assignment

Sources provided to students by the teacher	f
Course book	10
Internet	10
Libraries	4
Elder Family Members	3
Teachers	2
Reference Books	1
Science Magazines	1
Magazines	1
Workers that students can reach	1
Encyclopedias	1

When the sources that the teacher suggested were analyzed, it was seen that course book and the Internet were suggested mostly, followed by library, elder family members, and teachers. The least suggested source appeared to be encyclopedia. When sources provided by the teacher were analyzed, it was seen that the teacher provided a common sources. For example, instead of providing a web site or sites in reference lists, the teacher mentioned only "the Internet". Similarly, instead of suggesting a specific book or a magazine, she preferred to suggest them as library, magazines and reference books.

Teacher's assignments were also analyzed in terms of *evaluation standards* that the teacher herself provided. In terms of evaluation standards, at least three standards were considered sufficient. When teacher's assignments were analyzed in terms of evaluation standards, 80% of the assignments were considered to be sufficient. Moreover, the analysis also showed that the teacher insisted on finishing webfolios in time. Other most important criteria the teacher followed were following spelling rules and giving correct information. Other than these the teacher also used standards like making use of various sources, order, and suitability to the aim of the assignments, etc.

Another analysis criteria used when analyzing teacher's assignments was *punctuation and spelling rules.* Examination of the assignments revealed that punctuation and spelling use of the teacher was sufficient in 70% of the assignments. The analysis also revealed what kind of mistakes the teacher made in the use of punctuation and spelling. According to this, the teacher only made some basic keyboard mistakes (adding one more letter mistakenly, or misplaced letters etc.).

The Use of Webfolio System by the Students

Student data in webfolio system were analyzed in order to find out to what extend the students were able to use the webfolio system. In this respect, what features were students able to use, what features were problematic, and what features students never used were scrutinized.

Webfolio system features take into consideration in order to determine the usability level by the students were "using webfolio editor", "using peer-feedback system", "filling in personal information", "creating a personal web page", and "using question and answer system".

The first feature in determining the use of webfolio system is *the use of webfolio editor.* When student data in the webfolio system were analyzed, it was seen that students used text formatting to transform a text bold, italic, underlined form, picture feature to insert pictures, and coloring feature that helped them change the color of their font and background. The frequency of the features is presented in Table: 4.

Table: 4
Data Related to How Effective the Students Used Webfolio

How Effective the Students Used Webfolio	f
Coloring	17
Inserting Pictures	17
Text Formatting	16
Adding Bullets	4
Adding links	3
Adding Tables	1

As seen in Table 4, the students preferred to use coloring and inserting pictures features the most. Adding links and tables were among the least used features. When the use of webfolio editor features was analyzed, it was seen that sophisticated features like adding video files, sound files, and flash animations were not used. Moreover, features like adding bullets and links were also among the least used features. It could be said that students either had difficulties in the use of these features, or did not need to use them.

One of the features of webfolio system is that students could give each other *peer-feedback.* After students complete their webfolios, they activate peer-feedback setting in "peer-feedback" menu available in their webfolio system before sending their webfolio to the teacher. This way, their friends could provide peer-feedback to the students who activated their peer-feedback settings. Moreover, students could not see who they were giving feedback to. Hence, students were made sure to provide correct feedback in an academic manner. When webfolios were analyzed, it was clear that most of the students got peer-feedback support. Moreover, students helped their friends by providing peer-feedback. The document analysis revealed that all the students, except for two students, activated peer feedback setting in their webfolios, and got peer-feedback from their friends.

Another part of webfolio system is the *personal information* tab*.* This part is not related to webfolio preparation. In this part, students were able to write the e-mails, mother and father names, etc. Although this part was not completely related with the preparation of webfolios, this information could be seen in "student" tab in teacher's menu, thus it was considerably important for the teacher. When personal information tabs of the students were analyzed, it was seen that all the students filled in the necessary information.

Another feature in webfolio system was "personal web page". In this part, an editor having the same characteristics as webfolio editor was used. Hence, students were able to make use of features such as inserting pictures, sound files and video files, and adding links etc. when student web pages were analyzed, it was seen that 8 students out of 18 prepared their web pages; remaining 10 students did not form a web page. The analysis of the web pages revealed that some students put their web pages a welcome note, and provided various information like the pop stars they like, and football teams they support.

Another feature of webfolio system is *"question and answer system".* With the help of this system, students were able to ask or consult the teacher questions or points to be clarified even after school hours. The analysis revealed that most of the students used question and answer feature effectively. 16 out of 18 students used the system. Document analysis revealed the aim of the students in the use of question-answer feature. The aim of the students in the use of question-answer feature is presented in Table: 5.

Table: 5
Data Concerning the Use of Question-Answer System

Data Concerning the Use of Question-Answer System	f
How much time left?	7
I finished assignment. Can I send?	3
How am I going to send my assignment?	2
Did you like my assignment?	1
I cannot save my assignment?	1
I cannot insert pictures?	1
What else should I add to my Assignment?	1

When the questions asked by the students were analyzed, it was revealed that the most common question was "how much time left". This was followed by asking to send the assignment to the teacher, and in what way the assignment is sent. Students also asked questions to learn whether the teacher liked their assignment, or how to insert pictures.

The use of Webfolio System by the Teacher

Likewise in the students, how effective the teacher used webfolio system and in what points she had difficulties were also taken into consideration. In this respect, standards like "the use of question-answer tab", "the use of teacher feedback system", "forming personal information tab", and "preparing personal web page" were considered.

One of the activities that the teacher did in the webfolio system was to provide feedback to the questions asked by the students in the question-answer tab. Students were able to ask questions out of the school hours, too.

Thus, teacher should have spared some time to answer these questions. When data were analyzed, it was seen that teacher tried to provide clear and concise answer to the questions.

Another feature of webfolio system is "*teacher feedback system".* Teacher provided feedback to the assignments completed by students in the webfolio system. The feedback the teacher provided for the completed webfolios were analyzed. The analysis revealed that the teacher approved webfolios if they meet the criteria; otherwise, sent the webfolios back so that students could make necessary improvements.

When data in *personal information tab* of the teacher were analyzed, it was seen that teacher did not provide information like his e-mail. The teacher probably did not feel the need to provide her e-mail since she was the only teacher in the system, and students could not see that information.

Another field that teacher could fill in the webfolio system was *personal web page* tab. Teacher was able to create a personal web page in this field. However, the analysis revealed that teacher did not form a web page.

RESULTS AND DISCUSSION

According to the data gathered throughout the study, most of the student webfolios have readability. Moreover, students were able use colors correctly in order to improve readability. Mistakes that decrease the readability, and that students made while preparing their webfolios are unreadable font choice, insignificant background color choice, writing the words close to each other, unsuitable font use. Most of the webfolios students prepared are authentic. However, contents that can be found in homework sites, blogs, and forums were found to have been used in some of the student webfolios.

Students made use of up to date sources of information in their webfolios. Students, by making use of sources such as the Internet, reached at up to date information, and used that information in their webfolios. Most of the student webfolios do not have a systematic structure. It was seen that most of the webfolios do not have an introduction or explanations, but supported with multi-media sources, by giving direct examples. Students preferred to use media sources in their webfolios. While pictures, photos, and animations were preferred as multimedia, sources like sound files or videos were not.

Most of the media sources used in student webfolios are compatible with webfolio content. Students used media sources in their webfolios to visualize, schematize the content, and to explain the process. On the other hand, the media sources, irrelevant to the content, were used in order to increase visualization. While the content was being formed in webfolios, students took care of punctuation spelling rules. But, there are also webfolios that have a lot of punctuation and spelling mistakes. In this respect, the most common mistakes were starting a sentence in lower case and spelling mistakes.

In general, the quality of the webfolios that students created is considered to be sufficient enough.

This finding is in parallel with the study, which stated that students created webfolios in the same quality as traditional portfolios, conducted by Driessen et.al (2007), and titled "Web or Traditional Portfolios: Is There a Difference?"

The assignments given by the teacher had quality in terms of readability and clarity. Teacher gave assignments clear enough for students to understand easily. Moreover, the teacher preferred to provide course book and the Internet as the sources for assignment. Furthermore, library, elder family members, teachers, other source books, magazines, the workers around and encyclopedia were among the sources the teacher suggested to students.

As an evaluation standard, the teacher gave importance to webfolios being finished in-time. Along with this, following spelling rules, using correct information, making use of various sources, cleanliness and order, and preparation compatible with the aim of assignments are other standards the teacher gave importance. In giving assignment, the teacher did not make any spelling or punctuation mistakes.

Students were able to use some features of webfolio editor such as inserting colored text and background color, adding pictures, text formatting, inserting links to other sources or pages, and adding tables. However, students were not able to use sources such as sound files, video files and flash content. Most of the students got peer feedback about their webfolio by activating peer-feedback settings. Moreover, by organizing their webfolios according to the feedback they got from their peers, they were able to create more qualified webfolios before sending them to the teacher.

Most of the students filled the personal information in webfolio system. Some students, on the other hand, presented all the information except for their e-mails. Most of the students created their personal web-pages. They inserted content and pictures that they have an interest with.

Most of the students made use of question-answer system to ask questions to the teacher. They used the system to be informed about the time left, to ask the teacher whether to send their webfolios, to learn how to send their webfolios, and to be informed about some technical issues.

The teacher answered student questions with the help of question-answer system. She answered questions related to both the webfolio system and technical issues. The teacher examined the webfolios and approved the ones she considered sufficient.

She sent the ones which were not sufficient or sent by mistake back to be developed. The teacher did not fill in personal information file and did not create his own web page.

In light of the findings of this study, following suggestions were proposed:

- **In order to improve quality of education in primary schools, webfolio system must be used by primary school teachers and students.**
- **For the maximum efficiency of webfolio system, teachers and students should learn how to use webfolio system.**

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SWOT ANALYSIS OF MA EDUCATIONAL PLANNING AND MANAGEMENT PROGRAMME OF ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD

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ABSTRACT

The major objectives of the study were to explore various internal aspects of the MA Educational Planning and Management (EPM) programme of Allama Iqbal Open University (AIOU), Islamabad to find its strengths and weaknesses, and to look into external aspects for identifying the opportunities and threats to the programme. Based on the study, a number of strengths, weaknesses, opportunities, and threats were found which provided a basis for reviewing and revising a number of components of the programme. The study explored the various aspects of MA EPM programme of AIOU in the light of programme objectives as well as the national and international needs with special considerations to a distance education programme.

The finding of the study revealed recognition of a number of strengths and opportunities of the programme related to enrolment, workshops, examination, job placement, job satisfaction, and performance of the graduates in a competitive environment. At the same time, the study reflected few weaknesses and threats to the programme associated with the written assignments, tutors, study material, study tours, relevance of the curriculum to local needs, need to update the content, and revision of the curriculum. Recommendations of the study include periodically revising the curriculum, upgrading the courses books, improving the evaluation methods of assignments, introducing more activities for both learning and evaluation, and including study tours in the workshops. The study also recommended the EPPSL department to induct part-time/visiting faculty members in emergency situations to achieve the programme objectives. The researcher further recommended the EPPSL department to maintain the record of the graduates for prompt access to them for research purposes and to train the students for offering more cooperation with the researchers. More follow-up studies may be conducted to determine the viability and impact of EPM programmes of AIOU on the society.

Keywords: **Programme, Assignment, Workshop, Resource Person, Educational Planning and Management (EPM), Graduates**

INTRODUCTION

Education, generally, is a means of transmitting knowledge, attitudes and skills from one generation to another. According to Oxford English Dictionary (1989, p.385) education is "training and instruction designed to give knowledge and develop skills". Education in the largest sense is any act or experience that has a formative effect on the mind, character, or physical ability of an individual.

In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills, and values from one generation to another.

Thus education is responsible for a permanent change in attitude and behavior of an individual that is needed for personal as well as social adjustment of an individual. Education however is not to be strictly associated with the means it is transmitted through. The main focus is on the objectives and impact of any system and mode of education. Albert Einstein is of the view that "Education is what remains after one has forgotten what one has learned in school" (www.brainyquote.com).

This fact leads to discovery and invention of modern ways of education which suit every set of circumstances man has ever to come across. Non Formal Education (NFE) or more specifically Distance Education is therefore taken as emerging way of education for their flexibility and adaptability. Pakistan has a great reservoir of the agencies and organizations through which NFE programmes can be launched.

In Pakistan, a number of non-formal educational programmes have been initiated at times both by public and private agencies. Allama Iqbal Open University (AIOU), established in 1972 is the pioneer and one of the greatest non formal educational systems in Pakistan and has been imparting education under various disciplines over the last 4 decades. In AIOU, the institute of education had been working since 1976. In 1984 it was changed to Faculty of Education which is successfully operating since then. The department of Educational Planning and Management (EPM) started working in 1976 in the institute of Education. MA EPM was the first master degree programme of AIOU which was launched soon after the university was established, (Prospectus Faculty of Education AIOU, 2010). Since then the department is getting around 200 students enrolled in MA EPM programme every year.

Hence for the last 35 years, AIOU has been producing professionals for educational planning and management. On combining few related areas of studies the name of the department has now been changed from EPM to Educational Planning, Policy Studies and Leadership (EPPSL).

A programme with more than 35 years of age requires its evaluation and revision a number of times. MA EPM is the oldest master degree programme of AIOU. When it was launched, there was no other master level programme in the university to be compared with and to learn from. Furthermore there was no other institution in the country offering the similar programmes; this made it even harder to understand the advantages and disadvantages associated with the programme in the current circumstances of the country and the region. Moreover no significant studies were made to analyze and evaluate the programme in the later years as well. This called for a need of reviewing and analyzing the master degree programme of EPM department. SWOT analysis is a useful way to discuss the prospects and problems of a programme like MA EPM. It is one of the modern techniques of identifying and relating the strengths and problems associated to operation of an organization.

The purpose of this technique is to find a base to make a strategic plan for the organization's development. SWOT Analysis has been conducted by a number of organizations and educational programmes for improving their performance and overcoming the deficiencies.

These studies include SWOT Analysis of the department of Kinesiology & Physical Education, Michigan Technical University (MTU), Frederick Country Ag Education Programme, B.Ed programme in Govt. College of Education, Afzalpur AJK, The Department of Education, Sargodha University, and M.Ed programme of AIOU. Amir, (2010) has also conducted SWOT analysis of another advanced programme of EPM i.e. M. Phil EPM. These studies have reflected a number of strengths, weaknesses, opportunities and threats which could be considered for further strategic planning of these organizations and programmes. Hence SWOT Analysis of MA EPM programme was identified to be very important means to assess the overall viability of the programme and to develop new strategies for its development if needed.

REVIEW OF THE RELATED LITERATURE

Educational Planning and Management (EPM) a Comprehensive Approach

Planning and management in education are the interrelated acts for achieving the educational objectives. The process of planning contributes to achieve the objectives by making advance preparations for the purpose where as management contributes by directing and controlling the implementation (Pervaiz, 2007 p.37). Planning is a complex process which requires a large number of factors to be considered. According to Haddad (1995, p.7). Planning entails a variety of processes, from the analysis of the present situation, the generation and assessment of policy options, to the careful preparation and monitoring of policy implementation, eventually leading to the redefinition of a new policy cycle. A variety of players intervene in these processes and if their interests are not carefully assessed and taken care of, then the policy or the plan will have every chance of failing. (www.unesco.org/education)It is therefore necessary that planning should always be considered keeping in view all its complicated processes. The scope of planning is not limited to the traditional institutionalized setup anymore. While discussing the scope of educational planning as quoted by Haddad (1995, p.5), Hallak further stated:

The scope of educational planning has been broadened. In addition to the formal system of education, it is now applied to all other important educational efforts in non formal settings. Attention to the growth and expansion of educational systems is being complemented and sometimes even replaced by a growing concern for the quality of the entire educational process and for the control of its results.

Educational Planning is now considered to be an important factor towards educational development and should therefore be given significant role in the overall planning of education. According to (Prakash, V. 2008, p.1) a Working Party Report of the UNESCO states, "… educational planning is not an isolated activity … it must be undertaken in the framework of comprehensive development planning, and must be viewed in the larger context of all the steps required for effective educational development."

EPM IN GLOBAL PERSPECTIVE

A large number of organizations, societies and forums have been established for the purpose of planning and management in education both for national and international needs. It is therefore of great importance to study the various activities and organizations of educational planning and management before one proceeds to evaluate any study program related to educational planning and management.

The International Institute for Educational Planning (IIEP), The International Society for Educational Planning (ISEP), and The Academy of Educational Planning and management (AEPAM) are few of the institutes working in the field of EPM in collaboration with UNESCO and other related organizations. (www.aepam.edu.pk).

In order to understand how an EPM program for a university should be developed to serve especially in developing countries, it is useful to study the guidelines or objectives of various related agencies and universities educating EPM. A number of institutions/universities in developing countries are offering programmes of EPM at undergraduate and graduate level.

These institutes include Bahir Dar University Ethiopia (www.bdu.edu.et), National University of Educational Planning and Administration (NUEPA) India (www.nuepa.org), American University of Beirut (AUB) (www.aub.edu.lb), University of Education (UE) Pakistan (www.ue.edu.pk), Superior Group of Colleges, Pakistan (www.superior.edu.pk), National University of Modern Languages (NUML) Pakistan (www.numl.edu.pk), and Allama Iqbal Open University (AIOU) Pakistan(www.aiou.edu.pk). Most of the universities have almost similar aims and objectives that can best be represented by the aims and objectives of Advanced Training Programme of IIEP.

ADVANCED TRAINING PROGRAMME (ATP), IIEP

Through annual Advanced Training Programme (ATP) launched in 1965, IIEP trains educational planners and managers to analyze education systems, formulate policies, develop plans and programmes, and manage and monitor their implementation. The ATP started as a certificate programme in 1965 and, following its success and considerable demands from member states, the institute introduced a diploma in 1999. Since 2002, the IIEP Advanced Training Programme provides a master's degree option, open to those who obtain the required scores in the courses.(www.unesco.org, p.2)The advanced training programme of IIEP aims at:

- **Reviewing theories and approaches in current educational planning and management**
- **Strengthening core competencies in sector diagnosis and policy formulation**
- **Developing skills for strategic management and leadership in education**
- **Providing tools for building and using information systems for decision making and educational policy analysis**
- **Developing skills for monitoring and evaluating educational programmes and projects**
- **Developing competencies for undertaking educational research**
- **Fostering comparative perspectives on education through course work, interaction with other trainees from different parts of the world, and study visits to two UNESCO Member States. (www.unesco.org, p. 3)**

FUNDAMENTALS OF EPM

In order to identify the real up-to-date issues in educational planning and policy making in different parts of the world, to support IIEP an editorial board has been appointed, composed of two general editors and associate editors from different regions, all professionals of high repute in their own field.

At the first meeting of this new editorial board in January 1990, its members identified key topics to be covered in the coming issues under the following headings:

- **Education and development**
- **Equity considerations**
- **Quality of education**
- **Structure, administration and management of education**
- **Curriculum**
- **Cost and financing of education**
- **Planning techniques and approaches**
- **Information systems, monitoring and evaluation**

(www.unesco.org/education)

SWOT ANALYSIS

SWOT (Strengths, Weaknesses, Opportunities, and Threats) came from the research conducted by Albert S Humphrey and his team at Stanford Research Institute from 1960-1970. The research was funded by the fortune 500 companies to find out why corporate planning failed and what could be done about this failure. Albert S Humphrey is therefore considered to be the founder of SWOT Analysis. (www.businessballs.com) SWOT profile uses a very simple framework as shown in the following figure.

	Positive	Negative
Internal Factors	Strengths	Weaknesses
External Fact	Opportunities	Threats

Figure: 1
www.entrepreneurstoolkit.org

An important advantage of SWOT Analysis is its simplicity; most of the stakeholders can understand the findings of SWOT Analysis without necessarily having much technical knowledge. It further makes it easy to relate the findings, draw conclusions, and develop new strategies in a very simple way. Thus one of the most important merits of SWOT

Analysis is that it does not require any specific qualification or technical experience for utilizing its outcomes. The attractions of SWOT Analysis are that this technique is familiar and easily understandable by users and it provides a good structuring device for sorting out ideas about the future and an organization's ability to exploit that future.

The reason why it has become so widely known is because of its inherent attractions, which include the facts that the technique is simple enough in concept to be immediately and readily accessible to managers.

And finally SWOT analysis provides us with a device to structure the awkward mixture of quantitative and qualitative information, of familiar and unfamiliar facts, of known and half-known understandings that marks strategic marketing planning. (Piercy & Giles, 1989, p.6)

The SWOT analysis is self-assessment data collection exercise for an organization. It should be followed by more comprehensive analysis which feed into a strategic plan.

This should consider how to build on strengths, address the weaknesses, make the most of the opportunities identified, or reduce the impact of potential threats. (www.beecoop.co.uk)

SWOT ANALYSIS OF EDUCATIONAL INSTITUTIONS

According to Hunter Taylor (www.ehow.com), the following questions/factors should be kept in mind while identifying Strengths, Weaknesses, Opportunities, and Threats for SWOT Analysis of educational institutions.

Strengths/Weaknesses

An institution can identify its strengths by asking questions such as "What does the institution do better than anyone else" or "What advantages does the institution have?" A weakness for an academic institution could be its course offerings.

For example, online institutions do not offer as many diverse courses as traditional brick-and-mortar institutions.

Opportunities/Threats

What societal trends is occurring that the institution is not taking advantage of or what opportunities are being missed? An opportunity for an institution could be to offer courses to senior adults. A decrease in financial aid funding could affect a institution's budget.

Factors Specific to Study Programmes

In SWOT analysis for managing vocational and technical education (VTE) programmes for improved efficiency in Nigeria, Adepoju and Famade (p.359) suggested that SWOT should cover all of the following areas, each of which may be a source of strengths, weaknesses, opportunities or threats.

Internal Environment of the Institution

The internal environment of the institution provides a number of factors that normally are related to strengths and weakness of the study programme. These factors include faculty and staff, classrooms, laboratories and facilities (the learning environment), current students, operating budget, various committees, and research programmes.

External Environment of the Institution

The external factors which are usually related to opportunities and threats to the programme include prospective employers of graduates, parents and families of students, competing colleges, preparatory high schools, population demographics, and funding agencies (Adepoju and Famade, 2010, p.359)

Some SWOT Studies on Educational Programmes

SWOT analysis being a very useful technique has been practiced by innumerable organizations to find out their positive and negative aspects and to utilize the findings for organization's development. Some of the important SWOT studies conducted by different organizations are presented as follows. This would certainly a useful attempt to understand how SWOT analysis has been applied and utilized by various organizations.

SWOT Analysis on the national Lifelong Learning (LLL) Strategies of Slovak Republic

In Slovakia, the SWOT analysis in term of lifelong learning (LLL) and lifelong guidance (LLG) was created in years 2004-2006. This original SWOT analysis is the part of the Strategy of Lifelong Learning and Lifelong Guidance. The original SWOT analysis was elaborated as the basis for the creation of the Strategy of Lifelong Learning and Lifelong Guidance. This study led to certain findings in terms of the strengths, weaknesses, opportunities and threats. (www.cbi-nlls.net)

SWOT Analysis for Frederick County Ag Education Programs

In 2008 The Agricultural Education Program Advisory Committee (PAC) decided to conduct Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis for the Agriculture Education programs in Frederick County. A number of important discoveries were found on the basis of this study.
(www.discoverfrederickmd.com)

SWOT Analysis of Vocational and Technical Education (VTE) Programmes in Nigeria

In 2010, a research paper "The application of strengths, weaknesses, opportunities and threats (SWOT) analysis for managing vocational and technical education (VTE) programmes for improved efficiency in Nigeria" was developed by Adepoju and Famade. In the context of this paper, SWOT was presented for use as a decision-making strategy. An insight into the wide range of the potential applications of SWOT analysis was also the thrust of the paper. As conclusion, the SWOT Analysis was identified as very useful tool for decision making. (www.academicjournals.org)

SWOT Analysis of Michigan Technological University (MTU)

The self study report of Michigan Technological University (MTU) highlights different points which were identified in the SWOT Analysis. On the basis of these finding a detailed action plan was developed which was to be integrated into the strategic planning process for 1998/99. (www.admin.mtu.edu)

SWOT Analysis of M.Ed Programme of AIOU

SWOT analysis of M.Ed. Programme of AIOU was presented by Tahir (2009). The strengths, weaknesses, opportunities, and threats found in the study provided a base for improvements in the programme where needed. (www.scribd.com)

SWOT Analysis of M.Phil EPM programme of Allama Iqbal Open University

SWOT analysis of M.Phil EPM programme of AIOU was conducted by Shazia Amer (2010).

The major Objectives of the study were to asses the impact of EPM training on the performance of graduates and to identify the contribution of the programme towards better placement of graduates.

The study focused on the following assumptions about each of the strengths, weaknesses, opportunities, and threats.

NON FORMAL EDUCATION (NFE)

As the programme under consideration i.e. MA EPM of AIOU is launched through distance learning under Non Formal Education (NFE) system, it is necessary to understand the important features and considerations to NFE particularly in Pakistan.
According to Mujahid and Iqbal (2004, p.8) the non formal education in Pakistan is introduced as:

Technically, non-formal education comprises all those educational activities (at all levels such as primary education, vocational training, adult literacy, functional literacy, etc.) which fall "outside" the purview of the formal standardized education system, endorsed by the Government of Pakistan or an international examination syndicate/board. In Pakistan, non-formal education is generally provided through:

- **Non-formal basic education community or "home schools";**
- **Vocational/skill training centres/institutes;**
- **Adult literacy/functional literacy centres; and**
- **"Deeni madrassah" or religious schools.(www.paklife.net)**

IMPORTANT FEATURES OF DISTANCE LEARNING

As the programme under consideration i.e. MA EPM of AIOU is launched through distance learning under Non Formal Education (NFE) system, it is useful to understand the important features and considerations to distance learning system.

As stated by Dib (1988, p.4), the three universally accepted features of distance learning are as follows:

- **Typical of the whole distance study is that it is based on non-contiguous communication, i.e., the learner is at a distance from the teacher for much, most or even all of the time during the teaching-learning process.**
- **A pre-produced course, as self-instructional as possible, printed and/or consisting of presentation brought about by other means than print (audio or video-tapes, radio or TV programmes, etc.) guides the study.**
- **Organized non-contiguous two-way communication is a constitutive element of distance study. It is in most cases principally brought about by assignments for submission for the students to solve and answer and for the tutors to comment on (in writing or on audio-tape), but freer forms of communication also occur.**

Basic Responsibilities of Distance Learning Programme

As the basic responsibilities, a distance learning system or programme should effectively manage certain activities. These activities are performed to ensure the smooth operation of the programme and achievement of the objectives of the programme.

As mentioned by Dib (1988, p.4), distance learning is comprised of the development and technical production of distance study courses, the distribution of course materials, the non-contiguous two-way communication between students and tutors/counselors, and record-keeping.

In some case, other activities may be required, as for instance course certificate, examination and degrees, and supplementary face-to-face contacts between students and tutors/counselors.

Key Assessment Areas-Concluded from the Literature

In connection to the literature reviewed above, the SWOT Analysis of MA EPM programme would be based on the following assumed areas for identification of the strengths, weaknesses, opportunities, and threats to the programme.

Strengths and Weaknesses

The strengths and weakness of the programme may be studied with reference to:

- **Factors related to general perception about the programme: what people know about the programme and how they rate it among the other similar programmes.**
- **Factors regarding the access to the programme: it includes the publicity, admission criteria and admission process.**
- **Quality of curriculum, faculty, and the overall teaching learning environment**
- **Relevance of the curriculum to the national needs and objectives: it provides a base for measuring the impact of the programme on the education system.**
- **Suitability of the students to the requirements, expectations, and demands of the programme: it determines whether the students can easily meet the requirements for understanding the content, and practicing the various activities of the programme.**
- **Factors related to completion of the programme and dropouts: it deals with the factors related to successful completion of the programme and also the reasons and remedies of the dropout problems.**
- **Extent of achieving the objectives: the level and the extent to which the programme is useful in achieving the objectives specified in the curriculum.**

Opportunities and Threats

The following important points may be considered while identifying the opportunities and opportunities to the programme:

- **University's management structure and facilities: it deals with the coordination and integration with other programmes, and also the overall circumstances and rules of the university associated with the students' future.**
- **Factors related to further education and job placement**
- **New emerging institutions with identical programmes**
- **Trends of the society**
- **National needs and circumstances: it deals with the significance and importance of the programme at national level. It also includes the problems related to recognition of the programme when compared with the equivalent programmes of other universities or in other fields.**

- **International needs and circumstances: whether the programme addresses the problems and issues of international community or is related to national need only. It also included the relevance of the international efforts and researches in EPM with the content of the programme.**
- **Effects of development in educational technology: it attempts to determine the extent to which the programme strategies are suitable to the emerging instructional technologies.**
- **Formal versus Non Formal conflicts and perception of the job offering agencies: it covers the likely conflicts in the systems of formal and non-formal education. This also includes the general perception about the quality, methods, teachers, study hours, and most of all the devotion and caliber of the clientele in both the system.**

The key assessment areas identified above are useful to proceed for developing a research tool and analyzing the data obtained through it for evaluating the programme i.e. MA EPM programme of AIOU, through SWOT analysis.

OBJECTIVES OF THE STUDY

The objectives of the study were to:

- **Assess the strengths of MA EPM Programme of AIOU**
- **Point out the weaknesses, if any, in MA EPM Programme**
- **Identify opportunities to meet the future managerial requirements for further expansion, and accessibility of the programme**
- **Analyze the problems and external constraints, if any, of the MA EPM Programme**

METHODOLOGY

The population of the study comprises 266 graduates of MA EPM program of the sessions 2007-2009, 2008-2010, and 2009-2011. Many of the addresses of the graduates provided by EPPSL department of AIOU were related to their work positions. Due to changes in jobs, transfers, or shifting of the offices, these addresses were likely to be changed over the period of many years.

Therefore the researcher did not have equal chances to approach each and every member of the population after their graduation. This limitation called for a need of convenience sampling and the graduates with permanent addresses were considered to be conveniently accessible by the researcher. In view to the above, 38% of the population i.e. 100 graduates with permanent addresses were selected to comprise the sample of the study.

Thus the sample of the study comprised 100 MA EPM graduates of AIOU of the sessions starting in;

- **2007,**
- **2008, and**
- **2009 through convenient sampling.**

A detailed questionnaire was developed as research tool after consulting the relevant literature and experts in the field of education. This questionnaire had 30 closed form statements and 3 open-ended questions. The collection of data was conducted through mailed questionnaires. The questionnaire was sent along with a return envelope and a covering letter to each of the respondents at the addresses obtained from EPPSL department of AIOU. Some of the respondents were also contacted personally or through email. As a result 81 out of 100 respondents returned the filled questionnaires which provided the data for analysis and conclusion.

DATA ANALYSIS

The data obtained through the questionnaire was tabulated separately for each of the items in the questionnaire. After frequency distribution of the responses for each item, these data were then taken through appropriate statistical treatments including percentage and arithmetic mean with the help of Microsoft Excel (a computer application).

FINDINGS

The analysis of the data directed towards the findings of the study which comprise the following facts.

Ninty three percent of the respondents agreed that MA EPM of AIOU was one of the prestigious distance learning programmes in Pakistan whereas 5% of them disagreed and 2% of the respondents were uncertain about the statement. 80% of the respondents were of the opinion that the admission criteria ensured the potential required for successful completion of the programme whereas 7% disagreed and 13% were uncertain about the statement. 67% of the respondents said that MA EPM of AIOU was comparatively a low-cost programme whereas 22% disagreed with the statement and 11% were uncertain about it. 65% of the respondents agreed that the programme was useful for remote area students also along with others. 21% disagreed with it and 14% were uncertain about the statement. 86% of the respondents said that the faculty of EPPSL department of AIOU was highly qualified. 6% disagreed with the statement and 7% of them were uncertain. 93% of the respondents were of the opinion that the workshops of the program were effective and useful for students' learning.

5% disagreed with the statement and 2% of the respondents remained uncertain. 91% of the respondents agreed that the programme was offering equal opportunity to both the genders whereas 4% disagreed and 5% were uncertain about the statement.

Fifty three percent of the respondents were in the favor that the EPPSL department addressed the academic problems of the students. 20% disagreed and a 27% remained uncertain about the statement. 41% of the respondents supported the statement that the printing quality of the study material was up to the mark. 42% respondents disagreed with the statement and 17% remained uncertain about it. 36% of the respondents supported the statement that the content of the study material was up to date whereas 51% of the respondents disagreed with the statement and 14% were uncertain about it. 75% of the respondents were satisfied that the program offered student-teacher interaction to a reasonable extent. 14% of them disagreed whereas 11% were uncertain about the statement. 41% of the respondents supported the statement that the assignments were properly evaluated by the tutors.

44% respondents disagreed with the statement whereas 15% of them were uncertain. 52% of the respondents agreed that the workshop schedule was suitable to the circumstances of working students whereas 36% disagreed and 12% of them remained uncertain about it. 63% of the respondents agreed that the strength of the students in the workshop was appropriate for their better learning. 26% disagreed whereas 11% were uncertain about the statement. 80% agreed that the workshops were organized to obtain maximum benefit from the recourse persons whereas 16% disagreed and 4% of them were uncertain about the statement.

Thirteen percent of the respondents agreed with the statement that the workshops offered a chance to visit different planning and management organizations whereas 73% supported the statement and 14% remained uncertain about it. 93% of the respondents said that the conduct of final examination at the end of the workshop was a useful step whereas 2% of them disagreed and 5% remained uncertain about the statement. 74% of the respondents agreed that the MA EPM graduates of AIOU are comparatively preferred for higher education in EPM. 10% of them disagreed whereas 16% remained uncertain about the statement. 46% of the respondents said that the MA EPM graduates of AIOU are comparatively preferred for administrative and managerial jobs. 21% disagreed whereas 33% were uncertain about the statement. 81% of the respondents agreed with a need of more EPM graduates due to the increasing demand of education at all levels. 13% disagreed whereas 6% remained uncertain about the statement. 74% of the respondents agreed with increasing need of EPM graduates in the country due to new Education Policy/ Education Sector Reforms. 12% of them disagreed whereas 14% remained uncertain about the statement. 54% of the respondents agreed that the programme encouraged the students to proceed for research whereas 28% disagreed and 17% were uncertain about the statement. 74% of the respondents agreed that after completion of the programme, the graduates felt a significant elevation in their position or status. 10% disagreed with the statement and 16% were uncertain about it. 70% of the respondents agreed that the inter-personal skills produced by the programme were according to the need of the day whereas 12% disagreed with it and 17% of them were uncertain.

Forty eight percent respondents agreed that candidates prefer a formal system for MA EPM instead of distance learning. 19% of them disagreed whereas 33% were uncertain about the statement. 68% of the respondents agreed that the EPM courses offered by AIOU were equally effective as in new emerging universities. 11% of them disagreed whereas 21% were uncertain about it.

70% of the respondents believed the programme to maintain its effectiveness in a competitive environment with other universities.

19% disagreed whereas 11% were uncertain about it. 76% of the respondents agreed that the programme sustained its popularity even with high dropout rate whereas 7% disagreed and 17% remained uncertain about the statement.

51% respondents supported the statement that employers accepted the MA EPM degree as a professional degree for teaching jobs. 26% of the respondents disagreed and 23% were uncertain about the statement. 21% of the respondents agreed that the number of faculty members was adequate for achieving the programme objectives in emergency situations.

Fifty six percent disagreed with the statement and 23% remained uncertain about it. As far as the suggestions to improve the curriculum are concerned, 79% of the respondents suggested periodic evaluation and revision of the curriculum to make the curriculum relevant to local needs and problems.

57% of the respondents suggested enriching the curriculum with latest information and advanced courses to meet international standards. 30% of the respondents also suggested that a variety of learning experiences and a Practical approached may be introduced in the curriculum. 23% of the candidates suggested improving the quality of the textbook in order to present the content in a simple and easy way. In order to improve the evaluation criteria, 30% of the respondents proposed to improve the quality of the Assignment component to ensure proper evaluation and guidance of the students. 27% were of the opinion to introduce activity based evaluation including presentations, projects etc. instead of mere written examination system. For general comments about the programme, majority 59% of the respondents rated it as an effective and helpful programme for managers.

CONCLUSIONS AND DISCUSSION

Objective No: 1

Based on the findings of the research, the following conclusions were drawn about MA EPM programme of AIOU. MA EPM programme was considered to be prestigious distance learning programme in Pakistan with a reasonable student-teacher interaction.

The programme was comparatively low-cost and the admission criteria of the programme were sound enough to ensure the potential required for successful completion.

The programme was equally useful for both the genders as well as the students of remote areas. The faculty of the EPPSL department was highly qualified and the EPPSL department was supportive to the students in their academic problems. The programme offered equally effective courses as in new emerging universities and encouraged the students to proceed for research.

The group-study workshops of the programme were of appropriate group size, properly scheduled to be manageable for working students, useful in students' learning, and organized to get maximum benefit from the resource persons. T

he conduct of final examination at the end of the workshop of each course was also taken as a very useful step. The interpersonal skills produced by the programme were according to the need of the day. The programme sustained its popularity even with high dropout rate and maintained its effectiveness in a competitive environment with other universities.

Objective No: 2

The printing quality of the study material was not up to the mark as per the expectations of the students. The content was also found to be out-dated. It was also found that the written assignments were not properly evaluated by the tutors. The research further showed that there were no provision of study tours to different planning and management organization during the workshops.

Objective No: 3

MA EPM graduates of AIOU were comparatively preferred for higher studies and the jobs related to management and administration in education. More EPM graduates were needed due to increasing demand of education at all levels. The degree of MA EPM was accepted by the employers for teaching jobs as well. Moreover the need of more EPM graduates due to education sector reforms/policies was also considered to be an opportunity for the graduates. The graduates felt a significant elevation in their position or status after completing the programme.

Objective No: 4

The candidates willing for enrolling in MA EPM programme prefer a formal system of education over distance education system which was concluded to be a threat to the MA EPM programme of AIOU. It was also found that the number of faculty members is not adequate for achieving the programme objectives in emergency situations.In connection to the improvement in the curriculum, it was concluded that there was a need of continuous revision of the curriculum on periodic basis. It was suggested to modify the curriculum to suit the local needs and problems, and to include the latest information and advanced courses to meet international standards.

It was also suggested to introduce a practical approach and a variety of activities to improve the curriculum. The text books were required to be improved to present the content in simple and easy way.

OVERALL CONCLUSIONS

As far as the evaluation criteria are concerned, it was found that the assignment component needed improvements especially in evaluating them, and giving feedback to the students. It was also found that the respondents felt a need of introducing activity based evaluation instead of the written examination only. As general remarks about the programme, it was found that the graduates rated the MA EPM programme as an effective programme being helpful to managers.

The printing quality of the study material may be improved and the content may be presented in a simpler and easier way.

The curriculum may be enriched with the updated content and advanced courses to meet international standards. The curriculum may periodically be revised to focus on the local needs and problems of the society. The tutors may be instructed to be more dedicated for evaluating the assignments and providing the feed back to the students. Provision of study tours to different planning and management organizations may be offered during the workshops.

Activity based evaluating techniques may be introduced in addition to mere written examination system. In order to compete with the similar programmes of formal education system, a variety of the learning activities and a practical approach may be introduced to make the programme attractive and interesting. The provision of temporarily appointed/visiting faculty members may be granted by the university administration to achieve the programme objectives in emergency situations. Record of EPM graduates may be maintained by the EPPSL department to ensure prompt access to the information about the graduates for research activity. The EPM students may be trained to cooperate in research activities in related fields.

Similar researches may be conducted to find the viability of other programmes i.e. PGD, MS Leading to PhD, and PhD, in EPPSL department of AIOU.

More follow-up studies may be conducted to determine the impact of EPM programmes of AIOU on the society

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APPENDICES

Appendix-A

Table: 1
Response of the Graduates

Statements	Response (Percentage)		
	A	D	U
1. MA EPM of AIOU is one of the prestigious Distance Learning Programmes in Pakistan.	93	5	2
2. The admission criteria ensure the potential required for successful completion of the programme.	80	7	13
3. MA EPM of AIOU is comparatively a low-cost programme.	67	22	11
4. The programme is useful for remote area students as well.	65	21	14
5. The faculty of EPPSL department of AIOU is highly qualified.	86	6	7
6. The workshop of the program is effective and useful in students' learning.	93	5	2
7. The programme offers equal opportunity to both the genders.	91	4	5
8. The EPPSL department addresses the academic problems of the students.	53	20	27
9. The printing quality of the study material is up to the mark.	41	42	17
10. The content of the study material is up to date.	36	51	14
11. The program offers reasonable student-teacher interaction.	75	14	11
12. The assignments are properly evaluated by the tutors	41	44	15
13. The workshop schedule suits the circumstances of working students.	52	36	12
14. The strength of the students in the workshop is appropriate for their better learning.	63	26	11
15. The workshops are organized to obtain maximum benefit from the recourse persons.	80	16	4
16. The workshops offer a chance to visit the different planning and management Orgn.	13	73	14
17. The conduct of final examination at the end of the workshop is a useful step.	93	2	5
18. The MA EPM graduates of AIOU are comparatively preferred for higher education in EPM.	74	10	16
19. The MA EPM graduates of AIOU are comparatively preferred for administrative and managerial jobs.	46	21	33
20. More EPM graduates are needed to respond to the increasing demand of education (at all levels).	81	13	6
21. The New Education Policy/ Education Sector Reforms call for the need of more EPM graduates in the country.	74	12	14
22. The Programme encourages the students to proceed for research.	54	28	17
23. The graduates feel a significant elevation in their position/status after completing the programme.	74	10	16
24. The inter-personal skills produced by the programme fulfill the need of the day.	70	12	17
25. Candidates prefer a formal system for MA EPM.	48	19	33
26. AIOU offers equally effective courses as in new emerging universities.	68	11	21
27. The programme maintains its effectiveness in a competitive environment with other Univ.	70	19	11
28. The programme sustains its popularity even with high dropout rate.	76	7	17
29. The employers accept MA EPM degree as a professional degree for teaching jobs.	51	26	23
30. The number of faculty members is adequate for achieving the programme objectives in emergency situations.	21	56	23

Appendix-B

Table: 2
Open ended questions (Suggestions/Comments of the Graduates)

Item No.	Suggestions/Comments	f	%
1	Periodically revise the curriculum to focus on local needs and problems.	64	79
2	The programme is effective and very helpful for managers.	48	59
3	Enrich the curriculum with latest information and advance courses to meet international standards.	46	57
4	Introduce variety of learning experiences and practical approach.	24	30
5	Improve the quality of assignment component to ensure proper evaluation and guidance for the students.	24	30
6	Introduce activity based evaluation techniques instead of written examination only.	22	27
7	Improve quality of the textbooks to present the content in simple and easy way.	19	23

ASSESSING CONCEPTUAL UNDERSTANDING IN MATHEMATICS: Using Derivative Function to Solve Connected Problems

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ABSTRACT

Open and distance education plays an important role in the actualization of cultural goals as well as in societal developments. This is an independent teaching and learning method for mathematics which forms the dynamic of scientific thinking. Distance education is an important alternative to traditional teaching applications. These contributions brought by technology enable students to participate actively in having access to information and questioning it. Such an application increases students' motivation and teaches how mathematics can be used in daily life. Derivative is a mathematical concept which can be used in many areas of daily life.

The aim of this study is to enable the concept of derivatives to be understood well by using the derivative function in the solution of various problems. It also aims at interpreting difficulties theoretically in the solution of problems and determining mistakes in terms of teaching methods. In this study, how various aspects of derivatives are understood is emphasized. These aspects concern the explanation of concepts and process, and also their application to certain concepts in physics. Students' depth of understanding of derivatives was analyzed based on two aspects of understanding; theoretical analysis and contextual application. Follow-up interviews were conducted with five students.

The results show that the students preferred to apply an algebraic symbolic aspect instead of using logical meanings of function and its derivative. In addition, in relation to how the graph of the derivative function affects the aspect of function, it was determined that the students displayed low performance.

Keywords: **Mathematics education, learning, teaching, derivative, solving problems.**

INTRODUCTION

Effective learning is one of the important factors which increase students' success. Therefore, a number of researchers in mathematics are looking for ways to improve the quality of learning and to develop a rational understanding of the concept of calculus. As it is known, many concepts in mathematics do not mean much on their own, but they can be meaningful when they are correlated with other mathematical concepts and activities are conducted. In other words, conceptual in formation in mathematics teaching is meaningful when used in different areas by adaptation and when there is transition among concepts.

Understanding in calculus is the ability to explore the facts, rules and concepts and how they connect within the mathematical context. Students need to be encouraged and given the opportunity to reflect on the connections among various mathematical topics so that they can identify equivalent representations of the same concept (Berry and Nyman, 2003).

The concept of function is a concept which constitutes the core of mathematical subjects and supplies wholeness between subjects. At university level, the concepts of function and its derivative are used as the basic ideas in advanced mathematics courses. Research into mathematics education has shown that while the concepts of mathematics education were understood and they gave meaning to these concepts, students have difficulties (Vinner, 1989, Radatz, 1979, Klymchuk, et al. 2010). However, students can overcome these difficulties when they apply mathematical concepts in the correct manner.

Many researchers have found that students have a limited view of conceptual understanding of function and its derivative. Moreover, they report that students exhibit a predominant reliance on the use of and the need for algebraic formulas when dealing with the function concept (Breidenbach, Dubinsky, Hawks, Nichols 1992, Eisenberg, 1992, Eisenberg, Dreyfus, 1991).

Vinner and Dreyfus (1989) point out that there are many ways to learn to represent knowledge in mathematics and this makes the understanding of the concepts in calculus easier. The correlation among multiple representations provides the thought processes in the assessment of understanding and moves the obstacle when students solve unusual mathematical problems (Sigel, 1999). Orton (1983), Heid (1988) stated that there is a noticeable increase in the performance of students when they grasp concepts that can be represented in multiple ways in calculus. Kendal and Stacey (2000) found that the most capable students achieved the goal of developing facility with numerical, graphical, and symbolic representations of functions and derivatives. Kieran (1994) states in one of his studies that mathematical concepts should be perceived in different ways and should be evaluated in detail in order to make the learning permanent for students. One of the concepts which is suitable for the use of multiple representation is the concept of derivations. Derivations can be given as an example for this in order to use the mathematical concept in various areas and to explain it more effectively. The concept of the derivative is a difficult concept to understand for students. Learning the concept of derivatives, the relationship of derivatives with limit, continuity, tangent, and slope form a mathematical basis. However, students encounter certain difficulties.

In the conceptualization of derivations, the design of the educational process is also important (Amit and Vinner 1990, Leinhardt et al., 1990, Tall and Vinner 1981). The basic strategy in this concept is to form mathematical thinking of derivations by using the language of mathematics and to analyze the concepts and to form problem-solving. Graphs of derivations and function involve all the information concerning function or the behavior of the related problem. Students can overcome a lot of difficulties by using graphs. However, students rarely use them. Thus, conceptual knowledge stands on an operational level and it becomes impossible to coordinate between the concept of function and its graph. Generally, the derivative stands as the knowledge of formulas and rules. Unfortunately, these concepts are called operational knowledge that cannot always be understood by students.

On the other hand, Tall (1991) emphasizes that there was no consistency in students' success in multiple representations. Even though the fact that mathematical concepts, which include different displays, are understood by students seems to be an advantage, it can also be a disadvantage. The understanding of concepts requires the knowledge and the connection of relationships among different representations. Studies conducted indicate that students have difficulty in making connections among multiple representations of derivatives (Amoach and Laridon, 2004).

In order to understand derivations conceptually, it is not enough to know the relationships among the concept of derivatives and derivative-tangent, slope, the derivative-limit, and the derivative-the ratio of change (Zandieh, 2000). As Zandieh (2000) states, making connections among these concepts is necessary. This connection can only be accomplished with solutions of real-life related problems. In mathematics teaching, conceptual knowledge gains meaning as long as it is used in various areas and a transition between concepts is achieved (Turker, 1981; Vinner, 1989; Tall, 1991). Lesh (2000) has shown that there is a constitutive relationship between students' representational abilities and their mathematical understanding and problem solving proficiency.

Several researchers who explored calculus students' understanding of the derivative report that students have a variety of difficulties, such as a difficulty in geometrical interpretation and physical interpretation, and interpretation as the value of the limit of the derivative (Lauten et al 1994; Jong, &Brinkman, 1997). Asiala et al., (1997) examined students' conceptualization of the graphical implications for the derivative, continuity and the value of the limit. Zandieh, and Knapp (2006) analyzed in more detail the concept of the derivative at the freshman calculus level. They describe a framework for analyzing student understanding of the concept of the derivative. The derivative framework has two main components; multiple representations and layers of process-object pairs.

The first component of the derivative framework is: the concept of the derivative can be represented graphically as the slope of the tangent line to a curve at a point; verbally as the instantaneous rate of change; physically as speed or velocity; and symbolically as the limit of the difference quotient.

They describe how some students mentioned slope and rate of change, while other students mentioned velocity or the process of taking the derivative. The second component of the derivative framework is the aspects of the concept of the derivative.

The aspects of the concept of the derivative are ratio, limit, and function which are called layers of framework. We combine the layers to form the structure of the concept of the derivative.

Most studies have investigated students' understanding of the derivative in different aspects. However, a few researchers have investigated the use of the derivative concept in solving several problems.

The aim of this study is to investigate whether or not the concept of derivation is well understood, using the derivative function in the solution of various problems, and to compare the relationship between the function and its derivative function.

Students' depth of understanding was analyzed, based on two aspects of understanding; theoretical analysis and contextual application. The contextual application demonstrates knowledge of how and when to use the appropriate skills and strategies of calculus.

METHODOLOGY

The study was conducted with eighty-five freshman calculus students who had previously taken at least two semesters of single variable calculus in the Science Faculty during the spring semester in 2010-2011. The data for the research was collected from an examination consisting of fifteen open-ended questions. The test was designed to assess how well students had learned procedures for calculating derivative functions and solving related problems.

The target and behavior of the test were taken from the course program. The test consisted of two sections. Questions in the first section were related to developed conceptual knowledge of the derivative and questions in the second section were developed problems which are solvable using the derivative. Most of the questions consisted of non-routine problems; that is problems for which no method for solving had been taught. In the solution of these questions, the applications of function and derivative form a bridge

In addition, questions were designed to demonstrate graphically between a function and its derivative. Students were asked to explain how they arrived at their answers. Students' responses for each of these items were analyzed based on two aspects of understanding; theoretical analysis and contextual application.

RESULTS

The analysis of the results was to determine how students construct their understanding of the concept and how this may lead to changes in the instructional aspects.

We have seen that students have an inadequate reliance on solving real life problems which deal with the derivative function. Some of the questions that were asked of the students are detailed below:

Research Question: 1

"Provided that,

$$f(x) = 2x^2 + 3x + 1,\ f'(x) = 4x + 3,\quad f'(0) = 3$$

Explain the meaning of number 3, geometrically."

This question was designed to assess how well the relationship between the derivative and the slope of a curve, and the graphic and algebraic forms of a function, were learned.

We wanted to see the geometrical definition of the derivative in the answer. Table: 1 indicates the performance of students in the first problem.

Table: 1
Categories of results in the problem 1

N=85	Correct Answer	Incorrect Support Work	Correct Support Work	Incorrect Answer	Partial Understanding	No response
	18%	10%	22%	31%	15%	4%

As can be seen in the Table 1 students performances are very poorly. Students were not able to give the expected performance in the first problem. Orton indicated that students have difficulties with graphical interpretations of the derivative. This conclusion is parallel to conclusions in the studies of Amit and Vinner (1990) and Aspinwall et al (1997). They report that, some students equate the derivative of a function for the line tangent to the graph of the function at a given point.

Research Question: 2

Show that if $f(x) = -x^2 + 4$ **then** $f'(-1) = 2$

This question was designed to assess the conceptual interpretation of the derivative. The aim of this question is to highlight the relationship between derivative and limit.

How can the slope of chord line to the approach of slope of the tangent line be expressed using limit conceptually? (See figure: 1). we wanted to see how students defined the derivative as a rate of change. This example illustrates that students were able to explain to a greater or lesser degree the differences of connection between the derivative and limit. Is the student able to think about the derivative as a rate of change? We wanted to see if students could associate the concepts of the derivative and limit?

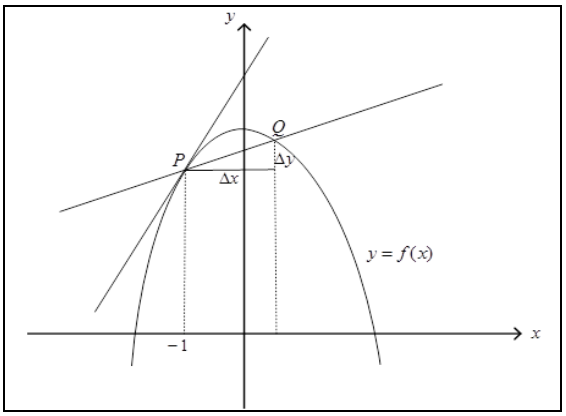

Figure: 1

$$\frac{dy}{dx} = \lim_{\Delta x \to 0} \frac{\Delta y}{\Delta x}$$

Table: 2 indicates the performance of students in the second problem.

Table: 2

Categories of results in the problem 2

N= 85	Correct Answer	Incorrect Support Work	Correct Support Work	Incorrect Answer	Partial Understanding	No response
	7%			40%	15%	6%

The majority of students answered this question using algebraic operations. This answer shows that the relationship between the derivative and the limit is static and memorized knowledge.

Plotting the tangent line from $x = -1$ to $f(x) = -x^2 + 4$, the slope was found to be 2 using algebraic operations 40%. So, using a graph was perceived as this form (7%).

$$f'(-1) = \frac{\Delta y}{\Delta x} = \lim_{x \to -1} \frac{f(x) - f(-1)}{x + 1}$$

The above expression did not appear in the answers of students 93% Almost all the students gave similar explanations in their solutions. Hallet (1991) notes that the beliefs held by students are that applying calculus is manipulating symbols and numbers.

The results show that to calculate the derivative at a point we must give the relationship between the various systems of representation involved with the concept of the derivative function due to various difficulties, i.e. the connections among various mathematical topics have to be given to the students, so that they can identify equivalent representations of the same concept.

Research Question: 3

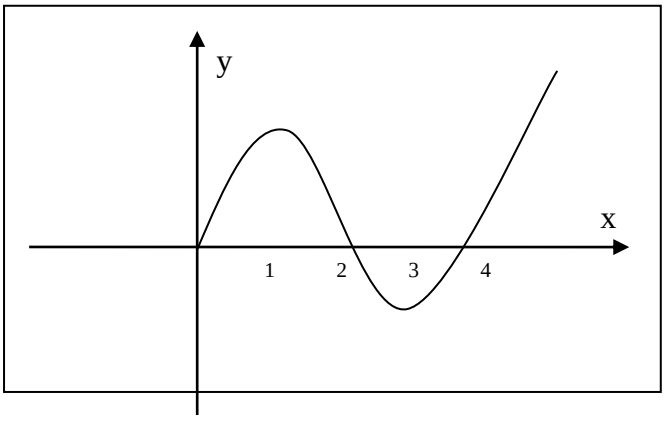

Figure: 2
The graph of the derivative function $f'(x)$

Figure: 2 shows the graph of the first derivative of a function $y = f(x)$. Use the graph of f' to estimate the intervals on which the function f is (a) increasing (b) decreasing. (c) Estimate where f has local extreme values.

The question was developed to construct the original function from the graphical properties of the derived function, i.e. this question related to visualization of the knowledge which the students could not understand algebraically or memorize. Table 3 indicates the performance of students in the third problem.

Table: 3
Categories of results in problem 3

N= 85	Correct Answer	Incorrect Support Work	Correct Support Work	Incorrect Answer	Partial Understanding	No response
	12%	18%	9%	26%	35%	----

We have seen that most students interpreted the derived function graph as the graph of the function that they could not make reversible. The results show that the most common incorrect responses are the extreme values and the intervals of increase and decrease of the function. As seen from the responses, the principal systematic error was to specify that function f(x) has extreme values at x=1 and x=3. This item was answered poorly. Another systematic error was to specify that the function increases at the domain of (0,1)and (3,$^{\infty}$). Most of the students did not identify the graph of the function correctly from the graph of its derivative.

Berry and Nyman (2003) investigated using an observational study on how students think about the relationship between the graph of a derived function and the original function from which it was formed. The results confirm that at the start of the activity the students demonstrated an algebraic symbolic view of calculus and found it difficult to make connections between the graphs of a derived function and the function itself.

Although visualization is basic in mathematical education, Tall (1991) and Vinner (1989) determine in a study that students tended towards algebraic symbolic rather than graphical understanding. One of the reasons for this is that a visual expression was not plausible through the mathematical proof. Commonly, graphs are being used more often in problem solving (Eisenberg and Dreyfus 1991, Vinner, 1989).

Many researchers investigated the problems of students relating to graphical interpretation of the derivative (Orton 1983; Ferrini-Mundy, Lauten 1994; Amit and Vinner, 1990; Leinhard et.al., 1990). The difficulties in this question may be a result of traditional instructional methods that tend to emphasize the construction of a derived function from the original function but in a reserve way from the derived function to an original function.

Research Question: 4

"The following graph shows the position function of any car (Figure: 3). on which points is the velocity of the car maximum and minimum? What is the velocity of the car between A and B?

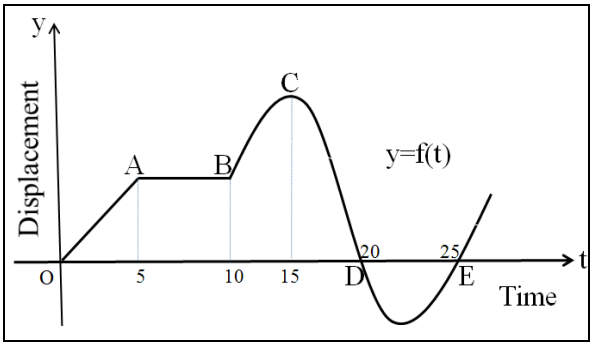

Figure : 3
The position function of any car

The aim of this question relates to knowledge of the relationship between the slope of a tangent line which passes through any point and the instantaneous physical variation ratio at the same point. In another words, it relates to how the slope of the tangent line via an instantaneous variation ratio could be determined. Also, physics makes calculus concrete for students and deepens students' understanding of the calculus concept. Table 4 indicates the performance of students in the fourth problem.

Table: 4
Categories of results in the problem 4

N= 85	Correct Answer	Incorrect Support Work	Correct Support Work	Incorrect Answer	Partial Understanding	No response
	5%	34%	6%	40%	15%	-----

In an analysis of the responses, we see that students have not explored the connection between the velocity and the position of the car. This item was also answered poorly. They could not explain their choice, although it was correct. Schwalbach and Dosemagen (2000), Lesh (2000), suggest that making connections between calculus and physics can yield a deep understanding of semantic as well as procedural knowledge.

These findings are consistent with those of Orton (1983), Heid (1988), and Hallet, D. H. (1991) who report that students have difficulty understanding derivation as an instantaneous variation ratio, and even have difficulty explaining instantaneous variation ratio.

Research Question: 5
"The number of telephone subscribers in an allocation area is given in the following Table 5. Find the increasing ratio from year 2007 to year 2010 and the instantaneous increasing ratio for the year 2007.
P(t): The number of mobile phones in year of t (x1000)

Table:5
The number of mobile phones in the years.

t	2007	2008	2009	2010
P(t)	509	547	735	1345

The aim of this question is to see, starting from any life problem, how an increasing ratio (mean variation ratio) and an instantaneous increasing ratio on any point (instantaneous variation ratio) can be found? Table 6 indicates the performance of students in the fifth problem.

Table: 6
Categories of results in the problem 5

N= 85	Correct Answer	Incorrect Support Work	Correct Support Work	Incorrect Answer	Partial Understanding	No response
	---	43%	8%		15%	---

About 72% of the 85 students did not demonstrate any conceptual knowledge of the problem. The item was answered poorly. Most of the students 32% demonstrated the ability to calculate the increasing ratio from the year 2007 to year 2010 and the instantaneous increasing ratio for the year 2007 algebraically. They could not explain their choice, although it was correct. So the students' answer was not the desired answer. Namely, they could not use the concept of derivation in solving real life problem.

The derivative as a rate of change,

$$p'(2007) = \lim_{t \to 2007} \frac{p(t) - p(2007)}{t - 2007}$$

Table: 7
Instantaneous rate of change

t	2008	2009	2010
$\frac{\Delta p}{\Delta t}$	38	114	279

According to the results from the answers, the reason for failure is the fact that the derivative with its physical definition is used to calculate the velocity and acceleration of a generally moving object at any given time. But, the relationship between the derivative and the variation ratio should not only be used to find the velocity and acceleration. Students must themselves discover how the concept of the derivative is used to solve life-related problems. Klymchuk et al., (2010) sought to find reasons why most students could not use their knowledge to construct the function in a familiar context. They identify students' difficulties and present their suggestions on how to improve their skills in solving application problems.

One method proposed for a conceptual understanding of the derivative is to use multiple denotes (Zandieh, and Knapp, 2006). Thus, different directions of the derivative concept could be perceived and could supply evaluations from a different angle.

For a conceptual understanding of the derivative, not only should individual relations of the derivative-tangent be known, but the slope of any line, derivative-limit, derivative-variation ratio and also mutual relationships for these concepts and the teaching of the derivative must be given enclosing these relationships.

One of the reasons for the difficulties students encounter while solving real life problems is traditional teaching methods or their inclination to solve the problems in a short time. It is believed that solving real life problems improves the quality of learning and develops a relational understanding of the concepts of calculus.

Table: 8
Evaluation of answers which students gave to the questions

N	Average	Standard Deviation	Questions
85	42.3	12.5	1st question
85	33.7	12.8	2 nd question
85	25.4	13.5	3 rd question
85	35.9	13.9	4 th question
85	14.4	2.6	5 th question
85	13.7	2.3	6 th question

As shown in Table 8 the averages of the students were fairly low. They were unsuccessful partly on the 1^{st}, 2^{nd}, and 4^{th} questions, and fairly unsuccessful on the 5^{th} and 6^{th} questions related with graphs and real life problems. In addition, the achievement of students did not differ on the 5^{th} and 6^{th} questions.

The interview was conducted with five students. Five students were selected as being representative of high-achievers, mid-achievers, and low-achievers, using the test. What we gathered from the interviews is described below. When we analyze the answers given to the first question, we can place the students into three categories. Those who answer the question correctly, those who lack in knowledge but answer the question correctly, and those give a wrong answer. Below is an interview with a student who seemed to have constructed the graphical interpretation of the derivative.

Inter. Can you explain what you understand from the first question?
S1 . 3 is the slope of tangent line to the function $y = f(x) = 2x^2 + 3x + 1$ at the point (0,1)
Inter. OK. How did you get 3 ?
Just find the slope of tangent line using the point (0,1).
S1. Then, he goes on to compute the slope of the tangent line and realizes that it is equal to the derivative. He does all of this easily.

Here is an interview with a student who answered the question correctly but lacked knowledge.

Inter. Could you explain the geometrical definition of the derivative?

S2. The geometrical meaning of the derivative is to draw a tangent line.
Inter. What is a tangent line?
S2. It means a line which touches a curve at one point.
Inter. This definition is not always correct. We will discuss it later. Let's go back to the question. How do you find the tangent line equation of a curve?
S2 I find a point and the slope of a line then write the equation.
Inter. OK. Can you find the point for this tangent line?
S2 Yes
Inter. Try it.
S2. Because f'(0) is given, I take x=0 .
Inter. How do you show a point on a plane?

S2. I show the point on the plane with (x, y).
Inter. Then find the point here.
S2. I have to find what y is to find x=0. So I put 0 instead of x in y= $f(x) = 2x^2 + 3x + 1$ then y is 1.
Inter. What happens then?
S2. (0, 1) is a point on the tangent line.
Inter. Now, let's analyze the equation of the tangent line. After finding the point, what is left?
S2. We need to find the slope.
Inter. Has the slope been given already?
S2. Yes, m=f' (0) it means it is 3
Inter. OK. Then can you find the equation for the line, sorry for the tangent line, at given point (0, 1)?
S2. Yes, if I say y-1=3(x-0), I get y=3x+1.
Inter. How do you express the line?
S2. Well, it is the equation of a line whose the slope is 3 and which is the tangent line of a curve at (0, 1) point.
Inter. What does f' (0) =3 mean?
S2. It is the slope of a line at (0, 1) point.
Inter. How do you express it as a whole?
S2. The derivative is the slope of a line
Inter. OK. What is the characteristic of this line?
S2. This line is the tangent line. Well, the derivative is the slope of a tangent line.
Inter. So, we have reached the correct answer step by step.

The student is unaware of the equivalence of the slope of the tangent line to the curve at a point and the value of the derivative at the same point. But he correctly finds the equation of the tangent line.In other interview, a lot of students said that they did not understand the connection of the fifth question with the derivative. Large number of students made no attempt to solve the problem.

Interviews provide the most fundamental information for this study.

DISCUSSION

According to the conclusions obtained from this study, it has been shown that students were unsuccessful in explaining the concept of the derivative from different dimensions. According to the students, the concept of the derivative is the operation of the derivative. Although a definition of the derivative via limit was known by the students, it is determined that they have difficulty using this relationship. The relationship between the concepts of the derivative and the variation ratio was not conceptualized. Similarly, although a geometric interpretation of the derivative was known, for the f(x) function, values of $f'(0) = 3$ and $f'(-1)$ could not be understood.

It was shown that students make conceptual mistakes among the concepts of the derivative- tangent-slope. From these conclusions, it seems that students have difficulties in establishing relationships between different presentations of the derivative. Most students could not apply the derivative concept to solve real life problems. According to Vinner (1983), if any student has conceptual definition knowledge, the student could not define a view of the concept.

Mistakes in this subject are nested with formal learning. In the concept of the derivative, in which visualization is important, it has been found that achievements of students in this direction are inadequate. While graphs of f and f' could be constructed, it was determined that students could not interpret them effectively. Generally, for students, graphs do not mean much other than a visual object having meaning specified, besides determining linked functions. Students tend to direct to algebraic operations instead of logical implication of the function and the derivative.

Similarly, while a graph of the f function is obtained from a graph of the f' function (or vice versa), students show low performance. The results show that in usual learning situations algebraic operations are weighed in mathematics education. In this study, the answers given to the questions match the results of most of the studies in the literature. Finally, the conceptual information on mathematical education gains importance in terms of how it has been used in various fields and how it relates to other concepts.

As with learning other mathematical concepts, establishing relationships with other mathematical concepts and examples from daily life, the concept of the derivative must be assimilated. The link between different representations of the same concept serves to an understanding and explanation of the concept of calculus. Also, making connections between the concepts in calculus and the solutions of related problems enables the concepts to be understood in detail.

CONCLUSIONS

In this paper we investigate whether or not the concept of derivation is well understood using the derivative function in the solution of various problems. There are many valid reasons for using communication technologies in mathematics teaching as in all subjects. Mathematics is a social and cultural product. Because of the importance of mathematics in all areas relating to information, the target mass is growing day by day.

Therefore, it seems that teaching mathematics in distance education is an applicable solution. Learning and teaching activities through distance education make the interaction of larger masses possible and learning becomes active through indivilization.

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PEER FEEDBACK THROUGH BLOGS: An Effective Tool for Improving Students' Writing Abilities

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ABSTRACT

The advancement of computer technology and expansion of the Internet has an increasing impact on writing instruction. The modes of peer feedback have shifted from traditional peer feedback to online peer feedback. This study investigated the effects of peer feedback activity through blogs on students' writing ability and examined their attitudes towards peer feedback activity. The research was conducted using a single group pretest-posttest design. Blog, the website, was used as a medium for peer feedback activity. Participants were 34 second-year students who studied EN 013 course (English for Expressing Ideas) in the first semester of the academic year 2012 at Bangkok University. Two writings tests and a questionnaire were used as instruments for data collection to acquire information. The results revealed that students' writing scores on the pretest and posttest were significantly different. It can be concluded that peer feedback activity through blogs had a significant role to play in improving students' writing skill. The students also expressed positive attitudes towards the value of peer feedback activity.

Keywords: **Peer feedback, blogs, EFL learning, writing ability**

INTRODUCTION

Learning to write is considered the most difficult skill for students who lack motivation to write in English, and whose writing capacity is not good. In order to improve students' writing skills, English teachers have to find the suitable, effective approaches or activities. Peer feedback activity is one of the effective ways to improve students' writing (Hyland, 2003). It facilitates further writing development. In general, peer feedback is used in the form of written commentary and verbal interaction between readers and writers in the preliminary and final stage of drafts. According to Hyland & Hyland (2006), feedback is perceived as an essential element to help writers make better subsequent drafts. Composition teachers, researchers, and scholars have acknowledged contributions of feedback to a powerful underpinning for autonomous learning as well as for revision processes.

At present, teaching and learning trend has shifted from the teacher-centered approach to student-centered approach. With the integration of educational technology into writing classroom, peer response has shifted from a traditional face-to-face environment to a networking computer mediated environment called electronic (computer-mediated communication) peer response, or e-peer response, in which the students are able to exchange their own ideas and respond to each other through computers online in the asynchronous or synchronous form.

As Warschauer and Ware (2006) stated, "the rapid pace at which educational technologies are growing creates a broad spectrum of ways in which technology can be integrated into classroom instruction" (p. 105). Under the influence of computer technology in L2 writing, some researchers claim that the technological developments can motivate student learning and make the writing classroom more creative, autonomous and collaborative (Chun, 1994; Warschauer, 1996; Warschauer & Kern, 2000).

In recent years, Weblog also extends its popularity in English language learning context. The use of computer technology as a tool for language learning was fully supported by most of educational institutions. Mynard (2007) stated that blog was an influential and effective tool for language teachers to encourage students to communicate or reflect their ideas on their learning experience and add their response to their peers' blogs to encourage further expression.

Blogs also integrate students into the world of interconnected media; they become familiar with using blog both as a writer and a reader. In addition, blogs provide a great usefulness in developing writing skills, critical thinking skills, and literary skills (Richardson, 2006). With the potential for collaborative and cooperative learning, more learning opportunities, and means for learners to interact with each other and learn effectively, peer feedback activity through blogging can possibly help students develop their writing. It is a worthy activity to increase students' motivation in writing and enhance the interaction among peers and teachers.

LITERATURE REVIEW

Peer Feedback

Peer feedback is a pedagogical cooperative learning technique, which commonly involves giving comments on each other's written drafts, waiting for the feedback to their own writing in return, and the their written drafts can be improved according to these comments (Nelson and Murphy, 1993; Paulus,1999).

Peer feedback is also called peer response, peer review, or student feedback. It's a cooperative activity in which students exchange their writing drafts with other students, their peers, give comments on their peers' writing draft so that their peers can improve their own written work (Nelson and Murphy, 1993). Students can do peer feedback activity with their friends, in pairs or small groups. Peer response has great potential benefits with regard to students' writing development. Through feedback from the student readers, the student writers are able to learn about their writing problems such as inappropriate language use, wrong mechanics, not understandable text, and illogical organization. Students can do peer feedback activity either in a written, oral, or computer-mediated mode (Liu & Hansen, 2002).

In addition, peer feedback is a writing activity in which students work in groups collaboratively and provide feedback on their peers' writing; the peer feedback activity can be done in form of an oral, a written or CMC model.

Using peer feedback is not meant to replace teacher evaluation, nor can it identify all the strengths and challenges in a piece of writing. However, when integrated into the writing task in a thoughtful way, peer feedback can be useful learning tools for both the writer and the student providing feedback.

According to Hansen and Liu (2005), peer feedback was defined as the 'use of sources of information, and interaction between each other'. Peer feedback is an integral part of most composition classes. Peer response comments can lead to meaningful revisions. Revisions based on peer comments can be better in vocabulary, organization and content. Actually there are three modes of peer feedback, name;

- **written feedback,**
- **oral feedback, and**
- **online feedback.**

Adapted from Tuzi (2004, cited in Wanchid, 2010), common features and differences of these three modes of giving feedback are presented in Table 1.

Table: 1
Common features and differences in oral, written, and online feedback

Criteria	Oral feedback	Written feedback	Online feedback
Mode of communication	Oral / Two-way communication	Written / mostly one-way communication	Written / Two-way communication
Pressure to respond	Pressure	Pressure	No pressure
Place and time	Dependent	Dependent	Independent
Components of communication	Nonverbal	No nonverbal	No nonverbal
Personal distance	Less	More or less	More
Level of cultural barriers	Greater	Greater	Fewer
Involvement	Greater	Greater	Greater
Frequency of meaning negotiation	More	Less	More
Delivery effort	Less	Greater	Less
Other facilities	Not available	No cut & paste	Cut & paste
Message permanence	Not available	Fewer	Greater

With regard to online feedback characteristics, the students can exchange their ideas and respond to each other through computers online.

They are able to access quickly the writing environment without time or place dependence. The use of networked computers offers students free communication, autonomous interaction and collaborative ideas shared in group discussion.

Moreover, online feedback environment can get rid of cultural impact. When making comments students reader or reviewers, they did not face them. This would encourage students more relaxing in giving feedback.

As a result, new ways of giving and receiving feedback seems a beneficial and effective activity in writing instruction (Morra & Romano, 2009).

Also, new technologies like wikis, podcasts, blogs, Twitter, Facebook and online forums are increasingly used in writing class.

Among these popular technologies, blogs seem to provide suitable features and characteristics that can support peer feedback activity in writing classroom.

Using Blogs in English Language Learning Context

According to Aljamah (2012), students can be motivated to write more in both academic and non academic. They can write and give comment on their friends' writing through blogging. Moreover, they can discuss and share their interests, their likes, and individual differences. Students can get feedback from other audiences through blogging; they also have an opportunity to get information in which they are interested and write things they really want to. In a similar way, Dawns (2004) claims that integrating blogs in writing classes improved students' writing skills. Nadzrah & Kemboja (2009) point out that students write their compositions with specific purposes through blogging. Moreover, it is asserted that there are many reasons that blogs are a powerful means to develop English language teaching and learning. Students are provided friendly and authentic learning environment through blogging. When writing, not only teachers but also peers are the audiences, including other people outside the classroom, a global audience (Noytim, 2010).

Galien & Bowcher (2010) state that students have an additional motivating opportunity through blogging since they are able to publish their works in a non-judgement fun environment. Moreover, blogs provide increased and more balanced students' communication and they allow the shy, quieter students to have more time to consider what to write and to formulate their responses. In addition, teachers can use blogs as a bridge between lessons; there are three kinds of blogs used in classroom; the tutor blog, the learner blog, and the class blog. Teachers are able to post teaching materials that recycle and review vocabulary and topics presented during lessons. Also, teachers can save the classroom time as information about schedule changes, homework assignments etc. (Campbell, 2003)

Previous Researches on On-line Peer Feedback in Language Learning

With the development of information technology, ways of providing and giving feedback have been shifted from traditional feedback to computer-mediated feedback. To understand whether on-line peer feedback are truly beneficial for improving students' writing ability, it is essential to know the findings of the previous studies about the effectiveness of using on-line peer feedback in language learning.

Many studies examined the teaching and learning of writing skill in relation to on-line peer feedback, and the results revealed its effectiveness in students' writing skill development. For example, Dippold (2007) investigated the usefulness of using blogs for providing peer feedback on ESL writing class. The results have shown that both student writers and student readers enjoy and get profit from doing peer feedback activity through blogging because of their friendly interactivity, easy and relaxing learning environment. However, more training for both student writers and student readers was necessary to enable them to use the blogs, learning tool, to their fullest potential. Similarly, Gedera (2012) investigated students' experience of receiving and providing peer feedback through blogging in a private university in Malaysia. The result showed that all the participants had positive attitude towards peer feedback activity through blogs.

The interactions and sharing through blogs enhanced them to use the authentic target language to a real audience. Students could improve their writing skill and became more independent and reflective learners.

Many studies were conducted to compare two modes of peer feedback on students' writing development (face-to-face and online), and most of the results demonstrated that on-line peer feedback produced better outcomes. For instance, Liu and Sadler (2003) studied the effect of different modes of peer feedback on EFL students' writing. This study was conducted with eight ESL students, divided into two groups. One group was assigned as online group, the other was face-to-face group.

The findings found that the overall number of comments made by the e-peer feedback group was larger for this group as well, thus resulting in a larger number of revisions overall. However, it also showed that the majority of the interaction of the majority of the online group, it focused on some irrelevant issues, which had less effect resulted for revision. Wichadee & Nopakun (2012) also studied the effect of two types of peer feedback, face-to-face and online feedback. The findings revealed that both kinds of peer feedback resulted in improving students' writing ability although students in online peer feedback group performed better writing work. In addition, both face-to-face and online peer feedback had a positive effect on students writing performance. Similarly, Hatime & Zeynep (2012) investigated the effect of online peer feedback through blogs on Turkish EFL students' writing performance and their perceptions. The control group consisting of 15 students attended in-class writing activities and utilized face-to-face oral discussions for peer feedback activity. In contrast, the experimental group of other 15 students attended classes in the computer laboratory and integrated blog peer feedback into their process oriented writing classes. The results revealed that although the students in both the control and experimental groups improved their writing in their revised drafts, students in the blog peer feedback group showed higher performance in revised drafts. Finally, the analysis of interviews and questionnaires revealed positive perceptions on the use of blogs in their writing classes.

It is noted that feedback received on-line tended to be more useful on the revised draft. Take an example of Song & Usaha (2009) who studied how EFL university students used e-peer feedback to revise their peers' writing in comparison with face-to-face peer feedback.

The findings revealed that the face-to-face group produced more comments than e-peer feedback group, thus resulting in many of comments used in revisions. However, e-peer feedback group produced more revision-oriented comments. The use of peer comments into revisions was different, so the students in e-feedback group had a better writing skill than those in the face-to-face group.

The result was similar to the study of Hatime & Zeynep (2012) in that students in the blog peer feedback group had better writing performance in revised drafts. However, it is interesting to learn that the results of some studies did not show any difference in students' writing improvement between the two modes: face-to-face and online peer feedback. For instance, Moradi & Karimpour, (2012) investigated students' experiences of online and offline peer feedback, two groups of students were asked to give comments on their peers' writing by using the checklist with a detailed way of writing self- and peer-assessment; one group gave online feedback while another gave feedback in classroom.

The finding indicated that there was not any significant difference between the feedback of the online and offline groups.

RESEARCH METHODOLOGY

Research Objectives

- **To examine the effects of blog peer feedback activity on students' writing abilities**
- **To investigate students' attitudes towards the blog peer feedback activity**
- **To study learning experience that students gain in blog peer feedback activity**

Participants

This study employed one group pretest posttest design. The population was 2,040 second- year students enrolled in English for Expressing Ideas course (EN013) in the first semester of 2012 academic year. There were 51 sections altogether. Since students were already assigned to their sections, the cluster sampling was employed to get one section. As a result, this study was made up of 34 students from one section participating in this study.

Instruments

The effect on students' learning was proved by three kinds of instruments. There were two writing tests, a survey questionnaire asking their attitudes toward the peer feedback activity, and postings of learning to demonstrate students' experience on blogs.

First, the English writing tests designed in a parallel form were administered as a pre-test and post-test. Both tests required students to write a paragraph, consisting of 100-150 words based on a given topic. Time allowed for each test was 100 minutes with the total score of 20 points. In scoring the test, three examiners, including the researcher and two experienced teachers, are needed to mark the writing papers to ensure the fairness.

Second, to study how students thought about using peer feedback activities through blogs in their writing class and how it made an effect on their knowledge as well as their attitude in their increased capabilities, a questionnaire containing 12 items with a choice of five rating scale responses for each was distributed to the students after the posttest. In the summer class, this questionnaire was pilot-tested with 30 students after they had participated in pilot learning of seven weeks. The students' feedback can be used to improve the questionnaire items, so the researcher can prevent any misinterpretation.

Finally, the third instrument was students' postings on blogs. To gain more details of students' mutual online learning, all students were encouraged to post their working experience on their weblogs at the end of the course. Students could share what they learned or got from learning with the team members through peer feedback activities on blogs. Also, they could give feedback on the difficulties they encountered and the benefits they gained while using blogs in doing peer feedback activities.

Procedure and Data Collection

In the first week, the pretest was given and the results were recorded, then the treatment started and lasted in 12 weeks. According to their scores, the subjects were placed in the high, average, and low groups. Using mean, median, and mode to group the students, the researcher got 6 groups, each of which contained 5-6 members; a high student, two average students and two low students.

Next, the teacher asked each group to create a group blog, with a safe password-protected and friendly environment for students to work together. The researcher suggested the students to use a popular, easy-to-use and free weblog provider: Blogger. Students were explained about how to give feedbacks; the training session was conducted before the lesson started. They were trained to be familiar with the peer feedback activity in order that they can produce more effective and specific comments.

After that, students were taught about how to write a good paragraph as well as how to write a main idea or a topic sentence, supporting details, and a concluding sentence. Then they were given a topic and a writing practice. The researcher explained the scoring criteria on the first two weeks of the semester.

Then, students were assigned to write a paragraph every two weeks and posted their writing on blogs, then taking turn to give comments to their peers in group.

Each student had to give feedback to every member in group. That is, one student had to provide comments to the other four members. Students needed to write three pieces of writing assignments and posted on blogs. By doing so, students could learn the process of writing a paragraph, when having problematic areas of the paragraph writing, they could know how to solve it.

Moreover, it is the students' responsibility to make their decision whether to use comments from peers in revising the second draft or not. Then the students rewrote the second draft and posted it on blogs again. On week 12, the intervention was followed by the posttest and questionnaire.

RESEARCH RESULTS

Research Question: 1

To what extent do the students improve their writing abilities after doing peer feedback activity through blogging? This research question explored the effects of blog peer feedback method by examining the students' writing scores.

In order to find out whether the students improved significantly in their writing ability, the pretest and posttest mean scores were compared by using a paired samples t-test. Table 1 indicated that the mean score of the posttest was higher than that of the pretest. As evidenced by the significant difference at the level of .05, it clearly showed that students improve their writing abilities after using blogs in learning. (See Table: 2)

Table: 2
Means of the Pre-Test and Post-Test of the Students

	N	$\bar{X}$	S.D.	t	Sig
Pretest	34	12.60	2.11	-5.46	.000
Posttest	34	13.91	1.73		

Research Question: 2
What are the students' attitudes towards peer feedback activity?

Table: 3
Students' Attitudes towards Peer Feedback Activity

Statement	$\bar{X}$	S.D.	meaning
1. The peer feedback activity was a useful learning tool to improve my writing ability.	4.18	.58	positive
2. I felt relaxed to have my writing read by my peer and receive feedback.	3.94	.89	positive
3. I felt relaxed to give feedback to my peer.	3.76	.82	positive
4. The peer feedback activity increased my motivation in learning English writing.	3.82	.67	positive
5. The peer feedback activity enhanced my critical thinking and creativity.	4.03	.67	positive
6 The peer feedback activity improved my writing.	4.00	.70	positive
7. The peer feedback activity enhanced / instilled autonomous learning.	4.09	.62	positive
8. When revising my own writing, I considered my peer's comments or suggestions.	3.91	.57	positive
9. Revising or editing my peers' writing could increase my learning experiences.	4.12	.69	positive
10. I felt that peer feedback activity made me gain interpersonal skills.	3.74	.75	positive
11. I like my writing to be revised by my peers.	3.71	.76	positive
12. I felt that peer feedback activity made me learn more in a writing class.	4.15	.74	positive
Total	3.95	.40	positive

After the experiment, the students were asked to express their attitudes toward peer feedback activity. Table 2 indicated that students had positive overall attitudes ($\bar{X}$ =.95). When considering each items, it was found that the highest score was on no.1 (The peer feedback activity was a useful learning tool to improve my writing ability, $\bar{X}$ =.18), followed by no. 12 (I felt that peer feedback activity made me learn more in a writing class, $\bar{X}$ =4.15), and followed by no. 9 (Revising or editing my peers' writing could increase my learning experiences, $\bar{X}$ =4.12). However, the item that had the least mean score was no.11 (I like my writing to be revised by my peers, $\bar{X}$ =3.71). All of the items were at a positive level.

Research Question: 3

What is the students' learning experience in blog peer feedback activity?

As for qualitative data, the students were asked to write their feeling of things they liked and disliked about peer feedback activity, and post them on their blogs. From their posts of things they like, it was found that 24 out of 34 participants said that peer feedback activity was useful when applied in the writing course. That is, they could learn from their mistakes to improve their writing. Moreover, they could learn more new vocabularies and get more knowledge on how to write better. 7 out of 34 participants agreed that they got a wonderful learning experience through peer feedback activity. They got new ideas and new information while editing their peers' writing work. Three students identified that they learned to work cooperatively with others in groups; peer feedback activity enhanced the interaction and it built better relationship among classmates.

However, when asked about things they disliked in doing peer feedback, 20 out of 34 students complained they were not confident in their English capacity in giving comments or editing their peers' writing. They didn't understand some words and content of their peers' writing. 9 out of 34 participants said that they were uncomfortable to comment or edit their peers' writing because they feared that negative feedback would humiliate their peers, and their personal relationships could be broken later. Besides, 5 students revealed that it took times in giving feedback because they needed to check on organization, writing mechanic, grammar, choosing words, etc.

DISCUSSION AND CONCLUSION

The research finding indicates that online peer feedback through blogging can contribute to the improvement of students' writing abilities. When comparing the mean scores of the pretest and posttest, the result showed that the students' writing abilities significantly improved. This improvement was probably because of the two main reasons. First of all, it might be due to the nature of blogs which offer authentic learning environment through real communication (Noytim, 2010).

Peer feedback activity through blogs encourages active learner participation, an authentic communicative context, and audience awareness; it also offers friendly learning environment, lower writing apprehension (Hyland & Hyland, 2006). Blogs can increase student-student interaction without time and place limitation. The more they joined the activity, the more they could practice and improve their writing skill. The second reason underlying this improvement was the beneficial process of peer feedback. Students can be encouraged to develop their writing through feedback activity. They realized that their writings were read, revised and edited by their peers; they were more careful in language use and grammatical structure in producing their written work. Peers' comments played an important role in improving their written work.

In other words, their written drafts can be improved according to those comments (Nelson and Murphy, 1993; Paulus, 1999). In addition, working through blogs helps shy and quiet students with low proficiency to have more time to consider what to write and to provide their responses (Galien & Bowcher, 2010).

This finding was found to be in accordance with the previous studies indicating that online peer feedback activity had a great impact on helping students to improve writing performance to some extent (Song & Usaha, 2009; Haytime & Zeynep, 2012; Wichadee & Nopakun, 2012).

The responses in the questionnaires showed that most of the students responded positively to the online peer feedback activity. Students viewed this activity as a useful learning tool to improve their writing ability.

This might be because they could get the comments from their peers and used them to develop their writing accordingly.

Moreover, students identified that revising or editing the peers' writing could increase their learning experiences. It suggested that students have grasped the benefits from doing this activity, for example, they could learn from mistakes to improve their writing. In addition, students felt relaxed in doing this activity because they were not limited by time and classroom context.

Meeting face-to-face with their friends and providing feedback in classroom might block the students to give constructive comments on their peers' writing. When students create and publish contents on blogs, their creative and critical thinking skills can be promoted. Students could also view their progress and monitor their improvement through blogs (Istifci, 2011).

This finding contributed to some researchers claiming that the technological developments can motivate student learning and make the writing classroom more creative, autonomous and collaborative (Chun, 1994; Warschauer, 1996; Warschauer & Kern, 2000).

It could be said that the use of peer feedback activity through blogs did not only expand students' learning, it also encouraged students to be autonomous learners. They had to be responsible for their own learning, in giving and evaluation their feedback; moreover, they were more engaged in the writing course.

Yang et al. (2006) stated that peer feedback activity can promote interaction and construct knowledge from the actual level to potential level for developing their writing. The peer feedback also fostered learner autonomy because students had to make their own decision as to what, how much to make comments on their peers' written work.

In conclusion, the finding in this study has proved that the way to provide feedback is not restricted to face-to-face communication. With the use of technology, peer feedback can be done online.

Apart from providing more convenience for students to get involved with the activity, time spent for peer feedback in class can be saved for other skills like reading and speaking.

The benefits that students gain from online peer feedback activity do not include only writing skill improvement, but also cover the development of other skills such as critical thinking and autonomous learning.

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PRE-SERVICE SCIENCE TEACHERS' PERCEPTIONS ABOUT EFFECTIVE DESIGN OF BLENDED UNIVERSITY CHEMISTRY COURSES

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ABSTRACT

The aim of the study is to examine how blended learning can be used more effectively for university chemistry courses, based on the perceptions of students. The sample included 179 pre-service science teachers in year one through year four who had taken a university chemistry class. Qualitative data were gathered through open-ended questions and semi-structured interviews. The data were analyzed by using descriptive statistics and thematic content analysis.

The results revealed necessary design characteristics for an effective blended chemistry course from students' point of view regarding content of online instruction, the teaching methods, interface design, use of media and other visual elements, usability, design techniques, and facilitator role.

The results showed that instruction should be carefully planned and must be appropriate to student needs and characteristics, the content should not be too long or complicated, content should be prepared by experts in chemistry, include reliable and valid information, designed to promote the learning process by choosing appropriate visual elements and media, be consistent with the learning outcomes, and include evaluation questions.

Blended instruction should include various updated and easily accessible technological resources and tools to facilitate learning. The results also revealed that blended learning environment is most suitable for specific topics such as organic chemistry, acids and bases, the structure of atom and matter.

Finally, a blended learning component matrix was created and suggested to show the interactions between the categories based on the perceptions of the participants. The results of this study, therefore, suggest important implications for instructors when designing effective blended chemistry courses for pre-service science teachers.

Keywords: **Blended learning, learner analysis, instructional design, chemistry, pre-service science teacher education.**

INTRODUCTION

Blended learning, which links traditional classroom learning to e-learning activities (Singh, 2003), has gained the attention of educational researchers throughout the past decade. Blended learning combines various activities, including face-to-face instruction, live e-learning and self-paced learning. Graham (2006) defined several categories of blended learning systems: *enabling blends* provide additional flexibility and opportunities for learning through a different modality; *enhancing blends* provide additional resources and some supplementary materials online in a traditional face-to-face learning environment; and *transforming blends* are a radical transformation of the pedagogy, enabling intellectual activity that was previously impossible without the current technology. In blended learning, constraints on the schedule and location of learning are decreased, and self-paced learning opportunities (Wang, 2006) promote effective interaction between peers and the instructor (Delialioglu & Yildirim, 2007).

Institutions of higher education have readily adopted technological innovations, especially blended learning applications. Recent studies have shown that integrated online technologies and media enhance instruction and that face-to-face instruction can be supported by these technologies (Chew, 2008). Similarly, Delfino and Persico (2007) and Kay (2007) believe that integrating technology into pre-service teacher education programs is extremely important so that the next generation of teachers has heightened facility with instructional technology.

Numerous studies have been conducted to examine the effectiveness of blended learning applications for teacher education. Mouzakis (2008) found that blended learning is effective for advancing in-service teachers' information and communication technology knowledge, collaborative learning processes and educators' daily teaching practices. Specifically, a number of blended learning application studies have focused on science education. Pereira et al. (2007) found that blended learning was more effective than the traditional instruction of human anatomy in biology courses offered in the undergraduate curriculum. The authors observed that learners who experienced blended learning as part of their instruction improved their academic performance. Sancho et. al (2006) noted that virtual laboratory tools effectively complement face-to-face microbiology courses, providing experiments via simulations that would be costly to provide using real materials. Garrison and Vaughan (2007) showed that a blended chemistry course was effective when it was complemented by appropriate lectures, problem solving opportunities and direct feedback given to the learners.

Researchers have proposed a number of key factors that will aid the effort to use blended learning in the classroom. Pereira et al. (2007) stated that the achievement of blended learning is particularly dependent on organising the course in terms of student needs, the nature of the course content and the course objectives.

Palmer and Holt (2009) noted that students' satisfaction with online learning correlated to the quality of content supported by online activities, getting helpful and timely feedback on what they need to know to become successful and continuing interaction between instructors and learners as well as between learners and learners. Wagner, Hassanein and Head (2008) emphasised that the success of e-learning is dependent upon the collaboration of stakeholder groups: learners, instructors, educational institutions, content providers and technology providers.

This kind of collaboration increases motivation and allows a variety of concerns to be addressed. Yukselturk and Bulut (2007) stated that course content should include real-life patterns and should include interactive examples, multimedia applications and references. In addition, to create a high-quality learning environment, the content of the course should be updated frequently to meet the students' needs, and new technologies should be integrated. Delialioglu and Yildirim (2007) stated that not only should the blending of technologies occur, but also the blending of pedagogies, theories and instructional design. Mouzakis (2008) noted that the facilitator's support is critical to the success of blended courses to assure that the materials are appropriately designed to engage the learners and to encourage learning. Zheng and Smaldino (2003) emphasized that interactivity, adequate and frequent feedback from the instructors to support learners, support related to system use, learner satisfaction and planning the content to meet the needs of the learners in terms of learner characteristics should be taken into account. Lan (2001) noted that technology infrastructure should be another priority for institutions that intend to offer blended or online courses. Updated and adequate technology infrastructure increases the possibility of regular use of technology for educational purposes by both faculty and students.

Chemistry Courses in Science Teacher Education Program

Chemistry is one of the required courses in the science teacher education program in Turkey. Chemistry I and Chemistry II courses are offered in the first year of the program, and Chemistry III and Chemistry IV are offered in the second year (first, second, third, and fourth semesters of the program, respectively).

The first three chemistry courses include a four-hour theoretical session, and the last course includes a two-hour theoretical session per week throughout the fourteen-week semester. Students also have a two-hour laboratory both in the first and second semester of their first year of education.

Chemistry education cannot be exclusively taught through e-learning as complete mastery requires that lessons be supported by hands-on laboratory activities. On the other hand, simulations are very useful for developing practical skills (Burewicz & Miranowicz, 2005).

Moreover, Dalgarno et. al (2009) stated that a virtual chemistry laboratory is a very effective tool for familiarising beginner students with chemistry experiments. Therefore, blended learning might be suitable for teaching chemistry.

METHOD

Purpose

This study is designed to determine how blended learning can be applied effectively to the chemistry courses of pre-service science teachers by conducting a content analysis using various sources of information.

This study specifically focused on how instructional materials and technological tools should be designed to support chemistry learning in a blended environment by considering learners' expectations and priorities to use blended learning.

Research Questions

The following research questions were investigated:

- **What are pre-service science teachers' recommendations for the most suitable chemistry topics for blended learning?**
- **What are pre-service science teachers' perceptions about necessary design characteristics for an effective blended chemistry course?**

Sample and Participants

The sample included 179 pre-service science teachers during the 2010 spring semester. The participants' perceptions about the instructional design of a blended chemistry course were gathered through open-ended questions and semi-structured interviews.

The study also involved a comprehensive learner analysis process including the following steps, which were adopted from Dick, Carey, and Carey (2005):

- **Entry behaviours: The skills and facilities necessary to implement blended learning, such as a learner's level of computer and Internet use, were determined.**
- **Pre-service science teachers' recommendations for the most suitable chemistry topics for blended learning-we examined those learners having the most difficulty with chemistry topics in their chemistry courses rather than analysing prior knowledge levels of learners.**
- **General characteristics - The pre-service teachers' demographic data and their science backgrounds were examined through the assessment of self-reported data.**

The participants were selected using purposive sampling method based on the student being enrolled in or having completed a college-level chemistry course and currently being enrolled as science education majors while the survey was administered. Out of 188 possible participants, 179 responded to the survey. The distribution of the participants was as follows: 31.8% (57) 1st year, 22.3% (40) 2nd year, 22.3% (40) 3rd year, and 23.5% (42) 4th year. Overall, 50.8% of the learners had personal computers, 52% had Internet access, and 96.1% had an e-mail account.

In addition, the levels of computer use were as follows: 3.9% of participants were poor; 45.8% were medium; 45.3% were good; 4.5 % were excellent. The levels of Internet use were as follows: 4.5% of participants were poor; 37.4% were medium; 48.0% were good; and 8.4% were excellent.

The pre-service teachers ranged in age from 17 to 25 with a mean of 20.7. While 40.4% (73) of the participants were male and 59.6% (106) were female. In addition, most had a science background during their either secondary school or high school.

Data Sources

The data for this study were gathered using the following tools:

Open-Ended Questions and Interviews

Qualitative data were collected by having participants respond in writing to two open-ended questions, and through 15-20 minute semi-structured interviews with ten of the participants by the authors. The two written items were:

- **Please briefly describe the major factors that you think are the most important in designing a blended chemistry course.**
- **Which chemistry topics are best learned through blended learning?**

Data Analysis

Qualitative data from the open-ended questions were analysed using a content analysis method. Overall, 590 statements were identified within those responses. Each student's answers were read several times until all statements had been assigned to one of the following categories;

- **learner,**
- **facilitator's role,**
- **interface design,**
- **content,**
- **teaching process,**
- **technology, and**
- **communication.**

The data were independently coded by both authors using the identified categories to increase inter-coder reliability. A matrix was developed to reveal the interactions among the categories. Each vertical category in the blended learning components matrix explains the needs and concerns of the horizontal category.

The matrix was developed through the following steps:

- **Both authors proposed an initial matrix independently based on the categories of the participants' responses;**
- **the Cohen Kappa inter-rater agreement coefficient was calculated as 0.74, which is accepted as "good agreement";**
- **discrepancies were resolved iteratively;**
- **a senior e-learning expert examined the created matrix and then made additional suggestions, and**
- **the last version of the matrix was created.**

RESULTS

For the first research question content analysis method was used to determine learners' recommendations regarding the chemistry topics for which a blended chemistry course might be most useful.

The second research question determined the pre-service science teachers' perceptions of the most important design characteristics of a blended chemistry course, in particular what should be taken into account while designing instruction.

Pre-service Science Teachers' Recommendations for The Most Suitable Chemistry Topics for Blended Learning

Pre-service science teachers suggested that certain topics in the chemistry courses could be offered as blended learning. The most prominent findings were associated with the *Chemistry I* course (f=123, 44.24%); in particular, lessons related to the atom (f=29, 10.43%) and structure of matter (f=21, 7.55%), were suggested for blended learning.

The second highest frequency (f=83, 29.86%) of topics suggested as being amenable to blended learning was for the *Chemistry IV* course, which includes organic chemistry topics.

A total of 58 (20.86%) comments focused on the *Chemistry II* course. Acids and bases (f=30, 20.86%), was considered the most useful chemistry topic to be taught through blended learning.

The results showed that the least frequently referenced topics were associated with the *Chemistry III* course, which includes analytical chemistry topics.

Some of the science teachers made general comments regarding the most useful chemistry topics for blended learning, such as abstract chemistry topics (f=22), all chemistry topics (f=16), chemistry topics including experiments (f=13), theoretical chemistry topics (f=8), and chemistry topics requiring mathematical measurements (f=3).

Certain chemistry topics suggested by the pre-service science teachers as blended learning can be seen in Table 1.

Table: 1
Pre-service science teachers' suggestions for the most suitable chemistry topics for BL

Course	F	%	Topic	f	%
Chemistry I	123	44.24	Atom	29	10.43
			Structure of matter	21	7.55
			Periodic table	16	5.76
			Chemical bonds	11	3.96
			Gases	10	3.60
			Chemical reactions	10	3.60
			Elements and compounds	9	3.24
			Solutions and mixtures	8	2.88
			radioactivity	7	2.52
Chemistry II	58	20.86	Acids and bases	30	10.79
			Chemical equilibrium	9	3.24
			Chemical kinetics	6	2.15
			electrochemistry	6	2.15
			Solubility equilibrium	6	2.15
			Metals and non-metals	1	0.40
Chemistry III	16	5.76	Analytical chemistry topics	16	5.76
Chemistry IV	83	29.86	Organic chemistry topics	83	29.86
Total	278	100		278	100

Perceptions of Learners About The Design of An Effective Blended Learning

The pre-service teachers reported several important suggestions with regard to blended learning in chemistry courses.

The second open-ended question and interview responses were coded according to seven categories. The themes, sub-themes and frequencies are presented in Table: 2.

Learner

Some of the learners mentioned that a blended chemistry course should be designed according to learner characteristics and needs, and directed according to learner satisfaction by the course instructor.

The following comments were typical responses with respect to this sub-theme:

- **The characteristics of the intended audience that is learning the subject must be taken into consideration so that unnecessary information can be avoided. (Learner characteristics)**
- **The topics that the students need to learn should be presented in a fun and understandable way during the instruction. (Learner satisfaction)**

Facilitator Role

Most of the learners indicated that the facilitator's role is very important for designing a blended chemistry course.

Pre-service science teachers' common views in this category were as follows:

- **The course instructor should prepare the content of the blended chemistry courses.**
- **Students should be able to ask questions through a forum or by e-mail and should get a prompt response.**
- **Support can be provided by more than one instructor.**
- **The instructor should update the online piece of the course regularly.**

Interface Design

A high number of statements were made regarding the interface design. According to the learners, there should be a search engine for locating relevant information.

In additionally, the course should be arranged taking into account usability and design principles such as font style, font size, and colours.

One of the learners stated the following representative response:

A search engine will help students to reach the necessary information without wasting time.

Students should be able to obtain information easily. Page layout, colour tones, font size, and format should be considered when designing the blended course.

Teaching Process

The most frequent response from the open-ended question was consideration of the teaching process (f=164). Learners noted:

The sequence of the topics on the online piece should be compatible with the face-to-face piece. Topics should be explained in an understandable way.

Students shouldn't have any question at the end of the instruction. The duration of the online piece should be short since the online environment has a lot of distracting pieces. After a while students may not give enough attention to the course.

The online piece should be designed to help learning. The teaching process should be designed very carefully and students should be guided in every stage.

Content

A high number of statements (f=131) about the pre-service science teachers' views on the major factors related to the design of the blended chemistry courses were classified under the content category.

Within this category consideration of visual elements (f=59) and use of media (f=53) such as animations and simulations were more prevalent than other types of statements.

Additionally, it was noted that there should be evaluation questions at the end of each topic and that the chemistry information should be valid and reliable. Several of the learners made similar comments about each of the sub-categories:

The instruction should be supported by videos, animations, visual elements, and any related media pieces when needed. (Visual elements and media)

The accuracy and reliability of the content is really important. (Accuracy)

The instructor/facilitator should prepare well-structured questions to make students think and reflect. (Evaluation)

Technology

Some of the learners mentioned that the technology used for blended chemistry courses should take into consideration update regularity, infrastructure, and easy access. Illustrative responses were as follows:

The website should be updated as needed by the instructors. (Update regularity)

The online piece of the blended course should be open to the public. Everybody should be able to get information from the online piece. (Easy access)

It is essential to have a computer lab accessible by the department to use the technology effectively and to communicate easily. (Infrastructure)

One of the learners gave a particularly insightful comment regarding infrastructure:

I believe that it is very important to consider equality of opportunity. I don't believe that the blended instruction will be effective until every student has equal circumstances regarding Internet and computer access. I also believe that blended instruction will be more effective when students have similar computing education.

After establishing a solid background and infrastructure, we can then integrate cutting edge technology and scientific innovation.

Communication

A number of students stated that communication with peers and the instructor of the course is very important in terms of the quality of a blended chemistry course. One of the students said:

It should be easy to communicate not only with other students but also with instructors to get prompt feedback and answers to all questions.

The categories and sub-categories, frequencies, and illustrative quotations are also presented in Table: 2.

Table: 2
Pre-service science teachers' expectations for designing a blended chemistry course

Category	F	Sub-Category	F	Illustrative quote
Learner	32	Characteristics	17	It should be appropriate for the target group's needs and characteristics.
		Satisfaction	15	The web page should be fun. Even prejudiced students should take a look at it.
Facilitator Role	64			The facilitator should answer students' questions promptly
Interface Design	125	Search Engine	5	There should be a search engine on the web site.
		Usability	60	It should be easy to access to major chemistry topics on the web site.
		Design techniques	60	Font style, font size, and the colors should be chosen according to design principles.
Teaching Process	164			It should be used various teaching methods during the instruction process.
Content	131	Visual Elements	59	There should be videos about chemistry experiences.
		Media	53	Abstract concepts should be made more concrete by using animations.
		Accuracy	9	Information should be valid and reliable.
		Evaluation	10	There should be evaluation questions to test our knowledge.
Technology	45	Update Regularity	23	Information on the web site should be updated.
		Infrastructure	9	Each student should own a personal computer and computer laboratory should be used effectively.
		Easy Access	13	There should be no membership or password requirement.
Communication	29			Students should be able to in contact with each other

The interactions between the categories can also be seen in the blended learning components matrix (Table: 3).

Table: 3
Blended Learning Components Matrix

	Learner	Facilitator Role	Interface Design	Content	Teaching Process	Technology
Learner	**Interact and share experiences with peers.**	**Interaction with facilitators and other instructors.**	**Provide feedback to facilitator about the page design.**	**Provide feedback to facilitator about the content design.**	**Learners should do research and homework at home.**	**Sufficient infrastructure needed to use blended learning. Adequate skill and knowledge to use BL**
Facilitator Role	**Provide effective and direct feedback to learners. Provide multiple instructor supports.**	**Interaction with other instructors.**	**Design synchronous and asynchronous tools to ensure effective communication.**	**Provide appropriate content to meet learner needs, Ensure validity and accuracy of the content, Ensure security of online tools,**	**To ensure knowledge transfer as effective as face-to-face learning. A good plan for the learning process.**	**Ensure the proper to use of technology. Be aware of the technological problems faced by the students**
Content	**Appropriate to learner expectations and needs. Useful resources for students' present and future use.**	**Content should be prepared by experts in the chemistry field. The website should be designed for facilitators to be able to give prompt feedback to students.**	**Content and interface design should be consistent**	**Content should be consistent. Examples from daily life. Animations, visualisations and videos of experiments, pictures, figures, and graphics should be included to ensure more concrete content.**	**Content should be designed to promote learning process. Various materials should be used to support learning.**	**Appropriate media should be chosen for content.**
Interface Design	**Appropriate to learner satisfaction.**	**Additional resources and facilitator's contact information should be available.**	**Navigation should be user-friendly.**	**Design to find chemistry topics easily. Material and interface design should be consistent.**	**Concept maps should guide the learners through the learning process.**	**Cutting edge technology should be used in the interface design**

Teaching Process	**Learner should be informed about the duration of the teaching process.**	**A good plan for the teaching process.**	**Interface should be designed to promote learning process.**	**Teaching process should be consistent with content. Teaching process should be consistent with content**	**Various instructional methods should be used.**	**Various technological tools should be used during the teaching process**
Technology	**Synchronous and asynchronous tools should be used for learner to learner communication.**	**The facilitator should be well equipped in terms of technology.**	**Update regularity in terms of page design.**	**Update regularity in terms of knowledge and innovation in the field. There should be no membership or password requirement.**	**Abstract concepts should be made more concrete by using technological tools.**	**Technological problems should be eliminated as much as possible.**

CONCLUSIONS AND DISCUSSION

Previous studies demonstrated that blended learning applications are useful in many ways for teachers and for science education. A content analysis was conducted to determine pre-service science teachers' perceptions about how such a course could be designed according to perceptions and priorities of learners. In addition, this study examined the learners' perceptions of the essential factors necessary to design an effective blended chemistry course.

The qualitative data showed that a majority of the learners stated that the teaching process is a priority, with the over-arching theme being that the instruction should be carefully planned and responsive to student needs. Commonly, learners expressed that the process of teaching the content should not be too long or complicated. If the material is too lengthy or when students learn the material at their own pace, a negative effect can readily occur with dual mode presentation (Guan, 2009).
Moreover, learners stated that various teaching methods should be used and that instructions should be given step by step. Instructors need to consider effective teaching methods to ensure the quality of the instruction (Zheng & Smaldino, 2003).

Another important observation from the study is that the learners agreed that their needs and characteristics and their satisfaction about the course content should be taken into account when designing a course. Along these lines, many researchers stated that the achievement of blended learning is dependent upon the organisation of the course based on student needs, the nature of course content, and the course objectives (Zheng & Smaldino, 2003; Burewicz & Miranowicz, 2005; Pereira et al., 2007; Yukselturk & Bulut, 2007). It is necessary to determine the pre-service science teachers' motivations for using blended learning since designing a blended chemistry course requires a large amount of time and effort. Learners who have motivation and adaptation problems within the online environment may not be successful with the blended instruction (Yükseltürk & Bulut, 2007). However, students who consider themselves well informed regarding the use of technology indicated less anxiety and more confident about using computers (Lambert, Gong, & Cuper, 2008).

In addition, learners are more motivated to use new technology when they believe it is a necessary and useful tool (Lan, 2001).

Content organisation has a great impact on learning outcomes (Zheng & Smaldino, 2003). According to the learners in the study, content should be prepared by experts in chemistry, should include reliable and valid information, and should be designed to promote the learning process by choosing appropriate visual elements and media. Previous research reported similar results. Instructional designers need to be aware of the effects of visual elements and media on learning efficiency (Guan, 2009). In addition, blended learning helps students to perform difficult laboratory exercises through visual media such as simulations, virtual laboratories, and other digital resources (Sancho et. al, 2006). More specifically, the application of simulations and media allows for effective and individualised learning in teaching chemistry (Burewicz & Miranowicz, 2005). A resource that allowed learners to become familiar with the laboratory could have a major impact on their learning experience (Dalgarno et. al, 2009).

Moreover, learners stated that content should be consistent with the learning outcomes to motivate them to participate in their classes. As long as the learners do not see a connection between the course content and the learning outcomes, they will not be willing to take a blended course (Gerber, Grunt, Grote, 2008). Learners also stated that course content should include evaluation questions to assess the knowledge they acquired through blended learning. This assessment should include clear, constructive, and prompt feedback (Palmer & Holt, 2008).

The next most popular statements were related to the facilitator's role. This result is consistent with research demonstrating the importance of the facilitator's role in ensuring a high quality of blended learning (Wang, 2006; Mouzakis, 2008; Palmer & Holt, 2009; Goktas, Yildirim, & Yildirim, 2009).

The learners specifically stated that they needed effective and direct feedback about their problems and questions via forum or e-mail by the facilitator of the course. Timely feedback greatly increases the student's learning in online instruction (Wang, Wu, & Wang, 2009) as well as student satisfaction with the course (Palmer and Holt, 2009) Communication and interaction are other important issues in designing a blended chemistry course. Learners can affect the quality of online learning through communication with their peers and the course instructors (Yukselturk & Bulut, 2007). Various synchronous or asynchronous communication tools such as e-mails, blogs, chats, and forums provide a convenient place for learners to discuss the course topics (Ng, 2008). Learners should be encouraged to use these tools with each other and their instructors (Palmer & Holt, 2009). Learners also made many statements that fell into the interface design category. It was clear that usability and design technique were equal priorities for the participants. The quality of material can be improved by considering design principles. (Ozdilek & Ozkan, 2009). Stein, et.al. (2001) proposed that students' performances may be impacted by well-designed instructional materials.

The results affirm that blended instruction should include various technological resources and tools to facilitate learning. These technological tools should be updated regularly and should be easily accessible to design a high-quality learning environment (Yükseltürk & Bulut, 2007). The administration should also provide an adequate technology infrastructure, including a well-equipped computer laboratory.

In conclusion, content analysis showed that a blended chemistry course is an effective means of educating pre-service science teachers to ensure higher quality chemistry instruction. The results revealed that the content of online instruction, the teaching methods, interface design, use of media and other visual elements, usability, design techniques, and facilitator role should be taken into consideration when designing the blended learning. The results of the study also suggested that designing a blended learning environment is most suitable for specific topics such as organic chemistry, acids and bases, the structure of an atom, and the structure of matter. When blended chemistry courses are designed according to learner expectations, it can be concluded that the majority of the learners will benefit. Likewise, the results of the study have important implications for instructors designing effective blended chemistry courses for pre-service science teachers.

RECOMMENDATIONS

- **This study provides important suggestions for designing a blended chemistry course for pre-service science teachers. Several main and sub-categories arose from open-ended responses and interviews of learners.**
- **The interaction between these categories is shown in Table: 3. Based on our results, major recommendations for blended chemistry course design are as follows.**
- **Facilitators should ensure that the knowledge transfer in the online environment is as effective as face-to-face learning, which can be done through adequate planning. Instructors should provide constructive and timely feedback to learners' problems and questions. To sustain effective communication, either synchronous or asynchronous tools should be included in the online learning environment.**
- **Facilitators are also responsible for the validity and accuracy of the chemistry content, which should appropriately meet the learner expectations. Concrete content, examples from daily life, animation, visualisations and videos of experiments, pictures, figures, and graphics should be included in instructional materials.**
- **A search engine should be included to provide easy access to specific chemistry topics. Facilitators should be aware of the importance of update regularity, particularly page design and content.**
- **Learners should interact with their peers and the instructor of the course regularly, provide feedback to the facilitator about the page and content design, and do their research and homework about the topics.**
- **In addition, they should have the adequate skills and knowledge necessary to use blended learning.**

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INNOVATION IN OPEN AND DISTANCE LEARNING SYSTEM: The IGNOU Experience

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ABSTRACT

The Indira Gandhi National Open University (IGNOU) occupies a prominent position in the academic world by way of shouldering the responsibility of providing quality education to the growing numbers of learners. Its journey of achieving its objectives is marked with the problems of efficiency, equity, quality and benchmarking of the ODL system. The IGNOU had established the experience that there are several impediments to innovation, most of which are of bureaucratic nature. In this paper we present our experience of nurturing innovations with an aim to sensitize the ODL functionaries towards creativity and innovation.

Keywords: **Innovation, bureaucratic impediment, open and distance learning system.**

The Open and Distance Learning (ODL) system in India is about three decades old. There is one National Open University, namely the Indira Gandhi National Open University (IGNOU) and 13 State Open Universities approved by the Distance Education Council. The ODL system has shown a tremendous growth during the past few decades due to its unique feature of being a user-friendly system. In this system, the students are free to learn at their own pace and convenience while being placed far away from the institution. This uniqueness and the ease of gaining knowledge have a pivotal role to play in facilitating today's emerging knowledge society. In India, today almost half of the students enrolled in higher education are receiving education through the distance mode, i.e., through the open universities or through the Directorates of Distance Education of traditional universities. However, the problems of efficiency, equity, quality and benchmarking of the ODL system still persist.

In the wake of the UN Millennium Development Goals, which emphasize on education for sustainable development, there is a need and demand for innovative methodologies and programmes in the ODL system that would meet the quality requirements of the large and diverse communities of the country, for their overall development. There is a need for innovations that would increase the efficiency and quality of the ODL system.

The Government of India (GoI) has set the target of the national Gross Enrolment Ratio (GER) to be increased to 30 % by 2020 (Department of Higher Education, 2011, p.7), which means bringing in about additional 26 million learners in the ambit of higher education (p. 9).

To achieve this colossal target, there is an estimated need for 800 more Universities and 35,000 more colleges in the next ten years (The Times of India, 2010). Evidently, with the current infrastructure of 480 Universities and 22,000 colleges, the country is not equipped to cater to the huge number of learners.

The Working Group of the Department of Higher Education, Ministry of Human Resources Development, GoI for the 12th Five Year Plan (2012-2017) clearly emphasised the important role of IGNOU and Distance Education saying "IGNOU's share in higher education enrolment amounts to about 15% of the total student population in the universities in India" (Department of Higher Education, 2011, p. 20) and "Distance Education system is emerging as an important means to cater to the increasing demand for higher education" (p. 25 -26).

In the above scenario, the role of IGNOU becomes highly crucial in taking a lead role as regards providing quality education to the growing numbers of learners. There is a pressing need for IGNOU to equip itself for making innovations in its various educational services to provide quality and access to the unreached. IGNOU functions through its sub-systems, such as the Vice Chancellor's office, Schools of Studies, Centres, Administration Division, Finance and Accounts Division, and Learner Support Services Division among others. The mindset of the functionaries in these sub-systems plays an important role in the acceptance and diffusion of innovations in the system (Das & Ghosh, 2012).

Recognising the need for innovations in the ODL system, IGNOU had established the National Centre for Innovations in Distance Education (NCIDE) to promote, develop and pilot innovations in all aspects of the ODL system. While working on the subject of innovations at NCIDE, we have experienced that there are several impediments to innovation, such as acceptance of the innovative ideas by the functionaries concerned, which reflects their attitude towards innovation. This mindset needs to be changed if any improvement in the ODL system is to be brought about.
In this paper we have highlighted some of our experiences with an aim to sensitize the ODL functionaries towards innovations. There is a need for them to understand the psyche of the innovators to be in a position to better appreciate their approach and attitude towards work.

THE ATTITUDE IS LACKING

Let us look into a real life experience of one of the authors (CKG) which has reflection about the lack of proper attitude. The episode will help in setting the tone of the paper.

Night Sky is a Fantastic Laboratory

Teachers in school have a tendency of complaining about lack of infrastructure. They feel that in particular, laboratory infrastructure is quite poor across the schools in the country. Thus the teachers are unable to show live demonstration in the classrooms. In this connection, let us question – Have we ever given a thought on the issue that night sky is a fantastic laboratory?

One does not need the Attendant to come and open the locks. It is of course required that the sky be clear. It is this laboratory which was used to a great extent by stalwarts like Aryabhatta, Aristarchus of Samos, Galileo, Tyco Brahe, Johannes Kepler and others.

Having said so, let us narrate an experience of CKG who was denied the opportunity of making suitable observation of the night sky. The incident took place in April 1986 when he was teaching at the Department of Physics of a well-known college in Kolkata, India. It was the time when the Haley's Comet was getting viewed from earth. Such a situation happens with a periodicity of about 76 years, and so it is quite a rare cosmic phenomenon. In 1986 the tail of the comet was away from the sun and thus it did not become a cosmic spectacle. A telescope was required for its viewing.

The author was quite keen to make the observation. He also inspired his students to do so. There is a place called Diamond Harbour about 100 km southeast of Kolkata. It was the vantage point for observation during the late evening time for a stretch of about five to six days. He had to look for a good telescope for being taken to Diamond Harbour for the observation. The college being quite old and traditional had a large 8-inch telescope. It was kept unutilized for years together and so the author felt that the observation of Haley's Comet would be the right occasion for utilising this telescope.

He with the help of a Laboratory Assistant took the telescope out of the store, got the accumulated fungus cleaned and brought it into proper shape so much so that distant objects like torn posters on building walls having aerial distance of more than 10 km could be seen clearly. But the telescope had to be taken outside the premises of the college to Diamond Harbour. So the permission of the Principal had to be sought. On approaching the Principal, he said that he was not the competent authority. Since it is a costly device, the permission of the College Council, which is the Governing Body, has to be sought. There was hardly any time left for holding a meeting of the Governing Body by following the due procedure. It was also pointed out that the issue is not so significant that it merits a meeting of the Governing Body with a single point agenda. Thus the telescope could not be taken for viewing Haley's Comet. The students missed a chance of a life time. The story does not end there. A few days later one of the teachers of the college had to go for Extra-ordinary Leave (EOL). The permission for EOL also is not the jurisdiction solely of the Principal. It has to be referred to the Governing Body. The case was urgent and permission for EOL was obtained from the members of the Governing Body by way of circulation of the relevant documents. One wonders that what could be done in the case of permission for EOL, why the same could not be done for getting the desired permission in respect of taking the telescope to Diamond Harbour!

In another incident, personal computers (PCs) sent to the rural schools of Madhya Pradesh, India were not unpacked from the packages as the Headmasters feared that if after opening the devices malfunction, then it would lead to curtailment of their pension.

The above episodes, though not directly related to the ODL system, show the lack of the desired attitude. The Principal of the college in Kolkata and the Headmasters in the state of Madhya Pradesh suffered from xenophobia and some kind of unknown fear.

It is also seen that the clerical staff on whom a lot depends, seldom escapes the infection spread by their superiors.

Needless to say, they lack the proper attitude that can nurture innovations. There is a huge gap in the level of understanding among the bureaucrats and the innovators. Bureaucrats are generally adaptors in contrast to the innovators. They have a different mindset compared to the innovators. They dislike risks and want to play safe. For the bureaucrats, therefore, it is important to understand the mindset of innovators, who can bring about quality and efficiency in the system. We attempt here to provide some idea about the psychological and behaviourial characteristics of innovators and adaptors.

INNOVATORS

Several experts have worked on the psychological profile of the innovators and have provided useful insights on how they innovate; what thought processes and methods they employ while innovating.

H. Barnett (1953) emphasized that innovations initially and primarily take place on a mental plane where divergent ideas converge. Popular belief holds that innovations are largely the product of supraindividual inventors who have great intellects, insight, and an eagerness to take risks. These independent innovators are also the entrepreneurs whose gall, brilliance and drive for profit make the market economy function (Environmental and Natural Resources Policy and Training Project, 1995).

Dr. Michael Kirton worked extensively for more than three decades on the psychological aspects of creative and innovative individuals. According to him, all people are creative and the creativity of one individual differs from another in style and approach. He proposed that the creative ability of the people could fall in a continuum between high and low.

While one person could have the ability to *do things better*, the other could have the ability to *do things differently*. Kirton labeled the people who could do things better as *adaptors*, and those who could do things differently as *innovators*. He theorized that these two categories of people form the extreme ends of a continuum on which any individual could be located.

He stated, "The contention . . . is that everyone can be located on a continuum ranging from an ability to 'do things better' to an ability to 'do things differently,' and the ends of this continuum are labeled adaptive and innovative, respectively" (Stum, 2009). He called his theory the Adaptor –Innovator (A-I) theory.

Kirton defined creativity as the capacity of an individual for initiating change and based on his A-I theory, he proposed parameters to measure how and in what ways a person is creative, known as the Kirton Adaption-Innovation Inventory (KAI). The KAI helps people find their creating styles and how they use them to initiate a change that is both new and relevant to their context.

He also provided the behavioural descriptions of both adaptors and innovators (Kirton, 1984) which is summarised in Table 1.

Table: 1

Behaviour descriptions of adaptors and innovators

Adaptor	Innovator
Does things better Reliable, efficient, methodical, disciplined, conforming, safe, dependable	Does things differently Undisciplined, unpredictable, abrasive, creating dissonance, ingenious, unsound, impractical, catalyst to settled groups, irreverent of their consensual views
Resolve problems rather than finding them	Discover problems, manipulate problems and discover solutions that have low consensus
Impervious to boredom	Work in routine for usually only short bursts
Tends to high self-doubt when system is challenged, reacts to criticism by closer outward conformity; Vulnerable to social pressure and authority; compliant	Appears to have low self-doubt when generating ideas, not needing consensus to maintain certitude in face of opposition; less certain when placed in core of system
When collaborating with innovators: supplies stability, order and continuity to the partnership	When collaborating with adaptors: supplies the task orientations, the break with the past and accepted theory
Provides a safe base for the innovator's riskier operations	Provides the dynamics to bring about periodic radical change, without which institutions tend to ossify

Understanding the behaviour and the motivation of the innovator (s) is of prime importance for the successful steering of an organisation towards innovativeness. However, there is a lack of understanding between the innovators and the bureaucrats in this vital area. The following section explores the impediments the innovators face due to the apathetic attitude of the bureaucrats.

Apathy Towards Learning Through Electronic Medium

One of the authors (CKG) had been a member of the Executive Council (EC) and Planning Board (PB) of two State Open Universities. Both the universities are in existence for more than a decade. At both the places during deliberations at the meetings of the Executive Council and Planning Board the efficacy of learning through electronic media was explained.

It was also mentioned that educational video must from an integral part of the teaching-learning transactions of any open university. In order to bring home the point, some educational video programmes prepared by IGNOU and in particular one physics programme made by CKG along with the eminent scientist, Prof. J.V. Narlikar was shown.

It was appreciated by one and all. CKG got lot of pats on his back. Some sort of wishes (no commitments) were expressed that the said open university would take up such endeavour of preparing video programming, but nothing has happened so far.

An introspection into the matter reveals an apathy towards electronic media as the cause behind such inaction (Roy & Ghosh, 2011). Thus more than a decade old open universities remain restricted to printed mode as far as teaching-learning transactions are concerned and do not provide the scope to their students to get the benefit of learning through the visual medium.

Innovation in the Open and Distance Learning (ODL) System

Innovations in the ODL system in India have indeed been found across diverse areas. However, no attempts had been made to identify, classify and adapt these innovations. The National Centre for Innovations in Distance Education (NCIDE) at the Indira Gandhi National Open University (IGNOU) took up the task and classified the diverse areas of innovation of the ODL system into the following categories (Das & Dikshit, 2010):

- **Innovative Programme**
- **Innovative application of Information and Communication Technology (ICT) in delivery mechanism**
- **Innovations in admission procedures and learner support**
- **Innovations in evaluation methodologies and practices**
- **Innovations supporting convergence of systems**
- **Quality management and benchmarking**

Let us now discuss them in detail.

Innovative Programme

A programme forms the core of the ODL system. It refers to either a Certificate, Diploma or Degree programme that consists of a few courses (the number of which differs from programme to programme). Examples of programmes include Master of Business Administration, Bachelor's Degree, Post Graduate Diploma in Distance Education Programme, etc. It has been discussed earlier that the main component of a Programme comprises instructional design. It is the special design of the instructions to the learners (study material) of the ODL system.

The instruction is learner-centric instead of being teacher-centric and has features that the learner easily understands. It is designed in such a way so as to cater to learners with a wide range of qualifications and learning abilities. The programmes considered innovative are expected to contain new content which includes contemporary issues and the range is indeed wide-from Shoe Stitching to Heart Stitching, from Pottery Design to Performing Arts. Some examples are Certificate Course in English Language & Personality Development (Uttarakhand Open University), Postgraduate Diploma or Masters Degree in Museum Studies at University of Leicester, Life Coping Skills and Communication Skills (Tamil Nadu Open University), Online Horticulture Degree (Oregon State University), Natural Resources and the Environment Certificate (Colorado State University), PG Diploma in Water, Wastewater & Health (Chhattisgarh University), and Certificate in Sustainable Community Development (Simon Fraser University).

The Impediments in Offering Innovating Programmes Are As Under

These innovative programmes generally do not have any parallel in the conventional system. So there is no room to fall back upon for getting guidelines about curriculum design, evaluation methodology, organising practical sessions for skill-based programmes, etc.

However, there are institutions/organizations that have specialized in these areas, for example Apollo Hospital for Clinical Cardiology, *Khadi Gramodyog Vikas Samiti* for handmade paper products, etc. It is not in the scheme of things of an open university to recruit faculty with complete expertise in an offbeat area and offer the programme. Thus, it emerges that there should be adequate provision for collaboration with institutions/organizations, which have expertise in such areas. As a matter of fact, such provisions are not non-existent. But the statutory obligations involved are many, which are quite time consuming, full of bureaucratic hassles and at times quite intimidating from the point of view of consequences to be faced by a faculty if each of them is not fulfilled.For example, say one has chosen an organization X for some programme. While vetting the MoU required to be signed, the Legal Cell will raise the question – Has the possibility of collaboration with other similar organization been explored? However, there are no specific University guidelines that direct the process of collaboration. At present a MoU is signed based on the fulfilment of basic mutual objectives.

Next comes the question about the 'Share of Fee' between the university and the collaborating institution. Again there is no specific formula. In a way it is a reflection on flexibility and a healthy practice but it entails performing some calculations on the basis of unknown parameters like number of students to be admitted, number of study centres per region to be activated, cost of consumable items in case of a laboratory based programme, etc. Thus it becomes essential that the matter gets referred to Finance & Accounts. There such calculations, which are generally done by way of combined application of mind of the faculty members and the officials of the Student Support Services Division, are vetted by the clerical staff at the behest of their superiors. With due respect to them, they lack adequate knowledge about the innovative dimensions of the programmes which generally do not have any precedence, nor do they try to apply their mind to understand the intricacies. But still they provide comments and these get authenticated by their superiors. Such a working procedure has become a part of the pattern of operations and needless to mention, it impedes the process of launch of the programme.

A programme, prior to its launch, has to go through several stages which involve the School Board, that is the highest academic body in the School of Studies that houses the programme, the Planning and Development Division, the Academic Council and finally the Board of Management.

Such a flowchart has been worked out to ensure checks and balances which are essential in a university system but it is seen more often than not that most of the learned members of these bodies remain silent during the discussions. They do not contribute effectively, but these deliberations form an essential part of the procedural framework and hence unavoidable. Can we not think of a single body customized to the requirement of the programme?

Innovative Application Of ICT In Delivery Mechanism

The impact of ICT in education can be felt strongly by observing the uses of ICT tools, such as multiple media, in teaching. These ICT tools support the predominant print media being used by the ODL system. The ICT tools are expected to help teachers in finding solutions to learning problems by providing them with new instruments for the analysis and continuous monitoring of students' learning processes.

The category 'Application of ICT in delivery mechanism' includes the innovative use of ICT tools in delivery mechanism and learning methodologies. It also includes innovative ICT–enabled online student registration, online programme delivery, online evaluation of assignments and project reports, online examination, online availability of results, and making available the self learning materials and other resources in a digital repository, etc. Any creative intervention that uses ICT in print material production and its distribution to learners is also considered an innovation in this category.

In order to ensure that the fruits of such innovation reach the students, it is essential that they should have at least a PC with access to internet. The urban student is computer savvy and most of them would be having the desired access. The problem lies with the semi-urban and the rural students. We have to remember that the slogan of the ODL system is to '*Reach the Unreached*'. So we have to worry more for such disadvantaged learners. Now, "If the Mountain does not come to the Muhammad, then Muhammad has to go to the Mountain." Keeping such an ideology in mind, it was felt time and again that let the study centres of IGNOU be equipped with ICT based devices, and let that first be done for the remote area study centres. A student may not be having the facility with him, but he and his peers can definitely take access to such systems at the study centres.

Now comes the bureaucratic intervention. An IGNOU study centre is not a permanent establishment of IGNOU. They are temporary or at best semi-permanent. Some of them are in private institutions. Can the public fund be utilized to create facilities at such an institution? Again the host institution asks how can they pay for additional charges of electricity, telephone, etc? Who will purchase the software? The University becomes wary of the fact that perhaps due to the inability on the part of the host institutions of the study centres to meet the cost of original software, they may go for pirated versions. In such case the responsibility, indirectly falls on IGNOU! As a matter of fact, the University has been struggling to find suitable answers to such questions for more than a decade.

Innovations in Admission Procedures And Learner Support

The admission procedure to the ODL system involves walk-in admission or through entrance tests. As of today the admission forms and prospectus is available online for several ODL institutions. The detailed information about the eligibility criteria depending upon the course selected by the learner is also available online. However, there is much scope of innovation in the area of admissions that would ease the workload of the staff involved and increase efficiency. Similarly, the learner support system is overloaded and is slow owing to several factors.

An innovative application of technology in admission procedures and practices that is useful and effective; and also has the characteristic of user-friendliness and cost effectiveness is considered as an innovation. If technology has been used creatively and applied for monitoring the learners' needs and for receiving the feedback from the learners and for dissipating any other learner related dynamic information, it is considered as an innovation.

A very big issue regarding the admission process is the timely availability of the Student Handbook and Prospectus. Printing takes place only at the city of headquarters.

The process of these books (these are no longer booklets) getting printed and subsequently dispatched to sixty-odd Regional Centres by trucks and thereafter the Regional Centres sending the desired shares to the Study Centres, on an average 50 under each Regional Centre, is quite an uphill task. Actions like augmentation of the infrastructure, manpower, etc., have been tried but the desired results have not been achieved.

At IGNOU, the admission procedures have been computerized at the Regional Centres and the Headquarters. The admission data is received from the Regional Centres online. Till 2010, FoxPro was used, which did not allow online transfer of data. Recently, the Student Registration Division has adapted Oracle, which allows the transfer of data online from the RCs to the Headquarters and vice versa. The Student Evaluation Division, which is responsible for declaring the results is still in the process of adapting Oracle.

The IGNOU supports the learners if they need to change their names (mostly women learners who change their surname after marriage) Regional Centre, Study Centre or Examination Centre, the Medium of Instruction and courses. To change the name, the learner has to write an application to the Registrar, Student Registration Division, with a copy to the Regional Director along with the Notification of change of name published in the newspaper. The change of a Course/Programme/Medium is permissible within one month of receiving the study material. For changes of Course/Programme/Medium there are prescribed fees. The payment has to be made through demand draft and submitted along with a prescribed form for change of Course/Programme/Medium to the Registrar, Students Evaluation Division at the IGNOU headquarters. The study material has to be returned to the Registrar, Material Production and Distribution Division at IGNOU. To change the address or correction of the address, a prescribed form is to be filled in and sent to the Regional Director. It may take six weeks to take effect. To change a study centre the learner has to write an application to the Regional Director, with a copy to the Registrar, Students' Evaluation Division. The allotment of a new study centre is subject to the availability of seats. Change of Study Centre is not permissible in programmes where practical components are involved.

To transfer the Regional Centre, a learner has to write an application to the Regional Centre from which s/he seeks a transfer, sending a copy of the same to the Regional Centre where s/he would like to be transferred and another copy to the Registrar, Students Evaluation Division. In addition, the learner has to write to the Coordinator of the Study Centre from where s/he is seeking transfer regarding the number of assignments submitted. The Regional Director of the RC from where the learner is seeking transfer will send all the records of the learner to the Regional Director of the RC where the learner wants the transfer.

In this age of dominance of information and communication technologies, one expects that such services be web enabled. But in the 27 years of existence of the University this has not happened mostly due to very trivial reasons.

Other such areas of support services where serious thoughts about web-enablement need to be given are handling of assignments and projects (wherever applicable). We shall be talking about assignments while discussing evaluation methodologies. Let us now discuss about an initiative taken regarding project report submission.

An innovative ICT-based "Web based environment for evaluation of Project Reports (A software tool for evaluation of ES-320)" was developed by STRIDE, IGNOU for the MADE programme (Mythili & Mishra, 2009). It has the following features:

- **online student registration/authentication;**
- **online evaluator authentication;**
- **automatic allotment of project report to evaluators;**
- **automatic updating of student record and feedback.**

The features like automatic allotment of project report to evaluators and automatic update of student record and feedback is an innovative mechanism developed by the team. This system can be used as an online availability of submitted and evaluated reports in a digital repository. Simultaneously the system can also be used for any other project report submission at IGNOU, which will save a lot of physical space and administrative effort. Thus, an online library of project reports can be made available. This will also help to reduce plagiarism and duplication of work.

The University has introduced project component in several programmes. The idea is to provide real life experience to the learners, something similar to a miniature for of what is deemed to be achieved by a trainee doctor during his/her internship period. So it is a very crucial competent and the overall management of the issue of handling of projects, particularly in programmes like MBA, MCA, BCA involve a lot of effort, time and manpower. So it was prudent that the above platform be used for such other programmes also. It required scaling up of the innovative intervention. But it has not yet happened, primarily due to a peculiar kind of lethargy prevalent in the bureaucratic set up and the tendency to maintain the status quo despite knowing that the change is capable of bringing in more efficiency.

Innovations in Evaluation Methodologies and Practices

Monitoring and evaluation are critical elements in managing the ODL system. They provide an evidential base and establish linkages between course structure, instructional delivery and expectations from the students. Evaluation is the most crucial component of the ODL system. The overall aim of evaluation is to ensure that the programme/course results in the expected outcomes from learners. The learner in ODL system is generally evaluated by providing self assessment questions in the course book itself, questions at the end of each unit, multiple choice questions, projects, assignments, and through term end examination. Any innovative method or practice that contributes to the efficiency of the evaluation system is considered an innovation under this category.

Evaluation at IGNOU is a three-fold package which consists of self assessment questions (which has NIL weightage), continuous evaluation through assignments (30% weightage) and term-end examination (70% weightage). Term-end examination is held in June and December at about thousand centres in the country and about fifty centres abroad. This examination is handled in a conventional manner where the students are made to use paper and pen. Thoughts have been given towards organising online examination, but that seems to be a far cry.

For objective type tests, like the entrance tests for MBA, B.Ed., etc., Optical Mark Recognition (OMR) sheets are used.

This has to some extent eased out the process of holding the examination and subsequent declaration of result. But such process cannot be introduced for subjective tests and it appears that there is not much scope for innovation. However, there is scope for innovation in respect of the continuous evaluation through assignments. It is very much necessary that the assignments are evaluated timely and the scores are fed in the system managed by the Student Evaluation Division. This does not happen due to multiple reasons, the most crucial among them being the delivery mechanism which is a long chain – the students getting the assignment questions, themselves submitting the responses to their respective Study Centres, the centres getting them evaluated and sending the scores to the Regional Centres and the Regional Centres sending the data of scores to the Student Evaluation Division where it gets processed.

NCIDE took up the issue and worked out a strategy to avoid human intervention as far as practicable, it suggested that let the assignment questions be uploaded on the website and let the students submit their responses also through the Internet. Let there be a pool of evaluators who can access the responses topic wise, region wise, who after making the assessments would send the scores directly to the Student Evaluation Division and the comments to the students through e-mail.

The scheme did not work out as many of our students and even teachers do not have access to PC and Internet. But from a study it could be ascertained that almost 60 to 70% students can avail themselves of this facility. So it was proposed that let these students take benefit of the system, and the rest go by the existing process which will help in reducing the burden to a substantial extent. But now the objection was about the integrity of the students. Some of them may not write the responses themselves. The responses will be prepared by others on their behalf and fed into the system. Such a doubt is not ruled out even in case of the existing paper and pen -method. But there is a kind of pseudo – satisfaction that the student is writing in his or her own hand. Thus on one hand we could not make the lengthy, uncomfortable existing system foolproof and on the other hand the circumstances did not allow to bring about a change which could have ensured some relief at least in respect of cutting down on the turn-around time.

Innovations Supporting Convergence of Systems

Convergence of systems is envisioned to ease the flow of students from ODL system to conventional system and vice versa. Today in India, although there is an enabling mechanism for the transfer of students from the conventional to the ODL system, the reverse is not true. As a result the student of the ODL system faces difficulties. The rules of admission need to be reworked in detail to enable the transfer of students from one system to another with ease.

The crux of the issue lies with the 'Credit System', which is in operation for the ODL system. One credit is equivalent to 30 hours of study time from the point of view of an average learner, which consists of all learning activities like reading and deciphering the contents of and working out the exercises given in the self-instructional printed material, listening to/viewing the relevant audio/video programmes, attending counseling sessions at the study centre and also telecounselling wherever applicable and preparing responses to the assignment questions. Credits are earned by way of qualifying at the examinations.The University has the provision of transferring the credits earned by a learner at IGNOU or say at other institution.

External Credit Transfer allows a student of another university to get enrolled in IGNOU for completing any equivalent degree/diploma programme on the basis of credits obtained by him/her in that university. Such students are allowed exemption in examinations if they have been found to complete the courses and acquired the credits.

The Credit Transfer scheme is applicable to those students who have not completed their degree from any other recognized university. The BCA/MCA and B.Com programme have the provision of External Credit Transfer. Internal credit transfers are allowed to the already enrolled students of IGNOU. For example, if a student has done a one-year Post Graduate Diploma in Distance Education (PGDDE), s/he can complete a two-year Masters in Distance Education (MADE) in one year. His/her credits from the PGDDE will be transferred to MADE and s/he has to study the remaining credits to complete the programme.

The creation of intelligent solutions to address credit transfers, exemptions, transfers, recognition of prior learning etc., have been considered as innovations under this category.

Innovations in Respect of Coordination Between Subsystems

In the conventional system, the teacher is the master of the situation. All he needs is a classroom in a reasonably good institutions, a chalk, a duster and a blackboard. But in the ODL system, the teacher is not independent. He may be a course writer who has applied the methodology of distance education to prepare the self-instructional material.It goes through several stages like course editor, language editor, format editor, printer, artist and so on.

If a particular topic has to be explained with the help of a diagram, in the classroom situation, the teacher handles it himself whereas here he has to depend on the artist, his understanding of the concept to be brought home through the diagram and so on. Again on the whole, the University needs further intervention which is basically a co-ordination between the different divisions like the Student Support Service Division, which controls the regional and the study centres the Student Registration Division, which controls the process of admission, the Student Evaluation Division, which is the nodal unit for examination related matters.

It has been the experience that the above task of co-ordination is not very simple, again primarily because of too much of human intervention. The most crucial feature is the communication channel between the distance teachers at the University headquarters and the academic counsellors at the study centres who basically from the interface between the students and the University. These academic counsellors are supposed to get oriented by the teachers from the headquarters, but many a times such programmes do not materialize. Programmes are organized, but counsellors cannot join perhaps for not getting leave from their host institutions or even if they join they do not get the required facilities at the study centres to carry out the sessions in the manner they are asked to.

Counselling of the learners is indeed a very crucial service and efforts are to be taken to make it effective. The best possible solution seems to be the creation of an electronic platform, which can enable interactivity between a learner and his peers and also with his teachers.

To cater to this issue, an effort was made through *Vedyadhara*- Technology Enhanced Open Learning System created by IGNOU (Kumar & Farooqi, 2010). The salient features of the electronic platform are as follows:

- **A powerful open e-learning framework supported by disciplined social networking that empowers the learner with the freedom of learning at the convenience of time and space and yet be connected with the teacher/ instructor and the peers alike.**
- **The ICT intervention in the programme delivery provides a quality assured learning support to the learners that alleviates their fear of isolation and paves way for moving from the passive ODL system to active learner and learning centric education.**
- **The student's learning experience and engagements are enriched through community wiki, discussion forums, Learning Management System and other forms of open source supported interactions.**

This platform is being used to deliver highly skill based capacity building programmes, one of which is Post Graduate Diploma in Analytical chemistry (PGDAC). The ICT based material of the PGDAC consists of linkages with open resources, additional and supplementary material in addition to the approved course material. It has "Enriched Unit" as a novel feature under the additional materials. It consists of the annotated approved course unit; the annotations providing the contextual linkages to relevant animations, simulations, video lectures, quizzes and presentations, etc. In spite of high appreciation from the learners, counsellors and the other stakeholders, this innovative intervention is losing its lustre due to factors such as lack of coordination and facilitation of the faculty through technical support. The NCIDE has also developed an innovative ICT-based platform called the Virtual Training Lounge. The Virtual Training Lounge is a web-based platform that enables trainers to provide training and capacity building of the ODL functionaries online. This system is designed to provide not only synchronous training, but also to sustain the learning experience of the trainees online. The ease of access to the Virtual Training Lounge anytime from anywhere makes it an ideal platform for training and its sustainability. Some of its key features are:

- **Access anytime, anywhere through a web based platform.**
- **Asynchronous and synchronous collaborative tools, such as discussion board, chat, wikis, blogs etc.**
- **Flexible content uploading.**
- **WYSIWYG editor for interactive content generation**

The Virtual Training Lounge is yet to be implemented on a large scale due to non-availability of technical support.

Quality Management And Benchmarking

Quality management plays a key role in developing and maintaining quality in distance education institutes. It deals with the quality of the learning experience and the support services.

It helps to ensure the completion rates of studies and diminishes dropout figures and results in satisfied students who may in the future be willing to start new studies. It also ensures that the students are easily accepted in the traditional universities.

Benchmarking is one form of monitoring and measurement used in quality management. Benchmarking is being highly used in educational organizations to evaluate various aspects of the teaching-learning processes in relation to the best practices or innovations. It provides new methods, ideas and tools to improve the effectiveness of the organization. The ODL system in India needs to improve its quality management and benchmarking mechanisms to develop and establish innovative practices in the system for increasing its efficiency. Any practice that has markedly improved the quality of the system is considered an innovation under this category.

To give an example, the quality of a programme is of paramount importance in the ODL system. It has been mentioned earlier that such programmes generally do not have parallel in the conventional system and so a teacher may like to pre-test the material by providing it to some prospective students with a view to obtain their suggestion, because all said and done, the students are the best judge. Now, in order to introduce some kind of professionalism the teacher decides to pay the students a token amount for their services. Such a step will trigger many questions, such as:

How do you know that they are prospective students? What has been the basis of their selection? How have you arrived at the figure for the token amount? It is a national university, but you have chosen students only from the city of the headquarters, why so? Uncomfortable questions like, "Were the students known to you?" are also asked.

A deep introspection into the matter will reveal that in the instant case useful suggestions can only be obtained from the known persons. Fruitful suggestions may emerge from persons unknown but the general tendency is to work with known persons on whom you can depend. It is a common practice among successful authors of good text in science to get the manuscript read by their students, to cross-check the solutions to the problems assigned in the text. You can do such things when you are the author of a text by yourself, but if you are in the role of an author, in the form of what is called a 'course writer', in open university parlance, there will be many hassles if you intend to take such an otherwise extremely normal step to ensure the quality of the learning material.

CONCLUSION

The spirit of innovation must get inculcated among one and all. A small but significant step has been taken by the National Centre for Innovations in Distance Education, IGNOU. It releases posters entitled 'DID YOU KNOW?', which contain information with illustrations of incidents that keep happening in real life but generally go unnoticed. For example – *"Did you know that by the time you complete reading this sentence, Usain Bolt, who won the Olympic Gold Medals for Men's 100m race, 200m and 4x100m relay race at the Beijing Olympics, 2008 and London Olympics, 2012, would have reached the finishing line of 100m."* The 'DID YOU KNOW' series have also been made into audio and video snippets of 90 seconds' duration and are being aired through *Gyan Vani* and *Gyan Darshan*. We have got feedback from those who view the posters or listen/watch the audio/video that it enhances their thinking faculty which is a step towards being creative and innovative.

However, at every step we need the support and understanding of the bureaucracy, such as the Finance & Accounts (F&A) and the Administration Division.

The bureaucracy has a tendency to tread the beaten track and look for precedence. They need to realize that a suggested innovative measure cannot have precedence. So there is ought to be ways and means to make the attitude of bureaucracy more friendly towards innovations. It may be easier said than done. We therefore suggest that the officials of the F&A and the Administration Division of the University should be sensitized about innovations in the ODL System through periodic training programmes.

Earlier the universities of our country used to be known as temples of learning. They got identified by the teaching and research work of the erudite teachers. The universities would be pulsating with academic activities making the entire ambience an environment of learning. It would be relevant in this regard to mention about young physicists from all over the world studying under Sommerfeld in Munich in then Undivided Germany. They used to discuss about their work among themselves, particularly when they met at the University Cafe.

They will not even spare the marble-topped tables at the cafe to write several mathematical equations, many of which figure in umpteen number of text-books today. The waiters at the cafe were not allowed to wipe the contents scribbled on the tables without the permission of the scholars (Jungk, 1956). It is unfortunate that areas other than academics figure in the discussions among the staff members of the universities today when they meet at the canteens or corridors. Innovative approach towards academia, for which there is lot of scope in the ODL System, can perhaps provide a way of redemption.

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DIGITAL "TSUNAMI" IN HIGHER EDUCATION: Democratisation Movement towards Open and Free Education

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ABSTRACT

The result of the digital "Tsunami" changes in education in the 21st has been huge. Recall that in the year 2000 there was no such thing as internet broadband, Facebook or iTunes which is now a daily commodity. No doubt changes in technology will continue to accelerate. Education is about learning. Learning happens everywhere and technology creates a platform of almost limitless opportunities for better learning. With the recent digital development of Open Education Resources (OER) and Massive Open Online Courses (MOOCs), these emergence towards free and open resources and courses has a tremendous potential to democratise education. There is no denying that it's one of the biggest discussions being had in education and around the world. Will the digital 'tsunami' phenomenon revolutionise the landscape of education? Some believe that this new medium will revolutionise both online and conventional education. This paper attempts to explore the hype issues that surround the notion of democratisation movement that gears towards open and free education. This paper looks into the impact and the types of evidence that are being generated across initiatives, organisations and individuals in order to make a summative analysis and recommendations. Finally, this paper hopes to provide some insight into the dynamics of the evolution of digital 'tsunami' in present higher education.

Keywords: **Theory of disruption innovations, democratisation in higher education, industrialisation of education, 0pen Education resources (OERs), MOOCs**

INTRODUCTION

The changes in education of the 21st century as a result of the digital 'tsunami' have been huge. In the context of education, open and free education has become the watermark for recent and fast growing number of free learning materials and associated digitalise online platforms and practices from a variety institutions and enterprises. Recall that in the year 2000 Internet broadband, Facebook or iTunes, where not readily available and are now an integral part of our daily lives. Changes in technology will continue to accelerate at a greater speed; the shift to digital needs to be adaptive in par with the educational landscape. Open Education Resources (OER), Massive Open Online Courses (MOOCs), and more recently, initiatives such as *OERU*, *Coursera*, *Udacity*, *EdX* are technology-enabled platforms that have a tremendous potential to democratise higher education.

As stated by Kanwar (2012), globalisation in the context of education is "the reality shaped by an increasingly integrated world economy, new information and communications technology (ICT), the emergence of an international knowledge network …and other forces beyond the control of academic institutions.
Sethy (2008) noted that the ability to produce outputs via collaboratively in global networks is more appreciated by the present market than an academic degree fixed in space and time.

Technologies open up new opportunities for education. The information and communication technologies produced an era of digital 'tsunami' and are driving the restructuring of academic by forcing educators to re-align and re-design their academic work dramatically. The Open and Distance Learning (ODL), for instance, with the assistance from technologies has given access to higher education to those who would otherwise have been unable to have access to education due to the lack of formal qualifications or the inability to combine traditional studies with work or personal family matters. This result according to Sethy (2008) is to open the boundaries between education and work. In this regards, Peters (2010) wrote that "throughout history, education has been constrained by the iron triangle of quality, access and cost. The author further noted that in the case of ODL, through the division of labour, specialisation and the economies of scale created by media and advance technology, the access-quality-cost triangle ideology can actually be re-configured.

There is a flux of rising problem in education, including, the rise of private, for-profit provision of education coupled with rising higher tuition fees, shrinking of public funding and investment in education. Technological innovations can now be applied to widen access to content and resource materials to achieve economies of greater scale than several decades ago (Kanwar, 2012).

The digital technologies gave rise to many new providers of higher education and increased the competition in the academic globalise market; we witness a growing trend of collaborations and convergence of academic practices enhanced by the new media. The growth of nonconventional higher learning institutions, such as the distance education institutions, ODL universities, free and open online courses has, especially in recent years, been on a continuous rise.

The fact that these institutions have been able to develop courses produced on an industrial scale has made it possible to offer educational opportunities to a greater number at a lower or no costs. What started with MIT's OpenCourseWare (OCW) project has now been replicated to reach more countries in the world. A recent development of Massive Online Open Course (MOOC) or know for its open virtually access of quality course to anyone, provides a way of connecting instructors and learners across a common topic or field of discourse may have proof as one of the new digital technology innovation in our present time. Webley (2012) wrote that MOOC may be a silly-sounding acronym, but this new breed of open and free online classes have been heralded as *revolutionary*, the *future*, the single most important *event* that will democratise higher education and end the era of overpriced higher educational cost.

Still, the question remains, as to what extent the emerging movement of Open Education Resources (OER) and MOOC, have as a potential to democratise the higher education landscape?

At the same time, how does this democratisation movements impact the educational institutions. In this article, we will attempts to review the development of the democratisation movement, its primary role and the impact it has on higher education. The article set forward as an exploratory paper that we hope to gather evidence, across from initiatives, organisations and individuals in order to make a summative analysis to provides some insight into the strategies higher education institutions could adopt and to better understand its dynamic roles of the evolution of digital 'tsunami' that has the capability to transform and democratise the future higher education openly and freely for all.

THE INDUSTRIALISATION OF EDUCATION

The progress and expansion of distance education was made possible according to Peters (2010) by the *industrialisation of education*. *Industrialisation* implies the massive productions of goods that may be manufactured at a lower cost than products manufactured by craftsman.

Table: 1
Industrialisation in the production of goods and Industrialisation of Education

Criteria	Description (Industry)	Identified in "distance education"
Specialisation/ Division of labour	Work processes are no longer performed by generalists, such as craftsmen, but by specialists responsible for one part of the process only.	Persons are no longer generalists as teachers in the classroom but trained specialist. Teaching is divided into several functions : authors, instructional designers, media specialists, tutors, counselors, course coordinators etc.
Mass production /distribution	Standardised products are mass produced. Mass production Or distribution is capital and energy intensive and enables the acceleration of production and ships the goods to customers wherever they may live.	The carefully and expensively developed high quality distance teaching course is the standardised and the self instructional learning material may be distributed to students living everywhere in the country (or abroad).
Concentration	Concentration causes the agglomeration of manpower, capital, revenue and the trend towards monopolised markets. Concentration of power makes for greater profitability.	Distance teaching institutions, especially open universities, often become the biggest in the country. This leads to a concentration of funds, experts, teachers and technical equipment. When open universities produce more graduates than conventional universities they have also the tendency to monopolise higher education.

Adapted from Peters (2010).

Thus, these products can be more widely distrusted and sold at a much lower price making them accessible to a larger number of people.

During its infancy stage, the main goal of distance education may have been to reach out to those students for whom, and for whatever reasons, it was impossible to be physically present in a classroom. This is no longer the case as "distance education", mainly because of technology, is now trying to reach as many people as possible. In order to meet this goal, it has become necessary to produce teaching and learning materials that can be made available to a large number. Peters goes on to suggest that "…industrialised education may help to pave the way to an information-driven educational system that might be more adequate to our rapidly changing information and knowledge society" (Peters, 2010).Peters' *industrialisation of education* theory is not a proposition as to how education may be made available to a greater number at an affordable cost. Peters' theory was developed by analysing the evolution and presents the status of "distance education". Peters established a list of criteria that explain the parallel between the industrialisation of consumer products and education.

Due to their significance in understanding the evolution of distance education and the implication of the industrialisation process in education three of these criteria are retained presented in Table: 1.

As demonstrated in Table: 1 distance education has developed measures and procedures that correspond to the *industrialisation* of consumer products. This is not to say that the *industrialisation of education* has produced, or is producing, a lower quality of standards. That discussion will be presented in the sections that follow. What is described is that education has, in certain settings, been transformed bringing about changes as to how and who produces educational material and how it may be dispensed and consumed. The teacher, in this scenario, is no longer the only one involved in transmitting knowledge to students. The roles of educators and of learners are also being transformed. The traditional teaching and learning process, in a closed interactive setting, face to face interaction, is replaced by a greater emphasis on self learning.

The consequences of these changes may also have bearing on the role of traditional institutions themselves. A fundamental question that will have to be considered, as put forward by Peters', is the idea of *concentration*, in that along with the process of democratising education a new form of *monopolisation of education* may be taking place.

ERA OF DIGITAL "TSUNAMI" IN EDUCATION

During the last decade a perfect storm of capacity, distribution and need has created the conditions that have spawned an exponential increase of free, accessible and open educational resources. This storm of free accessible and open educational resources, or known as Open Educational Resources (OERs), started as a grassroots movement to make education available to everyone. It all started when Massachusetts Institute of Technology (MIT) made its historic announcement to make its courses open and fully accessible, known as MIT OpenCourseWare Project in 2002. Over the next few years many other institutions followed MIT's lead (Matkin, 2013). The OER movement has then become an institutional movement in higher education communities. Other prestigious educational institutions, such as Harvard, Yale, Stanford, Carnegie Mellon, and U.C. Berkeley had made some of their educational content freely available online as well.

Atkins, Brown, and Hammond (2007) define OERs as "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others". In a simpler term, the OER resources, in any type and form, may be freely available for use, adapt, share, and reuse without any legal obligation.

As of today there are approximately *281* universities, from around the world, in more than 30 countries that are creating (or using OERs), and OER material is available in multiple languages. Large-scale open "utilities" tools such as the *YouTube* and *iTunes* U have been used by OER educational institutions to promote open and free education (Matkin, 2013). Initially completion of an institution's OER material did not allow those who successfully complete the material to receive any course credits, exceptionally the Khan Academy, first created in 2006, does awards academic *badges* and *points* to those who complete various tasks on the studied course. The *badges* provide learners outward rewards (extrinsic) for achievement and completion (Khan Academy, 2013).

One could expect that the proliferation of OER began to have a gravitational pull. The learning community began to wonder how OER could be more effective in helping and reaching out to more learners, improving the teaching and learning process, and potentially lowering the cost of education.

However, the uses of OERs typically are much less structured, and prominently for informal and self-directed learners engaged in self-study. Additionally, the vast majority of OERs resources are for the purpose for enhancing personal knowledge and perhaps exploring interests outside of one's professional field (Masterman & Wild, 2011).

In 2008 with the OER movement, an idea and practices synchronous known as "open online course" was introduced by George Siemens and Stephen Downes in Canada. The first ever open course scheduled in a more fluid structure, made it possible for 2300 learners, from the general public, to participate in the online class, free of charge.

Dave Cormier and Bryan Alexander introduced the term Massive Open Online Course (Daniel, 2012). Stanford and other prestigious institutions in the US followed their lead in 2011 and 2012. Markoff (2011) noted that tens of thousands of users from over 150 countries signed up for the first free computer science classes offered by Stanford University in 2011.

The creators of this course, Sebastian Thrun, David Stavens, and Mike Sokolsky, have since then founded *Udacity*, a private educational organisation offering massive open online courses (MOOCs). In about the same timeframe, MIT undertook a similar MOOC open course approach that subsequently developed MITx, which as MIT explains "will offer a portfolio of MIT courses for free to a virtual community of learners around the world" (MITx, 2012).

In May 2012, MIT and Harvard (with the addition of UC Berkeley) announced EdX, a larger in scale learning platform that awards "Certificate of Accomplishment" to people who demonstrate mastery of EdX course material.

Since then similar initiatives from other prestigious institutions have come thick and fast in joining the MOOCs lead in the fear of being left behind (Daniel, 2012).

Other companies are following suit in institutions across the US, including the for-profit *Coursera*, which has almost 2 million registrants, presently offering more than 200 courses (Coursera, 2012). What is new about MOOC is the *scale, scope* and *pace* of the ventures and the *disruption* innovations that we will discuss in the following section. MOOCs represents a new generation of online education that is freely accessible on the Web and geared towards a very large numbers of learners from all over the world (Boxall, 2012).

Platforms of MOOCs appears to be separated into two distinct types that serves different purposes: those that emphases the connectives philosophy such as creation, creativity, autonomy and social networking learning carry the terms "cMOOC" while those that use video presentations and short quizzes such as those offered by Coursera and EdX is terms as "xMOOC" (Siemens, 2012). The phenomenon of *Open and Online Free Education* (OOFE) for all has revolutionised education landscape and as expressed by the President of Standford University and quoted by Boxall (2011) created 'a digital tsunami' potentially threatening to sweep aside conventional university education.

A LOOK AT OOFE LEARNERS' SOCIO-DEMOGRAPHICS

Much has been said about the new education innovations; however, few reliable statistics have been published about OOFE learners. The following Table 2 was taken and derived from the data available online (Jordan, 2013).
OOFE providers. The duration of these courses has been between one and three months.

The period covered is between October 2010 and April 2013. The data covers 26 individual courses made available by four different

The total number of students who enrolled in the courses during October 2010 and April 2013 (covered period) is 1,662,236. However, the completion rate is only 7.4 percent for a total of 113,096 recorded as completion.

The vast numbers of enrolments does strongly indicate an interest in OOFE and MOOCs.

The numbers also show that courses produced on an industrial scale can be made accessible to a large number. The most striking example is the *Coursera* course that enrolled 180,000 students. No conventional university could even imagine enrolling such a large number of students, *at one time*, *in one place*, for one course. It also seems to indicate that, with mass production of courses and the adequate technology, high enrolment is not a deterrent in course offering. To have a better understanding of the impact OOFE courses may have in the higher education industry it is imperative to have, at the very least, a general understanding of the learners' social-demographics. Details as to who these MOOCs' learners are, is also very limited.

One available report, with a very limited number of 2350 learners, who enrolled in two courses, concluded that the mean age of the students was 35 with the youngest being 16 and the oldest 88. The highest education achievement of the learners were: PhD roughly estimated about 7 percent, those with a Masters Degree approximately 42 percent, College degree qualification approximately 36 percent, High School qualification roughly estimated to account for 14 percent and for those with no formal school approximately 1 percent (Balch, 2013).

In comparison to distance education insitution, for instance the Open University of UK (OU), the average age of new undergraduate OU learners is about 31 years old, less that 10% (~ 9%) of new learners are over 50 year olds. It is estimated about 27% of new OU undergraduates are under 25 this year (19,982 registered learners). In the total enrolment learners' count, over 31,000 learners who are under 25 year of age.

Table: 2
Compiled Statistics on MOOCs' Enrolment and Completion

	Providers	Period	Enrolled	Completion (%)	Total # Completion
1	Coursera	2012-09 to 2012-10	50000	19.2	9600
2	EdX	2013-02 to 2013-04	52661	15.5	8163
3	Udacity	2011-10 to 2011-12	160000	13.8	11594
4	Coursera	2012-09 to 2012-10	50899	12.6	4039
5	Coursera	2011-10 to 2011-12	104000	12.5	8320
6	Coursera	2011-10 to 2011-12	60000	10.8	6480
7	Coursera	2012-07 to 2012-09	46000	10.1	4554
8	Coursera	2012-08 to 2012-10	81600	10.1	8241
9	EdX	2012-10 to 2013-01	28512	7.3	2081
10	Class2go	2013-01-15 to current	64127	7.6	4873
11	Coursera	2012-05 to 2012-06	50000	7	3500
12	EdX	2012-09 to 2013-01	46000	6.5	2990
13	Coursera	2012-12 to 2013-02	66800	6.6	4408
14	Coursera	2012-07 to 2012-08	36295	8.6	3221
15	Coursera	2012-10 to 2012-10	33000	5.2	1726
16	Coursera	2012-10 to 2012-12	53205	4.8	2553
17	Coursera	2013-01-22 to current	102000	5.4	5508
18	MITx	2012-03 to 2012-06	154763	6.4	9904
19	Coursera	2012-09 to 2012-10	15930	4.7	748
20	Coursera	2012-09 to 2012-12	55000	4.5	2475
21	Coursera	2012-11 to 2013-0	180000	1.7	3060
22	Coursera	2012-09 to 2012-11	12000	2.6	312
23	Coursera	2012-05 to 2012-07	29105	2.7	785
24	Coursera	2012-06 to 2012-07	40000	3.2	1280
25	Coursera	2012-11 to 2013-02	60000	3.5	2100
26	Coursera	2012-09 to 2012-11	83000	0.7	581
	Analysis question: What this statistics telling us?				
		Total enrolment =	**1,662,236**		
		Average Completion Rate =		**7.4**	
	(113,096)				

Adapted from Jordan (2013)

The majority of these learners (~89%) choose this mode of learning and studying to further their career advancement above other aims. Over 71% of OU learners either work full or part-time during their studies (The Open University, 2012). There thus appears to be socio-demographic simillairties between OU learners and MOOC learners**The real success and impact of MOOC is difficult to evaluate and measure; enrolment rates are unusually high but so are attrition rates. Students completion rates is always an issue in any type of higher education institution. Though conventional institutions seem to have the highest retention rates in comparison to Open and distance institutions.**

Comparing the exact *impact* OOFEs on the former institutions is not a simple task where presently there is limited available information on students in OOFE courses. The only comparative data is from the growth of Open Universities. To illustrate, we will use the Open University of UK (OU) and other online providers as references. When OU first opened in 1971 it had 25,000 students registered. The OU reports having over 210,000 enrolled in 2012. There were approximately a total of 2.5 million students enrolled in UK conventional universities (Wikipedia, 2013). The OU enrolments were 8.4 percent of the total university enrolments. A study done in the United States in 2011, *Going the Distance Online Education in the United States*, indicates 6.1 million students were enrolled in 2010, in at least one online university course being provided by one of the 2,500 higher education institutions offering online courses. According to this study the numbers grew from 1.6 million in 2003. It is further stated that this represents a growth rate of 18.3 percent during that time period. During the same period, the overall university enrolled has only grown by 2 percent (16.6 million in 2002 to 19.6 million in 2010). The total enrolments in distance education in 2010-2011, represent 31 percent of the overall university enrolments (Seaman, 2011).

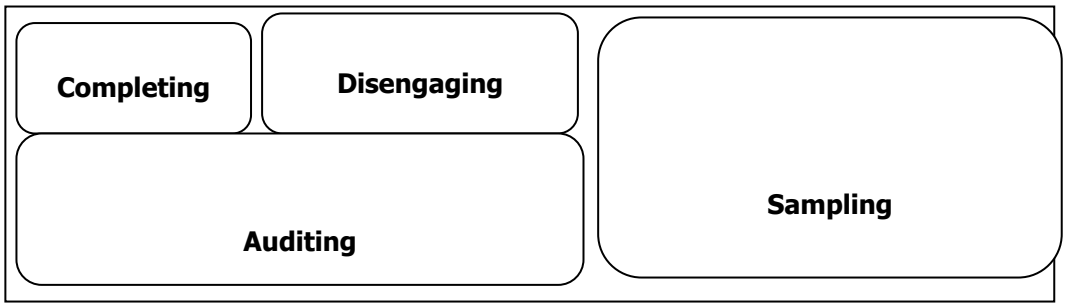
In an attempt to better understand learner's behaviour and the goals of learners in registering in OOFE courses, Kizilcec, Piech and Schneider (2013) did a longitudinal study of those learners who enrolled in three MOOC courses. Examining the trajectories from enrollment to completion, the researchers came up with a prototype of learners as summarized in Table: 3.

Table: 3
MOOCs Learners Prototypes

Completing	**Learners who completed the majority of assessments.**
Auditing	**Learners who followed the course for the majority of its duration but did few assessments.**
Disengaging	**Learners who did assessments at the beginning but who eventually only watched some videos or stopped following the course.**
Sampling	**Learners who watch a single video or explore the material once the class is underway.**

Adapted from Kizilcec, Piech, & Schneider (2013).

According to Kizilcec, *et al* (2013) findings, the greater part of the enrollees are samplers, followed by auditors, those who disengage and lastly the completers. A visual demonstration of this is presented in Figure: 1



Adapted from Hill (2013)

Figure: 1
Prototypes of Enrollers

In terms of knowledge prolification it is possible to assume that the two most significant prototypes are the ones who complete the course and the auditors. The main reason for enrolling in the three courses being discussed is primarily because they find it challenging and have interest in the topic. Enrolling for enhancement of resume is more prevalent with completers than amongst other groups, varying between15% to 33% depending on the course. Other interesting fact is that there are a significantly higher proportion of US learners and UK learners who completed the courses then there are from other countries.

For the most part interest in the subject matter seems to be the most important reason for enrolling for completers as well as for the auditors and the samplers. (Kizilcec, Piech & Schneider, 2013)

In an attempt to further understand the trends, Hill (2013) has made a hypothetical categorisation of four types of learners. These categories are described in the following Table: 4. Hill (2013) redefines the typology described by Kizilcec *et al*. in the following terms:

Table: 4
Four types of learners

Completing	**Learners who are active participants**
Auditing	**Learners who are passive participants**
Disengaging	**Drop-outs or people moving from active participant to passive participant to Observer**
Sampling	**A combination of Observers and Drop-Ins**

Hill observations are further summarised in into Figure: 2 on determining the emerging patterns of the learners in *Coursera's* MOOC courses.

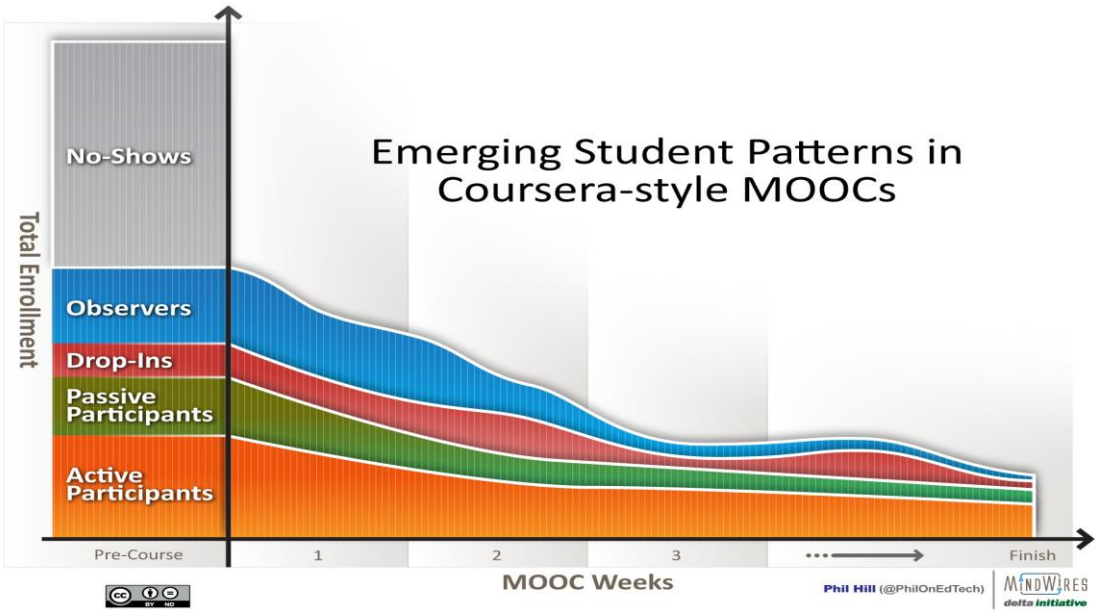


Figure: 2
Emerging Pattern of *Coursera's* learners
Source: Hill (2013)

From Figure: 2, it is possible to observe that the numbers drop drastically after the initial enrolment. The numbers continue to drop as the weeks go by. However, the learners who do make it to the finish line do not include only learners who completed all the assignments and all the course obligations. This graphical representation simply represents trends being followed by the learners who enrol in MOOCs. Hill (2013) and Kizilcec, *et al* (2013) reflect on the estimation that there is no static pattern. Learners may move from one type to another. Hill adds that passive participants may become active participants and/ or simply drop out. Learners may also be motivated by specific goals and register for courses following these goals which may be as simple as sampling the course, getting information, retrieving the content from the course or completion of the course. There are no official statistics as to the numbers considered in these studies.

However, going back to Table 2 which shows that 113,009 did complete the courses and the trends that are represented in Figure 1 and 2 there is no denying that an overwhelming number of people, in a short period of time, have benefited, to varying degrees from the availability of MOOC courses. It may then just be too simplistic, in terms of the idea of democratising of education, to try and determine the impact of OOFEs' by looking at completion rates alone. Nevertheless, one thing that is for sure is that access to knowledge is being made possible to an impressive number of learners.

DEMOCRATISATION OF EDUCATION IN A MARKET ECONOMY

It is well accepted that democratisation in education, making education available to all, is an obvious way to reduce social inequalities and create greater opportunities for all (Duru-Bellat, 2005). All share the idea that knowledge is socially constructed and should not be the sole possession of a few (Davenport, 2007).
Conventionally, higher education has been regarded as a public good providing a wide variety of benefits to individuals as well as all of society. Public goods are defined as goods that "cannot be provided exclusively to some: others cannot be excluded from consuming them ... their consumption by some does not diminish other people's consumption levels of the same goods" (Tilak, 2009). The ideology, that has driven the concept of higher education as a public good, rest on the following premesis proposed by Tilak (2009):

- **First, higher education drives the absorption and dissemination of knowledge.**
- **Secondly, higher education provides people with professional, technical and managerial skills necessary in the growth of knowledge economies.**
- **Thirdly, universities are institutions that assist in building character and morals and thus protecting and enhancing societal values.**
- **Fourthly, higher education contributes to the building of strong nation-state, producing citizens who can take an active part in civil, political, social, cultural and economic activities of society.**

Presently, the idea of higher education as a public good is being contested (Altbach and Knight, 2007). According to Altbach and Knight, there are three factors combined to make this happen: the increase cost of higher education, the shortage of funds for higher education and the liberalisation in economic policies, which include higher education. The liberalisation of economic policies in higher education is part the World Trade Organization (WTO) Agreement on Trade in Services (GATS*)*.

Robertson (2006) describes GATS as "hostile to public goods and social services, including specifically higher education".

This shift in thinking and the forces at play are having an increasing impact on higher education being transformed from a public good to a commodity to be bought and sold like any other commodity in the market. In Robertson evaluation of the GATS agreement, Knight (2002) outlined four modes of supply on how cross border services can be traded. The four ways in which this can be done are present in the following Table: 5. The first column categorise the mode of supply. A brief explanation on how the service is provided is given in the second column "Explanation". The third column describes how each of these four modes is applied to the education sector. The last column covers the size of the market. The paremeters outlined in the above Table: 5 make it clear that cross border suppy of education can be done via distance education, students attending university in a foreign country, universities setting up branch campus, including twinning or franchising, and professors working abroad.

Table: 5
GATS Cross Border Education

Mode of Supply According to GATS	Explanation	Examples in Higher Education	Size/Potential of Market
1. Cross Border Supply	-the provision of a service where the service crosses the border (does not require the physical movement of the consumer)	- distance education - e-learning -virtual universities	-currently a relatively small market -seen to have great potential through the use of new ICTs and especially the Internet
2. Consumption Abroad	-provision of the Service involving the movement of the consumer to the country of the supplier	-students who go to another country to study	-currently represents the largest share of the global market for education services
3. Commercial Presence	-the service provider establishes or has presence of commercial facilities in another country in order to render service	-local branch or satellite campuses -twinning partnerships - franchising arrangements with local institutions	-growing interest and strong potential for future growth -most controversial as It appears to set international rules on foreign investment
4. Presence of Natural Persons	- persons travelling to another country on a temporary basis to provide service	-professors, teachers, researchers working abroad	-potentially a strong market given the emphasis on mobility of professionals

Adapted from Knight (2002)

The GATS agreement simply reflects what is happening in the market place and may be considered as an attempt to standardise international trade in education. Trade in education services is rapidly becoming a huge industry. As a demonstration of this phenomena education, in Australia alone, are the third largest export services creating revenue of AUS$4.1 billion.

Foreign students in the UK, in the same year, contributed GB£3 to the economy. As for the United States more than half a million foreign students spend an estimated US$9 billion each year (Robertson, 2006). In 2002 there were over 200 degrees granting international branch around the world (Altbach, 2002). The number of institutions offering their services in the International market continues to grow (Altbach & Knight, 2007). The main focus of such institutions is to generate revenue (Sean & Garrett, 2012). Students studying in a foreign country is thus a big generator of revenue for the host country.

On the other hand, for the user countries this can provide knowledge and language acquisition and enhance the curriculum with international content and also provides access to higher education in countries where local institutions cannot meet the demand. (Altbach & Knight, 2007).

Internet is now spawning a new set of technologies build upon user generated and created content that is freely available, that once again promises to expand educational opportunity and in a disruptive fashion challenge the role and function of existing open and distance education suppliers.

Anderson (2012) wrote that "disruptive technologies demand structural adaptation and many of our open universities seem resistant to such innovations, celebrating their past accomplishments rather than our current opportunities.

The market potential contained in Table 5, Consumption Abroad and Commercial Presence have been, up to now, the two principle modes of providing cross border educational services while e-learning had a relatively small market but was estimated to have potential for growth.

As discussed in the previous section *Era of Digital "Tsunami" in Education,* online distance learning is taking an unprecedented place as a form of providing education. The interest created by OOFEs may just launch e-leaning as a viable contender in higher education in general and in the cross border education market.

According to Sean *et al* (2012), American elite universities have invested over $100 million in OOFEs in order to further globalise themselves and that is an indication of the future of online education. It is presently estimated, by Global Industry Analysts, that online distance education will be a highly competitive market worth $100 Billion worldwide, by 2015 (Boxal, 2012).

THEORY OF DISRUPTIVE INNOVATIONS

The survival of Open and Online Free Education (OOFE) ventures, in the market place, depends on their possibility to attract and maintain customers: students. How and where open and distance education institutions and OOFE ventures fit into the general scheme of education, their implications and consequences, may be better understood in the light of the *Theory of Disruptive Innovations* as put forward by Christeen, Horn, Caldera and Soares (2011).

The theory has sufficient explanatory power to make the role played by these new providers, in the higher education industry, comprehensible. The general definition of the theory is as follows:

"...innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, and convenient and serves many... The new innovation does so by redefining quality in a simple and often disparaged application at first and then gradually improves such that it takes more and more market share over time as it becomes able to tackle more complicated problems. (Christeen et al., 2011, p. 2)

The theory stipulates that the industries previously providing the service or product tend to improve upon the product rendering it more specialised and expensive. The product, at one point, exceeds the needs of the consumer, becomes expensive and affordable only to the high end of the consumer scale: to those who have the money to buy it and the expertise to use it. The *Theory of Disruptive Innovations* further states that disruptive innovations have two key elements that enable them to evolve. The first one of these is technology. In early years of distance education postal services served the purpose, the technology has evolved to include internet technologies. The disruptive innovation, at first, provides a lesser product and serves people who are not being served. As the product and the technology improve, the disruptive innovation draws clients from the original provider and provides a product that is sufficiently acceptable to meet the needs of the consumer and gradually replace the original provider. The authors point out that low cost is defined by the amount the university spends per student (Christeen *et al.*, 2011).

The second element that allow disruptive innovative to evolve is the business model. Disruptive innovations thrive to serve the need of customers, provide the client with what is needed for the client to achieve the goal being sought at a lower cost and in a manner that is convenient to the client. This is being achieved by online higher education providers.

This is not to say that substandard products and substandard content are being provided. The open and distance education industry is growing and its success can best be described by its focused approach in providing teaching and learning opportunities to meet the requirement of the clients. Christeen *et al.*, (2011) noted that "... focused on highly structured programmers targeted at preparation for careers - has meanwhile given several organisations [i.e online education providers] a significant cost advantage and allowed them to grow rapidly". There are three factors that are important to retain at this point: the available technology can provide greater accessibly to a greater number, the focus of these universities is on knowledge proliferation and lastly low cost does not necessarily equate to "*cheap*" but "meaning the amount the university spends per student" (Christeen *et al.*, 2011).

The online distance education industry is growing and its success can best be described by its focused approach in providing teaching and learning opportunities to meet the requirement of the clients "focused on highly structured programs targeted and preparation for careers has given several organisations a significant cost advantage and allowed them to grow rapidly (Christeen *et al.*, 2011, p. 3).

There is another important element to qualify where quality can only be measured relative to what customers' value in their own context (Christeen *et al.,* 2011). Opportunity cost being that students can take courses anytime and anywhere.

The *Theory of Disruptive Innovations* states that new innovations thrive to serve the need of customers and provide the client with what is needed for the client to achieve the goal being sought. In doing so the new innovations tend to operate in areas that do not put them in conflict with regulations and that eventually, once customers have migrated to the unregulated system, regulators respond to "the fait accompli". Internet is now spawning a new set of technologies build upon user generated and created content that is freely available, that once again promises to expand educational opportunity and in a disruptive fashion, challenge the role and function of existing traditional, open and distance education suppliers. There are, of course, many major challenges for OOFEs to become a disruptive force in the higher education market place.

THREAT (OBSTACLES) OR OPPORTUNITIES IN DEMOCRATISATION MOVEMENT

Development of democratisation in higher education is closely related to the availability of OERs and MOOCs. The OOFE ventures come with certain interrelated obstacles and potential opportunities. There are some present persistent questions enthusiastic researchers try to answer. Will this OOFE have disruptive effects while creating new opportunities? Perhaps, OOFEs is one of the major breakthroughs in education for one and for all?

We have identified the following characteristics that might be obstacles and opportunities in this democratisation movement.

Demand for Higher Education

Along with globalisation comes increase competition creating a greater demand for specialized skills and interdisciplinary knowledge demanding also lifelong learning; however, universities seem unable to meet the growing and changing world demand (CISCO, 2010). The history of "correspondence education" dates back to 1728 in Boston with lessons being send by mail (Infographic, 2013). The world's first open distance education institution, The Open University of the UK (OU) opened to its first students in 1971. The first course taught online was in 1995. In 1996 Jones International University was launched and claims to be the first fully online university accredited by a regional accrediting association in the US (Wikipedia, 2013). MOOC is the new generation giving itself a new mandate in the world of online and free education. In the next decade the technological requirement for jobs will rise from 50% to 77%. By 2014 the number of college students taking at least one online course is expected to go from 4.6 million to 18.65 million and by 2015 is expected to increase by another 37% [these stats are US stats] (Infographic, 2013). While there are numerous countries who have set up their own Open Universities, for the most part the focus is on nationals although most do accept international students. The practice of satelite campus has been a buiness move to make education more offordable to local populations and thus increase the competitive edge of foreign institutions (Knight, 2002). However, the OOFE ventures are open to students from across the world thus lanching e-learning as one of the possible major providers in the national market and in the cross border education market. World population demographics show that by 2020 half of the world's tertiary students will be in India, China, the US and Indonesia with another 25% in Pakistan, Bangladesh, the Philippines and Vietnam (Sean & Garrett, 2012). The chalanges are great, to give an example, to meet the growing demand in China, India and Indonesia, it is estimated an additional 10 million teachers will be needed (CISCO, 2010).

Technology

The technology to produce the MOOC courses setup by the OOFE venture seems not to be a problem but an advantage. MOOC embodies a convergence of technology that is creating new energy especially around the online learning communities. On the technology side, the platforms enabling web-based instruction are more effective and reach greater scale of learners than ever before. Technologies that are widely used usually include high-quality indexed videos, data capture and analytics and interactive delivery platforms that combine the qualities of social networking sites with the content delivery, discussion and automated testing and grading functions of the traditional learning management system, adaptive learning platforms (i.e. Khan Academy and Knewton) do offer massive online material. This adaptive technology platform tracks and correlates data generated as students work's progresses – from time of day to clicks and response patterns – to personalise instruction. Ultimately all platforms may use data to adapt instruction to the learner (EDUCASE, 2012). In fact, many technology-driven solutions are now available to the aspiring OERs educators to use, including tools for improving discoverability through search engine optimization and metadata; for publishing content and assessing learning (McAndrew, 2012). Technology will define where online and distance education goes next (Regalado, 2012). All those millions of distance learning students clicking online can have their progress tracked, logged, studied, and probably influenced. Just perhaps in the *near* future, with the advance development of technology it will create software that maps an individual's knowledge and offers a lesson plan unique to him or her.

Language

Most OERs and MOOCs originated in the United States where the prominent language being use is English. Bund (2013) wrote that "… MOOC is …. Internationally accessible, however, the language barrier remains a key obstacle. Efforts to overcome this obstacle are being made by some service providers, such as *Coursera* in collaboration with *Amara,* a subtitling non-profit crowd-sourced platform, to provide translation (Weredacdemic, 2012). *Coursera* boast that it has enrolled over 1 million students from 196 countries. A closer look at the statistics reveals that of the total number of students 38.5% are from the United States. This number goes down significantly for the second largest number of enrolments by country with 5.9% of the students enrolled residing in Brazil. All other students enrolled, 61.5%, are spread throughout 195 countries equating to a small fraction of enrolments per country (Coursera.org, 2012). In order to have a clearer understanding of the language issue the English Proficiency index developed by English First was used as a reference (English First, 2012). In its 2012 report they established the English Proficiency of 54 countries on a five level scale from *Very High Proficiency* to *Very Low Proficiency*. Countries with a *Very High Proficiency* rating are Sweden, Denmark, Netherlands, Finland and Norway. Based on the report by Coursera the total of enrolments for the above mentioned countries is 2 percent of the total enrolments.

There is another group of 7 countries who are classified as by English First as *High Proficiency*. The total enrolment in Coursera courses, for these countries, is 4.6 percent of the total enrolments. China is classified as a *Low Proficiency* country but counts for 4.1 percent of the enrolments. Brazil which is classified as a *Very Low Proficiency* country counts for 5.9 percent of the total enrolments. Canada and the UK which are English speaking countries only account for 4.1 and 4 percent of the enrolments. These statistics alone do not establish causality between enrolment and language proficiency.

There is a conscious awareness that language proficiency may be an obstacle on the other hand these statistics seem to indicate the possibility that English language proficiency is not necessarily a drawing card for enrolment.

Accreditation

Many have framed accrediting agencies as one of the most significant barriers that prevent innovation from occurring in higher education. Accreditation plays a significant role in higher education today. Universities and higher education institutions that are not accredited do not have access to funding from governments or funding agencies. Furthermore, accreditation is seen as a stamp of quality - such that if a university is not accredited, the assumption is often that there is something subpar about it. Rossi and Mustaro (2012) note that quality is no longer a characteristic merely measured or inspected to identify problems in the services or defects in the products, but its edification has to be prioritised during product development. This is realised in the same way for educational products and services, especially for educational products supported by technology. The move for accreditation off MOOC courses is in process at varying levels. This process in taking shape either through direct accreditation for courses offered by OOFE or through collaboration with institutions that can provide credits. For instance, EdX is planning what it calls the "flipped-classroom" in an experiment with a community college in the United States.

The experiment is to combine MOOC courses with traditional campus instruction. On the other spectrum, the American Council on Education is considering recommending college credits for some of the completed free courses (Mangan, 2012). Subject to certain conditions, some traditional universities already grant credits for certain MOOC courses such as in San Jose State University and Penn State University. Cooperation between degree granting institutions is also growing.

Coursera **recently announced that 69 schools had already signed up to offer their courses. The newest partners include Northwestern University, IE Business School in Spain and National Taiwan University (Korn, 2013). The University of Toronto has recently launched its own OOFE venture. Students who enrolled in classes were from Indonesia and Tunisia, Lithuania, Sudan and Kyrgyzstan and the United States, the United Kingdom, China and Canada (Bradshaw, 2012). Most recently in June 2013, Udacity in collaboration with Georgia Tech and AT&T now offers an online, Master Degree in Computer Science for a fee of 7,000$US, the free non-credit cerificates is available and open to for learners all over the globe (udacity, 2013).**

Job Market Value

There is an increasing demand for *credentialed* as "proof" of knowledge in the job market. The acceptable practice is that university degrees are an integral part of the labour market (Craig, 2012). The *Chronicle of Higher Education* released data from a study of professors, who teach MOOC courses, a majority of them do not believe that credit should be awarded, yet believe that the courses play an important role in the changing face of education and have inherent value (Thadani, 2013). Previous research has demonstrated that candidates with online degrees are usually viewed as less desirable then candidates with traditional face-to-face institutions degrees; candidates holding these traditional degrees have a better chance of finding employment (Adams & Defleur, 2005; 2006). According to Columbaro and Monaghan (2009), potential employers reported some concerns in regard to online degrees which include lack of rigor, risk of cheating, lack of commitment and concerns over degree mills.

These perceptions have serious implication for OOFE courses where potential job seekers may hold only certificates of completion as proof of knowledge. Some researches argue that there is no significant different in the learning outcomes of students in online and traditional face-to-face settings (Astabi, 2010). A particularly important aspect is that employers with online experience had a more positive attitude towards hiring online learners than those without online experience. The numbers who have this experience is on the contestant rise as demonstrated by the growing number of enrolments in OU and OOFE courses. There lies a paradox between the need for credentials as proof of knowledge, how knowledge will be defined in the market place and the growing demand for knowledgeable individuals to fill the needs of the economy. The question then becomes, do we prioritise the interests of tuition-paying, credit-earning students over other students? (Bruff, 2013).

DISCUSSION AND IMPLICATIONS FOR HIGHER EDUCATION

There is no imperical evidence that this new innovation (OOFE) towards open and free education movement is, at this time, disrupting established institutions of higher education. There is no evidence to demostrate that students who are enrolling for courses are students who would of otherwise enrolled in conventional, open distance or other institutuon of higher education. Collaboration between the new innovation and the traditional providers appears to be the norm, at this point of time. The United States has approximately 2,500 institutions offering online distance couses. The new consortium has improved the product with advanced information communication and technology (ICT), brought in some of the worlds prestigous universities (such as Yale, Stanford, Carnegie Mellon, and U.C. Berkeley) has partenerships with [at the time of writing] some 69 institutions from different parts of the world and made it available to a bigger market, at a lower cost. The evidence does also show that via collaboration between the OOFE providers and conventional providers, both in the United States and outside the United States, show a tremendous growth and interests. Established prestigious institutions from other parts of the world higher are getting involved by offering free courses or/and collaborating in the process. The reasons for this collaboration may not be clear at glance. As stated by Sethy (2008), one of the reasons may be *a fear of being left behind*.

This may be a cause for concern, as noted by Peters (2010), when Open Universities produce more graduates than conventional universities there is a great potential for higher education to be monopolised by the first. The vast number of enrolments with OOFEs may be an indication of such a potential as well. No conventional face-to-face university has such the potential to enrol as large a number of students, at one time, for one course as can be done with online distance education. At the present time, we believe that OOFEs need to cross some barriers as discussed in the previous section. However, depending on the extent of collaboration between OOFE providers with other major higher institutions across the globe the barriers may not be insurmountable.

According to Sean *et al* (2012), the $100 million invested in OOFE ventures is one of the strong indications that online distance learning is part of the *future* of higher education. Conventional universities that heavily relied on face-to-face teaching will have to decide how to get involved, how to face the competition, and how to best manage this new innovation of digital "TSUNAMI" in higher education that provide education for free [or lower cost] in present educational landscape.

As the Theory of Disruptive Innovations basically states that new innovations thrive to serve the need of customers and provide what is needed to achieve the goal being sought. It also states that new innovations tend to operate in areas that do not put them in conflict with regulations and that eventually, once customers have migrated to the unregulated system, regulators respond to "the fait accompli".

Customers may be defined by the increasing demand by individuals (customer) to have access to quality higher education and secondly the need in the marketplace (customer) for highly qualified people to fill jobs that demand new skills.

The fact that OOFEs are cooperating with world class higher institutions, in the proliferation of knowledge, making it possible for these universities to compete in national and cross border markets, could come to be accepted and comparable to a degree obtained from lesser institutions (Sean & Garrett, 2012). As Sethy (2008) rightfully pointed out collaboration in global networks is more appreciated in the marketplace than a degree obtained in the conventional manner. Thus addressing the needs of both customer groups or as put forward by the President of Stanford University with the creation of "A DIGITAL TSUNAMI" threatening to sweep aside conventional university education whereas education would become defined, by the marketplace, in terms of knowledge and not uniquely in terms of degrees per se. Considering what is going on in the marketplace, we analyse the current *existing* educational providers and re-defined the types of educational providers into three specific categories, as describes in Table 6.

Table: 6
Re-defined Types of Educational Providers

Provider Types	Specific Type	Descriptions
Conventional (traditional) Face-to-Face Learning (CFFL)	All inclusive (both Accreditation & Knowledge driven)	• Heavily involved in research and knowledge development. • Personal and social development of students through direct participation in university life. • Degree granting with limitations for customers (prerequisites required) • High in cost, available at ONLY specific time and place (usually in specified campus) • Provides specialised services to society and industry (advisory, research and consulting)
Open and Distance Learning (ODL)	Accreditation provider	• May provides some specialized services to society and industry (advisory and consulting) • Some knowledge development in research, but limited. • Degree granting with few limitations to customers (few or no prerequisites required) • Low in cost • Available anytime anywhere (usually at National reach level)
Open and Online Free Distance Learning (OOFDL)	Knowledge driven provider	• Knowledge proliferation • Highly flexible in time and place (global reach level) • Minimal or at no cost

The history of OOFEs so far is one of cooperation with established traditional universities. Where, resources are pulled together, in alliances, to make existing knowledge and higher education available, with fewer restrictions in cost, time and place. It may not be, as stated by Peters (2010), that education as such is being monopolised by one particular type of institution but that the mode of providing education has the capability to change and of gaining greater monopolisation. In a nutshell, the OOFEs are making an inroad both nationally and in the cross border market. The conventional (traditional) universities therefore face at least two identified challenges as the following:

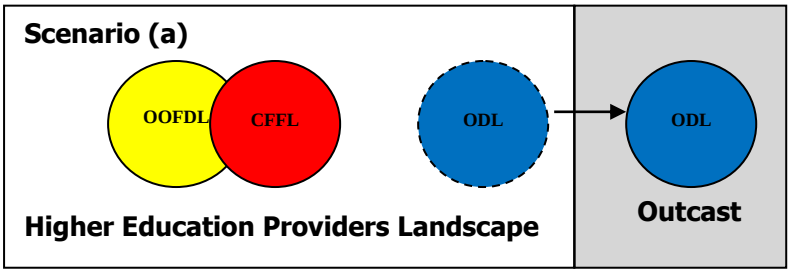
- **First, the conventional (traditional) universities must decide how to get into the MOOC venture (game) to remain competitive, either by producing their own MOOCs where they are in competitive advantages, or alternatively integrating best of breed MOOCs into their educational offering,**
- **Second, the conventional (traditional) universities must re-focus on the *value proposition* of a costly on campus learning, when free or at lower cost, yet quality options, are made available everywhere in the world.**

Additionally, as what Caudill (2013) notes that from the business model perspective, MOOCs and OOFE venture are very much a traditional business model concepts; they are low cost production sold for low prices but at extremely huge volumes that potentially generate substantially incomes while delivering a quality product to a large audience of learners across the globe.

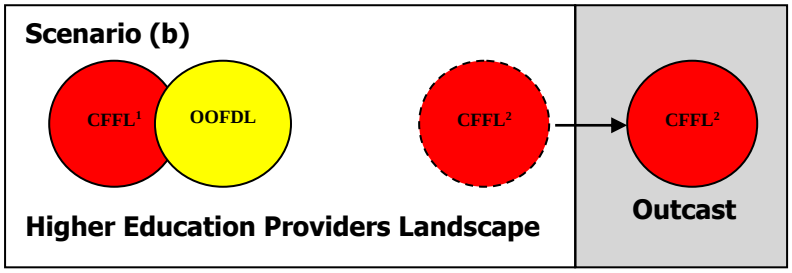
In brief, we would like to offer perspectives scenarios that perhaps seem pertinent, at this point of time, regarding the providers described in Table: 6.

Scenarios

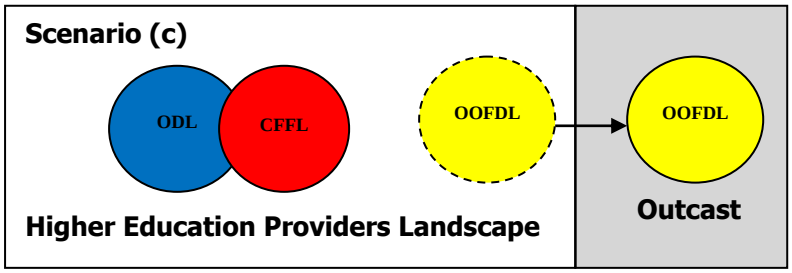
Could the OOFDL, in its collaboration with the CFFL, disrupt the ODL?



Could the CFFL^2, who are established institutions choose not to cooperate, or who are not capable of doing so, with the OOFDL be disrupted by the major players in the CFFL^1 and the OOFDL?



Can the ODL, in developing partnerships with the CFFL remain a strong force in the market and disrupt the OOFDL?



CONCLUSION AND RECOMMENDATIONS

No doubt that this democratisation movement has the potential to impact higher education across the world. The development and democratisation movement towards open and free education may be a solution to the existing problems in the ever rising cost in education. With the rise of all types of OOFE ventures, the future of higher education is perhaps one step closer to a "for all" people, everywhere, to have affordable, accessible education opportunities. Yet, it is premature to predict the prominent impacts on all types of educational providers. Many universities and private venture funds investing in this area have openly acknowledge the high level of experimentation and testing involved.

Perhaps, the year 2013 is the *infancy* stage of democratisation, the coming years will tell the story of what OOFE venture will become, but one thing is affirmed, that this movement is simply too great for educators, and any enthusiasts, to ignore and disregard. As presented in the three potential scenarios presented above, this evolution has the potential to undermine and replace the existing business model of all educational providers; institutions that depend on recruiting and retaining students for location-bound, proprietary forms of campus-based learning or distance-based learning.

OOFE innovation is causing a lot of stir. Individuals all *over the world* are either completing courses or checking on the possibilites [for those who enrolled but did not complete the course]. Establised institution from major parts of the world are also getting involved by offering courses or/and collaborating in the process. Although accreditation and language continues to be obstacles for this new innovation to distrup the higher education industry, what the disruptive innovation theory does state is that "...the disruption first prospered in a completely independent space outside the reach of regulators" (Peters, 2010). The process makes it possible for the new innovation to enter the market place and compete, first at the low-end user, with satisfactory products to meet the customers immidate need.

As noted by Peters (2010), once the new value network has proven itself to be viable and better and the bulk of the customers have migrated to the unregulated system, its regulators responded to the "fait accompli". In many parts of the world efforts are being made in to ensure greater collaboration amongts higher education institutions.

In the United Statas, leaders in the field of higher education are looking at simplifying the accreditation rules so that the online market can enroll students from around the country (Anderson, 2013).

Agreement like the *Seoul Accord of 2008* involving eight countries that includes Republic of Korea, USA, Australia, UK, Canada, Hong Kong, Taipei and Japan, who have agreed to the mutual recognition for accredited academic computing programs is one example of international cooperation in accriditation. (Accreditation.org, 2013).

In March 2013, according to the recent Europe Higher Education Area (EHEA) announcemnt (2013) there were about 35 European countries and regions who agreed to the need of ensuring a more comparable, compatible and coherent systems of higher education in Europe.

Democratisation movement towards open and free education has opened up new frontier of higher education that provides the fast-track route for learners from all over the world to take up universities courses for free or at a low cost. It is undeniable that the recent hype of MOOCs and OERs attracts a great deal of attention from higher education institutions and OOFE service providers are seeking opportunities to build their brand and to enter the education market.

Towards this end, we would like offer and recommend that higher education institutions [regardless in conventional (traditional) mode and distance learning mode] need *to learn* and perhaps *look more closely* at the present development of OOFE, that seems to be revolutionising the educational frontier in creating new breed of online class, new innovation, new business model, new learning pedogogies, new financial and revenu models that are able to meet the different needs of new groups of learners in an open higher education marketplace.

At national and international levels, the democratisation movement towards open and free education, being brought about by OOFEs, is still in its *infancy* stages. But its growth has serious implications for all higher education providers and policy makers. While quatity assurance is necessary, used as protective measure, nationaly and localy, accreditation may just be offset by cost defined in terms of fanancial cost as well as quality and accesibility cost as discussed earlier.

The notion of education as a public good as opossed to a consumer good is also being re-defined in terms of cost. Access to knowledge, and gradually to deplomas is being ofered cheaper through the market place then it is through government funded institutions.

The cost of providing education is also becoming economically more feasable through the maketplace then through higly subsidised government funded institutions.

The measures used to determine quality through accreditation may also have to be re-examined to meet the marked needs of education: the simple paradox of supply and demand at a affordable cost.

With the growth of the industry in the marketplace traditional institutions and distance learning institutions may need to consider how to re-position themselves in order to remain competitive

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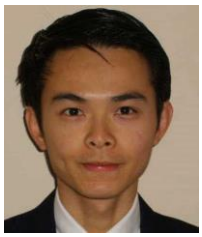

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WHAT'S IN A NAME: The Amateur's View of Good Practices in Naming an Online Educational Program

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ABSTRACT

Branding is considered to be particularly important in the marketing of online educational programs. A critical step to establishing the brand is naming the product appropriately. To this end, one can secure the services of professionals or rely on a do-it-yourself approach. The research reported here aimed to identify the features that non-professionals (graduate students) consider to be important in the name for an online educational product, and to compare these to the recommendations made by naming professionals (as reported in the literature). A survey directed at current and prospective graduate students at a traditional university asked about the desirability of 16 characteristics in the name of a new line of online courses. The six characteristics that were deemed most critical are (in order of importance): self-explanatory, memorable, easy to pronounce, has appealing associations, suggests/hints at the key features, and short. These are the same features that professionals in the business of creating new product names generally consider as best practices in creating a name. The results show that contrary to the concerns expressed by some practitioners in the naming industry, college-educated individuals who do not create names for a living nonetheless demonstrate an awareness and appreciation for the features of a good name in an Internet-based course delivery system.

Keywords: **Naming, online, features, non-professionals, self-explanatory, memorable**

INTRODUCTION

Like all sectors of the economy, colleges need to engage in branding (Chapleo, 2011). Branding may be particularly important in the marketing of online educational programs (Simpson, 2011), especially if a traditional university decides to create a separate identity for its distance education program in order to allow it to stand on its own merits and not potentially dilute the university's image if it fails to perform (Paden, & Stell, 2006).

According to Gokaliler and Sabuncuoglu Aybar (2011), an online education program needs to have a strong name, logo, and symbol in order to compete effectively.

Naming a new product or service is recognized as a critical step in establishing the brand (Turley & Moore, 1995).

A number of companies specialize in naming new products and services, which can be quite lucrative, as evidenced by the title of a US News & World Report article providing an overview of this industry: "*What's in a name? For the pros, big bucks*." (Hammel, 1997).

The claim is made by the professionals that their guidance in naming is absolutely necessary, and amateurs are warned about the potential dangers fraught in creating good names (e.g. Aper, 2008; brighternaming. com; Dunford, 2009).

Although some writers refer to the practice of naming as a science (Thompson, 2011), an inspection of actual practices reveals that most frequently the process is mainly art (Hammel, 1997; Russell, 2007). A number of conventions (rules of thumb) for crafting good names have been proposed, but quite often these are anecdotal, without a theoretical foundation or even any empirical evidence to support them (Klink, 2009).

Some authorities therefore advocate a "homegrown" approach, pointing out that many of the top names were crafted by non-professionals. Several web sites offer do-it-yourself naming software (http://www.rhymer.com; http://www.naming.net; http://www.brain-donor.com; http://nameideas.wordpress.com).

The press release announcing the Brain Donor® Naming System claims that it is "*the do-it-yourself system that transplants the naming know-how used by the experts directly into your marketing team's gray matter*" and that one can save $100,000 since "*top brand identity companies charge $100,000 to develop a new brand name*" (prweb.com, 2009). A number of product names were the result of contests using non-professionals. For example, Boeing's 7E7 was named "Dreamliner" on the basis of a contest with 500,000 submissions from 160 countries (Daye & VanAuken, 2010). In fact, there are companies in the business of soliciting public opinion to name a new product or service. One company offering this type of service has the tag line "*the crowd submits….you choose*." It describes the process as follows:

> ***"If you need a business name, domain name, or product name you can create a naming contest. Our namers, who are creative members of the public, will submit business name suggestions on your contest page. If you choose a winning name we award the namer the award amount. If our namers don't submit a suitable name, you can request a refund (http://www.namingforce.com)."***

Although the promotional literature does not mention it, this company's business model is supported by the evidence presented in Surowiecki's *The Wisdom of Crowds: Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations* (2004).Given that non-professionals do in fact develop (or at least suggest) names for new educational products, it is of value to know which criteria non-professionals consider important, and how these compare to professionals' recommendations. To this end, current and potential graduate students at one university were surveyed regarding what they thought to be the desirable features in a name for an online series of courses to be offered by the university. Their perceptions can then be compared with the practices espoused by naming practitioners.

REVIEW OF THE LITERATURE

Taxonomies of Naming Practices

A variety of approaches to naming can be identified (Rivkin & Sutherland, 2004), and these are often reflected in the various taxonomies for classifying product names. The complexity of the classificatory system is a function of how broad or narrow these classifications are. The broadest classification is "meaningful versus unrelated" names. Unrelated names offer no clue as to what the product is about, whereas meaningful names provide some type of clue as to its nature. Meaning can be bestowed by either explicitly specifying the nature of the product in the name, associating the name with some related image, or indicating a product's attributes or benefits in the name (Kohli & Suri, 2000; Kohli, Harich, & Leuthesser, 2005). Since the level of relatedness between a product and its name is a matter of degree (Thompson 2011), based on level of relatedness, product names can be classified as either abstract (e.g. *Prius*), suggestive (e.g. *Flickr*), or descriptive (e.g. *PlayStation*).

Igor International (2010), a company in the naming business, uses a four category system to classify names:

- **Functional/Descriptive,**
- **Invented,**
- **Experiential**
- **Evocative.**

Two methods for creating Invented names are cited: (1) Greek or Latin roots and (2) poetic (such as rhyming). Experiential names can be distinguished from ones that are Functional/Descriptive because "experiential names offer a direct connection to something real, to a part of direct human experience. They rise above descriptive names because their message is more about the experience than the task (p. 8)." As examples from Web portals, Igor International points to *Infoseek, GoTo, FindWhat*, and *AllTheWeb* as Functional/Descriptive names. Examples of Experiential web portal names are *Explorer, Magellan, Navigator*, and *Safari.* Lastly, Evocative names according to Igor "evoke the positioning of a company or product, rather than describing a function or a direct experience (p.9)." Yahoo is offered as an example of a Web portal name that is Evocative. A more detailed taxonomy, reported at rhymer.com, classifies names into nine categories:

- **Coined (e.g. *Nu Skin, Altima, Microsoft*);**
- **Common Words with a Twist (e.g. *Balance Shoes, Dollar Tree*);**
- **Surnames and First names (e.g., *Wendy's*, *Smucker's, Oscar Meyer, Papa John's Pizza, Ford Edsel*);**
- **Telescoped or Alpha-Numeric names (e.g. *3M Company, A-1 Steak Sauce, 7-UP*);**
- **Names with Deviant Spellings (*Krazee Kids, Kandy Korn, Tuff Skins, Xtreme*);**
- **Acronyms and Abbreviations (*IBM, KFC, CNN News*);**
- **Geographical (*American Airlines., Philadelphia Cream Cheese, Kentucky Fried Chicken, Evian*);**
- **Alliterative or Rhyming (*Roto Rooter, Cellular Source, Peter Piper Pizza, Water World, and Bargain Basement*);**
- **Prestige (*Lady Di, Pierre Cardin*).**

An even more detailed 20-category scheme is presented by Merriam Associates (http://merriamassociates.com), which overlaps somewhat with the rhymer.com taxonomy. Merriam's nomenclature has in common with the rhymer.com system the categories of geographical names and coined names (called fabricated by Merriam Associates). The term Ideophonmes in the Merriam Associates classificatory system deals with the same type of names as captured by the telescopic and alphanumeric classification in rhymer.com. The Alliterative or Rhyming category in the rhymer.com system is simply called Alliteration in the Merriam system, but the examples given show that it includes both alliterative and rhyming names (an example of alliteration is *Dunkin Donuts*, whereas *Piggly Wiggly* is a rhyming name). The category of surnames and first names in the rhymer.com system is similar to the Founder's name category (e.g. *Ford, Michelin*) in the Merriman system, although some names used for products are not the founder's name.

Certain of the rhymer.com name categories are divided into more discrete units in the Merriman taxonomy. The category called Acronyms and Abbreviations by rhymer.com is broken down into its two individual components in the Merriam system. The rhymer.com category of "common words with a twist" is encompassed by three distinct Merriman categories: Mimetics (alternative spelling, such as *Krazy Glue*), Onomatopoeia (naming something on the basis of a sound associated with it, such as the "sizz" sound of a steak cooking in *Sizzler Steakhouse*), and Oxymoron (e.g. *True Lies*). Unique to the Merriman system are the categories of:

- **appropriated (e.g. *BlackBerry* phone, *Apple* computer),**
- **classical (Greek , Latin; e.g. *Volvo*, which mean rolls in Latin),**
- **descriptive (e.g. *E-trade*),**
- **evocative (.g. *Frigidaire*),**
- **foreign,**
- **historical,**
- **humorous (e.g. *Cracker Jack*),**
- **composition (*Power Book*, *Page Maker*),**
- **merged (*Rolls-Royce*), and**
- **Mythological (e.g *Mercury*).**

Historical trends in naming practices have been observed and may reflect fads (Glynn & Abzug, 2002). For instance, Rivkin, and Sutherland (2004) report that the use of hyphenated names is on the decline. Sebba (1986) explored the phenomenon of names ending in "ex" (e.g. Kleenex, Kotex, Windex), which was uncommon prior to 1920.

Kohli and Hemnes (1995) and Delattre (2002) determined that new corporate names are generally shorter and more likely to be coined words and to have fewer geographic associations. The use of acronyms is on the rise, such as KFC instead of Kentucky Fried Chicken or DQ instead of Dairy Queen.

However, as Rivkin, and Sutherland (2004) point out, initialization only works well if the company is already well established (IBM, GE, GM). Latin and Greek names continue to be popular, especially in corporate names; Muzellec (2006) reports that 34% of corporate names that had changed dramatically became Latin or Greek in derivation or in sound.

Perhaps this is because classical names imply prestige (Rivkin, & Sutherland, 2004). The same may be true of foreign names, hence the creation of faux –foreign names such as Haagen-Dazs.

Professional Consensus on Desirable Features in a Name

There is some consensus among professionals that names should be distinctive, short, easy to spell, pronounceable, memorable, and suggestive of the product's benefits (Bao, Shao, & Rivers, 2008; Hendricks, 2010; Keller, Heckler, & Houston, 1998; Klink, 2000; Kohli & LaBahn, 1997; Kollmann & Suckow, 2007; Opatow, 1985; Robertson, 1989; Sen, 1999; Turley & Moore, 1995; Zinkhan & Martin, 1987).

According to a firm named Strategic Name Development (www.namedevelopment.com), the litmus test of a good name is "memorability." Memorability is recognition and recall. Notably, these two features of a good name are not necessarily compatible. Research suggests that descriptive or suggestive names are easier to recall than coined or arbitrary names, but they are not as distinctive as coined names (Kohli & Suri, 2000).

Although with extensive repeated exposure through advertising one can make almost any name memorable, certain name features enhance recall. Kohli and Suri (2000) found that descriptive and suggestive names are easier to recall than arbitrary and coined names.

Some authorities in the field of naming insist that good names are ones that rhyme (Maile & Bialik, 1989), not only because they are esthetically appealing, but also because they are more memorable and believable (Fortin, n.d.); however, this proposition is not universally accepted.

There is evidence as well that desirable name features may not be independent of the specific product or service (Peterson & Ross, 1972).

For instance, as noted by rhymer.com, the alliteration "Tiny Tots Toys" is appealing for a children's goods, but "Comfy Coronary Catheters" would not be a desirable name for a medical product. Likewise, alpha-numeric brand names may be most appropriate for high-tech, and futuristic products (Pavia & Costa, 1993).

View of Good Names from the Perspective of Persons Not in the Business of Naming

Several studies have investigated what people who are not directly in the business of developing product names consider to constitute the features of a good name. The e-entrepreneurs' view of good naming practices was explored in a survey directed at German e-entrepreneurs (Kollmann & Suckow, 2007) who were asked to rate the importance of 12 characteristics on a scale of 1= not at all important to 5= extremely important. The 105 respondents' ranking of these characteristics based on the mean rating (shown in parentheses) was: #1: ease of recall (4.42), #1: ease of recognition (4.42), #3: domain availability (4.32), #4: positive connotations (4.19), #5: distinctiveness (4.13), #6: ease of pronunciation (3.90), #7: overall liking (3.88), #8: versatile among countries/languages (3.80), #9: consistent with company image (3.73), #10: no negative connotations (3.64), #11: versatile (production/markets) (3.63), and #12: ease of trademark registration (3.50).

Kollmann and Suckow (2007) compared their results with ones from an earlier survey conducted by Kohli and LaBahn (1997) with 101 product brand managers. Kohli and LaBahn used importance ratings on a 7-point scale, so the means are not directly comparable, but if the characteristics in the two studies are ranked by their respective means, the result of the two studies can be compared.

The items, ranked based on the mean ratings reported in the Kohli and LaBahn (1997) study, were as follows: #1: relevance to product category (5.99), #2 connotations (5.83), #3 overall liking (5.79), #4: ease of recognition (5.77), #5: distinctiveness (5.49), #6: ease of recall (5.42), #6: consistency with company image (5.42), #8: ease of trademark registration (5.14), #9: ease of pronunciation (5.07), #10: consistency with existing product line (4.95), #11: profane or negative connotations (4.59), #12: versatility for use with other products (3.61), and #13: carriers over well to other languages (3.18).

Kollmann and Suckow (2007) point to the greater importance placed on recognition and recall of the brand name in their study compared with the earlier Kohli and La Bahn investigation. They attribute the difference to the influence of the net economy, although demographic differences in the characteristics of the two samples may also have been a factor in this difference.

Although neither Kollman nor Suckow (2007) nor Kohli and LaBahn (1997) had used naming professionals in their respective studies, their respondents did have some marketing experience. The true amateurs' perceptions of good naming practices were studied by Kohli and Suri (2000), who asked 90 college undergraduates to evaluate the brand names on overall liking and then looked at the relationship of likability to the type of name. Generally, the preferences from most-liked to least-liked names were: descriptive, suggestive, arbitrary, and coined. (The one exception was a flu medication where the coined name was preferred to the arbitrary name.) Also, there were differences in the recall of the names as a function of these four classifications. That is, meaningful names (descriptive, suggestive) were better recalled than unrelated names (arbitrary, coined). The worst on recall were the arbitrary names. A follow-up study (Kohli, Harich, & Leuthesser, 2005) showed that after repeated exposure, the likability of unrelated names increased, but meaningful brand names continued to be perceived more favorably than unrelated names. It is probably no accident that the majority of brand names are descriptive or suggestive rather than arbitrary or coined.

AIMS OF THE PRESENT STUDY

Kohli and Suri (2000) identified college students' perceptions of good names by examining which types of names they liked and disliked. Overall, their preferences reflected and matched the features that most naming experts recommend in a good name. However, since good and poor names may be tied to the nature of the product (Pavia & Costa, 1993; Peterson & Ross, 1972). The purpose of the present study was to directly determine which naming conventions are endorsed by consumers (students) in the context of naming an online program to be offered by a traditional university. It should provide an answer as to whether amateurs can be trusted to select a good name for an online program.

METHOD

Drawing on the various approaches to crafting possible names and suggested critical features of good names, 16 characteristics were presented to the participants as part of a comprehensive questionnaire designed to collect student opinion about what to name an online program of courses. The respondents were asked to rate the importance of each characteristic using a four-point Likert scale: 1= not important, 2=slightly important, 3=moderately important, and 4=very important.

A "no opinion" option was also provided. In the order as they appeared on the survey form, the 16 items were: self-explanatory, original, memorable, Latin word, Greek word, English word combinations, coined (completely made up word), has a meaningful acronym, arouses your curiosity, conveys prestige, rhymes, play on words (using words that have multiple meanings), short, easy to pronounce, has appealing associations, suggests/hints at the key features.

The list is by no means comprehensive, but it does cover the most commonly cited characteristics of names and approaches to naming.

E-mail invitations to participate in a survey about naming the online program were mailed to 2,619 current and prospective graduate students. The invitation contained a link to an Internet-based survey. There were 167 respondents (6.3% response rate), who were about equally distributed between current students and prospective students (accepted but not enrolled). After eliminating respondents who either indicated that they had no opinion about a given characteristic (*n* =7 to24) or who left the item blank (*n* = 18 to 24) there remained 144 respondents who rated at least one of the 16 items and 92 who provided ratings for all 16 items.

RESULTS

Table 1 reports means and standard deviations statistics on the importance ratings of the 16 characteristics. Summary descriptive statistics using both pair-wise and list-wise deletions are given. It is claimed by some statisticians that computing means on ordinal level data is inappropriate (a position with which I disagree); therefore for the 92 respondents who answered all 16 items, mean within-person ranks are also reported.

Both parametric (One-way Repeated Measures ANOVA) and non-parametric (Friedman test) tests were run on the data from the 92 respondents.

Table: 1
Ratings of the Importance of Characteristics of an Effective Name for a Program of Online Courses

Characteristic	All Cases (*n* ranges from 119 to 144)			Cases with No Missing Ratings (*n* =92)		
	n	*M* Rating	*SD* Rating	*M* Rank	*M* Rating	*SD* Rating
self-explanatory	142	3.68	.53	12.96	3.73	.44
memorable	141	3.62	.70	12.80	3.63	.64
easy to pronounce	140	3.44	.76	12.17	3.46	.73
appealing associations	136	3.31	.82	11.65	3.36	.76
suggests/hints key features	139	3.28	.85	11.50	3.30	.84
short	140	3.11	.90	10.48	3.09	.91
conveys prestige	139	3.00	.96	10.13	2.93	.99
original	144	2.96	1.04	10.33	2.97	.96
arouses curiosity	139	2.84	1.06	9.33	2.73	1.05
has meaningful acronym	134	2.14	1.03	6.86	2.07	.98

English word combinations	**119**	**2.03**	**1.10**	**6..44**	**1.97**	**1.06**
play on words	**138**	**1.83**	**.96**	**5..65**	**1.75**	**.94**
coined	**129**	**1.45**	**.79**	**4.42**	**1..41**	**.77**
rhymes	**134**	**1.40**	**.75**	**4.24**	**1.37**	**.72**
Latin word	**126**	**1.19**	**.56**	**3.49**	**1.14**	**.48**
Greek word	**127**	**1.19**	**.56**	**3.55**	**1.15**	**.51**

Since Mauchly's *W* test indicated that the assumption of sphericity had been violated [χ^2 (119) = 569.13, *p* =.0000], the degrees of freedom were adjusted using the Huynh-Feldt correction (ε = 0.79).

The ANOVA was statistically significant even after this correction [*F* (10.42, 948.44) =147.97, *p* = .000, partial *eta* ^{2}= .62]. The non-parametric Friedman test on ranks was also statistically significant [χ^2 (15) =865.41, *p* =.000].

The results (*p*-level) of the LSD pair-wise post-hoc tests are reported in the Appendix. Of the 120 comparisons, 97 (81%) reached statistical significance (*p* <.05).

If a Bonferroni correction for multiple comparisons is applied (*p* = .004 required for statistical significance), only an additional 3 comparisons become non-significant.

Notably, the importance of the characteristic "English word combinations" failed to differ significantly the most (10 of 15) from the other characteristics.

The pattern of average importance ratings is similar in the larger sample and the smaller sample (created based on pair-wise vs. list-wise deletions for missing values).

For the smaller sample, the mean ratings ranged from a high of 3.73 (self-explanatory) to a low of 1.14 (Latin word).

The six characteristics with average ratings above 3.0 (i.e. above moderately important) in both samples are:

- **self-explanatory,**
- **memorable,**
- **easy to pronounce,**
- **has appealing associations,**
- **suggests/hints at the key features,**
- **short.**

Based on the LSD tests, the desirability for the name to be self-explanatory was significantly greater than the desirability of the all characteristics other than memorable. Considered to be very unimportant (average ratings below 2=slightly important) were a requirement for the name to be a Greek or Latin word, to rhyme, or to be a play on words. Also rated low was the need for the name to be a coined word.To determine if there were more basic relationships underlying the desirability of the 16 characteristics, the data were submitted to a principal components factor analysis with Varimax rotation.

The five components with an eigen value of at least 1 explained approximately 64% of the variance. The characteristics loading .3 and above on each of the five retained components are reported in Table 2.

The first factor was named "Distinctiveness" because it deals with aspects that make a name unique. That is, it calls for the name to be original and to arouse curiosity; coined names are of this sort, and so it makes sense that this naming strategy was also part of the first factor. Factor 2, which was named "Classical Orientation," is defined primarily by preference for names that are Latin and Greek words in origin. The third factor was named "Suggestiveness" because it is defined primarily by the requirements that the name (a) suggest/hint at the key features and (b) that it possess appealing associations. The fourth factor clearly captures a preference for "Simplicity" in a name (easy to pronounce, short) and hence that is the name used for it.

Only one characteristic --self-explanatory --positively defined the fifth factor. Another characteristic -- coined-- loaded negatively on it. It is readily apparent that coined names can't be self explanatory and so this structure is to be expected. Thus, the fifth factor seems to capture a preference for descriptive names, and so I call it "Descriptiveness."

Table: 2
Loadings of Features on the Components Underlying the 16 Features

Factor 1: Distinctiveness	
original	**.75**
arouses your curiosity	**.68**
coined (completely made up word)	**.67**
conveys prestige	**.55**
play on words (using words that have multiple meanings)	**.54**
rhymes	**.49**
Meaningful acronym	**.45**
Factor2: Classical Roots	
Greek word	**.95**
Latin word	**.96**
rhymes	**.51**
English word combinations	**.43**
Meaningful acronym	**.35**
Play on words	**.33**
Factor 3: Suggestiveness	
suggests/hints at the key features	**.77**
has appealing associations	**.73**
memorable	**.65**
Arouse curiosity	**.32**
English word combination	**.30**
Factor 4: Simplicity	
easy to pronounce	**.85**
short	**.76**
has appealing associations	**.43**
Play on words	**.33**
Factor 5: Descriptiveness	
self-explanatory	**.89**
Coined	**-.31**

DISCUSSION

Naming experts insist that the name of a new product exerts a very powerful influence on whether it will be successful. The counter opinion is often expressed by a quote from Shakespeare's play Romeo and Juliet:

"What's in a name? That which we call a rose by any other name would smell as sweet [Romeo and Juliet (II, ii, 1-2)]. Most likely, it is the case that a bad name can hurt the marketability of a new product more than a good name can help it. Naming professionals tend to warn that inappropriate names created by inexperienced amateurs may lead to dire consequences.

The purpose of this study was to determine if non-professionals (graduate students in this case) would endorse the naming conventions that the professionals espouse, although it must be recognized that there is no complete consensus in this regard even among the professionals. Overall, the results show that members of the general public do recognize the critical features of good naming practices. According to our respondents, a good name for the program of Internet-based courses should be:

- **self-explanatory,**
- **memorable,**
- **easy to pronounce,**
- **have appealing associations, suggest/hint the key features of the product.**

These recommendations are consistent with the guidelines presented in the professional literature for naming practices.

Previous studies indicated that descriptive and suggestive names have a higher overall liking than arbitrary and coined names (Kohli, Harich, & Leuthesser, 2005; Kohli & Suri, 2000). The results of the current study point to the same conclusion, given that self-explanatory and suggestive were rated as important features, whereas coined, Latin, and Greek names were rated as unimportant. My results also concur with the Kollman and Suckov (2007) finding that it is critical for the name to be memorable. In their study of entrepreneurs, the two most critical features of a name were judged to be ease of recall and ease of recognition, which together constitute memorability. In the present study, memorable was rated second highest in importance among the 16 rated characteristics.

The implication from this study is clear. If necessary, it may be cost effective and expedient to rely on nonprofessional (consumers) opinion about naming an Internet-based course delivery system. If one can afford it, it may be best to consult a professional experienced in the art of naming, but one can rely on the "wisdom of crowds" if necessary and select a name endorsed by a majority. These results add credence to the use of the general public for coming up with names.

LIMITATIONS

Although they were not naming professionals, the participants in this study were college-educated individuals. An unanswered question is whether their level of education was a critical factor in their ability to recognize what constitutes best practices in the business of creating product names.

It is unknown whether persons with lower levels of education could also effectively identify these practices. Perhaps this is a question that can be answered in future research.Some readers may have concerns about a factor analysis with 16 variables and a sample of 92 participants.

I acknowledge the danger of overfitting the data , but wish to point out that the problem may not be as serious as it appears on first blush. The issue of the proper sample size for an exploratory factor analysis remains debatable. Typical rules of thumb are based on either overall sample size or the ratio of variables to participants [see de Winter, Dodou, & Wieringa (2009)]. A very common recommendation is that the sample size should be at least 100, but some authorities on the subject contend that it can be as low as 50. In terms of the second criterion, most sources on the subject recommend that the ratio must be no lower than 5 participants for each variable, but ratios as low as 3:1 have been deemed acceptable by some methodologists. Notably, the more recent literature on this topic considers the recommendations based on sample size and on participant-to-variable ratio to be overly simplistic. The adequacy of a sample for an exploratory factor analysis depends on the communalities, loadings, number of variables per factor, and the number of factors. Generally, the stability of a factor solution improves with increases in

- **sample size**
- **communalities,**
- **higher ratio of number-of-variables to number-of-factors.**

However, the impact of the ratio of variables to factors decreases as the communalities increase (de Winter, Dodou, & Wieringa, 2009; Hogarty, Hines, Kromrey, Ferron, & Mumford, 2005; MacCallum, Widaman, Zhang, & Hong, 1999).Communalities, which indicate the percent of variance in a given variable explained by all the factors jointly, are a good guide as to the stability of a solution because they reflect the reliability of the variable. Preacher and MacCallum, (2002, p. 160) maintain that "as long as communalities are high, the number of expected factors is relatively small, and model error is low (a condition which often goes hand-in-hand with high communalities), researchers and reviewers should not be overly concerned about small sample sizes."

McCallum et al (p. 96) indicate that the mean level of communality should be to be at least .7 and that the communalities should not to vary widely. In the current study, the average communality was .65 (*SD*=.17), which rounds out to .7, and 11 of the 16 communalities were above .6.Generally, it is desirable for a factor to be defined by at least 3 variables. Usually, one would have to regard as unstable any factor on which fewer than three variables load. This requirement was met for four of the five factors. The exception was the factor labeled descriptiveness, which was defined by one variable with a positive loading and one variable with a negative loading. However, conceptually it made sense ("self –explanatory" and "coined" should be negatively correlated).

Finally, it must be recognized that the factor analysis was not central to this study, and the other conclusions stand without accepting the credibility of the factor analysis.

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APPENDIX

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	self-explanatory		.000	.235	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.005	.000	.000
2	original			.000	.000	.000	.000	.000	.000	.011	.694	.000	.000	.380	.000	.001	.006
3	memorable				.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.070	.002	.001
4	Latin word					.320	.000	.003	.000	.000	.000	.001	.000	.000	.000	.000	.000
5	Greek word						.000	.005	.000	.000	.000	.003	.000	.000	.000	.000	.000
6	English word combinations							.119	.113	.134	.132	.115	.132	.140	.128	.123	.128
7	coined								.000	.000	.000	.630	.002	.000	.000	.000	.000
8	meaningful acronym									.000	.000	.000	.010	.000	.000	.000	.000
9	arouses curiosity										.063	.000	.000	.009	.000	.000	.000
10	conveys prestige											.000	.000	.228	.000	.000	.002
11	rhymes												.000	.000	.000	.000	.000
12	play on word													.000	.000	.000	.000
13	short														.000	.012	.084
14	easy to pronounce															.251	.195
15	appealing associations																.525
16	suggests/hint key features																

Probability Levels of Pair-wise LSD comparisons

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USING MOBILE PHONES TO PROMOTE LIFE SKILLS EDUCATION AMONG OPEN SCHOOLING STUDENTS: Promises, Possibilities, and Potential Strategies

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ABSTRACT

Across the globe, life skills education has been usually developed as part of a school initiative designed to support the healthy psychosocial development of children and adolescents. In other side, formal education system not always provides young people with good opportunities to become confident and realize their potentials. In this back drop, the biggest challenge is to identify the best strategies for providing effective life skills education to those many children who never attend secondary school or reach an age of high vulnerability and risk taking behaviour in the years immediately before reaching secondary school. Considering the situation that in different parts of the world, majority of the youths is having a mobile or will have a mobile soon, the researcher is of the view that mobile phones can be a viable option to offer life skills education to open schooling students coming from different cultural and social settings and backgrounds. Following this approach, present paper mainly discusses about: promises offered by mobile phones for life skills education; possibilities for using mobile phones as an effective, efficient and economical option for offering life skills education; and potential strategies to offer mobile phones supported life skills education to open schooling students.

Keywords: **Mobile phones, open schooling students, life skills education, M-learning Strategies**

BACKGROUND

Life skills education is a concept which originated in thinking about training and education about skills and competencies that an individual needs for sustaining and enriching life (Bender, 2002). At the heart of life skills education is the learning of life skills. Life skills are abilities for adaptive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life. In particular, life skills are a group of psychological competencies and interpersonal skills that help people make informed decisions, solve problems, think critically and curatively, communicate effectively, build healthy relationships, empathize with others, and cope with and manage their lives in a healthy and productive manner' (WHO, 2001, p.8). The ten core life skills as laid down by WHO (1997) are: *Self-awareness, Empathy Critical thinking, Creative thinking, Decision making, Problem Solving, Effective communication, Interpersonal relationship, Coping with stress, and Coping with emotion.*

Life skills are developed as a result of a constructive processing of information, impressions, encounters and experiences, - both individual and social - that are a *part of one's daily life and work* and the rapid changes that occur *in the course of one's life.* The social dimensions are particularly important as they condition life itself and compel individuals to purposefully acquire skills, develop attitudes and values in order to face and master real life situations (Ouane 2002). Considering these benefits, countries are now considering the development of life skills education in response to the need to reform traditional education systems, which appear to be out of step with the realities of modern social and economic life. Problems such as violence in schools and student drop-out are crippling the ability of school systems to achieve their academic goals. Furthermore, in addition to its wide-ranging applications in primary prevention and the advantages that it can bring for education systems, life skills education lays the foundation for learning skills that are in great demand in today's job markets (WHO, 1999. p.2).

LIFE SKILLS EDUCATION TO STUDENTS: Purposes and Challenges

Initiatives to develop and implement life skills education has been undertaken in many countries around the world, although, these initiatives differ in nature and purpose. In Zimbabwe and Thailand the impetus for initiating life skills education was the prevention of HIV/AIDS. In Mexico, it was the prevention of adolescent pregnancy. In the United Kingdom, an important life skills initiative was set up to contribute to child abuse prevention, and in the USA there are numerous life skills programmes for the prevention of substance abuse and violence. In South Africa and Colombia an important stimulus for life skills education has been the desire to create a curriculum for education for life, called "Life Orientation" education in South Africa and "Integral Education" in Colombia (WHO, 1999, pp.1-2). In addition to help the individuals to adopt positive and protective behavious, life skills education has been seen as empowering and enabling them to take more responsibility for their actions.

Life skill education is aimed to help the individuals in many ways, as observed by Francis (2007), "Life skill education is a value addition programme for the youth to understand self and able to assess their skill, abilities and areas of developments. Which also enable them to analyze their capacity to enhance the function in a most productive way. Life skill education allows the youth get along with other people, able to adjust with their environment and making responsible decision. Which also incorporate to build up their values and to communicate effectively." Regarding the psycho-social impact of life skills education, a report from UNICEF (2005, p.5) presents very interesting note, "The literature indicates that there is little evidence to suggest that teaching general life skills in school will lead to desired behaviours. Yet the literature on HIV prevention programming, which takes a life skills approach, shows that people can be taught to adopt and sustain desired behaviors if certain criteria are adhered to."
Across the globe, life skills education has been usually developed as part of a school initiative designed to support the healthy psychosocial development of children and adolescents. In other side, formal education system not always provides young people with good opportunities to become confident and realize their potentials.

Rather, young people who are not so successful in learning competition may lose their confidence and hopes for their future prosperities. For some people, education backgrounds and names of University enlarge future possibility and prosperity.

For many people, education background could become a lifetime complex (Miyazawa, 2011). In this back drop, the biggest challenge is to identify the best strategies for providing effective life skills education to those many children who never attend secondary school or reach an age of high vulnerability and risk taking behaviour in the years immediately before reaching secondary school (UNICEF, 2005). Mobile phones, recognized as one of the most used, easily available and economically viable communication devices in the world, can help a lot to promote this cause.

MOBILE PHONES FOR LIFE SKILLS EDUCATION: Promises and Possibilities

Mobile phones are used for a variety of purposes, including keeping in touch with family members, conducting business, and having access to a telephone in the event of an emergency. Beyond their utility as a technology of information exchange, cell phones have inserted themselves into the cultural fabric of societies across the world (Bell, 2006). An editorial from Heeks and Jagun (2007) suggests that mobile phones have brought three kinds of benefits. First, incremental benefits, improving what people already do-offering them faster and cheaper communication, often substituting for costly and risky journeys; Second, transformational benefits that offer something new, e.g. m-banking and m-commerce that are bringing enabling people to use mobile phones to pay for goods and services; and Third, production benefits that result from the creation of new livelihoods, not only through professional telecommunications jobs but also through activities like re-selling airtime or phone cards. Probably, they missed the fourth and foremost benefit of mobiles- offering educational services to millions of people at minimal cost (Misra, 2012).

The mobile learning (m-learning) value proposition, albeit underdeveloped, purports to extend the reach of learning opportunities to remote areas, thereby supporting the expansion of educational access. Mobile learning also enables an improvement in the quality of education by opening up new avenues for informal, personalized and situated learning. In addition, mobile learning can potentially promote social equity by allowing marginalized groups access to decision making (Isaacs, 2012). Looking at m-learning in a wider context, we have to recognize that mobile, personal, and wireless devices are now radically transforming societal notions of discourse and knowledge, and are responsible for new forms of art, employment, language, commerce, as well as learning. Cobcroft et al. (2006) suggest that m-learning can support the social construction of knowledge amongst learners by enhancing their critical, creative, collaborative and communicative engagement within the sites of application of knowledge.

Mobile markets across the globe are experiencing continued rapid growth. Considering the situation that in different parts of the world majority of the youths is having a mobile or will have a mobile soon, we can use mobiles to educate youths about life skills education.

This argument is based on the fact that m-learning has the potential to improve efficiency in the education sector and expand educational opportunities to underserved communities in remote areas. Depending on the context, m-learning can be useful in number of areas like expanding educational opportunities; increasing efficiency; enhancing quality of learning; enhancing quality of teaching; sustaining lifelong learning; facilitating skill formation; advancing community development; improving policy planning and management (Meleisea, 2005).

The findings from the "m-learning.org" project of European Union reveal that mobile helps learners to improve literacy and numerical skills, raises learner confidence; encourages independent and collaborative learning; and removes formality from the learning experience.

Talking about the possibilities of using emerging technologies for offering life skills education, International Youth foundation (2006) advocates, "Whether it be e-mail, the internet, digital cameras, video and audio-recording equipment, computer software, or mobile phones, technology can be a valuable asset in delivering life skills programs. Of particular benefit is that young people find working with such media exciting and creative. Today's technologies offer youth a means of expressing their views, of connecting with the wider community, and acquiring 'hard skills,' ranging from increased computer literacy to proficiency in operating a video camera. Other essential life skills developed through technology-oriented programs include self-confidence, communication, decision making, problem solving, and teamwork." Banking on this positivism, efforts of varied nature are taking place in different parts of the world to use technologies including mobiles for offering life skills education.

In Netherlands, Youth Press Agency (YPA) offers participants to create a video, a website, a radio broadcast, or a newspaper to explore issues ranging from homosexuality to careers to how community members coped during a major heat wave. The findings suggests that programme helped participants to work together to achieve a common goal. The Cámara! Programme in Mexico offers youth an opportunity to shoot videos focusing on the harsh realities e.g., poverty, crime, and pollution. One of the greatest benefits of the programme was engaging young people in the life of their communities and addressing the alienation experienced by youth who often feel marginalized in their societies. In U.S. a programmme called Make a Connection Thru Art, makes it possible for young people to work with professional artists to create visual art and written works and share their final creations online and on CD and DVD. This programme has also helped them to experience, discuss, and learn from the works of their peers (International Youth Foundation, 2006).

Slowly more specific efforts are also taking place to use mobiles for life skills education. In South Africa, the Dr Life Orientation and Life Skills (LOLS) project uses mobile phones to provide advice and subject-support to learners and teachers of LOLS, a recognized subject in the South African school curriculum geared toward personal growth and social, intellectual and emotional development. LOLS topics include-HIV/AIDS, drug abuse, child abuse and study skills. The learners have reported that they gained technological and digital literacy skills related to mobile phone use and internet safety, as well as other life skills, through the programme. Participating teachers indicated in interviews that they learned more about the curriculum, improved their texting skills and overcame their fears of technology (CSIR, 2010). In India, a report from Centre for Women's Development and Research underlines that mobile are ideal and more effective than computers to reach out the rural adolescent girls to provide comprehensive sexuality education and life skill training to develop relevant skills needed to plan their career and life (Renuka, 2005).

Revealing about one such effort in Thailand, Miyazawa, (2011) observes, "The penetration of mobile phones in Thailand is high. If they are more than 18 years old, all of them literally have mobile phones. Some already have smart phones and spend considerable time in social networks.

We try to feature the 21st Century skills that have been advocated by the governments and private corporations as much as possible. To support young people to obtain these skills, we would like to take three main approaches. One is the daily mobile learning. Young people will receive interesting, useful and inspiring SMS messages on life skills /21st Century skills every day and night. They will keep them in their minds, think of them and create new questions with their curiosity. They are expected to respond with SMS from time to time." These observations lead us to believe that m-learning with the aim of improving knowledge, skills and competence can be a viable option to offer life skills education to youths coming from different cultural and social settings and backgrounds.

USING MOBILE PHONES TO PROMOTE LIFE SKILLS EDUCATION AMONG OPEN SCHOOLING STUDENTS: Potential Strategies

A look on these past and present initiatives of using mobile establishes two things. First, it is practically possibly to use mobile phones to transform the delivery of life skills education and training in as the obtained results are encouraging and promising. Second, all these initiatives are more or less country and context specific as none of them propagates to use mobile phones in wider perspective. Whereas, need of the hour that we must think out of the box and try to utilize the real potential and promise of mobile phones for life skills education. In this backdrop, following strategies that are based on the 'affordable cost and reach to illiterate' feature of mobile phones (Misra, 2011) can help a lot to open schooling institutions and agencies to promote life skills education among students.

Sending Mobile Alerts About Life Skills Based Audio Programmes

Mobile companies offer the facility of mobile alerts to their customers. Under this facility, companies alert their customers about special offers, latest events and other useful information. Open schooling institutions/agencies can use this feature of mobile services in a unique way. As first step, the institutions/agencies will be required to put different life skills based audio education programmes on institutional websites for live steaming or download. Afterwards, institutions/agencies may send mobile alerts to students detailing about nature, purpose and availability of programmes.

These mobile alerts and regular updates will especially help the students to listen life skills based audio education programmes as per their convenience and ease.

Distributing Life skills Based SMSs/MMSs

The other notable use of mobile will be to send 'life skills based 'SMSs/MMSs' to students with a request to spread these SMSs/MMSs to other youths. These SMSs/ MMSs will help to create awareness about life skills in youth community and this awareness will ultimately help them to join life skills movement for social and individual benefits. Open schooling institutions/agencies can also request youths to share their innovative and indigenous life skills practices with other students in the form of SMSs/ MMSs.

Broadcasting Life Skills Based Education Programmes on FM Channels

Students often use mobile for listening FM radio programmes. Banking on this tendency, the open schooling institutions/agencies can broadcast life skills based programmes like stories, drama, expert talks, discussion forums, etc. on FM channels.

The students of open schools may be informed and advised to learn from these programmes by sending mobile alerts. The students may also be motivated to record their own programmes on life skills education via mobiles and send them to FM radio stations for broadcast.

Establishing Life Skills Education Mobile Call Centres

Every mobile company has customer care centre to provide free of cost consultancy to their customers. Taking clue from this scheme, open schooling institutions/agencies can establish Life skills education centre via mobile network to provide consultancy and counseling to students. The interested students can contact these centers by using toll free numbers. This step will be helpful to improve the communication and awareness about life skills education among student community. Besides, these centres will also help students to put their queries and apprehensions about life skills education to experts without disclosing their identity.

Encouraging Students To Make Life Skills Based Video On Mobile

The best way to teach students about life skills education is to help them to learn from the experiences of others and their surroundings. To make this happen, open schooling institutions/agencies can ask the students to make mobile based videos related to different aspects of life skills. The students can also be encouraged to share these videos via MMSs. To promote this life skills videos making habit among students, open schooling institutions/agencies can run special training programme/courses for open schooling students. The institutions/agencies can also organize life skills based video competitions for open schooling students. These competitions will help the students to showcase their videos for use and benefit of other students.

Offering Life Skills Based Mobile Games

Students use mobile a lot to play games. This tendency of students can be exploited to promote life skills education among them. The open schooling institutions/agencies can develop different mobile based life skills games and put it on mobile platforms for free download. These games will help the students to understand and realize the importance of life skills education in their lives. Besides, everyday playing of these games will help the students to make life skills practices and habits a part of their life.

CONCLUSION

Talking about the challenges of promoting life skills education, UNICEF (2005, p.5) observes, "In South Asian schools, life skills are taught as a stand alone curriculum, a component of an existing curriculum (i.e. social studies), an extracurricular activity, or a blend of these....This is problematic given that many students in South Asia never attend secondary school and that many are vulnerable or are exposed to risks in the years prior to secondary school. It is also unfortunate that many in-school life skills programmes do not question the societal structures underlying the vulnerabilities and risks they seek to reduce, and have difficulties linking the development of knowledge, attitudes and life skills to the practice of positive and protective behaviours."

This observation clearly establishes that societies need to provide more information and opportunities about life skills education to students. The use of mobile offers immense possibilities to face this challenge. The researcher has a belief that adoption of proposed strategies by open schooling institutions/agencies will certainly be helpful to promote life skills education particularly among out of school students.

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SURVEY OF DISTANCE EDUCATION ROLE IN UTILIZATION OF ENVIRONMENT COMPONENTS IN HIGHER EDUCATION

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ABSTRACT

The aim of this research is survey of distance education role in utilization of environment components in higher education. This research in phase of goal is applied and in base of research method is a descriptive survey. Statistical society in this research is student of TEHRAN PNU university in 2010-2011 that research method is in base of stratified sample .this selection has been done among ten provinces that had the most frequency at these universities. It has done with MORGAN formulation for four hundred people. Gathering instruments of information is questioner, which is in base of the research purpose. ALFA Cronbach's was used for durability and validity (α=0.86).in this research statistical method is descriptive and inferential with SPSS (one-sample T Test). Results illustrated that students believed distance education does not have any role in effect ions of environmental education and Independent-samples T-test shows that distance education instruction will change the environmental behavior of student to achieve goals. Also in view of responders, there are barriers in distance education utilization for performance of environmental education.

Keywords: **Distance education, environmental behavior, higher education, environment education, constant improvement.**

INTRODUCTION

Recently, increase of society does not estimate in base of past scales rather constantly of society to environmental problems and protection of natural resources, observance of constant progress scales and protection of Environmental variety that means protection of nature ,progress of Culture as a basic scales for estimating of society increase.

In the world, constant progress, protection of resources and environment pay attention to nature ecology unification and society as a tow variable goals, Not only among countries, so in the residential globe (Sholtez, 2007:292). The environmental thought of land maybe much more desire of human, but it will not possible unless with promotion, widespread publication and continuum of Environmental education among diverse classes of society.

The first step in explanation of environmental education is instruction that it's rang is flexible among urban environment to complex forestall and ….and the most important difference between new education to traditional education are increase of desire to participation of citizens in management and organizing of environment with increasing of knowledge, awareness and change of their behavior that all of them are problems, though in this world education has a different meaning. Science and technology made the necessity of evolution undeniable in process of education activities. We cant regard to learners and their training with past attitude. Nowadays, educational system should train forces. They should be enabling for perception of complex world also is creative in management and leadership and behave logically (Shabani, 2005:67).

So, for answering to economic, social, cultural and environmental needs, society should have made basic evolution in education system (Alayi, 2003:373). Because it is the affective factor for using of whole past saves, increasing of qualification and making the necessary skills in people for having a best life.

Today, the most experts believe that one of the factors for progress of society is public education offer. But, the most countries cant offer the public education with using of personal education because population increasing is the most factors for lack of skillful education staffs and demand face to face relationship between learner and instructor, and capacity of limited acceptation in personal education system. So, one of the possible way for offering of public education is utilization of distance education. (Salmani, 2008; 6).

THE EXPRESSION AND NECESSITY OF RESEARCH

Always nature and environment, that are field of life، s human, have special importance of technology, industry and population, irregular utilizations to resources which endanger human. In according to instruction will be the most effective tool for contrasting to future challenges, especially protection of environment. One of the manners to challenge with this great danger is pay attention to education. For achieving to this important goal, centralization and focus on affective training are essential and it needs recognition to scales of environmental education. Because, despite of objective tensions in base of environment, people should adapt themselves to environment that its root is extremely consistent. It، s because of that, education is able to prepare a suitable basis for improvement and progress of developing countries, also necessary policy for challenging to tension among local and national areas. Despite of Speed and rate of scientific production, modern gathering manners, analyzing and publication of information ,increase of society to utilize various information , they caused to creation of social term that calls information period,wh ich its affections on divers scales ,obvious completely (Montazer, 2002:176).

Distance education is sample of system that is result of technology, s progress of communication. Distance education i‌s manners were been famous in the end of twentieth decades .obviously, increase of needs in continuum instruction and ovation of new manners in science and communications, caused to distance education turn into the most activities in field of instruction (Tafazoli moghadam, 2009:219). Rather to mechanical life with anxiety such as: place, time and distance, this kind of education is needed.

Ebrahim Zadeh (2004) Believes that the movement to creation of changing in traditional manners and utilization of modern Technology, that should be start from higher education to bottom for instance preschool against whatever that is usual ,can emerge from higher education at university.

Because preparedness for using of knowledge and modern technology, which is in base of research efforts and thought result, is more than other ‌s education.

Based on the view of attar an. electronics communications technologies to be extended, they involve changing the learning and education infrastructures based on time and place states. Clearly, while, technologies such as electronic learning adapted professors face the challenge and this involves potential capabilities for changing the trainings and structures.

By adapting training system and promoting the science and technology and communications the future will be optimistic training can pave the route for any situation to be progressed and make a decision facing the crisis in the level of national and world wide. e- Learning is a typical created by these technologies and burgeoned in the last decay of 20 century. In other words, need to cover these problems and enhancing the level of skills and science entails the emerging of it and based on this, e- learning is of help to adapting technology and more advanced things and this is taken into account in the programs of audience and students as well as cases the respondent reaction toward this to be more accepted. In addition, cases the ways to be more comforting for authorities in the realm of recognizing the problems. Eco- system must be operation for public and specialized. (Nemati, 2009:25)

For learning-teaching in curriculum and in base of environmental problems for students and other audiences, also it can help programmer and officials of higher education for environmental education to identification of guide lines and effective activities. That reason is, environmental education should turn into continues current for general and particular. Distance education and its planning in the society consider as undeniable necessity for transferring of knowledge and information, which caused to advance the Goal of environmental education.

THE RESEARCH OBJECTIVES

- **Does distance education change students‌ environmental behavior?**
- **Does distance education cause environmental education, effectiveness in students?**
- **Does utilization of distance education achieves to environmental education goals?**
- **Study of barriers for utilization of distance education to Performance of environmental education.**

RESEARCH QUESTIONS

- **Q1 Does distance education change students' environmental Behavior?**
- **Q2 Does distance education cause environmental education effectiveness in students?**
- **Q3 Does utilization of distance education achieves to environmental education goals?**
- **Q4 Are there barriers for utilization of distance education to Perform environmental education at university?**

BACKGROUND RESEARCH

Jahanzad Farahnaz offered a suitable thesis for development of environmental education in order to motivate with use of Virtual education .her thesis is about "study of virtual education' role in complement and development of environmental education at PNU University (2009) in grade of Master degree." That result is consist of teachers and educational experts Believed that utilization of virtual education for development of environmental education is so important ,but the importance of this kind of education is less than others. Also, they believe that virtual education' utilization in environment education is so effective. Virtual education utilization of environmental education' goals is so important. it shows that virtual education' ability fulfills environmental education goals. Also responders believed that recent barriers for utilization of virtual education in order to environmental education, performance, are lack of financial advocating, this advocating of students for using of ICT, not to be enough communicative foundation for virtual space, dissimilarity of recent facilities 'communication technology with student 'needs, the internet band for technical education.

Taghavi, Marzieh presented a modern educational approach to high school about high school administrators attitude in Tehran .her thesis is" the survey of utilization barriers to virtual education in high school about high school administrators at SBU university in Tehran(2004-2005)". The research results show that related factors such as: financial, technical, man-made and organized ,are barriers as administrators viewpoint exception of resistance of school 'administrators than presence of virtual education development inside of traditional education. There are four factors about evaluation of deterrence rate, that are consist of equip mental, financial, social and man-maid factors. Rrezaie Iraj researched as" the creation of motivation and needs in various audiences for improvement of effectiveness in virtual education at SBU University in 2003". This research explains suitable misperception of audience about wasting of financial resources and time as a main factor in environmental process that is caused to irreparable damages to nature .there for tow solutions should analyze in order to develop awareness, recognition of people about environmental problems.

- **Economical, cultural, mental and religious factors should be used for making of motivation in audiences.**
- **Offered program imitates patterns to attract audiences comfortably.**
- **Motivate audiences consider as the most central department in education and all of our efforts won' t be affective until audience does not have any motivation for Learning.**

Yaser zahtab E yazdi, study is "awareness, rate, attitude and Professors, environmental behavior through descriptive and Survey manners". It was done in Tehran, in grade of master through descriptive and inferential manners. Results presented that Professors have a suitable awareness Attitude and behavior regarding to environment, also awareness, rate has a basic role for determine of environmental behavior. Professors' environmental tendency affects their behavior male professors have more trend than female, but female professors have more positive attitude and behavior than environment, it is against of male Professors.

METHODOLOGY

In base of methodology, this research is descriptive with survey approach because researchers, goal is explanation of everything that should be in descriptive approach and researcher tries that achieved situation be objective which calls descriptive detector. This approach pays attention to study of qualification and people characteristic in the society (Hafeznia, 2005:62). It, s for that reason, this approach goal is description of situations or elements of that could be for recognition more than available situations or help to decision making approach (Sarmad, 2007:82). Survey uses as analyzing of society qualifications, this kind of research studies situations, nature, relationship between events and present situations (Sarmad, 2007:82).

Statistical Population

In available research, all PNU university studies in each department are as Statistical population (with 102090 people) in 2010-2011.The selection of this kind of group as research population are for that reasons :

- **Acceptable society for researcher.**
- **Qualifications of PNU University as free and distance education.**
- **Tehran PNU university has the most frequency in discipline and tendency, also educational grads between other universities and other provinces.**
- **Having more students between other PNU universities in other provinces.**

Statistical Sample

Statistical population is students of PNU University in Tehran, in three ranks that are consist of discontinuous bachelor, bachelor, Master of Science. The sampling is in base of CLUSTER sampling, for about ten departments at PNU University in Tehran that have the most students. Four disciplines selected (education, physical education, Computer engineering, agricultural engineering) in three grades between male and female in 2010-2011. Reason of this selection is being more frequency among these disciplines than others at PNU University that in base of MORGAN chart with 400 people as stratified random sampling.

RESEARCH METHOD

In this survey research method is questioner with thirty base of LIKERT classification.

Questioner Reliability and Validity

In this research, validity of content uses as measurement method, so questioner in base of research variables.

Experts' opinions and professors in distance education, environment and resources have been used for determination of research stability through SPSS and ALFA Cronbach's coefficient (α=0.86).

Introduction of Questioner Test

Analyzing of research questions has been done with SPSS to describe and make inference research questions. In descriptive statistic, some indexes used such as:

Central tendency, dispersion to frequency table, normative variables. To facilitate analyzing of result One -sample T-test has been used.

Statistical Analyzing

Research data analyzed through one –sample test. Descriptive result and inferential statistic are consist of concerning to PNU university students as statistical population, the first table was presented in base of sexuality Separation among 400 students with 60male (35%) and 260, female (65%).

Table: 1
Distribution and frequency percentage in base of sexuality Separation

Sex	Frequency	Frequency percentage	Collective frequency
Male	140	35.0	35.0
Female	260	65.0	100.0
Total	400	100.00	0

The second table was presented in base of discipline Separation that the most statistical sample is education, about 48% of whole population then Computer engineering 26.5%.

Table: 2
Distribution and frequency percentage in base of discipline Separation

Discipline	Frequency	Frequency percentage	Collective frequency
Physical education	50	12.5	100
Education	192	48	87.5
Computer engineering	106	26.5	39.5
Agricultural engineering	52	13	13
Total	400	100	

Descriptive Data of Research Questions

Descriptive data about research questions determined through utilization of mean, standard deviation. Each question analyzes through One-sample T test. Achieved mean compares to 3(index), either. (Table: 3)

Table: 3
Presents statistical indexes (mean, standard deviation) that is related to each

Questions	Frequency	Standard deviation
Does distance education change students environmental Behavior?	2.93	0.98
Does distance education cause environmental education, effectiveness in students?	2.63	0.59
Does utilization of distance education achieve to environmental education, goals?	2.885	0.89
Are there barriers for utilization of distance education to Perform environmental education at university?	1.92	0.83

First Question

Does distance education change students, environmental Behavior? The Table 4 presents that distance education changes students, environmental Behavior (p>0.05), mean (2.927) is equal to 3(index).

Table: 4
Result of independent-samples T-test" The study of distance education utilization for changing of students, environmental Behavior"

Variable	mean	Standard deviation	Variance	T-Value	F	P-value
Distance education changes students, environmental Behavior	2.927	6790	70.0	-1.476	399	0.141

(p>0.05), mean (2.927) is equal to 3(index).

Second Question

Does distance education cause environmental educatio effectiveness in students?

The Table: 5 presents that distance education does,nt cause Effectiveness of environmental education. (p<0.05), that mean (2.63) is less than 3(index).

Table: 5
Result of independent-samples T-test" The study of distance education utilization affects students, environmental education"

Variable	Mean	Standard Deviation	Variance	T-Value	F	P-Value
Cause environmental education						
Cause environmental education, Effectiveness in students	2.631	695.0	-863.0	-12.369	399	0.00

(p<0.05), that mean (2.63) is less than 3(index).

Third Question

Does utilization of distance education achieve to environmental education, goals?The table 6 presents that distance education doesn't achieves to environmental education goals (p<0.05).Achieved mean (2.88) is less than 3(index).

Table: 6
Result of independent-samples T-test" Utilization of distance education achieves to environmental education, goals"

Variable	mean	Standard deviation	variance	T Value	F	P value
utilization of distance education achieve to environmental education in students	2.885	0.894	-511.0	2.571	399	0.01

(p<0.05).Achieved mean (2.88) is less than 3(index).

Fourth Question

Are there barriers for utilization of distance education to Performance of environmental education at university? Seventh table presents that there are some barriers for utilization of distance education to perform environmental Education (p<0.05).because mean (1.92) is less than 3(index).

Table: 7
Result of independent-samples T-test "Utilization of distance education achieves to environmental education goals"

Variable	Mean	Standard Deviation	Variance	T-value	P value
Are there barriers for utilization of distance education to Perform Environmental education at university?	1.92	0.825	-1.078	-26.13	0.00

(p<0.05).because mean (1.92) is less than 3(index)

CONCLUSION

In base of result ,distance education can be used as a suitable method to change attitude and skills that recent generation need it for facing to severe environmental crisis ,also according to result development of environmental education and increase of influence and performance , through distance education are not affective , its reason is mismatching of facilities and non-using about distance education to solve environmental problems .So, we cannot be helpful that about effectiveness without consideration of distance education foundations . At first these foundations should recognize before making decision and then use it for achieving to distance education objectives .in base of observations, although educational methods can be used for encouraging of learners to achieve environmental education objectives and protect environment, utilization of distance education is not effective onward achieving to environmental educations objectives.

So, utilization of distance education is one of environmental educations objectives for stable development ,it considers as a factor for creation of co operational learning environment that let learners and teachers study about problems and express manners toward educations objectives.

For this purpose ,tow strategy should be used as short-time and long-time for solving of recent problems .long-time strategy reviews modern educational methods and have a comprehensive studies in other countries .shore- time strategy tries to solve problems and consider programs to long-time strategy ،objectives in a shore- time strategy ,but in base of a suitable manners.

As regards to social, political and economical problems could consider as barriers to achieve the best objectives.

The results of research explain, despite of some barriers to utilize environmental education through distance education, we should effort to develop environmental education with use of modern technology and other distance education .in this way preparation of environmental education curriculum ought to in base of distance education to perform.

"Study of professors, attitude, awareness and environmental behavior at Tehran University, which has been done by Yaser Zahtab (2010), explains that higher education acts successfully to help students in order to inform about their role ,encourage a suitable behavior which is related to environment, creates ability in decision makers to use environmental approach .also, helps learner to respect the world and enjoy it then perception of thought and environmental act for promotion of international recognition and stable development.

"The manner of motivate and creation of needs in various audiences to improve environmental education effectiveness at SBU university, that has been done by Iraj Rezaei (2003), expresses unsuitable perception about environmental education by audiences causes to wasting of financial resources and losing the time as a main factor in environmental process, which result to irreparable damages to nature.

There is a research as "study of virtual education role in evolution and development of environmental education that has been done by Farahnaz Jahanzad (2009), the result of this research is not same as our result.

It is because of unsuitable manner for performance of research with recent research, also difference between research samples that presents abilities of this kind of education is useful to achieve environmental education goals."the survey of barriers for utilization of virtual education In high school about high school administrators ،opinion in Tehran (2004-2005), that has been done by Taghvai. This research presents that financial, technical, man-made and organizing factors, consider as barriers about administrators, opinion exception of resistance of high school administrators than presence of virtual education development inside of traditional education. There are four factors such as: equip mental, financial, social and man-made factors as barriers about measurement of deterrence rate.

Research Restrictions

This point is so important; there are some restrictions that cause result implications to whole of PNU University.

- **Utilization of achieved questioner.**
- **Limitation of statistical population to PNU university's students in Tehran.**
- **Lack of recent resources about environmental education in distance education.**
- **Lack of students in discontinuous bachelor and absence of them at university, because lessons were his reader, so they could not answer questioners.**
- **Time limitations (performance of coincide with the end of education)**

RESEARCH SUGGESTIONS

- **Creation of media and special network for promotion and changing of environmental behavior in society.**
- **It is suggested to informal organizations help development of informal education through distance education and encourages them to perform educational planning for creation of environmental responsible behavior.**
- **In spite of the fact that the most environmental education objectives are related to education about environment, it is suggested to contents consider as connection between education and environment ,so contents should be about Destruction , renewal, protection of environment and a kind of environmental pollution in distance education which all of them must be included in books.**
- **Meet and discussion should be about environment for students at university, also environmental expressions ought to invite in this meeting.**
- **Service training should pay attention for professors of distance education about environmental problems.**
- **Lifetime distance education through related officials and organizations.**
- **Scientific committees should make in base of rethinking, recreation and reconstruction objectives in distance education to environmental education in higher education.**
- **The increase and development resources and recent technical facilities should consider at university.**
- **Its better that improvement of technical foundations be coincided to quantitative progress of distance education about environmental education.**
- **One of the most important indexes at university should improve students' literacy about computer.**

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SUPPORT AND SOCIAL ACTIVITIES IN INTERNET-BASED DISTANCE EDUCATION

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ABSTRACT

In this study, it is aimed to propose practical suggestions through determining the state of support activities and social activities among internet-based educational programs in distance education. In line with this aim, students' and instructors' views related with support activities and social activities practiced in the programs within internet-based distance education models applied in Mersin University Mersin Vocational Schools were gathered. 502 students and 30 instructors participated in the study. The quantitative data was collected through surveys, and the qualitative data was gathered through interviews. Frequencies and percentages were used to analyze the categorical data. Moreover, the qualitative data was analyzed via content analysis. According to the findings of the study, students needed to get support about education directives, career guidance, technical equipment, and personal problems.

The most frequently visited sources to get support by students are teachers, secretariat, and administrative units. However, students did not consider the supports they got from these units as sufficient. According to most of the students and instructors participated in the study, being involved in social activities was so prominent specifically to provide motivation for students. However, it seems impossible to be engaged in social activities in distance education due to the nature of distance education.

Students generally regarded themselves as unsocial, and they considered provided social interaction environment as insufficient. Students and instructors expressed that they mostly interacted through social networking sites. Further, they stated that the social environments they mostly faced with each other were final exams and graduation ceremony.

Keywords: **Distance Education, ınternet-based learning, support activities, social activities.**

INTRODUCTION

In the 21st Century in which technological developments change the world, training services also keep up with the change, and they provide individuals with life long learning. Distance education comes to the forefront with its technology-based lessons as being rapidly developing in new world order, as alternative to traditional campus-based structure.

Distance education, which occurs mostly when students and teachers are separated in terms of place and time (Moore and Thompson, 1997: 1; Perraton, 2010), emerges as an education process based on communication theories and education philosophies (Chaney, 2005).

Internet-based learning as education trained through using all kinds of internet environment is defined in many sources as the most rapidly developing kind of distance education (Imel, 1997; Singh and Reed, 2001; Perraton, 1998:34, Cited in: Usta, 2007).

The future of internet-based distance education programs possesses endless means since it is limited to technological developments bound to human imagination (Burns, 2011). Nowadays, technology becomes the most prominent part of the lives of the generation who was born and developed in digital world (Morgan and Bullen 2010; Kenny and Wirth, 2009).

Distance education which provides training to the students who cannot have formal education due to several reasons also contributes to educational equalization through reaching more students in higher education. It enables education right to women, who could not continue their education due to the fact that they are obliged to work or they faced with gender apartheid, and physically handicapped people (Chaudr and Rahman, 2010). Distance education raises its importance as being the most appropriate education system to today's adult learners' reality. Adults plan their own learning through using materials in internet-based education environment.

Many universities in the world follow distance education studies, and they carry on their studies to open new units. When appropriate basis is provided, it is emphasized that the effectiveness and success of distance education will increase (Varol and Bingol, 2002).

In today's world, internet-based education is presented as the alternative of traditional education. The analysis of the studies which compares face-to-face education and internet-based education shows that internet-based distance education is more effective than face-to-face education at very small scale and it is proposed that this difference will become larger in favor of internet-based education parallel with the developments in internet technology in the forthcoming years (Sahin, 2004).

INTERNET-BASED DISTANCE EDUCATION

Internet-based learning, as provided through using every internet environment, is defined in several studies as the most rapidly developing distance education type (Imel, 1997; Perraton, 1998:34; Singh and Reed, 2001). The future of internet-based distance education programs possesses endless means since it is limited to technological developments bound to human imagination (Burns, 2011). Internet-based distance education programs are designed to meet the needs of adult learners and provide learning to individuals in line with functional aims. In these programs it is aimed to actualize individuals' personal learning aims or perform their profession better (Clark and Mayer, 2005:13). Internet-based education may be defined as the education model which is carried out time and place independent, which computer is used as the tool for learning, presentation, and communication, and which is carried out in two different types according to student's and teacher's being in the interaction with each other synchronously and being asynchronously (Askar, 2000: 23).

Based on this difference, education environment can show also differences. Calli (2002) emphasizes when the satellite and large band technologies of asynchronous distance education actualized through limited internet and network infrastructure are stabilized, synchronous education will be applied in real terms, hereby it may be provided richer and more qualified education than formal education by eliminating communication and interaction problems. Since internet-based education includes internet pages designed for teaching, voice and image tools, interactive tools (chat, video conference, and so forth.), mass media (electronic mail, list and news groups), and so many other sources, it is a program that raises students' mental activities and has encouraging characteristics of research (Ozarslan et al., 2007). During the process of education, it is important to motivate students and give regular feedback to them (Ragan, 2009).

Preparation of the content of the lesson, evaluation of the assignments and projects, preparation of the exams, providing interactive communication environments need to be taken into account (Carr et al., Cited in; Al and Madran, 2004), and active learning needs to be encouraged (Graham et al., 2000).

Among the points that educators in distance educations need to take into consideration while determining the content of the lesson there are "teaching purposes, learners' needs, the most frequent access, the appropriateness of proper learning materials for learners' requirements" (Graham et al., 2000).

During the process of teaching-learning, teachers play an effective role as a guide of this process. At this very point, it is also quite important that the related teacher has distance education experience. Further, within the scope of internet-based distance education, internet page design is also vital in order to optimize the efficacy of the internet-based distance education. Internet page serves to the aim of teaching methods' practice, and it is the most prominent learning environment in which learner and teacher interact with each other. Within distance education programs, support activities and social activities occupy an important place among the most vital dimensions in promoting education and teaching. However, when the studies about the distance education programs (Bontempi, 2003; Cardak, 2006; Dimri and Chaturvedi, 2009; Karatas and Soncul, 2007; Küçük, 2010) are illustrated, most of the asserted missing points are related with support activities and social activities. Students need to take various support services both before the education service and during the time of education.

Thanks to these support services, it may be contributed to the development of students' self-efficacy and own management skills, and to actualize teaching objectives (Burn, 2010) in that these skills are the ones that students need to gain according to modern educational approaches. Support activities not only need to be used in order to actualize the teaching objectives, but also need to be used in the fields such as learners' knowledge, technology, psychological support, financial support, and et cetera. Students need to be supported to have necessary equipment so as to follow the lesson. Under the title of technological support, there appears both equipment support and raising the proficiency of technical knowledge. Moreover, there are library services, guiding services, administrative services, record services as support activities (Khan, 2004).

When it is investigated in terms of social activities, communication among students, instructors, technical and administrative personnel in distance education system, and the social side of this interaction differ from face-to-face education.

Behavioral pattern developed on the basis of technology is observed. It is quite important to provide an effective communication among the partners who form a unique community specifically in terms of student motivation (DiRamio and Wolverton, 2006; Svensson, 2002).

Social communication is generally fulfilled through social networking site in internet-based distance education. Universities have responsibility of enabling such communication. Apart from such official networking sites, there are also environments in which students establish to communicate with each other.

There appears a different view about the level of face-to-face interaction of individuals in the system or the importance of the activities based on face-to-face communication. There may be isolation problems in the group in case of exclusion of face-to-face communication (Dolan, 2011). Students' feeling as being part of a group and aspiring for collaborating with the others are among the important factors for actualizing teaching objectives and promoting students' motivation.

In the light of this information, among the main items in distance education programs, support activities and social activities are examined in this study. It is considered that the obtained data will contribute to the relevant literature.

This study is prominent in terms of the current state of the program, having information about its strong and weak points, and the application of this information in the studies of developing a program. When it is considered that there are few studies related with the mentioned issues of distance education, this study becomes important in the field.

In this study, support activity and social activity dimensions of eight programs (Computer Programming, Electronics Technology, Electronics and Communication Technology, Control and Automation Technology, Pharmacy Services, Management, Medical Promotion and Marketing, Health Care Management) in Distance Education Models applied in Mersin University Mersin Vocational School are investigated based on instructors' and students' views under distance education principles.

In line with this aim, research questions of this study are as follows:

- **What are the *views of students* about support activity and social activity dimensions of the programs executed via distance education in Mersin University Vocational School?**
- **Is there a significant difference in the mean points of the items according to gender, the graduated high school type and working experience (whether working in a job or not) variables as regards to the support activity and social activity dimensions of the programs executed via distance education in Mersin University Vocational School?**
- **What are the *views of instructors* about social activity dimension of the eight programs in distance education model executed in Mersin University Vocational School?**

METHOD

In this study, the situation determination was done through using survey model. The survey model is a research methodology which aims to describe a situation that either existed in the past or has been occurring presently as it exists (Karasar, 2008:86).

In the present study, the views of the students and the instructors in the mentioned program were gathered thorough using open-ended and close-ended survey items and interviews in order to determine the current situation.

The population of the study comprised of the instructors and the students in eight programs which distance education model was executed in 2010-2011 academic year in Mersin University Mersin Vocational School.

The population was not that much for sampling, therefore, sampling methodology is not preferred in the study.

The total obtained data percentage, after eliminating the surveys which were not coded appropriately or were not returned back, represented the whole population (Neuman, 2009: 350-351). The population of the research and the percentage of participation in the study were seen in Table: 1

Table: 1
The Population of the Study

STUDENT	INSTRUCTOR												
THE NAME OF THE DEPARTMENT	STUDENTS WHO ENROOLED FOR THE TERM (n)	STUDENTS WHO PARTICIPATED IN THE RESEARCH (n)	THE PERCENTAGE OF STUDENTS' PARTCIPATION IN THE STUDY (%)	TITLE	Instructors (n)	Instructors who participated in the interview (n)	The percentage of participation in the study (%)	Instructors who participated in studies related with distance education or adult teaching (n)	Instructors who participated in training related with distance education or adult education (%)	DUARATION OF INSTRUCTORS' LECTURING IN DISTANCE EDUCATION		DURATION OF LECTURING IN DISTANCE EDUCATION (n)	PERCENTAGE OF LECTURING IN DISTANCE EDUCATION (%)
COMPUTER PROGRAMMING	406	269	53,6	Prof.	4	3	75	0	0		fewer than 1 year	5	17
PHARMACY SERVICES	190	96	19,1	Assoc. Dr.	5	4	80	1	25		1-2 year	10	33
ELECTRONIC COMMUNICATION TECHNOLOGIES	99	63	12,5	Asst. Prof. Dr.	10	8	80	1	12,5		3-4 year	8	27
MANEGEMENT OF HEALTH CARE INSTITUTIONS	60	13	2,6	Instructor	14	12	86	1	8,3		5-6 year	4	13
ELECTRONIC TECHNOLGY	80	26	5,2	Lecturer	4	3	75	0	0			3	10
BUSINESS MANAGEMENT	30	10	2										
MEDICAL PROMOTION AND MARKETING	25	12	2,4										
CONTROL AND AUTOMATION TECHNOLOGY	38	13	2,6										
TOTAL	**928**	**502**	**54**	**Total**	**37**	**30**	**81**	**3**	**10**		**30**	**30**	**100**

According to the table-1, the number of the students who enrolled for the spring term and continued their education in Mersin University Distance Education Programs was 928. Since the study was limited to the students who enrolled for the spring term, the population of the study was accepted as 928. The students were asked to fill in the Student View Questionnaire Related with Distance Education Programs. The number of the questionnaires answered appropriately and returned back was 502.

The percentage of the students' participation in the study was determined as 54%. There were 37 instructors who taught in eight programs which distance education model was being executed within the spring term of 2010-2011 academic years in Mersin University Mersin Vocational School. The interview was conducted with 30 instructors who accepted to participate in the study. The percentage of instructors' participation in the study was determined as 81%.

When the distance education experiences of the participant instructors were investigated, it was seen that 17% of the instructors have taught fewer than one year in the institutions in which distance education is executed, 33% of them have taught between 1-2 years, 27% of the instructors have taught between 3-4 years, 13% of them have taught between 5-6 years, and 10% of them have taught more than 10 years.

When the participation of the instructors in in-service training, congress, symposium, and et cetera in the fields of "distance education" and "adult education" was illustrated, it was observed that 10% of instructors participated in such training. The distribution of the students according to some variables was presented in Table: 2.

Table: 2
The Distribution of the Students According to Some Variables

Variables	SUBCATEGORIES	n	%
Gender	Male	350	69,7
	Female	152	30,3
Total		502	100
Work Experience	Working	400	79,7
	Not working	102	20,3
Total		502	100
Age	18-21	84	16,7
	22-25	266	53
	26-30	122	24,3
	31-35	19	3,8
	36 and over	11	2,2
Total		502	100
THE NAME OF THE DEPARTMENT	Computer Programmıng	269	53,6
	Pharmacy Servıces	96	19,1
	Electronıc Communıcatıon Technologıes	63	12,5
	Manegement Of Health Care Instıtutıons	13	2,6
	Electronıc Technolgy	26	5,2
	Busıness Management	10	2
	Medıcal Promotıon And Marketıng	12	2,4
	Control And Automatıon Technology	13	2,6
Total		502	100
Graduated High School Type	General High School	306	61
	Vocational High School	196	39
Total		502	100

According to Table 2, male students comprised of the most of the participants in this study (69,7%). The participants' 30,3% were constituted by female students. When students' work experience was considered, it was observed that most of them (79,7%) were working, and few of them (20,3%) were not working. When students' age range was investigated, the most of them, 53% percentage of them, were between 22-25 years old. Students' 24,3% percentage of them were between 26-30 years old. In terms of the enrolled programs, "Computer Programming" was placed on the top of the list as it constituted more then half of the participant students (53,6%).

"Pharmacy Services" was ranked as the second with 19,1% percentage, "Electronic Communication" was placed as the third in the list with 12,5% percentage. When participant students' graduated high school type was illustrated, 61% of them were graduated from general high school, 39% of participant students were graduated from vocational high school.

In this study, as quantitative data collection tool, "Student View Questionnaire Related with Distance Education Programs" which was prepared by the researcher, and designed through consulting to a specialist and reviewing the literature was used in order to obtain students' views. Draft questionnaire was formed with 10 items related with support activities and 6 items related with social activities based on the relevant literature and the data obtained through pre-study questionnaire applied to instructors and students.

The views of expert instructors, one professor and two assistant professors in Educational Sciences Department (Curriculum and Instruction) , one professor, one associate doctor and two lecturers who work in Mersin University Mersin Vocational School Distance Education Programs, were gathered in order for validation analysis of the draft questionnaire.

The prepared questionnaire was applied to a pilot group formed by 11 distance education students in Mersin University Mersin Vocational School as a pre-study. Students were reached with the support of Vocational School. The application was done in Mersin University Mersin Vocational School between March, 3-7.

After the application of the questionnaire, the incomprehensible items were detected and necessary revisions were done, and the questionnaire was finalized.

"Student View Questionnaire Related with Distance Education Programs" is uploaded into internet page (http://uzak4.mersin.edu.tr) of Mersin University Mersin Vocational School between 26 February-20 May 2011.

Students marked one of the alternatives, "agreed (0)-undecided (1)-not agreed (2)", in the 16-item-questionnaire. The analysis of the obtained data was done through using SPSS (Statistical Package for the Social Sciences) 11.5 and MedCal.v.11.01.

The illustration of students' views was presented through descriptive statistics as percentages and frequencies.

The differences between students' views and variables' item point averages were determined through t test analysis. Statistically meaningful difference is determined as $p<0.05$.

As a qualitative data collection tool, interview with instructors was used in this study. Interview technique, used as a widespread in qualitative studies, is a strong method used to reveal personal views, experiences, and feelings (Yildirim and Simsek, 2005:104). "Semi-structured interviews" with instructors were conducted in the study. Semi-structured interview is a technique which some part of it is formed with structured questions, and some part of it is formed with unstructured questions that enable individuals to response freely (Erkus, 2005: 101).

In developing "semi-structured interview" technique and its application, firstly semi-structured interview form was formed in line with the third sub research question of the study. While the interview form was being prepared, it was noticed questions' being clear, focused, and open-ended (Yildirim and Simsek, 2005:128-134). Interviews were conducted in offices of the instructors between 1 April-10 May 2012 by the researcher.

"Qualitative content analysis" was used in order to analyze interview data. Content analysis is defined as deep analysis done in order to reach concepts and relations which explicate the obtained data (Yildirim and Simsek, 2005:223-227).

Examples of coding related with each theme were written in quotation marks in a faithful way to their original statements. Coding of the data was also done by two field experts independently apart from the researcher. Agreed and disagreed codes were determined after coding the whole data, and inter-reliability among coders was calculated according to Reliability formula of Miles and Huberman (1994). Since the obtained results were more than .70, codes were found reliable.

FINDINGS AND DISCUSSION

Findings and Discussion Of The Sub-Problem

10 items were constructed in "Student View Questionnaire Related with Distance Education Programs" with the aim of eliciting students' views about support activities. In this part, table 3 presents the findings related with these items.

Table: 3
Frequency and Percentage of Students' Views Concerning Support Activities in Student Questionnaire (n=502)

Questionnaire Items Related To Support Activities	agreed		undecided		not agreed	
	f	%	f	%	f	%
1. E-Counselling service provides us to ask our questions about lessons to our advisory.	189	37,6	125	24,9	188	37,5
2. Counselling services facilitate to accommodate with distance education.	200	39,8	114	22,7	188	37,5
3. Support services such as help desk, telephone, e-mail, text messages, and et cetera are sufficient enough to ease solving our problems about the running of the system.	170	33,9	113	22,5	219	43,6
4. It is easy to contact with student affairs.	246	49	89	17,7	167	33,3
5. School secretary is interested in our problems.	210	41,8	131	26,1	161	32,1
6. We have opportunity to reveal our problems about learning with the help of counseling services.	133	26,5	152	30,3	217	43,2
7. Activities that students can communicate with each other through web are designed.	187	37,2	131	26,1	184	36,7
8. Time plan is designed in order that we can consult with instructors in the academic term within the frame of our problems.	156	31,1	120	23,9	226	45
9. Instructors are interested in students .	190	37,8	128	25,5	184	36,7
10. We have chance to contact with executives.	164	32,7	145	28,9	193	38,4

According to table 3, fewer than half of the students (37,6%) did not agree on the item "E-Counselling service provides us to ask our questions about lessons to our advisory". Very few of the students were undecided in this item.

Moreover, fewer than half of the students (37,5%) were disagreed with the item. While fewer than half of the students (39,8%) agreed with the item "Counselling services facilitate to accommodate with distance education", very few of the students (22,5%) were undecided. Further, very fewer than half of the students (37,5%) disagreed with this item. Very fewer than half of the students (33,9%) agreed with the item "Support services such as help desk, telephone, e-mail, text messages, and et cetera are sufficient enough to ease solving our problems about the running of the system". While very small part of the students (22,5%) were undecided with this item, nearly half of the students (43,6%) disagreed with this item. Nearly half of the students (49%) agreed with the item "It is easy to contact with student affairs". Few of the students (17,7%) were undecided. Fewer than half of the students (33,3%) of the students disagreed with the item. Almost half of the students (41,8%) agreed with the item "School secretary is interested in our problems". Very small part of the students (26,1%) were undecided, and fewer than half of the students (32,1%) disagreed with the item. Quite fewer than half of the students (37,3%) agreed with the item "We have opportunity to reveal our problems about learning with the help of counseling services". Quite fewer than half of the students (30,3%) were undecided, and very fewer than half of the students (36,7%) disagreed with the item. Quite fewer than half of the students (31,1%) agreed with the item "Activities that students can communicate with each other through web are designed". Very small amount of students (26,1%) were undecided, and almost half of the students (45%) disagreed with the item. Considerably fewer than half of the students (37,8%) agreed with the item "Time plan is designed in order that we can consult with instructors in the academic term within the frame of our problems". Very small number of the students (23,9%) were undecided, and quite fewer than half of the students (36,7%) disagreed with the item.

Quite fewer than half of the students (32,7%) agreed with the item "Instructors are interested in students". Very small number of the students (25,5%) were undecided, and quite fewer than half of the students (38,4%) disagreed with the item. Very small number of the students (26,5%) agreed with the item "We have chance to contact with executives". Very small number of the students (28,9%) also were undecided about the item. Nearly half of the students (43,2%) disagreed with this item.

Support activities play active roles in each phase of distance education programs. Within these activities, executives' and administrative personals' expertise in this field is prominent for using support activities effectively (Yang, 2010). The number of such kind of activities have been increasing recently; however, merely small number of educators and team who work in support activities have been adapted to this programs (Huang et al., 2011). Nevertheless, support activities are quite important for the efficiency of distance education programs and students' being adapted to programs (Thomas and Soares, 2009). According to the findings of the study, nearly half of the students found support activities as insufficient. When the relevant literature is reviewed, there appear different findings related with this issue. Studies of Kucuk (2010) and Kaba et al. (2012) support the findings of this study. Like in this study, these studies also found that students' satisfaction degree about support services were lower than the expected results. However, in the study of Cekerol (2005), it was observed that students were satisfied with counseling services. Based on these findings, it may be concluded that our country cannot provide support services so effectively. Institutions which execute distance education programs should give great importance to these actitives since support activities are directly related with planning and managing of the distance education program.

Problems in these activities have negative impact on students' academic success (Doherty, 2010). According to the study, counseling services which is an important dimension of support activities in the relevant programs is insufficient in terms of reflecting students' problems about lessons and facilitating the adaptation of students to distance education system. Students are not informed adequately about distance education system, school's practices and general regulations (passing the lesson, summer school, graduation, and so forth.). In this sense, students regarded counseling course which was taught by the researcher as a source to share their problems and refer when to solve their problems. Based on this, it may be thought that continuation of counseling course practices may be a prominent support activity for students.

Help desk, telephone, e-mail, and text messages are defined as supportive units in the investigated programs; however, it is seen that these services are insufficient to ease solving the problems of the students about running system of the program. Findings of the study support Cardak's (2006) findings about "technical support is not included sufficiently" and Karatas's and Soncul's (2007) findings that present students' problems due to inadequacy of technical support. However, library, technical and financial support, tutorials, and academic guidance services, which are provided in traditional education, need to be also provided to the students who take web-based education in order to motivate students of distance education (Bontempi, 2003). The reasons of students' need for technical support may arise either from the inadequacies of background provided by institution or from students' not having adequate tool and equipment due to their financial inadequacy. Therefore, the need of providing financial support services may emerge. As in formal education, scholarship for students also needs to be met in distance education.

According to the research, one of the most important sources referred with the aim of getting support for their problems related with system and teaching is their advisors and other instructors. However, the findings of the study present that regular and efficient communication is not achieved between students and instructors.

Further, it is found that the interest of instructors to students is so low. The sources of problems may be thought as communication problems with instructors and timing of chat hours. While the findings of the study are supported with Kucuk's (2010) finding, "student participate in asynchronous discussion environment is mostly due to getting educational support, but there are some problems about the time of receiving this support and its quality", Walker's (2003) finding differentiates from this study and from Kucuk's (2010) study with its finding, "teachers are interested in students' problems".

As a consequence of this, it may be thought that communion time is insufficient and students cannot receive sufficient support from the instructors within the frame of problems with instructors in an academic term. Nonetheless, instructors need to be sensitive towards students' individual differences, their responsibilities, and their problems (Murphy and Rodriguez-Manzanares, 2009).

The density and type of social activities in distance education also differ from formal education. Social activities which students may be together psychically and which develop being university student awareness are among the important subjects of education programs. The findings about social activities obtained through Student View Questionnaire Related with Distance Education Programs are presented in Table 4.

Table: 4.
The findings related with social activities obtained through Student View Questionnaire Related with Distance Education Programs (n=502)

Questionnaire Items Related To Social Activities	agreed		undecided		not agreed	
	f	%	f	%	f	%
11. Activities that enable us to meet with instructors and our friends face-to-face are being designed.	127	25,3	115	22,9	260	51,8
12. Meetings such as group dinners, group trips, picnic, and et cetera are organized	84	16,7	103	20,5	315	62,7
13. Informative guiding services about how to benefit from the facilities in main campus are organized.	107	21,3	100	19,9	295	58,8
14. The distance education program we enrolled paves the way for our socialization.	131	26,1	106	21,1	265	52,8
15. Classroom awareness is developed with instructors and our friends.	128	25,5	128	25,5	246	49
16. It is important to vest and participate in parade in graduation ceremony.	160	31,9	245	48,8	97	19,3

According to Table 4, most of the students (25,3%) agreed with the item "Activities that enable us to meet with instructors and our friends face-to-face are being designed". The small number of students (22,9%) were undecided, and nearly half of the students (51,8%) disagreed with the item. Very small number of the students (16,7%) agreed with the item "Meetings such as group dinners, group trips, picnic, and et cetera are organized".

Further, very small number of students (20,5%) were undecided; however, most of the students (62,7%) disagreed with the item. Very small number of the students (21,3%) agreed with the item "Informative guiding services about how to benefit from the facilities in main campus are organized". Very small number of the students (19,9%) were undecided, and nearly most of the students (58,8%) disagreed with this item. Very small number of the students (26,1%) agreed with the item "The distance education program we enrolled paves the way for our socialization". Very small number of the students (21,1%) were undecided with the item. Almost half of the students (52, 8%) disagreed with this item. Very small number of the students (25,5%) agreed with the item "Classroom awareness is developed with instructors and our friends". Likewise, very small number of the students (25,5%) were undecided with the item.

Nearly half of the students (49%) disagreed with this item. Quite fewer than half of the students (31,9%) agreed with "It is important to vest and participate in parade in graduation ceremony". Very small number of the students (31,9%) were undecided, however, nearly half of the students (48,8%) disagreed with this item.

Social activities that may be organized in distance education differ from the ones in formal education. Partners construct a unique social group which shows behavioral patterns developing on the basis of technology (Svensson, 2002). The studies in the relevant literature propound that this social group also achieves social communication generally through internet via social networking sites (Dolan, 2011; Dooley et al., 2005; Kavathatzopoulos, 2006; Morgan and Bullen 2010; Svensson, 2002; Tanyildiz, 2003) and the findings of this study also support this view. However, as a negative result of social relations established through social networking sites, some students regard themselves as asocial.

This problem may be not only related with distance education system, but also this may be among the current problems of social life in today's world. Social support issue of which importance is proven in several studies is ignored in computer mediated communication environments (Kucuk, 2010). According to the findings of the study, students do not think they develop classroom awareness with their friends and their instructors; however, statements such as "*our class, my classmates*" in face-to-face interviews may show that they have class awareness. Further, the reason of students' being mostly undecided about vesting in graduation ceremony may be due to the inadequacy in their sense of belonging towards the university. As it is understood from this finding, students create environments where they can be in communication with each other. According to the findings of this study, students establish social sharing with each other generally through internet. This finding also is also supported with Dolan's (2011) findings. According to the findings of this study, the adjustments that may be organized in order that students, instructors and executives come together and socialize via social activities in related programs are found as inadequate. This finding also shows parallelism with Kucuk's (2010) finding explicating that "Social support of which importance is proven in several studies in computer mediated communication environments is ignored". However, it is quite important to provide environments where eye-contact can be established with the students in web-based distance education (Cosgrove, 2002). Motivation problem emerges as an important issue for distance education program students (Bontempi, 2003; DiRamio and Wolverton, 2006; Iwatsuki, 2009) and it may be thought that this problem can be solved with an effective social interaction mechanism.

Findings and Discussions Of The Sub-Problem

T-test is applied for each item in order to answer the question "Do item point averages of students' views about support activities change according to gender variable?", and the results related with this question is presented in Table 5.

Table: 5
T-test Analysis Table for Students' Views about Support Activities According to Gender Variable

Questionnaire Items Related To Support Activities	Gender	N	$\bar{X}$	S	sd	t	p
1	male	350	,94	,858	500	-1,943	,053
	female	152	1,11	,880			
2	male	350	,96	,875	500	-,622	,534
	female	152	1,01	,891			
3	male	350	1,10	,870	500	,204	,839
	female	152	1,08	,891			
4	male	350	,83	,897	500	-,426	,671
	female	152	,86	,889			
5	male	350	,92	,851	500	,814	,416
	female	152	,85	,864			
6	male	350	1,22	,808	500	2,170	,031*
	female	152	1,04	,832			
7	male	350	1,03	,864	500	1,480	,140
	female	152	,90	,848			
8	male	350	1,11	,857	500	-1,105	,270
	female	152	1,20	,871			
9	male	350	1,01	,856	500	,920	,358
	female	152	,93	,881			
10	male	350	1,03	,845	500	-,948	,344
	female	152	1,11	,834			

According to Table: 5, it is only found significant difference between female and male students in the favor of male students only in the 62nd item of Student View Questionnaire Related with Distance Education Programs about support activities (We have chance of sharing our problems experienced in learning through counseling services). Male students (X= 1,22; S= 0,808) explicated that they share their problems experienced in learning more than female students (X= 1,04; S= 0,832) at (p<.05) significant level.

For the other items in the questionnaire, no significant difference was found (p>.05).

T-test is applied for each item in order to answer the question "Do item point averages of students' views about support activities change according to working experience variable?", and the results related with this question is presented in Table: 6.

Table: 6.
T-test Analysis Table for Students' Views about Support Activities According to Working Experience Variable

Questionnaire Items Related To Support Activities	Working Experience	N	$\bar{X}$	S	sd	t	p
1	working	400	1	,867	500	,102	,919
	not working	102	,99	,873			
2	working	400	,97	,872	500	-,307	,759
	not working	102	1	,911			
3	working	400	1,10	,884	500	,501	,617
	not working	102	1,05	,842			
4	working	400	,81	,886	500	-1,248	,213
	not working	102	,94	,920			
5	working	400	,90	,856	500	,135	,892
	not working	102	,8922	,854			
6	working	400	1,17	,820	500	,144	,885
	not working	102	1,15	,817			
7	working	400	1,02	,861	500	1,340	,181
	not working	102	,89	,854			
8	working	400	1,13	,860	500	-,100	,920
	not working	102	1,14	,871			
9	working	400	1	,872	500	,870	,384
	not working	102	,92	,828			
10	working	400	1,08	,851	500	1,172	,242
	not working	102	,97	,801			

According to Table: 6, when the item point averages related with students' views about support activities were investigated, it was seen that there was no meaningful difference in students' views according to working experience, as working or not working (p>.05).

T-test is applied for each item in order to answer the question "Do item point averages of students' views about support activities change according to type of graduated high school variable?", and the results related with this question is shown in Table: 7.

Table: 7
T-test Analysis Table for Students' Views about Support Activities According to Type of Graduated High School Variable

Questionnaire Items Related To Support Activities	Type of Graduated High School	N	$\overline{X}$	S	sd	t	p
1	general high school	306	,98	,870	500	-,463	,644
	vocational high school	196	1,02	,865			
2	general high school	306	,92	,880	500	-1,529	,127
	vocational high school	196	1,05	,875			
3	general high school	306	1,02	,892	500	-2,217	,027*
	vocational high school	196	1,20	,840			
4	general high school	306	,87	,919	500	,937	,349
	vocational high school	196	,79	,852			
5	general high school	306	,84	,851	500	-1,730	,084
	vocational high school	196	,98	,856			
6	general high school	306	1,14	,827	500	-,916	,360
	vocational high school	196	1,20	,805			
7	general high school	306	1,01	,864	500	,619	,536
	vocational high school	196	,96	,855			
8	general high school	306	1,11	,848	500	-,708	,480
	vocational high school	196	1,17	,883			
9	general high school	306	,93	,850	500	-1,734	,084
	vocational high school	196	1,07	,879			
10	general high school	306	1	,843	500	-1,816	,070
	vocational high school	196	1,14	,835			

According to Table: 7; it is found meaningful difference in the only 59th item among the items related with learning-teaching process in Student View Questionnaire Related with Distance Education Programs in the favor of the students who graduated from vocational high school (p<.05). In the 59th item of the questionnaire (Support services such as help desk, telephone, e-mail and text messages are sufficient enough to solve our problems related with running of the system), the students who graduated from the vocational high school (X= 0,98; S= 0,803) think more than the students who graduated form general high school (X= 0,80; S= 0,842) in terms of exam questions' being prepared at the degree of applicability in the exams.

Table: 8
T-test Analysis Table for Students' Views about Social Activities According to Gender

Questionnaire Items Related To Social Activities	Gender	N	$\overline{X}$	S	sd	t	p
11	male	350	1,28	,826	500	,611	,542
	female	152	1,23	,864			
12	male	350	1,42	,785	500	-1,534	,126
	female	152	1,53	,708			
13	male	350	1,36	,810	500	-,248	,805
	female	152	1,38	,822			
14	male	350	1,27	,832	500	,409	,683
	female	152	1,24	,883			
15	male	350	1,23	,834	500	,085	,932
	female	152	1,23	,825			
16	male	350	,86	,689	500	-,699	,485
	female	152	,90	,740			

No meaningful difference between vocational high school and general high school graduate students and is found in the other items of the questionnaire (p>.05).T-test is applied for each item in order to answer the question "Do item point averages of students' views about social activities change according to gender variable?", and the results related with this question is presented in Table: 8. No significant difference is found between male and female students in terms of the related items with social activities in Student View Questionnaire Related with Distance Education Programs (p>.05).T-test is applied for each item in order to answer the question "Do item point averages of students' views about social activities change according to working experience variable?", and the results related with this question is presented in Table 9.

Table: 9
T-test Analysis Table for Students' Views about Social Activities According to Working Experience Variable

Questionnaire Items Related To Social Activities	Working Experience	N	$\overline{X}$	S	sd	t	p
11	working	400	1,26	,844	500	,135	,892
	not working	102	1,25	,816			
12	working	400	1,45	,757	500	-,444	,657
	not working	102	1,49	,792			
13	working	400	1,35	,818	500	-1,064	,288
	not working	102	1,45	,791			
14	working	400	1,28	,851	500	,945	,345
	not working	102	1,19	,832			
15	working	400	1,23	,842	500	-,136	,891
	not working	102	1,24	,788			
16	working	400	,88	,699	500	,503	,615
	not working	102	,84	,727			

According to Table: 9, when item point averages of students' vies related with social activities are investigated, no meaningful difference is found between the students who is working and the students who is not working as working experience variable (p>.05).

Table: 10
T-test Analysis Table for Students' Views about Social Activities According to Type of Graduated High School Variable

Questionnaire Items Related To Social Activities	Type of Graduated High School	N	$\overline{X}$	S	sd	t	p
11	general high school l	306	1,25	,837	500	-,335	,738
	vocational high school	196	1,28	,839			
12	general high school l	306	1,22	,856	500	-1,261	,208
	vocational high school	196	1,32	,832			
13	general high school l	306	1,36	,819	500	-,292	,771
	vocational high school	196	1,38	,805			
14	general high school l	306	1,39	,783	500	-2,423	,016*
	vocational high school	196	1,56	,724			
15	general high school l	306	1,23	,826	500	-,102	,919
	vocational high school	196	1,23	,840			
16	general high school l	306	,84	,703	500	-,986	,325
	vocational high school	196	,91	,707			

T-test is applied for each item in order to answer the question "Do item point averages of students' views about social activities change according to type of graduated high school variable?", and the results related with this question is shown in Table: 10. According to Table: 10; there is only significant difference between the graduates of vocational high school and the graduates of general high school in the favor of vocational high school graduates in the 70th item, among the items related with learning-teaching process, in Student View Questionnaire Related with Distance Education Programs (p<.05). The students graduated from vocational high school (X= 1,56; S= 0,724) think their education avail their socializing more than the students graduated from general high school (X= 1,39; S= 0,783) in the 68th item of the questionnaire (the distance education program which we enrolled avails our socializing) . No significant difference is found between graduates of vocational high school and graduates of general high school in other items of the questionnaire (p>.05).

To sum up, male students regard support activities as more effective in sharing problems about learning experiences than female students. This finding supports Dimri's and Chaturvedi's (2009) finding which points that "male students are involved in counseling services more than female students". However, these findings differ from Kaba's and et al. (2012) findings which present that the degree of being satisfied with support activities does not change according to gender.

Concerning support activities, there is no significant difference between male and female students. This finding shows parallelism with Dimri's and Chaturvedi's (2009) finding which concludes that "most of the students state that they are satisfied with their learning experiences in the university and there is no meaningful difference between male and female students".

According to the findings of the study, no significant difference is found between the students who are working and the students who are not working in terms of support activities and social activities. Concerning support activities, the students who were graduated from vocational high school think that help desk, telephone, text message, and such support activities are sufficient enough to solve problems about the running of the system. However, the students who were graduated from general high school regard this support services as less sufficient compared to graduates of vocational high school in terms of solving their problems. Based on this finding, it may be thought that learning experiences of the students, who were graduated from vocational high school, which prepare them for working life may have improved their problem solving skills.

These students may be thought as more efficient in getting help from support activities and solving their problems by themselves than the graduates of general high school. Further, concerning social activities, there is a significant difference between the graduates of vocational high school and the graduates of general high school in the matter of distance education program's in which they were enrolled contribution to their socializing. Graduates of vocational high school regard distance education as more effective in their socializing than the graduates of general high school. The differentiation in this item may be due to the expectancy of the students graduated from general high school about being involved in traditional campus-based higher education (Arslan, 2004). In our country, while general high schools serve for students who want to continue their academic education, vocational high schools serve for students who focus on starting working. In line with this, it may be concluded that distance education cannot meet the socializing expectancy of the graduates of high school.

Findings and Discussion Of The Sub-Problem

The findings obtained through semi-structured interviews conducted with 30 instructors who have been teaching in the eight Distance Education programs applied in Mersin University Mersin Vocational School were presented in this part. While displaying attractive and prominent statements of instructors, codes such as "A. lecture., B. lecture." were used. Open-ended questions such as "what are the social activities that can be done in distance education? And "what do you think about the presence of social activities in distance education? Were addressed to the instructors during semi-structured interviews. The obtained findings through content analysis are shown in Table 11.

Table: 11
Frequency and Percentage of Instructors' Views Related with Social Activities in Distance Education Program (n=30)

THEMES AND SUB-THEMES	f	%
THEME: Social Activities		
A. ocial Activity Perception		
1. Not Possible	17	57
2. Increases Motivation	15	50
3. Its not being is important inadequacy	13	43
4. Not necessary	4	13
B. ypes of Social Activities		
5. Chat time	23	77
6. Social networking sites	11	37
7. Final Exams	7	23
8. Trip-picnic-meeting	7	23
9. Graduation Ceremony	4	13

When Table: 11 is investigated, two sub-themes emerge within the context of instructors' views about social activities. Social activity perceptions were coded in the first sub-theme. 57% of instructors regard doing social activities as impossible. Half of the instructors (50%) explicate that social activities increase students' motivation. The percentage of instructors who consider social activities' not being in distance education as inadequacy is 43%; moreover, 13% of the instructors find social activities unnecessary. 77% of the instructors regard chat time as a social activity type. The percentage of the instructors who use social networking site is 37%. 23% of the instructors define final exams, trip-picnic-meeting type of activities as social activities. The percentage of the instructors who regard graduation ceremony as a social activity is 13%.

When instructors' views about social activities were analyzed, the salient and prominent statements were these ones:

A. Lecture: I invite students to the faculty in order to meet with them in the time of final exam and I think that the communication established with the ones who came to the faculty impacts positively on the success of them. I do activities such as chatting related with the department and knowing each other.

B. Lecture: Students create classroom awareness with the help of virtual communication established among them, sometimes I am also involved in this environment.

D. Lecture: We elect class prefect, such activities make them closer to the lessons and each other since social activities are important to make them concentrate on lesson even in distance education.

İ. Lecture.: students sometimes ask for meeting occasionally, doing trip, meeting, and such activities. I also participated in one these activities. However, there were only students who have lived in close destination. Such activities may be motivating if they are done more frequently.

L. Lecture : I do not think being together with students in distance education as necessary, it is also not possible due to their being in different cities.

K. Lecture: It cannot be expected from me to be interested in students since I do not know them, only we have chance to meet in meeting times.

M. Lecture. : Social activities are being organized. Meeting part was organized when students came for exams. We also invite students for graduation ceremony. Further, students can communicate with us in virtual networking sites and chat times, they can share their problems with us. The motivation of the students with whom I meet increases much more.

According to the findings of the study, most of the instructors state that it is impossible to do social activities with the students in web-based distance education environment. The reason of instructors' such attitudes may be considered as their perception of social activity in distance education. Instructors may have been evaluating social activities as face-to-face and in the same place. However, according to the findings, instructors explicate that they mostly interact with students in the internet environment during chat time and in social networking sites. Interaction between instructor and student in web-based distance education often occurs over internet through using e-mails and forum pages (Kavathatzopoulos, 2006). Face-to-face meetings occur in the time of final exams, graduation ceremony and trip-picnic-meeting, and such activities.

This finding supports Hawkins' and et al. (2011) findings which propound interaction between instructors and students occurs through graduation, interaction during lessons, support activities, and meetings. Instructors may gain important output in terms of the continuity of the program and students' vocational guidance as communicating with the graduates. Experiences of the graduates may be guiding both for students and instructors.

According to the findings, instructors state that they want to participate in social activities done with the students. However, it may be also understood from this finding that instructors do not see the planning of social activities as their own responsibility. Therefore, instructors do not create an environment where they can be involved in social activities with students. This finding may be supported with the view emerged in Hawkins' and et al. (2011) research claiming that "the interaction between instructor and students is started with students' questions in various subjects and instructors' expectancy is in line with this". However, being in interaction with students is one of the instructors' responsibilities. Social activities should not be regarded as only face-to-face activities. Even instructors' designing "user-friendly internet page" may foster interaction with students (Bartoletti, 2011).

Interacting with students through using social activities have positive impact on motivation of students towards lessons and students' success in learning (Burn, 2010; Dolan, 2011; Khan, 2004; Svensson, 2002). Likewise, Hawkins' and et al. (2011) claim which they propose the relation between instructor and students and the amount of it is quite effective in distance education supports this study.

CONCLUSION AND SUGGESTIONS

According to the results of the study, the most referred guides of the students to get support are instructors, secretary, and administrative units. However, students regard the support of these units as insufficient. The students who graduated from a vocational high school consider that they get more benefit from such activities than the students who graduated from a general high school. According to experience variable, there is not a significant difference among students' views related with support activities. When gender variable is taken into consideration, male students express guidance activities as more effective when compared to female students.

According to the most of the instructors and students, social activities are so important specifically to foster students' motivation. Nevertheless, social activity work in distance education seems quite impossible due to the nature of distance education. Students generally regard themselves as asocial and they find the provided social interaction environment as insufficient. Students and instructors explicate that they interact mostly through social networks.

Social environments in which they meet face-to-face are generally stated as final exams and graduation ceremony. Based on students' view about social activities, the only meaningful difference is found in graduated high school type variable concerning the correlation between socializing and distance education with regards to variables in this study. Students who graduated from a vocational high school consider that they have chance to socialize by the virtue of the program they were enrolled when they are compared to students who graduated from a general high school.

While preparing distance education programs, it is needed to ground on constructivist approach which is based on active learning and accepted in today's world. The studies in the related literature emphasize the efficiency of distance education programs designed according to constructivist approach (Jonassen et al., 1995; Bronack et al., 2006; Gurol and Demirli, 2001; Valadares, 2007).

In distance education programs, it is needed to build a construct which is based on current knowledge of the learner, and principles of meaningful learning and active learning. A program, which is student-centered, in which many methods and techniques are used, which is not stable, which dynamism is developed according to students' background knowledge, is a constructivist one (Yanpar, 2005:29). Based on the results of the study, in the light of constructivist approach, the implications are as follows:

- **It is needed to provide communication, coordination and cooperation between support services, and define their duties,**
- **It is needed to organize educational seminars about effective communication methods, handling with stress and problem solving for instructors and administrative personnel,**

- **It is needed to enable students with easy access to information sources through designing e-library service,**
- **It is needed to provide psychological counseling and guiding services,**
- **It is needed to plan how to carry on vocational guidance and classroom guidance with the help of organizing seminars for advisors,**
- **It is needed to encourage instructors who take extra tasks (increase online lesson hours, organize seminar) with awarding them for their such works,**
- **7. It is needed to do some works to create classroom awareness among students (e.g. sharing tasks such as class prefect, head boy, and et cetera, or prize competitions between classes),**
- **It is needed to detect communication among students, instructors and executives and their program cohesion through doing research including them all,**
- **It is needed to do questionnaire study in order to illustrate students', instructors' and executives' skills related with technology use and their attitudes towards these technologies. As a result, it is needed to organize seminars for satisfying the detected need,**
- **It is needed provide scholarship for students who ask for it, and it is needed to develop facilities for providing students with laptops in appropriate situations,**
- **It is needed to organize shared academic and socio-cultural activities with graduates,**
- **It is needed to continue education with graduates within the scope of life-long learning,**
- **It is needed to foster students to participate in Erasmus mobility programs and projects which support social and personal development of them through using supports in European Community projects,**
- **It is needed to update students' contact details.**

Authors' note: This article is part of a doctoral dissertation directed by Figen Kilic

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UNIVERSITY TEACHING IN FOCUS: A Learning-centred Approach

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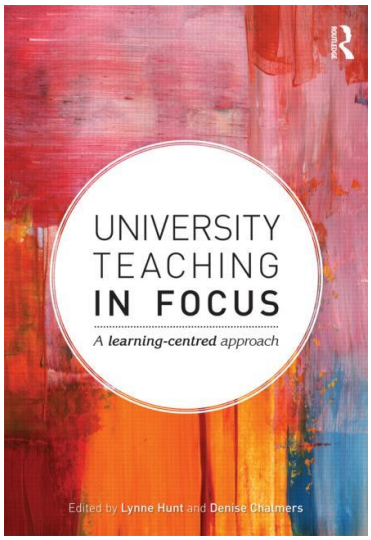

University Teaching in Focus provides a foundational springboard for early career academics preparing to teach in universities. Focusing on four critical areas -teaching, curriculum, students, and quality/leadership- this succinct resource offers university teachers a straightforward approach to facilitating effective student learning.

The book empowers university teachers and contributes to their career success by developing teaching skills, strategies, and knowledge, as well as linking theory to practice. Written in a clear and accessible style by internationally acclaimed experts, topics include: learning theories, assessment, discipline-based teaching, curriculum design, problem-based and work-integrated learning, effective classroom teaching, and flexible modes of delivery.

The needs of diverse student groups are explored and the scholarship of teaching and learning is addressed within a quality and leadership framework. The book also makes reference to seminal works and current resources. Real-world cases illuminate the theoretical content and 'Your Thoughts' sections encourage reflection and adaptation to local contexts. University Teaching in Focus explores ways that teachers can effectively engage students in life-long learning, extending their capacity to solve problems, to enter the workforce, to understand their discipline, and to interact positively with others in a global community throughout their professional lives. The teaching and learning in the higher education has gone a sea change during the past few decades. While teachers have realized the importance of the role of students in teaching and learning process, more and more efforts are made to shift the focus of learning process from teacher to learner. The tools of teaching and learning are integrated in the instructional design in such a way that more and more autonomy and responsibilities of learning are shifted to the learner. The teachers are expected to gain expertise in designing learner-centred activities in the pedagogical process. The volume in hand focuses on this paradigm of instructional process. Different components related to the process are focused by the authors in the book in a nice manner. An in-depth analysis of the core competencies required by the teachers in the university system is provided by the authors.

The old teaching styles of the teachers are now challenged by the learner-centred approach to teaching and learning.

The book spread over 16 different chapters, is divided into 4 parts and each of the parts focuses on a particular domain .e. teaching, curriculum, students and quality and leadership. The figures, tables and case studies in small format related to the topics through out the book, give a real and practical experience and help the reader in understanding the concepts in a more lucid way. Chapter-1 focuses on various theories of learning with key debates on their philosophy.

It initiates an open discussion on various pedagogical aspects and analyses the implications of the learning theories on teaching and learning processes, since awareness of the theoretical framework enables the teacher to optimally use different tools to 'secure learning outcomes' for the students. Chapter-2 discusses the role of an effective teacher in the classroom setting and highlights the use of different instructional styles and design components that help the students in the learning process.
The teachers need to develop a creative learning environment in the classroom by organising the content and various learning activities for different groups of students.

Chapter-3 presents the strong primary influence of the disciplinary context on teaching with 'generally accepted conceptual structures and boundaries' of its communities of practice. Various aspects of discipline based teaching practices are highlighted by the author in the discussion. Chapter-4 focuses on integration of 'graduate attributes' in discipline-based teaching. The 'graduate attributes' are defined by the authors as the necessary 'qualities, skills and understanding' which a student is supposed to have as an active participant of the learning process. The teachers should be able to embed necessary strategies in their teaching styles so as to develop these 'graduate attributes' in their students. Chapter-5 discusses about the different approaches adopted towards assessment. The author views the assessment of learner's performance as a means of promoting learning. The teachers need to review their time old methods of learning measurement used since when 'a smaller proportion of the population participated in higher education' and therefore, the issue remains as to how to redesign the assessment system so that it becomes a 'fit-to-purpose'.

Chapter-6 talks about the practical research-based principles and guidelines for designing subjects. Better subject design will promote student learning. The need for the teachers is underlined by the author to pose and answer 'meta' design questions which should be based on choice of specific subject content and techniques. He highlights the criteria of '7Cs' for a successful curriculum design.

Chapter-7 synthesises different research-based principles and modes for online leaning which can be helpful in creating blended learning environment to enhance the learning outcome for the students. He reiterates 5 strategies as propounded by different scholars as a multi-faceted approach to learning. The seven critical components of blended learning i.e. 'objective, content, instructional design, learner tasks, teacher roles and assessment are critically examined by the author.

Chapter-8 focuses on the undergraduate curricula based on research and explores the related issues. It tries to define the term 'research-led curriculum' in a broader perspective further giving the opinion of using the terms like 'research-based', 'research-active', 'problem' or, 'inquiry-based' to better describe the process.

Chapter-9 discusses about problem-based learning which is based on 'principles of adult education and cognitive psychology'. The process acknowledges the prior experiences and knowledge of the student which influences his behaviour in the classroom setting. These instructional strategies are considered important in developing communication, collaborative and informed decision making skills in the students. The role of reflective behaviour and assessment becomes important in such problem-based learning.

Chapter-10 describes one more approach to learning i.e. Work-integrated learning. It defines the element of work-integrated learning and advocates for constructing work-integrated learning curriculum which includes agreements, views, projects and reflective practices. The variety of terms of engagement in work can be seen as a continuous activity. The 'work-integrated learning focuses on the work itself as a learning activity'. This approach has the capacity to integrate the engagement of work with the learning process so as to benefit not only the learner but also those who are associated and influenced by the learner's work. Inclusive teaching is the focal area of

Chapter-11. The authors explore different important points related to the concept as a broader term. It is not only about registering students from different strata of the society to the university education but also engaging them in effective and enriching learning activities at the same time helping them in successfully completing the respective programmes. This entails the designing of an inclusive curriculum. Broadly the strategies can focus on other issues also like teacher self-awareness and organizational change.Majority of universities face the issues related to teaching of international students.

The Chapter-12 focuses on analysis of nature and extent of international students' *vis-à-vis* addressing the transcultural issues. The main issues highlighted by the authors are: cultural adjustment, social integration, language proficiency, academic integrity and managing intercultural conflicts, The main focus remains on curriculum development and different pedagogical strategies that enrich the learning experiences of the international students.

Chapter-13 focuses on the 'undeniable complexity' of the issues related to 'indigenisation' and their implications in pedagogical framework. The authors quote special reference to Australian philosophy of 'indigenisation' spread over different areas like 'indigenous knowledge, indigenous pedagogy, indigenous cultural protection' etc. The Australian universities are working for 'indigenisation' through integration of 'traditional knowers' and their 'knowledge practices'. Quality of teaching is the concern of the academic communities across the world. This phenomenon has received more attention during the past few decades consequent upon the exponential growth of educational opportunities for the students. While discussing quality management mechanism in the form of 'quality assurance' in the higher education institutions, the author in

Chapter-14 examines the issue as to why quality of teaching matters so much and thus explores the strategies adopted to enhance the quality of teaching in higher educational institutions.

Chapter-15 argues that 'scholarship' leads to quality learning and focuses on the needs of the students. The author view 'scholarship' in two dimensions i.e. about 'improving student learning' and as a systematic 'peer supported process'.

The scholarship of teaching is about 'making transparent, for public scrutiny and how learning has been made possible'. Leadership is one of the important aspects dealt by higher education institutions with a student point of view.

Chapter-16 discusses about 'leadership' as an important quality of teachers while presenting different dimensions of 'leadership' with special reference to teachers. To the author, 'academic work is inherently an act of leadership' as through this teacher vouches for transforming learning experiences of the students.

The book as the name depicts, focuses on different aspects of university teaching from learner-centred point of view. A wise range of issues has been highlighted and properly addressed by the authors in a very diligent manner. It will help the teachers in constructively engaging the students in effective learning. It is a step forward towards empowering the upcoming teachers with necessary strategies and stand point so that they are able to help the students in enhancing their quality learning. The book would be helpful not only to the novice teachers who have just stepped in the teaching profession but also other stakeholders of higher education system.

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A learning-centred approach
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TRENDS AND ISSUES IN DISTANCE EDUCATION: International Perspectives, Second Edition

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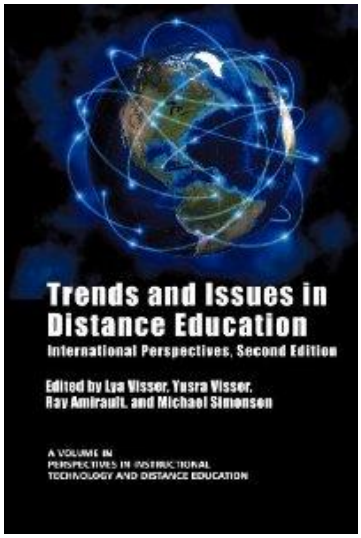

Over the last decade, the field of distance education (and e-learning) has substantially strengthened and assumed a more international scope. There has been an impressive growth in the conceptual, empirical and experiential foundations of the field. Trends and Issues in Distance Education: International Perspectives (2nd Ed) captures a representative snapshot of the breadth of current global trends and issues in distance education theory, research, and practice. Through 21 chapters (from over 30 international authors), the book documents new developments in distance education scholarship and practice, presenting a diverse set of viewpoints on the trends and issues affecting this increasingly central discipline. The book is for researchers, practitioners, and students. Chapters speak to the many creative ways in which distance education addresses learning and human development needs around the world. They focus on distance education in dissimilar settings that extend beyond the limitations of the dominating paradigms of the highly developed economies. Contributing authors touch upon conceptual as well as practical issues. They critically reflect on both large- and small-scale distance education initiatives, discussing the use of everything from the most advanced technologies (e.g., 3-D computing) to the most rudimentary technologies (e.g., wind-up radios) (Quated Amazon Pages)

This book makes a contribution to the field of distance education by offering a comprehensive overview and analysis of the current trends and issues in distance education. In addition, the book is well-organized and coherent in terms of presentation.

The reader is guided by section editors who provides introduction to the section and an overview of the chapters in the section, which makes the book reader-friendly.

The book includes four sections. In Section I, "Perspectives on Global Trends and Issues in Distance Education", the following issues are tackled: the fundamental definition and

understanding of the concept of distance education, the implications of an international research agenda, gauging short-term possibilities and challenges with the integration of commercial Technologies into distance education, the place of postsecondary distance education in a time of globalization, and the lessons to be extracted from the concrete and rich case of distance education in Brazil.

In Section II, "Distance Education in Primary and Secondary Education Settings", the issues that were focused on are: the design and development of virtual secondary school, discussion of e-learning in Portugal, how interactive radio instruction helps students and teachers to learn more effectively when assisted by radio lessons, and reflections on the results of 30 years of distance education experience in Mozambique.

Section III, "Distance Education in University and Other Formalized Higher Education Settings" is the largest section of the book. In general, it focuses on distance education in university and higher education settings.

Section IV, "Distance Education in the Workplace and in Nonformal Settings", is about the use of distance education to meet the needs of learners outside the formal education settings and to meet the education needs of learners' hard-to-reach or forgotten segments of society such as refugees and prisoners.

The chapters that are included in each section can be seen in detail in the Contents part below:

CONTENTS & CONTRIBUTORS

Distance Learning in Aviation :Applications and Impacts on a Global Industry, *Michael Crudden.*

New Tools for Learning: The Use of Wikis, *Evgeny Patarakin and Lya Visser.*

Formalizing Learning Spaces for Refugee Youth, *Barbara Zeus.*

Learning Landscapes: European Perspectives on Distance Learning in Prisons, *Anita Wilson.*

One of the strengths of the book is that it addresses a large number of readers such as students studying about distance education, students studying through distance education, practitioners, instructors, and researchers who are interested in the field of distance education. Another strong aspect of the book is that the chapters presented in the book are impressive in terms of the diversity of topics.

BIODATA and CONTACT ADDRESSES of the REVIEWER

Dilek ALTUNAY is currently an assistant professor in Mustafa Kemal University, department of English Language and Literature. Previously, she has worked in Anadolu University, Open Education Faculty as a lecturer and assistant professor. She received her PhD degree from Anadolu University, English Language Teaching (ELT) program. She obtained her M.A and B.A degrees from Bilkent University, Turkey. She has taught English through virtual classrooms and videoconferencing. She has been involved in online linguistics and second language acquisition courses as course facilitator and course content developer. She has worked for different open and distance education projects, and she has experience as a professional translator. Her academic interests are distance ELT, second language acquisition, text linguistics, open and distance education.

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