International Journal on New Trends in Education and Their Implications (IJONTE)

July, 2011

Volume: 2
Issue: 3

ISSN 1309-6249

http://ijonte.org

International Journal on New Trends in Education and Their Implications
July 2011 Volume: 2 Issue: 3 ISSN 1309-6249

Contact Addresses

Prof. Dr. Zeki Kaya, Gazi Üniversitesi, Endüstriyel Sanatlar Eğitim Fakültesi, Eğitim Bilimleri Bölüm Başkanlığı, 06830 Gölbaşı Ankara/Türkiye
E. Mail: ijonte2010@gmail.com Fax: +903124853123

Prof. Dr. Uğur Demiray, Anadolu Üniversitesi, İletişim Bilimleri Fakültesi, Yunusemre Kampüsü, 26470 Eskişehir/Türkiye
E. Mail: udemiray33@gmail.com Phone: +905422322167

Assist. Prof. Dr. Ilknur Istifci, Anadolu Üniversitesi, Yabancı Diller Yüksek Okulu, İki Eylül Kampusü, 26470 Eskişehir/Türkiye
E. Mail: ilk@ijonte.org or iistifci@gmail.com Phone: +902223350580

Indexed by

Sponsors

International Journal on New Trends in Education and Their Implications
October, November, December 2011 Volume: 2 Issue: 4 ISSN 1309-6249

International Journal on New Trends in Education and Their Implications
October, November, December 2011 Volume: 2 Issue: 4 ISSN 1309-6249

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Contents ISSN 1309-6249

CONTENTS..... i

FROM EDITORS.....iii
FOREWORD..... vii

ARTICLES..... 1-112

MIDDLE SCHOOL STUDENTS' ATTITUDE TOWARD SCIENCE IN CONSTRUCTIVIST CURRICULUM ENVIRONMENT..... 1
Esme HACİEMİNOGLU, Ozgul YILMAZ-TUZUN, Hamide ERTEPINAR, TURKEY

THE INTERPLAY BETWEEN METACOGNITIVE AWARENESS AND SCIENTIFIC EPISTEMOLOGICAL BELIEFS..... 7
Elif AKAR, Ceren TEKKAYA, Jale ÇAKIROĞLU, TURKEY

TEACHING COMPETENCY OF SECONDARY TEACHER EDUCATION STUDENTS IN RELATION TO THEIR METACOGNITION..... 14
Sheeja V. TITUS, P. ANNARAJA, INDIA

OPINIONS OF TRAINERS ON BLENDED LEARNING MODEL IN HIGHER VOCATIONAL EDUCATION AND TRAINING..... 23
Mehmet ŞAHIN, TURKEY

THE ATTITUDE OF STUDENTS TOWARDS SOCIAL SCIENCES IN UNDERGRADUATE STUDIES: A SAMPLE FOR THE COMMUNICATION THEORY COURSE..... 29
Deniz YENGİN, TURKEY

QUALITY MANAGEMENT IN UNIVERSITY EDUCATION PROCESS..... 36
Jozef GAŠPARÍK, SLOVAKIA

THE USE OF LEXICAL NETWORKS IN EFL VOCABULARY TEACHING..... 45
Hasan BAYRAKTAR, TURKEY

PROFESSIONAL CHOICE OF PUPILS WITH SPECIAL EDUCATIONAL NEEDS..... 56
Zdenek FRIEDMANN, Bohumíra LAZAROVÁ, CZECH REPUBLIC

SECONDARY SCHOOL STUDENTS' OPINIONS ON PORTFOLIO ASSESSMENT IN EFL 63
Tolga ERDOGAN, Irfan YURDABAKAN, TURKEY

ASSESSING THE RECEPTIVITY OF OPEN AND DISTANCE LEARNING PROGRAMMES AMONG ORDINARY AND ADVANCED LEVEL STUDENTS: A CASE OF THE ZIMBABWE OPEN UNIVERSITY.....73
Richard BUKALIYA, Farirai MUSIKA, ZIMBABWE

THE MOZART EFFECT IN THE FOREIGN LANGUAGE CLASSROOM A STUDY ON THE EFFECT OF MUSIC IN LEARNING VOCABULARY IN A FOREIGN ANGUAGE..... 88
Yasemin Yelbay YILMAZ, TURKEY

COMPUTER-BASED GLOSSES VS. TRADITIONAL PAPER-BASED GLOSSES AND L2 LEARNERS VOCABULARY LEARNING..... 99
Malahat YOUSEFZADEH, IRAN

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Contents ISSN 1309-6249

LEGAL EDUCATION AND MATHEMATICS..... 103
Z. Gönül BALKIR, Eylem APAYDIN, TURKEY

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 From Editors ISSN 1309-6249

Dear IJONTE Readers,

IJONTE appears on your screen now as Volume 2, Number: 3. In this issue it publishes 13 articles. And this time, 22 authors from 6 different countries are placed. These are Czech Republic, Iran, India, Slovakia, Turkey and Zimbabwe

The first article is from TURKEY on "MIDDLE SCHOOL STUDENTS' ATTITUTES TOWARD SCIENCE IN CONSTRACTIVE ENVIRONMENT", written by Esme HACIEMINOGLU, from Selcuk University, Konya, Ozgul YILMAZ-TUZUN and Hamide ERTEPINAR from Middle East Technical University, Ankara, TURKEY. The purpose of this study is to investigate middle school students' attitude toward science and the effect of gender, grade level and parent education level on students' attitude toward science. The sample of this survey study included 2961 sixth, seventh and eighth grade middle school students in Çankaya, Ankara. Students completed 40 items test of science related attitude (TOSRA) developed by Fraser (1978). MANOVA results showed that grade level significantly affected middle school students' attitude toward science regarding adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science. Gender and parents' education level have influence on only adaptation of scientific attitudes dimension.

The second article is on "THE INTERPLAY BETWEEN METACOGNITIVE AWARENESS AND SCIENTIFIC EPISTEMOLOGICAL BELIEFS", written by Elif AKAR, Ceren TEKKAYA and Jale ÇAKIROĞLU again from Middle East Technical University, Education Faculty, Ankara, TURKEY. This study presents considering the importance of epistemological beliefs in students' learning process and how students reach knowledge; this study explored contributions of metacognitive awareness level to students' scientific epistemological beliefs. Discipline Focused Epistemological Beliefs Questionnaire and Metacognitive Awareness Inventory were administrated to 250 eight graders. Correlation analysis indicated that both knowledge of cognition and regulation of cognition dimensions of Metacognition related with certainty/simplicity of knowledge, source of knowledge, attainability of truth dimensions of epistemological beliefs.

The third article is from INDIA. It is on "TEACHING COMPETENCY OF SECONDARY TEACHER EDUCATION STUDENTS IN RELATION TO THEIR METACOGNITION", conducted by Sheeja V. TITUS and. P. ANNARAJA, from Xavier's College of Education, Palayamkottai, South India, INDIA. In the presented paper investigators made an attempt to explore the effectiveness of metacognitive skills in developing the teaching competency among secondary teacher education students. They described the concept of metacognition as a higher-order cognitive structure. More specifically, metacognition is described as an appreciation of what one already knows, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the agility to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably. Students with good metacognition are claimed to be able to perform efficiently in teaching.

The fourth article which is entitled as "OPINIONS OF TRAINERS ON BLENDED LEARNING MODEL IN HIGHER VOCATIONAL EDUCATION AND TRAINING" is written by Mehmet SAHIN, Selcuk University, Higher School of Vocational and Technical Sciences, Konya, TURKEY. The purpose of this study is to find out the opinions, on blended learning model of the trainers working at Higher Schools of Vocational Education and Training. This study is based on a qualitative research technique: focus group interview. The findings are grouped under the titles such as current situation, positive response of the students, flexibility, collaborative learning, financial and pedagogical aspects, and lifelong learning model.

The fifth article arrived from TURKEY, which is prepared on "THE ATTITUDE OF STUDENTS TOWARDS SOCIAL SCIENCES IN UNDERGRADUATE STUDIES: A Sample for The Communication Theory Course", Written By Deniz YENGİN, Istanbul Kültür University, Istanbul, TURKEY. According to the author, education encapsulates two thirds of our life span. Thus, the author gives direction to our future according to the education we undergo. University students especially are equipped with theoretical and practical information during their undergraduate studies. However, students taking theoretical courses in social sciences have difficulties. In this study, the author examines how university students look at social science courses and according to these results she offers some suggestions.

The sixth article arrived from SLOVAKIA on "QUALITY MANAGEMENT IN UNIVERSITY EDUCATION PROCESS" " and written by Jozef GAŠPARÍK, Slovak University of Technology in Bratislava, SLOVAKIA. In this article the possibility of implementation of quality management trends in education process at the Faculty of Civil Engineering of the Slovak University of Technology (SUT) in Bratislava (Slovakia) is described. Quality of education process depends on many important factors, like high qualification of teachers, good infrastructure concerning the education, library with new books and journals from all over the world, effective university information system etc. In the process of continual increasing of the quality of education process, we can implement quality management system according to ISO 98001:2008, total quality management, reengineering, Kaizen method and model of excellence CAF (Common assessment framework). Implementation of these quality management philosophies at university education process can lead into increasing quality of teachers and our customers-students and through them to application of new world knowledge and experiences to practice. As a result some important documents like quality policy, map of quality assurance and monitoring of education process at university are presented.

The seventh article came from Middle East Technical University, Ankara, TURKEY. Article is titled as "THE USE OF LEXICAL NETWORKS IN EFL VOCABULARY TEACHING", written by Hasan BAYRAKTAR. This study has evaluated the effectiveness of vocabulary instruction via lexical networks and whether this approach aids text comprehension and vocabulary growth in an L2 reading and vocabulary course. The instructional use of lexical networks, more commonly known as semantic maps, was tested against the word-definition matching technique, an approach that focuses on lexical items in isolation, as independent units. The main interest of the researcher was whether the use of a lexical network approach can help students recognize lexical cohesive features of a text and consequently facilitate comprehension of a text and increase vocabulary retention. The results of the study showed that learners' identification of lexical networks in a text can be a useful vocabulary learning device for advanced L2 learners, helping them establish and strengthen the links not only between the items that were the focus of the explicit instruction, but also other semantically related lexical items in the text.

The eighth article arrived again from CZECH REPUBLIC and was written on "PROFESSIONAL CHOICE OF PUPILS WITH SPECIAL EDUCATIONAL NEEDS" by Zdenek FRIEDMANN in Department of Technical Education Faculty of Education, Masaryk University. This paper connects that pupils with specific learning difficulties and behavior disorders are a relatively strongly represented group in Czech schools, which traditionally received special attention. This group of pupils has more serious problems when making educational and subsequently professional choices in the labour market. In the text the author presents data from a quantitative investigation focused on identification of specific features in professional aspirations of pupils with a mild disability, specific learning difficulties and behavior disorders. Attention is paid to selected circumstances and influences which often play a role in the process of decision making, particularly the influence of counseling bodies.

Article nine is on "SECONDARY SCHOOL STUDENTS' OPINIONS ON PORTFOLIO ASSESSMENT IN EFL" which is written by Tolga ERDOGAN, Hacettepe University, Ankara and Irfan YURDABAKAN, Dokuz Eylul University,

Izmir, TURKEY. This study aims to find out the opinions of students on portfolio assessment. The study was implemented in a secondary school English preparatory class. As part of the study, portfolios and portfolio assessment activities were integrated into the program in a treatment group. The analysis of student responses showed that portfolio assessment is a fair method, compared to traditional assessments, it is a more down-to-earth approach, it increases student responsibility and motivates students positively. On the other hand, student responses revealed some negative results, like portfolio studies take time, there is a need to include various types of a lot of tasks in portfolios, and self-evaluations, reviews and corrections of student work entail a lot of student and teacher effort.

The tenth article is titled as "ASSESSING THE RECEPTIVITY OF OPEN AND DISTANCE LEARNING PROGRAMMES AMONG ORDINARY AND ADVANCED LEVEL STUDENTS: A Case of Zimbabwe Open University" from ZIMBABWE and was written by Richard BUKALIYA and Farirai MUSIKA, Zimbabwe Open University, ZIMBABWE. This paper presented was undertaken to establish Ordinary and Advanced level students` receptivity of Open and Distance Learning programmes offered by Zimbabwe Open University. With the proliferation of several higher education institutions, which include among them the eleven universities in the country and at one polytechnic in each of the ten provinces of Zimbabwe, competition for students has become stiff as enrolments in some of these institutions continue to plummet. There was, therefore, a need to establish how receptive these young adults were of the ODL mode, in light of the introduction of the Enhanced Tutorial Programme (ETP) as an innovation in the ODL system at the Zimbabwe Open University.

The eleventh article is on "THE MOZART EFFECT IN THE FOREIGN LANGUAGE CLASSROOM:A STUDY ON THE EFFECT OF MUSIC IN LEARNING VOCABULARY IN A FOREIGN LANGUAGE" written by Yasemin Yelbay YILMAZ, Ozel Final Ilköğretim Okulu, Diyarbakır, TURKEY. She conducted her research at Hacettepe University, School of Foreign Languages and aimed at determining the effect of music on learning and retaining new vocabulary in a foreign language. A secondary aim was to find whether musical intelligence had any effect on learning vocabulary with a music-based syllabus. A syllabus based on brain based learning principles that comprises music as its main component for vocabulary instruction was devised and implemented for 6 weeks. The experiment group got music based vocabulary instruction while the control group followed the same syllabus without the music component. Data have been collected by means of pre and post tests; student written feedback and an interview with random selected students in the experiment group to collect qualitative data. It has been found at the end of the study that the experiment group outperformed the control group with the number of words they learned. The experiment group also retained more words as music acted as a means to code the new vocabulary into the long term memory.

Article twelve arrived from IRAN. The subject of the article is "COMPUTER-BASED GLOSSES VS. TRADITIONAL PAPER-BASED GLOSSES AND L2 LEARNERS' VOCABULARY LEARNING" and written by Malahat YOUSEFZADEH, Islamic Azad University, IRAN. Her study investigated the superiority of computer-based glosses in comparison with traditional glosses. 80 participants were divided into two groups (computer-based gloss group and traditional gloss group). Computer-based group received instruction through computer. i.e. new words were presented with their pictures and L1 translations and traditional group received instruction on the paper only with L1 translation. The results (pre and post-tests) were analyzed using a t- test. The results indicated the superiority of computer-based gloss group over paper-based gloss ones.

The last article is from Turkey. It is entitled as "LEGAL EDUCATION AND MATHEMATICS" and Written by Z. Gönül BALKIR and Eylem APAYDIN from Kocaeli University, Faculty of Law, Kocaeli, TURKEY. They mentioned in their article that there is a natural integrity between law and mathematics arising from mathematics' being the primary device in the area of technical law even though the character of relationship between them is debatable. Instrumental use of mathematics is extremely important for technical aspect of law. Mathematical logic, statistics, probability logic, simulation models cannot be used in legal context without establishing the mathematics and mathematical relations. While the legal system with mathematics aims to create or construct

a more comprehensive and systematic world than a complex system or chaos; mathematics is the universe of the abstract and perfectly formed numerical collocations. In this context, law is the system of formed human relations, which is tried to be created by social mind. The necessity of mathematical understanding in legal world, on one hand, proves how important mathematics is in legal education and on the other hand, it demonstrates how similarly both legal and mathematical systems are formed. Law and mathematics emerged as the formed result of humanity's search for perfection.

Cordially,

Editors
Prof. Dr. Zeki KAYA, Gazi University, Ankara, TURKEY
Prof. Dr. Ugur DEMIRAY, Anadolu University, Eskisehir, TURKEY.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Foreword ISSN 1309-6249

Foreword

Dear Colleagues,

I am very glad to write a 'Foreword' to the third issue of the second volume on *The International Journal of New Trends in Education and their Implications* (IJONTE). There are only a few refereed journals in the field of education published from the developing world; and therefore IJONTE and its editors deserve our special congratulations.

As you will see from the past issues, the journal has been covering a wide range of areas and topics, especially those that have currency at the present times, and which teachers, academic managers and researchers are grappling for quite some time. This issue also includes research papers on a variety of areas and issues which should be of interest to all those involved in educational policy and practice of any form.

Quite a few papers deal with constructivism and meta-cognition which are critical areas insofar as quality of teaching and learning is concerned. In general and traditional classroom education and more so in open/distance/online learning it is crucial that we design educational and training programmes which provide for learner construction of knowledge and negotiation of meaning. This encompasses the initial stages of curriculum planning and design through learning resources and instructional facilitation to the stage of assessment and evaluation. Crucial to constructivist curriculum and instruction is that both the teachers and the learners reach a stage of meta-cognitive discourse so that the quality of learning is of high order. Both online learning and social technologies do facilitate this higher order learning. To this can be added the current 'blended learning' which in contexts of both classroom and distance education can be so designed as to accommodate constructivist and meta-cognitive strategies in order that both self-reflection and community-reflection are possible.

You will also find in this issue research papers on special needs education, portfolio assessment, open and distance learning, music in learning, legal education, and quality management. Papers in these areas further enrich the coverage of the journal, and provide avenues to an array of researchers to have a single platform to present their finding. I am sure you will enjoy reading these papers, use those in your practice, and also be motivated to further share your work with this journal.

All my best wishes to you all.

Prof. Dr. Santosh PANDA

Professor Santosh Panda started his teaching career at the Faculty of Education, Kurukshetra University, Haryana in 1984; and is currently a Professor of Distance Education at the Staff Training & Research Institute, Indira Gandhi National Open University.

In the past, he has been, Director, Centre for Flexible & Distance Learning, University of the South Pacific, Fiji. Director, Staff Training & Research Institute, IGNOU twice for six years. Director, Inter-University Consortium for ICT-Enabled Education, IGNOU for three years. Director, Association of Indian Universities for three years. Senior Fulbright Scholar in University of New Mexico, USA. Visiting Professor at: Manchester Metropolitan University, UK; & University of London, UK. Adjunct Professor at University of Maryland, USA.

During the past 26 years of university teaching, he has provided consultancy for: British Council, Commonwealth of Learning, IDRC, UNDP, UNESCO, World Bank, Ford Foundation; and governments of China, Nepal, Lesotho, and Nigeria, He has visited, presented keynotes, and conducted workshops in 25 countries: Bangladesh, Cambodia, Canada, China, Ethiopia, Fiji, France, The Gambia, Ghana, Indonesia, Lesotho, Germany, Hong Kong, Kenya, Nepal, Nigeria, Turkey, Sierra Leone, Singapore, South Africa, Thailand, The Netherlands, UAE, UK, and USA.He sits in the Editorial Board of over 15 internationally refereed journals including: International Journal of Educational Media (USA), International Journal for the Scholarship of Teaching & Learning (USA), Journal of Research in Learning Technology (Routledge, UK). He has extensively published internationally, and his latest books include: Planning and Management in Distance Education (Routledge, London), & Economics of Distance and Online Learning (Routledge, New York).

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 1 ISSN 1309-6249

MIDDLE SCHOOL STUDENTS' ATTITUDE TOWARD SCIENCE IN CONSTRUCTIVIST CURRICULUM ENVIRONMENT

Dr. Esme HACIEMİNOĞLU
Selçuk University,
Elementary Science Education,
Konya, TURKEY

Assoc. Prof. Dr. Özgül YILMAZ-TÜZÜN
Middle East Technical University,
Elementary Science Education
Ankara, TURKEY

Prof. Dr. Hamide ERTEPINAR
Middle East Technical University,
Elementary Science Education
Ankara, TURKEY
,

ABSTRACT

The purpose of this study was to investigate middle school students' attitude toward science and the effect of gender, grade level and parent education level on students' attitude toward science. The sample of this survey study included 2961 sixth, seventh and eighth grade middle school students in Çankaya, Ankara. Students completed 40 items test of science related attitude (TOSRA) developed by Fraser (1978). Four dimensions (adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science) were selected for this study. Descriptive analyses revealed that, regarding the mean scores of each TOSRA dimension, students were undecided about all sub-dimensions of attitude. MANOVA results showed that grade level significantly affected middle school students' attitude toward science regarding adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science. Gender and parents education level have influence on only adaptation of scientific attitudes dimension.

Keywords: Attitude toward science, Constructivist Curriculum Environment

INTRODUCTION

Student attitudes toward science have been discussed for several decades within different research contexts. Developing positive attitude toward science regardless of individual difference is one of the purposes of science education (Arısoy, 2007; Azizoğlu & Cetin, 2009). Attitude can be defined as "feelings, beliefs and values held about the enterprise of school science, science and the impact of the science on society" (Osborne, 2003, p.1050). Literature and meta-analyses studies revealed that gender difference is important factor revealing the differences in terms of students' attitude toward science (Weinburgh, 1995). Most of the studies reported that compared to the girls, boys had more positive attitudes toward science (Jones, Howe, & Rua, 2000; Jovanovic & King, 1998). Grade level is another student characteristic investigated in terms of students attitude. Some of the findings revealed the negative relationship between grade level and students attitude

toward science (Hofstein, Maoz, & Rishpon, 1990, Oh & Yager, 2004). Oh and Yager (2004) stated that while students negative attitudes toward science are related to traditional approach in science instruction, students' positive feelings toward science are associated with constructivist science classrooms. Authors also mentioned that if students are thought more scientific information, students will have more negative attitude. Therefore they suggest learning environment should be designed to provide students to attain scientific knowledge and gain more positive attitude toward science. Therefore in Turkey the last science curriculum development effort was developed in 2004 started to be implemented nationwide in all elementary schools in 2005-2006 academic years. Science is the way of inquiry which based on logical thinking and permanent investigation. In the current curriculum some important features are emphasized. According to current curriculum, scientific method includes observation, stating hypotheses, collecting data, testing hypotheses, rejecting or accepting hypotheses, and interpreting data. It is stated that Imagination, creativity, objectivity, inquiry, and being openness to new ideas are all important in scientific processes. In science and technology education students should learn the way of attaining knowledge. When students learn new things through discovery, they should reconstruct their knowledge again. Also in the curriculum it is emphasized that knowledge in science is not constant but it is the best explanation known. Moreover, the current curriculum aims creating awareness of scientific methods in addition to scientific literacy per se. When these features are considered, the current science and technology curriculum embraces a "constructivist approach". However, the previous science curriculum was student-centered and focused on the scientific method and investigation processes. However one of the most important differences between the current curriculum and the previous one is that, while the current curriculum has a spiral structure, the previous curriculum had a linear structure. In science and technology curriculum most of the subjects took place in all grade level from simple to complex. In this way students remember subjects rather frequently and they reinforce their learning.

The purpose of this study was to investigate middle school students' attitude toward science and to determine the effect of gender, grade and parents education level on students' attitude toward science.

METHODOLOGY

This study is survey design study. The sample included 2961 students enrolled in sixth, seventh, and eighth grade in elementary schools located in the Çankaya district one of the largest districts in Ankara. Students completed test of science related attitude (TOSRA) developed by Fraser (1978). TOSRA included 5 likert type 70 items with seven subscales namely: social implication of science, normality of scientists, attitudes toward inquiry, adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science. However of these subscales 40 items and four dimensions (adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science) were selected for this study. Reliability of this instrument was reported as .78 by Fraser (1978). TOSRA was translated and adapted into Turkish by Arısoy (2007) and alpha coefficients of these sub dimensions were reported .64, .85, .82, and .78 respectively.

RESULTS

Descriptive analyses revealed that, regarding the mean scores of each TOSRA dimension, students were undecided about all sub-dimensions of attitude with the values of adaptation of scientific attitudes (M=3.64, SD=.66), enjoyment of science lessons (M=3.69, SD=.87), leisure interest in science (M=3.46, SD=.84), and career interest in science (M=3.40, SD=.81).

MANOVA was conducted to investigate the effect of gender, grade and parents education level on students' attitude toward science. MANOVA results for students' attitude toward science were presented in Table 1.

Table 1: MANOVA Results for Students Attitude toward Science

	df	F	p
Adaptation of scientific attitudes			
Gender	1	13.89	.000*
Grade level	2	4.59	.010*
Parent Education level	1	4.07	.017*
Enjoyment of science lessons			
Grade level	2	6.35	.002*
Leisure interest in science			
Grade level	2	17.8	.000*
Career interest in science			
Grade level	2	7.91	.000*

* p< 0.05

Results revealed that grade level had significant main effect on middle school students' attitude toward science regarding adaptation of scientific attitudes, enjoyment of science lessons, leisure interest in science, and career interest in science ($F(2, 2943) = 4.59$, $p < .000$; $F(2, 2943) = 6.35$, $p < .000$; $F(2, 2943) = 17.8$, $p < .000$; $F(2, 2943) = 7.91$, $p < 0.000$ respectively). Gender and parents education level has influence on students' attitude toward science with respect to only adaptation of scientific attitudes dimension ($F (1, 2943) = 13.89$, $p< .000$; $F (2, 2943) = 4.07$). Male students (M=3.70 SD=0.26) had higher score than female students regarding adaptation of scientific attitudes.

Follow-up post hoc analyses were conducted to identify where the significant differences were for grade level and parents education level. In terms of adaptation of scientific attitudes and enjoyment of science lessons eighth grade students' responses had significantly lower mean scores than the sixth and seventh grade students. Concerning leisure and career interest in science the mean scores of sixth, seventh and eighth grade students were significantly different from each other. Moreover students having different parents' education level had different score related adaptation of scientific attitudes. Bonferroni test results, as a pair wise comparison, are presented in Table 2.

Table 2: The Bonferroni Test Results for Mean Scores at Different Grade Levels and Parent Education Level

	Mean Scores			
	adaptation of scientific attitudes	enjoyment of science lessons	leisure interest in science	career interest in science
Grade Level				
6th graders	3.68^{a*}	3.76^{a*}	3.57^{a*}	3.47^{a*}
7th graders	3.69^{a*}	3.68^{a*}	3.43^{b*}	3.39^{b*}
8th graders	3.53^{b*}	3.51^{b*}	3.20^{c*}	3.22^{c*}
Parent Education Level				
Primary-Secondary school	3.56^{a*}	3.61^{a*}	3.40^{a*}	3.33^{a*}
Undergraduate	3.64^{b*}	3.65^{a*}	3.41^{a*}	3.35^{a*}
Graduate	3.69^{c*}	3.69^{a*}	3.40^{a*}	3.40^{a*}

Means with similar letters (a, b) are not significantly different from each other; means with different letters (a, b) are significantly different from each other.

DİSCUSSİON CONCLUSİON AND IMPLİCATİON

Results of this study revealed middle school students' attitudes toward science were not respectable level. With respect to gender male students hold more positive attitudes regarding adaptation of scientific attitudes than female students. This finding might be related to extracurricular activities that male students interested in. Zimmerman and Bennett (1987) indicated that male students were more interested in doing science experiments than female students. In the literature as some studies support this findings (Catsambis, 1995; Greenfield, 1996; Jones, Howe, & Rua, 2000), there are also some contradictory findings (Catsambis, 1995; Dhindsa & Chung, 2003; Miller, Lietz & Kotte, 2002). Results also showed that when education level of parents' increased, their children' attitude regarding adaptation of scientific attitudes scores also increased. Based on their knowledge and experiences, parents with higher educational degrees could better coach their children in motivating to learn and increasing their adaptation of scientific attitudes.

Regarding grade level, students' attitude toward science has decreased with the increasing grade level. Hofstein, Maoz, and Rishpon (1990), Yager and Penick, (1986) and Weinburgh (1994) supported these findings and proposed that grade level was a significant predictor of student attitudes toward science. In the national exam system in Turkey, where, generally, students take exams at the end of each grade level of elementary school that enable them to enroll in one of the prestigious high schools. Studies conducted by one of Turkish educational community 58.7 % of the students reported that they did not want national exam after 6^{th}, 7^{th} and 8^{th} grade level. Since 47% of the students thought that being exams at the end of the each year lead to tension increasing anxiety. Therefore students had negative attitude toward science with the increasing grade level, even if they had constructivist learning environment for their science courses. Half percentages of the students take extra courses while getting ready for national exam. While they were studying for this exam, students did not give importance social, cultural and leisure time activities raising their stress. Aydın (2001) supported that as the number of exam which students enter increases, their tension and disadvantage of the exams also increases. Students' academic achievement should be considered rather than these exams while entering secondary school as supported by Özyürek (2010)

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Esme HACIEMİNOĞLU is Dr. at Science Education in Selçuk University. She has graduated from Hacettepe University in Department of Science Education. She received her PhD in Middle East Technical University.

Her research interests are science education, teacher education, nature of science, and motivation.

Dr. Esme HACIEMİNOĞLU
Selçuk University
Department of Elementary Education
Science Education
Konya, TURKEY

E. Mail: ehacieminoglu@gmail.com

Özgül YILMAZ-TÜZÜN is associate professor at Science Education in Middle East Technical University. She received her PhD in Indiana University.

Her research interests are teacher education, science education, environmental education, epistemological beliefs, self-efficacy, and misconceptions.

Associate Professor Yılmaz-Tüzün has authored, co-authored, or presented lots of articles, and conference presentations.

Assoc. Prof. Dr. ÖZGÜL YILMAZ-TÜZÜN
Middle East Technical University
Department of Elementary Education
Science Education
Ankara, TURKEY
E. Mail: ozgul@metu.edu.tr

Hamide ERTEPINAR is professor at Science education and Director of the Department of Elementary Education in Middle East Technical University. She received her PhD in Middle East Technical University. Her research interests are science education, chemistry education, teacher education, environmental education, conceptual change, nature of science, argumentation.

Professor Ertepınar has authored/edited eight books and authored, co-authored, or presented lots of articles, and conference presentations.

Prof. Dr. Hamide ERTEPINAR
Middle East Technical University
Department of Elementary Education
Science Education
Ankara, TURKEY
E. Mail: hamide@metu.edu.tr

REFERENCES

Arısoy, N. (2007). Examining 8th grade students' perception of learning environment of science classrooms in relation to motivational beliefs and attitudes. Unpublished Theses in Middle East Technical University, Ankara, Turkey.

Aydın, M. (2001). Investigating comperison of exam anxiety instrument model with two or three factor. Unpublished Theses in Cukurova University, Adana, Turkey.

Azizoğlu, N., & Çetin, G. (2009). The effect of learning style on middle schools students' motivation and attitudes towards science, and the relationships among these variables. *Kastamonu Education Journal, 17*(1), 171-182.

Catsambis, S. (1995). Gender, race, ethnicity, and science education in the middle grades. *Journal of Research in Science Teaching*, 32(3), 243-257.

Dhindsa, H. S. & Chung, G. (2003). Attitudes and achievement of Bruneian science students. *Internalational Journal of Science Education, 25*, 907-922.

Fraser, J. B. (1978). Development of a test of science-related attitudes, *Science Education, 62*(4), 509-515.

Greenfield, T. A. (1996). Gender, etnicity, science achievement and attitudes.*Journal of Research in Science Teaching, 33,* 901-933.

Hofstein, A., Maoz, N., & Rishpon, M. (1990). Attitudes towards school science: a comparison of participants and nonparticipants in extracurricular science activities. *School Science and Mathematics, 90(1),* 13-22.

Jones, G., Howe, A. & Rua, M (2000). Gender differences in students' experiences, interests, and attitudes towards science and scientists, *Science Education*, 84, 180-192.

Jovanovic, J. & King, S.S. (1998). Boys and girls in the performance based science classroom: who is doing the performing? *American Educational Research Journal*, 35, 477-496.

Miller, L., Lietz, P., & Kotte, D. (2002). On decreasing gender differences and attitudinal changes. Factors influencing Australian and English pupils' choice of a career in science. *Psyhology, Evolution, and Gender, 4,* 69-92.

Oh. P. S., & Yager, R. E. (2004). Development of Constructivist Science Classrooms and Changes in Student Attitudes toward Science Learning. *Science Education International, 15*(2), 105-113.

Osborne, J. (2003). Attitudes towards science: a review of the literature and its implications, *International Journal of Science Education*, 25(9), 1049-1079.

Özyürek, R. (2010). Ideas and suggestions related to SBS. Retrieved 19 March 2011 from http://www.sbshazirlanalim.tr.gg/SBS-Gorusleri.htm

Weinburgh, M. (1995). Gender differences in student attitudes toward science: a meta-analysis 18. of the literature from 1970 to 1991, *Journal of Research in Science Teaching*, 32, 387-398.

Zimmerman, B.J., & Bennett, S.A. (1987). *Gender difference in the California Statewide assessment of attitude and achievement in science.* Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 2 ISSN 1309-6249

THE INTERPLAY BETWEEN METACOGNITIVE AWARENESS AND SCIENTIFIC EPISTEMOLOGICAL BELIEFS

Elif AKAR
Middle East Technical University,
Education Faculty
Ankara, TURKEY

Prof. Dr. Ceren TEKKAYA
Middle East Technical University,
Education Faculty
Ankara, TURKEY

Assoc. Prof. Dr. Jale ÇAKIROĞLU
Middle East Technical University,
Education Faculty
Ankara, TURKEY

ABSTRACT

Considering the importance of epistemological beliefs in students' learning process and how students reach knowledge; this study explored contributions of metacognitive awareness level to students' scientific epistemological beliefs. Discipline Focused Epistemological Beliefs Questionnaire and Metacognitive Awareness Inventory were administrated to 250 eight graders. Correlation analysis indicated that both knowledge of cognition and regulation of cognition dimensions of Metacognition related with certainty/simplicity of knowledge, source of knowledge, attainability of truth dimensions of epistemological beliefs. Multiple Regression Correlation analysis, however, revealed that the model that includes regulation of cognition reached statistical significance and explained 11% of the variation in certainty/simplicity of knowledge; ($F= 14.772$, $p < .05$) and 7% of variation in attainability of truth ($F= 8.396$, $p < .05$). The positive beta values indicated that students controlling all aspect of their learning tended to see scientific knowledge as more certain, simple as well as more attainable.

Keywords: Epistemological beliefs, metacognitive awareness.

INTRODUCTION

The role and influence of an individual's epistemological views on learning and other cognitive processes have been investigated in educational and psychological literature recently. (Buehl & Alexander, 2001). Researchers in education claimed that epistemological views of individuals may influence their learning strategies and reasoning modes. Although previous studies indicated that epistemological beliefs and metacognition may have influence on students' achievement toward science (Kuhn 1991, Schommer- Aikins 2004; Scraw 2006), relatively few studies were investigated the possible link between students' metacognitive awareness level and their scientific epistemological beliefs among elementary students. After a review of extant theories on personal epistemology, Buehl and Alexander (2001) implied that to get to the "roots" of epistemology, it is crucial to explore "how epistemological beliefs change as a result of maturation and educational experience" (Akerson & Donnelly, 2008, p. 416). For instance; Bendixen and Rule (2004) implied an "important link between

personal epistemology and conceptual change" and stated that "as the promotion of epistemological change happens with students, this, in turn, facilitates conceptual change" (p. 77). In Turkish Elementary Science Education Curriculum it is stated that one of the main goal of education is to improve the students' learning and thinking abilities; therefore to access this goal it is important to measure students' epistemological beliefs and variables (e.g. metacognition, critical thinking ability) that have relationship and influence on this beliefs. Therefore; considering the importance of epistemological beliefs in students' learning process and how students reach knowledge, in this study we claimed that students' metacognitive awareness level might predict their scientific epistemological beliefs and the we explored the predictive influence of Turkish eight grade elementary students' metacognitive awareness level on their scientific epistemological beliefs.

THEORETICAL FRAMEWORK

Epistemological beliefs refer to beliefs of students related with knowledge (Hofer & Pintrich, 1997). William G. Perry (1970) is the first person who investigated students' beliefs experimentally. Based on relativistic and dualistic approaches of students toward beliefs; Perry divided students into two groups. This means that students who are in the dualistic approach side consider that knowledge is certain (right or wrong) and derived from authority however; students in the relativistic approach side; they are questioning the certainness of the knowledge. After his studies; Belenky, Tarule and Goldberger (1986) worked on gender issue through epistemological beliefs and later, Magolda (1994) developed Women's Ways of Knowing model and examined the development processes of women's epistemological beliefs. She interviewed 135 women by asking them vulnerable questions to evaluate different aspects of their epistemological beliefs. In addition, Schommer (1993) has developed new model for conceptualizing beliefs and developed new instrument to measure general epistemological beliefs of students. In contrast to Perry; she suggested that epistemological beliefs are multidimensional. In her hypothesis; Schommer stated that students' beliefs toward knowledge are related with five basic dimensions which are knowledge is simple or complex, knowledge is certain or tentative, ability to learn is fixed or acquired, knowledge is occurred quickly or step by step and knowledge is handed down by the authority or not. Besides, Hofer (2000) developed a quantitative instrument that is called Disciplined Focused Epistemological Beliefs Questionnaire (DFEBQ) to measure students' epistemological beliefs. For the purpose of the present study we used DFEBQ to measure students' scientific epistemological beliefs to examine young students' epistemological beliefs.

Metacognition defined as the ability to reflect upon, understand, and control one's learning (Schraw & Dennison, 1994) and the term metacognitive awareness refers to students learning to both be aware of and to control thinking processes (Wyre, 2007). Previous research indicated that metacognition has two major components (Brown, 1987; Flavell, 1987; Jacobs & Paris, 1987) that are knowledge of cognition and regulation of cognition. Knowledge of cognition includes what individuals know about their own self strategies about their cognition and being aware of how, when and why they use these strategies (Schraw & Dennison, 1994). Regulation of knowing includes number of sub processes that enhance the control aspects of learning (Schraw & Dennison, 1994). Research studies have revealed that if students are more metacognitively aware; they become more strategic and perform better than students who are less aware (Garner & Alexander, 1989; Pressley & Ghatala, 1990).

There has been growing research about whether there exist any relationship between epistemological beliefs and metacognition. Some have claimed that a connection between metacognition and personal epistemology must be considered (Bendixen & Hartley, 2003; Dean & Kuhn, 2003; Hammouri, 2003; Hofer, 2004b; Kuhn et al., 1995). The contention is that when one facilitates a student's thinking about his or her thinking process, that student will indicate improved skills associated with more mature epistemologies. For instance; Kuhn (2001) stated "To fully understand processes of knowing and knowledge acquisition, it is necessary to examine people's understanding of their own knowledge". In recent years; there have been an increasing effort to develop a new "integrated" construct (Bendixen & Rule, 2004) or model in which personal epistemology and

other factors such as metacognition are combined (Hofer, 2004b; Schommer-Aikins, 2004). Bendixen (2002) and Bendixen and Rule (2004) presented an integrated model in which epistemological belief and metacognition are indicated to be part of a larger process. In addition to these researchers; Hofer thought metacognition as critical to any development. The model of metacognition, Hofer (2004b) used, includes three components. One is metacognitive knowledge, that refers to "the most static and includes one's knowledge about cognition and strategies, as well as knowledge of self as a learner or thinker" (Hofer, p. 48). In this component, Hofer embedded the epistemological dimensions of certainty of knowledge and simplicity of knowledge. Another component of the metacognition model is metacognitive judgments and monitoring, which includes thinking that is "more process-oriented and involve such aspects as judging task difficulty, monitoring one's comprehension and learning, and assessing confidence" (Hofer, p. 48). This component embedded the epistemic dimensions of the source of knowledge and justification for knowing. The last component is self-regulation and control of cognition and learning. This component is interested in "planning, strategy selection, allocation of resources, and volitional control" (Hofer, p. 48).

Considering the lack of studies and the nature of the relationship between metacognitive enrichment and the maturing of a student's personal epistemology (Buelh, 2003), examining the interplay between metacognitive awareness and scientific epistemological beliefs will contribute to the studies conducted in the field of science education.

METHOD

The Discipline Focused Epistemological Beliefs Questionnaire and Metacognitive Awareness Inventory were administrated to 250 eight grade students in five elementary public schools located in Ankara, Turkey and schools were randomly selected.

Discipline Focused Epistemological Beliefs Questionnaire (DFEBQ)

Discipline Focused Epistemological Beliefs Questionnaire (DFEBQ) developed by Hofer (2000) was used to measure students' epistemological beliefs in four factors (certainty/ simplicity of knowledge, justification for knowing, source of the knowledge and attainability of truth). Exploratory factor analysis and reliability analysis was conducted to ensure reliability and validity of the translation form of the instrument. Exploratory factor analysis produced three factor structures namely, certainty/ simplicity of knowledge, source of the knowledge and attainability of truth. Cronbach alpha values for these dimensions were ranging from .53 to .63.

Metacognitive Awareness Inventory (MAI)

A 52 item Metacognitive Awareness Inventory (Schraw & Dennison, 1994) was translated and adapted into Turkish by Sungur and Şenler (2009). MAI includes items belonging to knowledge of cognition and regulation of cognition components of metacognition. Reliability analysis indicated that the Cronbach alpha values of these dimensions were ranging from .75 and .89.

Data analysis

To see the relationship that might exist among students' scientific epistemological beliefs dimensions and metacognitive awareness level; Pearson correlation analysis was computed. In the second part of data analysis, Multiple Regression Correlation (MRC) Analysis was used to explore contributions of students' metacognitive awareness level to their scientific epistemological beliefs.

RESULTS

Descriptive statistics for the data obtained showed that participants of this study have a higher mean score on epistemological beliefs indicates agreement with less sophisticated epistemological beliefs. Pearson correlation indicated that both knowledge of cognition and regulation of cognition dimensions of metacognition related

with certainty/simplicity of knowledge, source of knowledge, attainability of truth dimensions of epistemological beliefs. Analysis revealed that knowledge of condition dimension is significantly related with certainty/simplicity of knowledge, r = .270, p<.05, source of the knowledge, r = .247, p<.05 and attainability of truth, r = .214, p<.05. Moreover; regulation of cognition dimension is also significantly correlated with certainty/simplicity of knowledge, r = .325, p<.05, source of the knowledge, r = .263, p<.05 and attainability of truth, r = .249, p<.05.

Multiple Regression Correlation (MRC) Analysis was used to explore contributions of students' metacognitive awareness level to their scientific epistemological beliefs. The analysis indicated that with R= .327, with R^2= .107, regulation of cognition significantly accounted for 11% of the variation in students' beliefs toward certainty/simplicity of knowledge (F= 14.772, p < .05). This means that regulation of cognition made a statistically significant contribution to the variation in students' understanding beliefs toward certainty/simplicity of knowledge. Moreover; another MRC analysis revealed that with R= .252, with R2= .064 regulation of cognition significantly accounted for 7% of the variation in students' beliefs toward attainability of truth (F= 8.396, p < .05). Regulation of cognition made a statistically significant contribution to the variation in students' understanding beliefs toward attainability of truth. Results with .203 beta value indicated that regulation of cognition level of students might predict their beliefs toward attainability of truth.
In conclusion; the positive beta values indicated that students controlling all aspect of their learning tended to see scientific knowledge as more certain, simple as well as more attainable.

DISCUSSION

This study investigated the contributions of metacognitive awareness level to students' scientific epistemological beliefs. Regarding Pearson Correlation analysis, this study revealed that knowledge of cognition and regulation of cognition dimensions of metacognitive awareness level positively associated with certainty/simplicity of knowledge, source of knowledge and attainability of truth dimensions of epistemological beliefs. Highest correlation was observed between regulation of cognition and certainty/simplicity of knowledge domains. This means that students, who can control their learning process, easily believe that scientific knowledge is more certain and more simple, in other words they hold less sophisticated epistemological beliefs concerning simplicity/certainty of knowledge domain. This result can be explained by considering characteristics of learning environment, critical thinking ability and background knowledge of students that have great influence on students' metacognition and their epistemological beliefs (Schommer & Aikins, 2004). For instance, students might consider that if scientific knowledge was more complex and uncertain; it would be difficult to learn and control learning of knowledge. Therefore, students might think that if they can control their learning process in science subject easily, this might be resulted from certainty and simplicity features of scientific knowledge. Multiple Regression Analysis indicated that eight grade elementary students who indicate more tendencies to control all aspect of their learning, have less sophisticated epistemological beliefs concerning certainty/simplicity of knowledge and attainability of truth dimensions. This result is somewhat surprising because studies claim that when one have higher awareness of him/her learning strategies and controlling strategies for him/her learning, s/he will demonstrate improved skills associated with more mature epistemologies (Bendixen & Hartley, 2003; Dean & Kuhn, 2003). However there is not much consensus about this issue, for instance a study conducted in India suggested that preservice teachers who are aware of their own strengths, weaknesses and their strategies for learning, they do not recognize that scientific knowledge is subjective and they consider scientific knowledge as more certain (Akerson & Donnelly, 2008). In another study, it is found that although students have higher metacognitive awareness level; they might not have sophisticated epistemological beliefs (Yılmaz & Topçu, 2010). In fact, some studies claimed that relationships among epistemological beliefs, metacognition and learning variables would be highly context-sensitive (Pintrich & Hofer, 1997). This means that it would be difficult to generalize how epistemological beliefs promote or restrict metacognition and learning, therefore generalizations between these variables might not be true across different context or domains, for this reason variation among results of different

studies is quietly possible. This research might generate different findings and different relationships for the future and there needs to develop new models in order to explain why and how personal epistemological beliefs related to metacognition and learning in academic context. Moreover; there exist many other variables that might influence students' epistemological beliefs level. One of these variables is teacher' beliefs and attitudes toward nature of scientific knowledge that further affect students' epistemological beliefs systems toward science. For example; if teachers generally emphasize that scientific knowledge consists of facts and truths, then students would try to learn scientific knowledge based on facts and truths, they would believe that scientific knowledge is certain and they will try to study for memorizing the facts, truths and learn certain knowledge to get higher grade from exam. Therefore although students develop better metacognitive strategy for learning and controlling their learning in science; they might have less sophisticated epistemological beliefs toward science.

There are a number of limitations of the present study. First, the study was limited by its reliance on self-reported data. Subsequent research is needed to verify the consistency and accuracy of the present findings through use of multiple methods and measures. Secondly, the study conducted by a relatively small sample. Future research will use larger data set to obtain broader and more comprehensive picture of students' epistemological beliefs and their metacognitive awareness level. Current study is limited to 8th graders and science domain. Thus, this research can be replicated by using different grade level and different domains, such as mathematics, literacy, history.

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Elif AKAR is a master student in the Elementary Science Education at Middle East Technical University, Turkey. She received her degree of Bachelor in Elementary Science Education from Middle East Science Education. She is working as a science teacher in Sakarya, Turkey. Her major research interests are epistemological beliefs and metacognitive awareness.

Elif AKAR
Middle East Technical University
Faculty of Education
06800, ANKARA/TURKEY
E. Mail: e143461@metu.edu.tr

Ceren TEKKAYA is professor in the Elementary Science Education at Middle East Technical University, Turkey. She received her PhD (1996), MS (1991) in Science Education from Middle East Technical University and BS in Biological Sciences from Middle East Technical University (1988). Her main research interests are conceptual understanding; epistemological beliefs and environmental education.

Prof. Dr. Ceren TEKKAYA
Middle East Technical University
Faculty of Education
06800, ANKARA/TURKEY
E. Mail: ceren@metu.edu.tr

Jale CAKIROGLU is an Associate Professor of Elementary Science Education at Middle East Technical University, Turkey. She received her doctorate degree in Curriculum and Instruction from Indiana University with emphasis on science education. Her major research interests include classroom learning environments, teacher efficacy beliefs and the nature of science.

Assoc. Prof. Dr. Jale CAKIROGLU
Middle East Technical University
Faculty of Education
06800, ANKARA/TURKEY
E. Mail: jaleus@metu.edu.tr

REFERENCES

Akerson, V. L., & Donnelly, L. A. (2008). Relationships among learner characteristics and preservice elementary teachers' views of nature of science. Journal of Elementary Science Education, 20(1), 45-58.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). Women's ways of knowing: The development of self, voice and mind. New York: Basic Books.

Bendixen, L. (2002). A process model of belief change. In B. Hofer and P. Pintrich (Eds.), personal epistemology: The psychology of beliefs about knowledge and knowing. (pp. 191-208). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Bendixen, L.A., Dunkle, M.E., & Schraw, G, (1994). Epistemological beliefs and reflective judgement. Psychological Reports, 75, 1595-1600.

Berbereoğlu, G, & Hei, L. M. (2003). A comparison of university students' approach to learning across Taiwan and Turkey. Internal Journal of Testing 3(2), 173-187.

Brown, A. L. (1978). Knowing when, where, and how to remember: A problem of metacognition. Advances in Instructional Psychology, 1, 77–165.

Buehl, M. M. & Alexander, P. A. (2001). Beliefs about academic knowledge. Educational Psychological Review, 13(4), 385-418.

Hofer, B. K. (2000). Dimensionality and disciplinary differences in personal epistemology. Contemporary Educational Psychology, 25, 378-405.

Hofer, B. K. & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. Review of Educational Research, 67(1), 88-140.

Jacobs, J. E., & Paris, S. G. (1987). Children's metacognition about reading: Issues in definition, measurement, and instruction. Educational Psychologist, 22, 255-278.

Kuhn, D. (1991). Science as argument: Implications for teaching and learning scientific thinking. Science Education, 77(3), 319–337.

Perry, W. G. (1970). Forms of intellectual and ethical development in the college years: A scheme. New York: Holt, Rinehart, and Winston.

Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. Contemporary Educational Psychology, 19, 460-475.

Yılmaz-Tüzün, O. & Topçu, M. S. (2010). Investigating the relationships among elementary school students' epistemological beliefs, metacognition, and constructivist science learning environment. Science Teacher Education, 21, 255-273.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 3 ISSN 1309-6249

TEACHING COMPETENCY OF SECONDARY TEACHER EDUCATION STUDENTS IN RELATION TO THEIR METACOGNITION

Sheeja V. TITUS
Xavier's College of Education
Palayamkottai
South India, INDIA

Prof. Dr. P. ANNARAJA
Xavier's College of Education
Palayamkottai
South India, INDIA

ABSTRACT

In the present research to investigator made an attempt to explore the effectiveness of metacognitive skills in developing the teaching competency among secondary teacher education students. The concept of metacognition can be described as a higher-order cognitive structure. More specifically, metacognition as an appreciation of what one already knows, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the agility to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably. Students with good metacognition were able to perform efficiently in teaching.

Key words: Metacognition, metacognitive knowledge, regulation of cognition and teaching competency.

INTRODUCTION

Metacognition is one of the holy grails of education. Defines as "knowledge and beliefs about thinking and the factors affecting thinking" which regulate 'the articulation of strategy and knowledge' (Pressley, 1998). It is the primary enabling state for students to be able to work independently and flexibly. Metacognition helps the people to perform many cognitive tasks more effectively. It refers to a level of thinking that involves active control over the process of thinking that is used in learning situations. Individuals with a high level of metacognitive knowledge and skills identify blocks to learning as early as possible and change 'tools' or strategies to ensure goal attainment. The person who have the awareness of metacognitive knowledge, he is able to know about his own strengths and weakness, the nature of task at hand, and available 'tools or skills'.

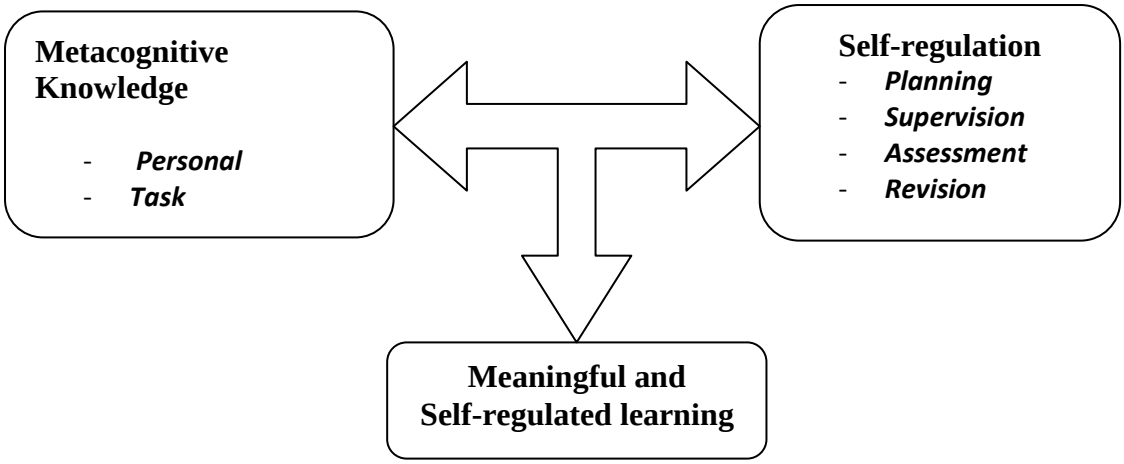
Theoretical Framework

According to Flavell (1976), metacognition refers to one's knowledge concerning one's own cognitive processes and products or anything related to them. Metacognition includes "the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective". It has been extensively studied in cognitive psychology and in other related fields.

Metacognition refers to a person's knowledge about his or her own cognition and about the control he or she has over it (Flavell, 1976). Since the term 'metacognition' was coined it has been considered as an essential element in the study of the teaching-learning process, because it is seen as the 'control centre' of the cognitive system. Brown (1987) explores this field more deeply, defining two broad and inter-related dimensions:

knowledge of cognition (knowledge about when and how to use them) and regulation of cognition (planning, supervision and assessment of the regulatory processes of one's own learning). This is illustrated in Fig 1.

Dimensions of metacognition and its influence on learning



Metacognition has a critical role to play in successful learning means it is important that it be demonstrated by both students and teachers. Teachers who demonstrate a wide range of metacognitive skills perform better in their teaching and complete work more efficiently. Planning the way to approach a task, monitoring, comprehension and evaluate the progress towards completion of a task: these are the metacognitive skills may help the teachers to improve their competency in teaching. Metacognitive skills and awareness helps the person to oversee his own learning process, plan and monitor ongoing cognitive activities and to compare cognitive outcomes with internal or external standards. In creation of a metacognitive environment, teachers monitor and apply their knowledge, deliberately modeling metacognitive behavior to assist students in becoming aware of their own thinking.

Metacognition and Teaching competency

Metacognition has been described as a conscious awareness of one's own knowledge and the conscious ability to understand, control and manipulate one's own cognitive process. The metacognitive knowledge is used to monitor and regulate cognitive processes of reasoning, comprehension, problem-solving and learning. This enables the students to be successful learners.

Effective learning involves planning and goal-setting, monitoring one's progress and adapting as needed. All of these activities are metacognitive in nature. By teaching these skills for the students, the teachers can improve student learning. There are three critical steps to teach metacognition.

(i) Teaching students that their ability to learn is mutable.
(ii) Teaching planning and goal-setting.
(iii) Giving students ample opportunities to practice monitoring their learning and adapting as necessary.

It is apparent that only the possession of metacognitive knowledge can act as a catalyst to provide metacognitive learning strategies to the students. Hence there is an urgent need to equip the teacher with metacognitive knowledge, self-awareness and self-regulation in their professional training period itself. This may help them to enlarge their cognitive, affective components with motivational style, attributional style, internal dialogue with oneself, and self-efficacy. These factors definitely enrich the competency of teachers.

TEACHING COMPETENCY

The terms 'Competency' and 'Competence' are used interchangeably (Passi and Lalitha, 1994). In the words of Singh (2002), competence is personal traits or a set of habits that leads to more effective and superior job performance. Teacher competence includes a thorough knowledge of the content. A teacher's competency mainly includes the strategies, understanding of student psychology and the process of learning.

Synder and Drumnon (1998) defined competency as 'a complex set of relationship between one's performances'. In the context of teaching competency means the right way of conveying units of knowledge, application and skills of students (Shukla, 2000). Here, the right way includes knowledge of contents as well as processes, and methods and means of conveying in an interesting way.

Competency will refer to appropriate prior knowledge, skills, attitudes, and abilities in a given context that adjust and develop with time and needs in order to accomplish a task effectively and efficiently and is measured against a minimum standard. To be precise, teaching competencies are functional abilities which teachers show in their teaching activities. A teacher who has flared for teaching is intelligent and is enthusiastic can evolve any number of strategies to make his/her teaching effective. It is rightly said that teaching competency is an ability to apply to practical situations, the essential principles and techniques of teaching.

The International Encyclopedia of Teaching and Teacher Education classified teaching competencies into six classes. They are a) Cognitive-based teaching competencies, b) Performance-based teaching competencies, c) Consequence-based teaching competencies, d) Exploratory competencies, e) Managerial teaching competencies and f) Affective teaching competencies (Momin, 2009).

Teaching is a cooperative affair between the teachers and the taught. Successful teaching must create a congenial atmosphere in the classroom for mutual interaction between the teachers and students and among the students also. Hence, democratic spirit should prevail in the classroom for making the teaching effective. Successful teaching should be invigorating and stimulating. It may be done through teacher's action, behavior and personality. It must be creative and promotive of all the good activities and qualities of students. Thus successful teaching requires metacognitive strategies and sound competencies.

SIGNIFICANCE OF THE STUDY

Globalization and advancements in technology are driving changes in the social, technological, economical, environmental and political landscapes at a rate and magnitude that is too great, and too multiple to ignore. As society changes, the skills that students need to be successful in life also change. Basic literacy skills of reading, writing, and arithmetic are no longer sufficient. Our students need to master those basic skills as well as read critically, write persuasively, think and reason logically, and solve complex problems. A successful student must be adept at managing information, finding, evaluating and applying new content understanding with great flexibility. They must be equipped with skills and perspectives designed to help them anticipate change. This is possible only by the help of teachers, who possess the potentialities like metacognitive thinking, emotional balance and competencies relevant to teaching learning process.

Objectives

The main objectives of the study are:

1. To find out whether there is any significant difference between male and female secondary teacher education students in their metacognition.
2. To find out whether there is any significant difference between rural and urban college secondary teacher education students in their metacognition.

3. To find out whether there is any significant difference between male and female secondary teacher education students in their teaching competency.
4. To find out whether there is any significant difference between rural and urban college secondary teacher education students in their teaching competency.
5. To find out whether there is any significant relationship between metacognition and teaching competency of secondary teacher education students.

METHODOLOGY

Survey method was chosen for the present study. The study was conducted on teacher education students from various colleges in Tirunelveli and Tuticorin districts of Tamilnadu, India. The sample size was 600. It was selected by using stratified random sampling technique. This study tried to find out the relationship between metacognition and teaching competency of secondary teacher education students.

The tools used for the study were:

1. Metacognitive Inventory (2003) standardized by Punita Govil.
2. Teaching competency scale (2009) developed and validated by Sheeja V. Titus & Annaraja.

Data Analysis

Statistical techniques such as 't' test and Pearson's product moment correlations were employed to analyze the data.

Hypothesis 1 There is no significant difference between male and female secondary teacher education students in their metacognition.

Table 1: Difference between Male and Female Secondary Teacher Education Students in Their Metacognition

Dimensions of Metacognition	Male N=198		Female N=402		Calculated 't' value	Remarks at 5% level
	Mean	S.D	Mean	S.D		
Knowledge of cognition	36.07	8.35	37.50	7.49	2.12	S
Regulation of cognition	27.57	3.27	28.31	3.36	2.60	S
Metacognition in total	63.63	9.20	65.82	8.30	2.92	S

(at 5% level of significance the table value of 't' is 1.96, S-significant, NS-Not significant)

The above table indicates that the calculated 't' values are significant at 0.05%level. Hence the null hypothesis is rejected. It is concluded that male and female secondary teacher education students differed significantly in their Metacognition. While comparing the mean scores of male and female students, female students are better than the male students in their metacognition.

Hypothesis 2 There is no significant difference between rural and urban college secondary teacher education students in their metacognition.

Table 2: Difference between Rural and Urban College Secondary Teacher Education Students in Their Metacognition

Dimensions of Metacognition	Rural N=300		Urban N=300		Calculated 't' value	Remarks at 5% level
	Mean	S.D	Mean	S.D		
Knowledge of cognition	36.24	7.87	37.82	7.68	2.49	S
Regulation of cognition	27.40	3.11	28.73	3.45	4.94	S
Metacognition in total	63.64	8.67	66.55	8.42	4.16	S

(at 5% level of significance the table value of 't' is 1.96, S-significant, NS-Not significant)

The above table indicates that the calculated 't' values are significant at 0.05%level. Hence the null hypothesis is rejected. It is concluded that rural and urban college secondary teacher education students differed significantly in their Metacognition. While comparing the mean scores of rural and urban college students, urban college students are better than the rural college students in their metacognition.

Hypothesis 3 There is no significant difference between male and female secondary teacher education students in their teaching competency.

Table 3: Difference Between Male and Female Secondary Teacher Education Students in Their Teaching Competency

Dimensions of Teaching competency	Male N=198		Female N=402		Calculated 't' value	Remarks at 5% level
	Mean	S.D	Mean	S.D		
Attitude towards children	60.09	8.60	61.00	7.765	1.30	NS
Interest in profession	69.39	7.18	70.61	6.65	2.05	S
Instructional strategy	61.78	6.94	62.81	6.88	1.73	NS
Classroom behaviour	66.20	7.02	65.97	8.14	0.35	NS
Teaching competency in total	257.45	5.87	260.39	25.64	1.31	NS

(at 5% level of significance the table value of 't' is 1.96, S-significant, NS-Not significant)

The above table indicates that the calculated 't' values are not significant at 0.05%level. It is concluded that male and female teacher education students do not differ significantly in their teaching competency except in the dimension of interest in profession.

Hypothesis 4 There is no significant difference between rural and urban college secondary teacher education students in their teaching competency.

Table 4: Difference Between Rural and Urban College Secondary Teacher Education Students in Their Teaching Competency

Dimensions of Teaching competency	Rural N=300		Urban N=300		Calculated 't' value	Remarks at 5% level
	Mean	S.D	Mean	S.D		
Attitude towards children	59.98	7.95	61.42	8.10	2.19	S
Interest in profession	69.95	6.64	70.47	7.06	0.92	NS
Instructional strategy	65.97	6.81	62.97	6.99	1.78	NS
Classroom behavior	65.42	7.75	66.67	7.79	1.96	NS
Teaching competency in total	257.32	25.11	216.53	26.21	2.00	S

(at 5% level of significance the table value of 't' is 1.96, S-significant, NS-Not significant)

The above table indicates that the calculated 't' values are not significant at 0.05% level. It is concluded that urban college students are better than rural college students in their interest in profession, instructional strategy and classroom behavior, except in the dimension of attitude towards children and teaching competency in total.

Hypothesis 5. There is no significant relationship between metacognition and teaching competency of secondary teacher education students.

Table 5: Relationship between Metacognition and Teaching Competency of Secondary Teacher Education Students

Variables	N	df	Calculated 'γ' value	Table value at 5% level	Remarks
Metacognition Vs. Teaching competency	600	598	0.292	.062	S

The above table indicates that the calculated 'γ' value is greater than the table value at 0.05%level of significance. It is concluded that there is a significant relationship between metacognition and teaching competency of secondary teacher education students.

FINDINGS

1. There is significant difference between male and female secondary teacher education students in their metacognition.
2. There is significant difference between rural and urban college secondary teacher education students in their metacognition.
3. There is no significant difference between male and female secondary teacher education students in their teaching competency except in their interest in profession.
4. There is no significant difference between rural and urban college secondary teacher education students in their teaching competency except in their attitude towards children.

CONCLUSION

It could be understood from the findings a significant relationship was existed between metacognition and teaching competency of secondary teacher education students. In this rapidly changing world, the challenge of teaching is to help students develop skills which will not become obsolete. Metacognitive strategies are essential for the twenty-first century. They will enable students to successfully cope with new situations. Teachers and school specialists capitalize on their talents as well as access a wealth of resources that will create a metacognitive environment which fosters the development of good thinkers who are successful problem-solvers and lifelong learners.

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Sheeja V. TITUS is a research scholar in Xavier's College of Education, Palayamkottai, Tirunelveli district, South India. She has published more than ten articles in both national and international level seminars. She acquired degrees of M.Ed. and M. Phil. in Manonmaninam Sundaranar University, Tirunelveli. At present she is doing her research in the area of education especially metacognition, emotional intelligence and teaching competency.

Sheeja V. TITUS
Xavier's College of Education
Palayamkottai, South India, INDIA
E. Mail:: titus_sheeja@yahoo.com

Prof. Dr. P. ANNARAJA is Dean & Director of Research Centre, St. Xavier's College of Education, Palayamkottai, Tirunelveli District, South India. He has served as teacher and researcher for more than thirty years and has produced more than 15 Ph.D. scholars and has conducted twelve national and ten state level seminars. He has also published four articles in international journals and thirty articles in leading Indian journals. He published two books related to mathematics teaching. He is a well known researcher in India. His major thrust areas are in soft skills and metacognition. At present, he is acting as an academic council member of Tamil Nadu Teacher Education University (TNTEU) Chennai (Madras) and Adhoc Board of Studies Member of Distance Education B.Ed.in Manonmaninam Sundaranar University, Tirunelveli. He is the editor of a national journal of Research and Reflections in Education (RRE).

Prof. Dr. P. ANNARAJA
Xavier's College of Education
Palayamkottai
South India, INDIA

REFERENCES

Aggarwal, J.C. (2002). *Educational Research; An Introduction*. New Delhi: Arya Book Depot.

Aggarwal, J.C. (2008). *Teacher and Education in Developing Society*. Delhi: Vikas Publishing House.

Aggarwal, Y.P. (1998). *Statistical Methods; Concept, Application and Computation*. New Delhi: Sterling Publishing Limited.

Andrade, Jackic & Mary,Jon. (2001). Cognitive Psychology.London: Bios Scientific Publishers.

Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116).

Hillsdale, NJ: Lawrence Erlbaum Associates.

Dave R.H. (2002). *Towards effective teacher education,* Miracle of teaching, 2(3) 110-113.

Flavel, J. H. (1985). *Cognitive Development, Englewood cliffs*, Delhi: Prentice Hall.

Mohanthy, J. (2007). *Teacher Education*. New Delhi: Deep & Deep Publications.

Nikme Momin, S. C, (2008) *Expectations and Responsibilities of Teachers: The Role of Teaching Competency and Personal Values,* University News 47 (22).

Perfect, T. J. & Schawartz B. L. (2002). *Applied Metacognition*. Cambridge: Cambridge University Press.

Raj R. (2005), *Professional Development of Teachers, Journal of Indian Education,* 30 (4).

Rajkumar, S. (2010), *Analysing the Role of Meta cognitive skills involved in the process of problem solving in physics among Higher Secondary Students*. Research and Reflections on Education, 8 (01), 13-16.

Rakesh, S. (2002) *Improvement in teaching competencies and teacher effectiveness,* Miracle of teaching, 2(2) 57-59.

Schraw, G. & Moshman D. (1995). Metacognitive theories. Educational Psychology Reviews, 7(4), 351-371.

Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science,* 26, 113-125.

Schraw, G., Dunkle, M. E., & Bendixen, L. B. (1995). Cognitive processes in well-defined and ill-defined problem solving. *Applied Cognitive Psychology, 9*, 523-538.

Sternberg, R. J. (2007). *Cognitive psychology*. New Delhi: Akash Press.

Taylor, S. E. (1981). The interface of cognitive and social psychology. In: J. Harvey, Cognition, social behavior and the environment. Hillsdale, NJ: Erlbaum.

WEBSITES

Jerome Bruner , The Process of Education,http://ww.mfed.org//thinkers/bruner.html>-

John H. Flavell. Metacognition and Reading to Learn. http:www.ericdigest.org/995-2/reading.html>

Metacognition. An overview. http://www.gse.buffalo.edu/fas/shuell/CEP564/metacog.html

Metacognition. http://eric.ed.gov/ERICWebportal/homeportal

Learning to Learn and Metacognition". <http://www.answers.com.topic/learning to learn and metacognition.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 4 ISSN 1309-6249

OPINIONS OF TRAINERS ON BLENDED LEARNING MODEL IN HIGHER VOCATIONAL EDUCATION AND TRAINING

Assist. Prof. Dr. Mehmet ŞAHIN
Selçuk University,
Higher School of Vocational
and Technical Sciences,
Konya, TURKEY

ABSTRACT

Blended learning model is the combination of face-to-face teaching and technology-based models and it is regarded as the 21st century model by the educational researchers. This study aims to find out the opinions, on blended learning model, of the trainers working at Higher Schools of Vocational Education and Training. This study is based on a qualitative research technique: focus group interview. The findings are grouped under the titles current situation, positive response of the students, flexibility, collaborative learning, financial and pedagogical aspects, and lifelong learning model.

Keywords: Blended learning, vocational education and training, opinions.

INTRODUCTION

There have been two shifts in education. The first is in the filed of material development: the shift from traditional materials to the use of advanced technology. The second is in the approach and methodology: the shift from teacher centered approach to learner centered one. When these two shifts come together, the new models like blended learning to come out. In fact, this is not a reality of the present time. For example, Young (2002) predicted, "Within five years, there will be lots of blended models such as students going to school two days a week and working at home three days a week. Another blended model…is where a student takes five face-to-face courses at school and two virtual courses" (cited in Picciano & Seaman, 2009:5). Also, Buckley et al. (2002) and Tagg (1995) noted a paradigm shift in higher education leading to new models of teaching and learning. Educators have been preoccupied with integrating technology into the classroom for decades (Dziuban, Hartman, Moskal, 2004). In 21st century, technology and students are changing rapidly, which implies that educators should be embracing "the new digital reality of the online, computerized world" (Jukes, 2008:6). Buckley (2002) and Barr and Tagg (1995) placed emphasis on student centered learning paradigms, new technologies like internet and personal computers, and new theories such as brain-based learning, cooperative learning and social constructivism to work together to form the new models. Thus, the term has come into use. Blended learning "combines various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology" (Driscoll, 2002, as cited in Graham et al., 2003). So, it seems possible to call blended learning a method of 21st century as blended learning is a recent online innovation as a result of integrating technology into education. In general terms, it is a "blended" form of traditional and innovative models based on the use of modern technology.

Blended learning model can be regarded as a reaction to some criticism towards traditional teaching and learning models or computer mediated models independently. It is an accepted fact that the model of blended learning is gaining widespread acceptance all over the world but a generally accepted definition has not emerged yet. Some educators stress the benefits of combining the two models and maximize the learning and teaching results. According to Valiathan (2002), the term "blended learning" is used to describe a solution that combines several different delivery methods, such as collaboration software, Web-based courses, EPSS, and knowledge management practices. For Graham et al. (2003), blended learning was developed for its potential

advantages in offering a more effective education, convenience, and access to teaching-learning environments. In the same way, for Rooney (2003), Blended learning refers to events that combine aspects of online and face-to-face instruction." Graham (2006:5) summarizes three definitions of blended learning as the (a) combination of instructional delivery media, (b) combination of instructional methods, and (c) combination of online and face-to-face instruction. For Bersin et al., (cited in Graham et al., 2003), "Blended learning means the combination of a wide range of learning media (instructor lead, web based courseware, simulations, job aids, webinars, documents) into a total training program." For Kerres & DeWitt (2003), 'blended learning' refers to all combinations of face-to-face learning with technology-based learning: traditional education can be enriched with the use of technology and learning with technology can profit from FTF meetings." Some others define blended learning simply as "maximizing the best of both worlds" so as to simultaneously benefit from the advantages of online environments and face-to-face learning environments (Morgan, 2002). For Thomson (2003), "...blended learning model uses a structured combination of instructional media...can include on-line instruction, mentoring/instructor-led support, and various sources of information and practice from text and electronic media. According to Dziuban et al., "Blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment" (2004:3). Blended learning is a method to organize the learning environment that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and is founded on transparent communication amongst all parties involved in a course (Heinze and Procter, 2006). Garnham and Kaleta (2002) define blended learning as 'courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated'. For Osguthorpe and Graham (2003:227), "Blended learning environment is used to try to maximize the benefits of both face-to-face and online methods- using the web for what it does best, and using class time for what it does best".

In the literature, blended learning is usually perceived in three different ways as media-based, method incorporation or a combination of online and traditional education methods (Usta, 2007). Findings of research on blended learning indicate that it is more effective for teaching both declarative and procedural knowledge (Sitzmann, Kraiger, Stewart, & Wisher, 2006); results in better outcomes than online or face-to-face learning alone (Zhao, Lei, Yan, & Tan, 2005); leads to increased access and flexibility, improved pedagogy, and higher cost-effectiveness (Graham, 2006); and may foster more active and deeper learning (Bonk, Kim, & Zeng, 2006; King, 2002). In blended learning, the combination of synchronous and asynchronous learning events and the opportunities for collaborative and problem-based learning are likely to increase the quantity and quality of interactions. Laurillard (1996) reports that a mixed used of teaching and learning methods will always be the most efficient way to support student learning, because only then it is possible to embrace all the activities of discussion, interaction, adaptation, and reflection, which are essential for academic learning. Riley (2000) stressed that teaching and learning that use technology effectively can lead to greater academic achievement and make a real difference in the lives of the students. Chung and Davis (1995) reported that blended instruction provided learners with greater control over the pace of learning, instructional flow, selection of resources, and time management. Hartman, et al., (2005) believe blended learning provides an opportunity to bridge the generations. It provides the face-to-face interactions, convenience, and flexibility desired by Boomers, independence preferred by Gen-X, and interaction and community for Millennials. By combining online and face-to-face formats, educators may achieve the inherent benefits of both types of instruction through a harmonious balance of virtual access to knowledge and physical human interaction; such an approach has been labeled as blended learning (Osguthorpe & Graham, 2003).

THE AIM AND IMPORTANCE OF THE RESEARCH

This study aims to find out the opinions of the trainers working at Higher Schools of Vocational Education and Training. The author himself has been working at a Higher School of Vocational Education and Training. Integrating technology in education has been the concern of many educators so far. This integration has been applied in higher education and workplace learning settings throughout the world and may lead to improved pedagogy, increased access and flexibility, and increased cost-effectiveness (Graham, 2006). Blended learning has been popular both in academia and the corporate environment. Each has its own motives (Dewar & Whittington, 2004). Integrating educational technology to vocational education and training in the context of using blended learning model is to be one of the interests of the trainers at university level organizations to contribute to production finally.

MATERIAL AND METHOD

This study is based on a qualitative research technique: focus group interview. A focus group is, according to Lederman (Thomas et al. 1995), a technique involving the use of in-depth group interviews in which participants are selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being 'focused' on a given topic. The views of the trainers are determined based on focus group interview technique to evaluate using qualitative research approach. Since the interviewees are themselves trainers, they can be regarded as experts and that's why focus group interview can be an effective technique. Since the aim of the research is to find out the opinions of the trainers working at higher school of vocational education and training, six trainers from at Higher School of Vocational Education and Training, of Selçuk University in Turkey formed the focus group. The group consists of one trainer from the following departments: Mechanical Manufacturing, Footwear Design, Electronics and automation, Construction, Furniture and Decoration and Printing and Publishing. In qualitative research, in particular, focus-group interviews generate large amounts of data. The central aim of data analysis, according to Robson (1993), is to reduce data. Yin (1989) points out that data analysis consists of a number of stages, i.e. examining, categorizing and tabulating or otherwise recombining the evidence, in order to address the initial goal of a study.

FINDINGS AND DISCUSSION

Current situation: Blending learning is used by the trainers at the activity level and at the course level. Face-to-face traditional learning is combined with computer-based learning for almost all covered subjects within the existent study programs. The national educational system must recognize and support financially blending learning programs to extend the whole coverage up to lifelong learning dimension. Furthermore, the organization using blended model should have enough technical equipment and space to serve and expand the service.

Positive response of the students: The trainers agree that students have positive response to this model. Students are in favor of this model as it is not boring and does not require discipline effort on the student. This aspect also helps students to get more engaged in the lesson content without any pressure by the trainer.

Flexibility: Blended learning can help use training time out of classroom and save time by minimizing the time assigned for classroom. The online part of the blended model can be scheduled at slow times, to minimize absence from work when work activity has priority. The blended learning model should be accessible by students whenever and wherever they wish to.

Collaborative learning: Blended learning model focuses on learning rather than teaching. When students try to learn and learn to learn, they naturally collaborate with the other students. In this case, the trainer acts as a coordinator rather than as a trainer. The level of collaboration is between the students themselves and between the students and the trainer.

Financial and pedagogical aspects: The trainers agree that the formation of an ideal blended learning environment is costly at least at the beginning. In addition, the trainer that is to apply this model should master the pedagogical and technical background.

Lifelong Learning model: The trainers also agree that blended learning model should be adopted as a lifelong learning model by taking the face-to-face side heavier and giving more place to online side.

CONCLUSION

Blended learning model is regarded as the combination of face-to-face teaching and technology-based models. This model is regarded as the 21st century model by the educational researchers. The trainers in the focus group utter nearly the same points about blended learning model. According to trainers, their school is currently using blended learning model but they lack enough technical equipment and space to serve and expand the service. The trainers agree that students have positive response to this model. Trainers do not feel themselves having to limit the lesson within the given classroom and time cycle as blended learning can help use training time out of classroom and save time by minimizing the time assigned for classroom. In blended model, the level of collaboration is between the students themselves and between the students and the trainer. The formation of an ideal blended learning environment is costly at least at the beginning. Blended learning model should be adopted as a lifelong learning model by taking the face-to-face side heavier and giving more place to online side.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Mehmet ŞAHİN is Assist. Prof. Dr. at Higher School of Vocational and Technical Sciences, Selçuk University, Konya, Turkey. He has been teaching Research Methods and Techniques, Curriculum Design and Instruction, Assessment and Evaluation in addition to vocational language teaching. He has been involved in LdV projects focusing on virtual training and curriculum development as coordinator and instructor.
His research interests are curriculum design for vocational and technical education, virtual training, blended learning and lifelong learning.

Assist. Prof. Dr. Mehmet ŞAHİN
Higher School of Vocational and Technical Sciences
Selçuk University
Konya, Turkey
E. Mail: mesahin@selcuk.edu.tr

REFERENCES

Barr, R. B., & Tagg, J. (1995). From teaching to learning-A new paradigm for undergraduate education [Electronic version.] Change, 27(6).

Bonk, C. J., Kim, K.-J., & Zeng, T. (2006). Future directions of blended learning in higher education and workplace learning settings. In C. J. Bonk & C. R. Graham (Eds.), *The Handbook of Blended Learning: Global Perspectives, Local Designs* (pp. 550-567). San Francisco, CA: Pfeiffer.

Buckley, D. P. (January/February 2002) In pursuit of the learning paradigm [Electronic version]. Educause Review, 37(1), 29-38.

Chung, J., & Davis, I. K. (1995). An instructional theory for learner control: Revisited. In M. R. Simonson (Ed.), Proceedings of the 1995 Annual National Convention of the Association for Educational Communications and Technology, Anaheim, CA: AACE, 72–86.

Dewar, T. & Whittington, D. (2004). *Calliope learning: Blended learning research report.* Retrieved May 15, 2009, from http://www.calliopelearning.com/papers/blended.pdf

Dziuban, C. D., Hartman, J. L., & Moskal, P. D. (March 30, 2004). Blended learning. Educause Center for Applied Research, 2004(7). Retrieved November 15, 2004, from http://www.educause.edu/ir/library/pdf/ERB0407.pdf

Garnham, C., & Kaleta, R. (2002). Introduction to Hybrid Courses. *Teaching with Technology Today, 8*(6).

Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. Bonk & C. Graham (Eds.), *The Handbook of Blended Learning:Global Perspectives, Local Designs* (Vol. San Francisco, CA, pp. 3-21).

Graham, C. R., Allen, S. & Ure, D. (2003) Blended Learning Environments: A Review Of The Research Literature. Brigham Young University. [Online Available] http://www.uab.edu/it/instructional/technology/docs/blended_learning_systems.pdf (Accessed on June 2008).

Hartman, J., Moskal, P., & Dziuban, C. (2005). Preparing the academy of today for the learner of tomorrow. In D. G. Oblinger & J. L. Oblinger (Eds.), Educating the Net Generation (pp. 6.1-6.15). Retrieved May 14,2005, from http://www.educause.edu/educatingthenetgen/

Heinze, A., & Procter, C. (2006). Online communication and information technology education. *Journal of Information Technology Education, 5*, pp. 235-249.

Jukes, I. (2008). *Rethinking education in the new digital landscape.* Retrieved July 15, 2008, from http://web.mac.com/iajukes/thecommittedsardine/Articles.html

King, K. P. (2002). Identifying success in online teacher education and Professional development. Internet and Higher Education, 5, 231-246.

Laurillard, D. (1996). The changing university. *A Forum for the Instructional Technology Community* http://itech1.coe.uga.edu/itforum/paper13/paper13.html Accessed October 12, 2006.

Morgan, K. R. (2002). Blended Learning: A Strategic Action Plan for a New Campus. Seminole, FL: University of Central Florida.

Osguthorpe, R. T., & Graham, C. (2003). Blended learning environments: Definitions and directions. *The Quarterly Review of Distance Education*, 4(3), 227-233.

Picciano, A., & Seaman, J. (January 2009). *K-12 online learning: A 2008 follow-up of the survey of U.S. school district administrators*. The Sloan Consortium. Retrieved April 30, 2009, from http://www.sloanconsortium.org/publications/survey/pdf/k-12_online_learning_2008.pdf

Riley, R. (2000). Intel® Teach to the Future Brings Together Microsoft and Other Industry Leaders in Half-Billion Dollar Commitment to Improve Student Learning. Available at: http://www.csrwire.com/News/58.html Accessed October 12, 2006

Rooney, J. E. (May 2003). Knowledge infusion: Blending learning opportunities to enhance educational programming and meetings. Association Managment, 55 (5). Retrieved February 13, 2005, from InfoTrac database.

Sitzmann, T., Kraiger, K., Stewart, D., & Wisher, R. (2006). The comparative effectiveness of Web-based and classroom instruction: A meta-analysis. *Personnel Psychology*, (59), 623-664.

Thomas L, MacMillan J, McColl E, Hale C & Bond S (1995) Comparison of focus group and individual interview methodology in examining patient satisfaction with nursing care. Social Sciences in Health 1, 206–219.

Thomson, Inc. (2003). Thomson job impact study: The next generation of corporate learning. Retrieved February 16, 2005, from http://www.netg.com/DemosAndDownloads/Downloads/JobImpact.pdf

Usta, E. (2007). Harmanlanmış Öğrenme ve Çevrimiçi Öğrenme Ortamlarının Akademik Başarı ve Doyuma Etkisi. Yayınlanmamış Doktora Tezi. Ankara: Gazi Üniversitesi Eğitim Bilimleri Enstitüsü.

Valiathan, P. (August 2002) . Blended learning models. Learning Circuits. Retrieved June 12, 2004, from http://www.learningcircuits.org/2002/aug2002/valiathan.html

Young, J.R. (March 22, 2002). Hybrid teaching seeks to end the divide between traditional and online instruction. *Chronicle of Higher Education*, *48*(28), A33.

Zhao, Y., Lei, J., Yan, B., & Tan, S. (2005). What makes the difference? A practical analysis of research on the effectiveness of distance education. *Teacher College Record*, 107, 1836-1884.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 5 ISSN 1309-6249

THE ATTITUDE OF STUDENTS TOWARDS SOCIAL SCIENCES IN UNDERGRADUATE STUDIES: A SAMPLE FOR THE COMMUNICATION THEORY COURSE

Assist. Prof. Dr. Deniz YENGİN,
Istanbul Kültür University
Faculty of Arts and Design
Istanbul, TURKEY

ABSTRACT

Education encapsulates two thirds of our life span. Thus we give direction to our futures according to the education we undergo. University students especially are equipped with theoretical and practical information during their undergraduate studies. However, students taking theoretical courses in social sciences have difficulties. In this study, I will examine how university students look at social science courses and according to these results I will offer some suggestions. I have chosen the Communication Theories course given at İstanbul Kültür University, Faculty of Arts and Design, Department of Communication Arts as a basis for this study. 120 students taking the course will serve as my research group. My research method will be interviews. In addition, by using differing teaching methods and seeing how students react to them during the class, I will obtain quantitative and qualitative data to examine.

Keywords: Education, social science, theory, applied education.

INTRODUCTION

Today the majority of our society is familiar with the school institution. The individuals interact with the school concept especially starting from the ages like six or seven and this institution becomes a part of their lives. The purpose of the school is to provide individuals with knowledge about life, daily developments, culture, rules or laws in the society in a systematic way starting from early ages under the concept of education. The concept of education derived from the word "*educare*" in Latin which means "feeding" and "*educere*" (Tanilli, 1988) which means "raising" is defined as "training and raising" of the children by their families, relatives and the elderly according to the traditions until they reach adolescence in respect to their duties, tasks and modes of behavior they are going to fulfill and display in the future" (TDK, 2011). Therefore, education which plays a significant role in the development of individuals is a natural right of each individual.
Education covers almost one third of our life so we shape our future according to our educational background. Especially the university students are equipped with theoretical and practical knowledge through undergraduate study. However, the main problem at this point is caused by the students' failure to establish a mutual relation between the theoretical knowledge acquired in a course and life itself. The students who go through an education system based on rote-learning from the primary –secondary level of education to the university level focus basically on either passing their classes or getting sufficient marks on their courses.

The education and training in Turkey differ from each other. The primary education and university education are supervised by the Ministry of Education and the Council of Higher Education respectively. In primary years education is based on general fields whereas it is offered on a specific field in the university. And a social science is one of these fields transferred to the students during the university education.

THEORY IN SOCIAL SCIENCES

The science which means the systematic group of information is defined as reaching generalizations as a result of analyzing the events which have been observed and efforts made through such generalizations to reach conclusions which should be tested based on the events over which judgments will be made (Sandıkçıoğlu, 1988). Science is classified as axiomatic and positive. The social sciences which have a positivist characteristic - the social research which started to settle the daily problems- have introduced a new dimension with the theoretical studies which were first started to be conducted in the 18th century (Aziz, 2003). The social sciences which have a positivist, interpretative and critical nature, deal with the nature of the social reality, basic nature of mankind, relation between science and common sense, theory of social reality and the relation between the social values and science through qualitative and quantitative methods (İslamoğlu, 2009).

One of the most significant topics of social sciences is communication. The study of social events which started during the 1900s has given rise to the theories which are different from each other but at the same time interconnected. Therefore, the definition of the theory becomes important at this point. Theory is a system of hypothesis which is partly verified but which has not become definite as a whole (Aziz, 2003). The overall theories which serve as a general proposition leading to the generation of hypothesis bring out the science in the related field.

The university which may be defined as the place where knowledge is accumulated collectively is also an institution which takes knowledge further, spreads the newly generated knowledge, shapes the final mode of adulthood, offers vocational education and guides technological production (Menteş, 1999). However, the understanding of education at the universities has changed due to the students' concerns about finding a job which causes them to continue their education more on vocational fields. Hence, many problems arise in the functioning of theoretical courses. Especially the lack of a strong background in the primary and secondary education effects the functioning of the courses taken in the university.

Students especially during the theoretical courses focus more on memorizing than understanding the subject. Students' approach to the concept of memorization prevents them from understanding the subject or makes it more difficult. Therefore the applied teaching in the flow of theoretical courses becomes mandatory. Lecturing on a topic is not enough on its own while teaching a theory. Theories should be taught with applied descriptions and updated examples.

Applied Education

Communication which is considered as a science in general sense, describes the transfer of message from the source to the target. Theories have been created in this field as a result of the studies conducted on the transfer of messages. The theory of communication helps us to understand the mass communication process better. In this study the transfer of the theoretical courses to the students is modeled by taking the models created in the field of communication as the starting point. Theories are shaped through linear and interactive methods in communication.

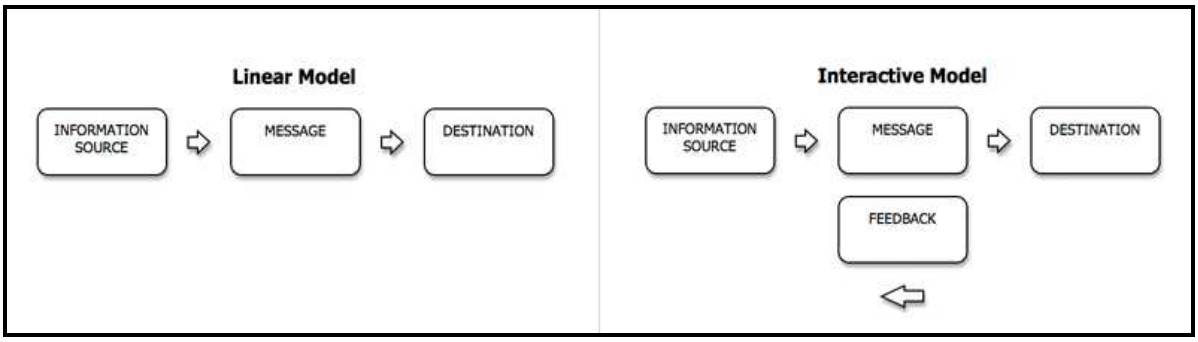


Figure 1: Linear & Interactive Model

Both linear and interactive models are given systematically in Figure 1.Information source represents the lecturer, message stands for information and destination is the students. The education in theoretical courses is usually offered through linear model system. Linear does not help the theoretical courses to be learned in an effective manner in unidirectional process. Interactive model, the other model, is realized through a bi-directional process. The only difference from the linear model is that it includes feedback. Here, feedback is defined as application. The theoretical knowledge transferred from the lecturer to the students in a bi-directional flow motivates the students through practices and reduces the duration of learning process. Students' approach to theoretical courses changes through the practices applied with the healthy establishment of the relation between theory and daily life. Thus, the concept of memorization which has been adopted by the students from the early ages is replaced by the theoretical courses which are more clearly understood with practices. The study is supported through the practices in "Communication Theories" course, which is picked as a sample, and thus the necessity of applied education is shown.

METHODOLOGY

In this study students' approach to the social sciences courses in undergraduate education is handled both quantitatively and qualitatively. The understanding of education is interpreted with a literature study conducted on this topic. In addition to these interpretations, the thoughts of the students on education in social sciences courses are evaluated with the survey questions addressed to the students who take these courses in undergraduate education.

The survey method is applied. Data is collected in the social sciences classes through the survey questions asked on education. The Communication Theory course offered to the students of Communication Arts Dept., School of Art and Design, İstanbul Kültür University is picked as a sample during the academic year 2010-2011 is picked. 120 students taking this course constitute the basis of the study. The data gathered at the end of the survey is transferred to SPSS program (Statistical Packages for Social Sciences). The data coded in an appropriate way is made ready for analysis and then studied.

FINDINGS

In the study the data has been collected through the survey method. Both the information provided by the students, who constitute the basis of the study, on Communication Theory course and the data gathered through the survey have been brought together.

120 students have been asked survey questions via the survey portal of Marmara University (http://anket.marmara.edu.tr/v2/survey.php?sid=284). The survey consists of 13 closed ended questions.

Three of these questions comprise questions on demographic qualities and the other ten comprise the questions concerning the outlook on social sciences courses in undergraduate education. The ordinal scale is applied especially with the questions prepared concerning the outlook on social sciences courses in undergraduate education.

Data from 120 students has been collected through the survey held via internet. Survey questions have been addressed to 66 male students (55%) and 54 female students (45%) (Table 1).

Table 1: Distribution according to gender

	Frequency	Percentage
Female	54	45
Male	66	55
Total	**120**	**100**

The participants have been asked distribution questions comprising 4 scales according to their ages. Distribution is measured according to the groups between 13-18, 19-24, 25-30 and 31-36. It is found that the number of the members of the group between 19 and 24 is higher than the others in age distribution with a rate of 65%.

Other questions aim to learn students' approach to the social sciences courses in undergraduate education. The five point Likert scale is used in the following definitions. Table 2 shows the distribution of assessment on the social science courses in undergraduate education.

Table 2: Distribution of assessment on the social sciences courses in undergraduate education

	Strongly Disagree		Disagree		Neither Agree nor Disagree		Agree		Strongly Agree	
	f	%	f	%	f	%	f	%	f	%
Social sciences courses should definitely take place in undergraduate education	**7**	**6**	**9**	**7,5**	**20**	**16.6**	**40**	**33,3**	**44**	**36,6**
I am more successful on social sciences courses	9	7,5	10	8,5	21	17,5	41	34	39	32,5
I am most interested in the theoretical courses among the social sciences courses	**10**	**8,5**	**30**	**25**	**35**	**29**	**37**	**31**	**8**	**6,5**
Social sciences courses should not only include theoretical courses	10	8,5	17	14	16	13,4	56	46,6	21	17,5
I have difficulties in understanding theoretical courses	**10**	**8,5**	**39**	**32,5**	**31**	**25,5**	**30**	**25**	**10**	**8,5**
Applied studies should be conducted in social sciences courses	3	2,5	7	6	14	12	44	36,5	52	43
Theoretical courses lead students to rote learning	**8**	**6,5**	**21**	**17,5**	**18**	**15**	**54**	**45**	**19**	**16**
Theoretical courses should be taught by transferring them to the applied up-to-date information	3	2,5	3	2,5	8	6,5	51	42,5	55	46
Visual sources should be used when teaching subjects in theoretical courses	**8**	**6,5**	**3**	**2,5**	**7**	**6**	**50**	**42**	**52**	**43**
Theoretical courses should be more elucidative and comprehensible	3	2,5	4	3	4	3	56	47,5	53	44

In order to test the reliability of the scales, Cronbach alpha (α) coefficient has been calculated. The low value of the Cronbach (α) coefficient (close to 0), which is the most common reliability method, shows that the variants are not reliable. The alpha coefficient is found 0,740 if 10 questions addressed to the users according to the five point Likert scale is studied mainly according to the Cronbach alpha values. The alpha coefficient close to 1 shows that the scale is highly reliable.

The survey data collected through the reliability test plays a guiding role in the assessment of the social sciences courses in the undergraduate education. The unconditional involvement of social sciences courses in the undergraduate education is considered positive by 70% of the students. Students have expressed a positive opinion about their success on the social sciences courses. 66,5% of the students are successful on the social sciences courses. There is no specific data about the interest of the students in the theoretical courses of the social sciences courses. 25% of the students have presented negative 29% have presented ambivalent and 31% have presented positive opinions. The majority of the students (64,1%) believe that social sciences courses should not only include theoretical courses. The students have expressed ambivalent opinion about the difficulties in understanding the theoretical courses. %79,5 of the students have expressed positive opinion in favor of the presence of the applied studies in theoretical courses. The students mainly believe that the theoretical courses lead students to rote learning. 45% of the students believe in it whereas 16% definitely stand against it.88.5% of the students (106 students) believe that the theoretical courses should be offered with up-to-date information. Students want to take the theoretical courses with applied studies. The use of visual aids in the theoretical courses is considered positive by 85% of the students. 91.5% of the students (109 students) believe that the theoretical courses should be more elucidative and comprehensible.

Important data is collected through the survey conducted to learn about the students' opinion about the social science courses in undergraduate education. The students who are successful on the social science courses wish to take these courses during their undergraduate study. However, it is found that they have problems with especially the theoretical courses. Not only the courses focusing mainly on theories but also those focusing on applied courses should be offered. The students who have difficulties in understanding the theoretical courses think that the theoretical courses should definitely be supported with applied studies. The students believe education should be offered by transferring the theoretical courses based on rote learning to the applied up-to-date information and supported with visual sources, and thus the theoretical courses in social sciences will be more elucidative and comprehensible with applied studies.

CONCLUSION

Today the skeleton of social sciences is made up of theoretical courses. Therefore, the understandability of theoretical courses gains more importance. However, the students have difficulties in understanding theoretical courses. This study which handles students' opinions about the social sciences courses in undergraduate education has proved that theoretical courses are expected to be supported with the applied studies and visual sources. Applied descriptions are brought together with the up-to-date topics and thus the theoretical courses become more elucidative and comprehensible. 90% of the students wish to take theoretical courses with applied and visual representations.

A mutual relation is established between the courses and lessons through applied studies. As a result of the applied studies in the theoretical courses the linear model in figure 1 is replaced by interactive model. With the support of applied and visual sources, the unidirectional flow of theoretical courses turn into bi-directional interactive flow At this point the students are equipped with a stronger infrastructure within a bi-directional communication process.

The students who constitute the basis of the study define the concept of theory as a rule or law. Students are not interested in theoretical courses which are a set of processed knowledge. It is observed that the university

students lack a strong primary and secondary education. The main problem here is the failure to establish a connection between a subject learned in a class and life itself. The majority of the students prefer to take applied courses rather than theoretical courses. At this point the transfer of courses and examples in theoretical courses become more important. The knowledge provided through theory should be activated through practices. Learning process will be faster and more efficient with the combination of theoretical knowledge and applied studies. It is discovered through this study that theoretical courses should not only be given by theories like its name, but also by practices prepared through up-to-date information. As a result of such transfer, the acquired theoretical knowledge become more permanent and students learn more quickly. Consequently, an interactive education is provided with the combination of theoretical knowledge and applied studies and a mutual relation is established between the theory and life. The subjects learned in theoretical courses help the students to establish a link with life though the applied practices.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Deniz YENGIN was born in 1978 in Istanbul. He graduated from Bilgi University, Faculty of Economics and Administrative Sciences. He completed his graduate degree at Istanbul Kültür University, Social Sciences Institute's Communication Design program. He completed his PhD at Marmara University, Social Sciences Institute Information Technology department. He is also teaching at Istanbul Kültür University as Assistant Professor. Furthermore, he is working extensively in the fields of communication, information technologies, new media and digital games.

Assist. Prof. Dr. Deniz YENGİN
İstanbul Kültür University, İstanbul, TURKEY
Faculty of Arts and Design
Tel : 090212 4984574
GSM: 090532 5662115
E. Mail: d.yengin@iku.edu.tr

REFERENCES

Adler, A. (1984). Güç Çocuğun Eğitimi. İstanbul: Varlık Yayınları.

Aziz, A. (2003). Araştırma Yöntemleri Teknikleri ve İletişim. Ankara: Turhan Kitabevi.

Bens, E. Golding, P. and McQuail, D. (2005). Communication Theory and Research. London: Sage Publication.

Carr, W., (2006). Education Without Theory. British Journal of Educational Studies. Vol.54, No.2, 136-159.

Hean, S., Craddock, D. & O'Halloran, C. (2009). Learning Theories and Interprofessional Education: A User's Guide. Learning Health and Social Care, Vol.8, No.4, 252-262.

İslamoğlu, H., (2009). Sosyal Bilimlerde Araştırma Yöntemleri. İstanbul: Beta Yayınları.

Littlejohn, S. ve Foss, K. (2009) Encyclopedia of Communication Theory. London: Sage Publication.

Lunenberg, M., Korthagen, F. (2009). Experience, Theory, and Practical Wisdom in Teaching and Teacher Education. Teachers and Teaching: Theory and Practice, Vol.15, No.2, 225-240.

Malik, M., Rahman, F. (2010). Impact of Theories of Distance Education On Teaching Learning Process. International Journal of Academic Research, Vol.2, No.4, 373-378.

Menteş, A. (1999). Yeniversite: Bilim Kurumlaşmasında Günümüz İçin Bir Perspektif. İstanbul: Metis Yayınları.

Russell, B. (1984). Eğitim Üzerine. İstanbul: Say Yayınları.

Sandıkçıoğlu, İ., Buchele, R. (1988). Üniversite Üzerine. İstanbul: Arkadas Yayınları.

Severin, W. and Tankard, J. (1992) Communication Theories: Origins, and Uses In The Mass Media. London: Longman.

Tanilli, S. (1988). Nasıl bir Eğitim İstiyoruz? İstanbul: Amaç Yayıncılık.

Turner, D. (2007). Theory and Practice of Education. New York: Continuum Publishing.

Zaretsky, L. (2005). From Practice to Theory: Inclusive Models Require Inclusive Theories. American Secondary Education. Vol.33, No.3, 65-86.

Avrupa Konseyi ve Avrupa Komisyonu (2000). Kültürlerarası Öğrenme. İstanbul: Tarih Vakfı Yayınları.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 6 ISSN 1309-6249

QUALITY MANAGEMENT IN UNIVERSITY EDUCATION PROCESS

Prof. Dr. Jozef GAŠPARÍK,
Slovak University of Technology in Bratislava
Faculty of Civil Engineering
Radlinského 11, 813 68 Bratislava SLOVAKIA

ABSTRACT

In my contribution possible implementation of quality management trends in education process at the Faculty of Civil Engineering of the Slovak University of Technology (SUT) in Bratislava (Slovakia) is described. Quality of education process depends on many important factors, like high qualification of teachers, good infrastructure concerning the education, library with new books and journals from all over the world, effective university information system etc. In the process of continual increasing the quality of education process we can implement quality management system according to ISO 98001:2008, total quality management, reengineering, Kaizen method and model of excellence CAF (Common assessment framework). Implementation of these quality management philosophies at university education process can lead into increasing quality of teachers and our customers-students and through them to application of new world knowledge and experiences to practice. At contribution are presented some important documents like quality policy, map of quality assurance and monitoring of education process at university.

Keywords: Quality, management, education, process, university.

INTRODUCTION

Quality of education process depends on many important factors. The most serious of them is quality and qualification of university teachers and researches responsible for quality of pedagogical process. Five years ago the rector of Slovak University of Technology in Bratislava decided to develop and implement new quality management trends in university and in all its faculties. Pedagogical process at university is the most important activity, because the students are our main customers and our main objective is to offer them the best information and knowledge, which help them to find fulfillment in practice after finishing university study. To reach this aim it requires to implement many other qualitative factors described at this contribution. I cooperated at this process at university and tried to implement the best features of more quality management approaches and philosophies with aim to find the best solution concerning the increasing of pedagogical process quality at university.

QUALITY VISION AND POLICY

The first important quality document for university students and employees is *Quality vision and policy,* which reflects overall intentions and direction of an organization related to quality expressed by top management of university (ISO 9000: 2005). Top management of university and its faculties shall ensure that the quality vision and policy: is appropriate to the purpose of the organization, include a commitment to comply with requirement and continually improve the effectiveness of the quality management system, provide a framework for establishing and reviewing quality objectives, is communicated and understood within the organization and is reviewed for continuing suitability (ISO 9001:2008). Quality vision and policy of SUT is initiated in figure 1.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 6 ISSN 1309-6249

QUALITY VISION AND POLICY
(Pedagogical process)

Top management of Slovak University of Technology (SUT) in Bratislava consider the development and implementation of quality management system according to ISO 9001:2008 and other quality management world trends (especially model CA - Common Assessment Framework) in pedagogical process and other related processes at SUT as a key priority connected with increasing requirements of society into quality and professionalism of our graduates.

Top management of SUT has commitment to fulfill expected requirements of society and university students concerning the quality of education process and continually improve the effectiveness of quality management system at university.

Basic principles of our vision and policy:
1. Creating work condition by top management of university, which will lead to university prosperity and significant position in Europe and world.
2. Assurance compatibility of education processes with top universities of Europe and world
3. Active involvement of all internal employees of university (pedagogues, researches) and external partners into increasing the quality of pedagogical process.
4. Continual improvement of university infrastructure with aim to create the best precondition of employee professional progress at all management levels.
5. Increasing of moral and professional potential of pedagogues and other employees of university with aim to deal with world knowledge to our customers in framework of accredited university field of studies and study programs.
6. Careful planning and actualization of study programs and content of study teaching subjects in harmony with new world knowledge and trends in area of science, technology and education.
7. Continual evaluation of feedback in pedagogical process with aims to improvement of university connection with practice and fulfillment the requirements of practice.
8. Effective communication and teamwork of university employees with aim to reach extra effects in area of education and research.
9. Motivation of university employees by top management of SUT and differential reward system according to reached results in education, research and other areas.
10. Increasing of university culture, economical prosperity of SUT and social approach of university top management into employees and students.

This quality vision and policy creates basic framework for each year quality objective determination in all faculties of SUT, which fulfillment is obligatory for all employees of university.

Top management of SUT wishes to all our employees a lot of energy and optimism during the process of quality policy and aims application and has commitment to create work conditions, which will lead to satisfaction of students, employees and to prosperity of our university.

In Bratislava Datum: Name and signature of SUT rector

Figure 1: Quality vision and policy at SUT

FACTORS INFLUENCING QUALITY OF PEDAGOGICAL PROCESS

The process of pedagogical process planning starts by proposal of study programs by guarantors approved by top management of faculties in framework of accredited fields of studies. Study programs are each year approved by scientific committee of SUT faculties and by academic senates of faculties. After this process study programs are publicized for teachers and students through Academic Information System (AIS) of faculties. On the faculty websites of SUT detailed information about all pedagogical system is given. Main responsibility for quality of pedagogical process has top management of faculty (dean of the faculty, vice-dean for education and guarantors of study programs). For quality of education process are responsible guarantor of study subjects, lecturer and heads of seminars. Important role during the pedagogical process planning and realization have pedagogical council, the members of which are guarantors of key subjects of study program. This council is responsible for quality evaluation of pedagogical process and its quality improvement. The council is open for students, teachers and practice and requirements of this people implements into increasing the quality of study programs, teaching plans and revision of study literature.
Communication between students and faculty management is realized by meetings with dean, vice-deans, and guarantors of study programs. Students have representing persons in academic senate and council of dean. Once a year we have meeting of all academic community, where are questions concerning the quality of pedagogical process analyzed. Factors influencing the quality of pedagogical process are illustrated in figure 2, where are described key activities of this process and responsibility of faculty management.

QUALITY EVALUATION SYSTEM OF PEDAGOGICAL PROCES

Basic activities concerning the quality monitoring and evaluation of pedagogical process are illustrated in figure 2. Final responsibility for quality of pedagogical process has dean of the faculty. Dean delegates this responsibility into vice dean for education process and especially into guarantors of study programs. This top management of faculty is responsible for:

- accessibility of all information concerning the pedagogical process for teachers and students of all degrees (bachelors, masters, PhD.)
- timely approval and publication of study programs,
- timely assurance of schedule for students and teachers,
- function and readability of academic information system (AIS) for students and teachers,
- assurance of modern didactic technique for pedagogical process in teaching rooms and laboratories (personal computers, data projectors, video projection, laboratory instruments and equipment etc.),
- accessibility and actualization of software using during pedagogical process,
- yearly evaluation and measurement quality of pedagogical process.

Very important factor of pedagogical process evaluation represent results of teachers quality evaluation by students through academic information system by form of anonym questionnaire, where each lecturer and head of seminar can find after finishing the semester evaluation of his or her pedagogical work. This information has also guarantor of study program and in case of bad teacher evaluation guarantor must prepare corrective and preventive actions for future activity of pedagogue. Guarantors of study programs and study subjects have responsibility for checking the quality of pedagogical process by form of inspection of lectures and seminars. Monitoring of pedagogical process quality involves these activities:

- input quality control of subject syllabus, teaching literature, didactic technique and professionalism of teachers,
- continuous quality control of pedagogical process by inspection of lectures and seminars quality level, quality of documents and necessary records etc.,

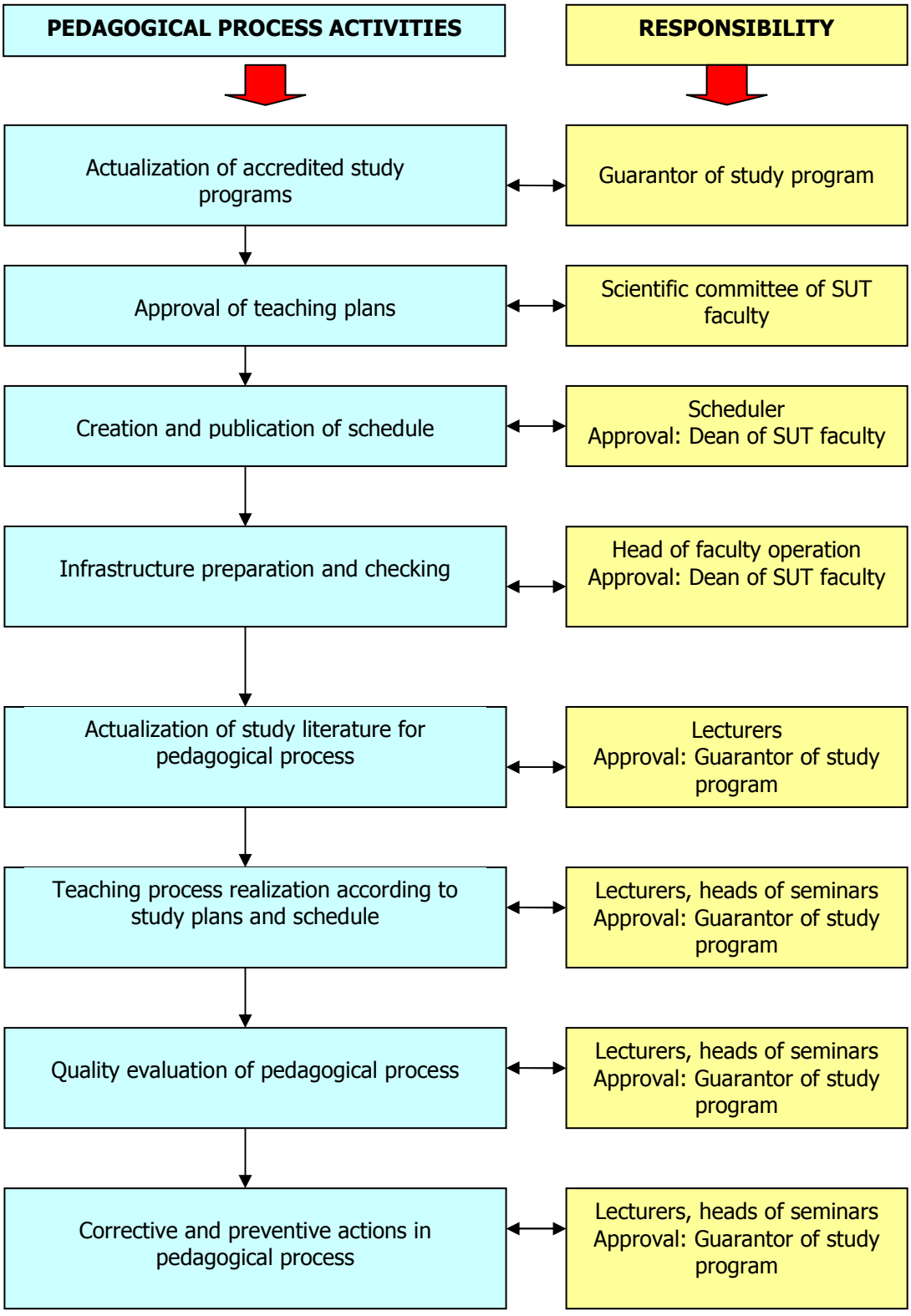


Figure 2: Structure of pedagogical process activities

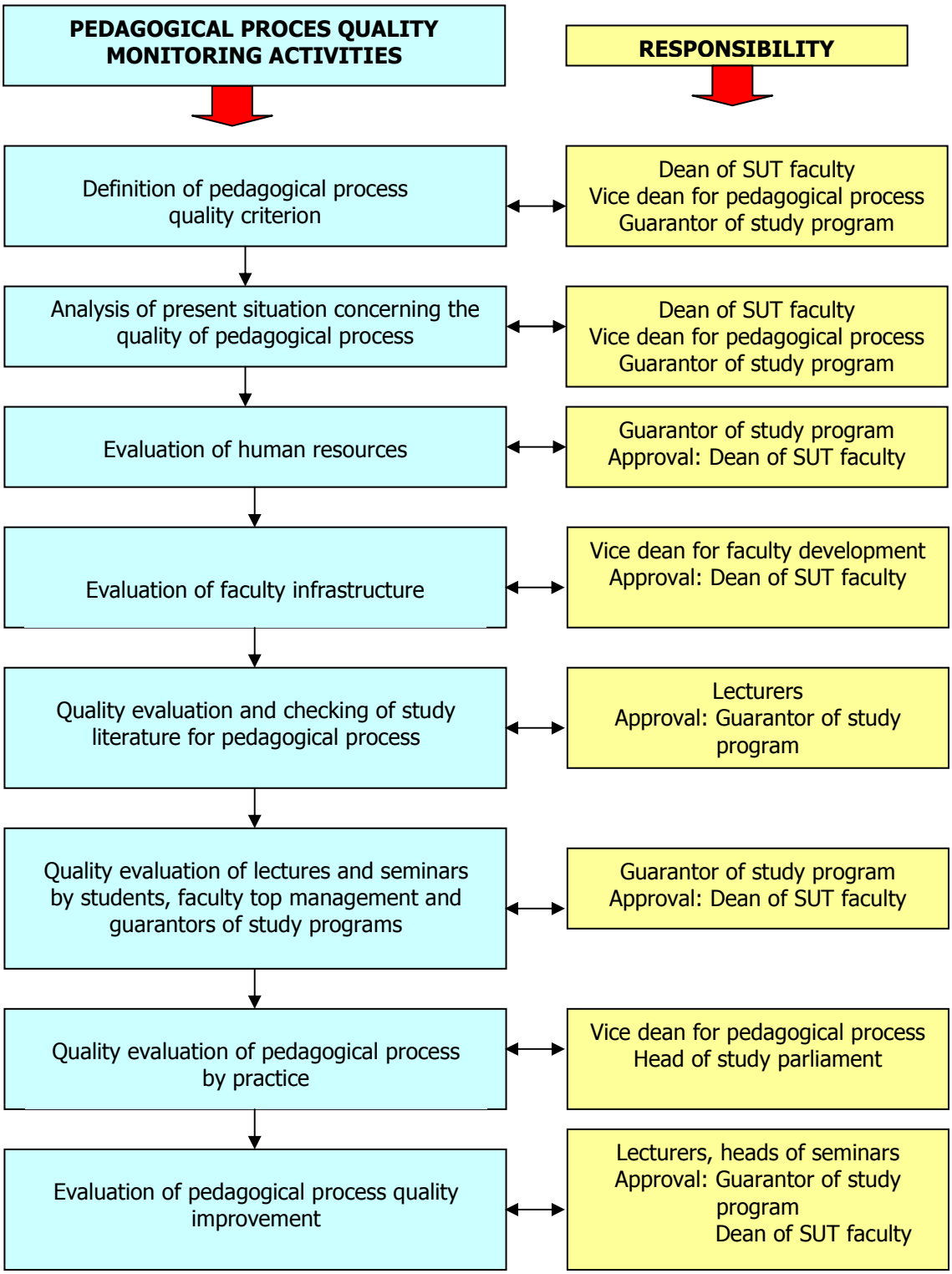


Figure 3: Quality evaluation of pedagogical process at SUT

- output quality control of pedagogical process concerning the knowledge of students (successfully finishing of study, study results), their adaptability in practice, evaluation of our students by external companies etc.

HIGHER LEVELS OF QUALITY MANAGEMENT IN PEDAGOGICAL PROCESS

With aim to continually increase the quality of pedagogical process I can advise several methods of quality management, especially methods of Total Quality management (TQM), KAIZEN, REENGINEERING and model of excellence CAF (Common assessment framework).
Total Quality Management (TQM) is approach of company management focused on quality, which is based on the participation of all its members and aiming at:

- long-term success achieved through satisfied customer,
- prosperity of the organization as a whole,
- benefit of all members of the organization.

TQM demands changes of attitudes and behavior of the employees of the organization in relation to customers (internal and external) and fulfilling of their duties in a controlled and coordinated manner (Paulová, Hekelová, Šatanová and Šalgovičová, 2008).

Effects of TQM implementation can be direct (minimization of pedagogical problems and complaints) and indirect (growth of consumer confidence to university, detection of hidden abilities of teachers, increasing of university culture).

Basic steps for TQM development and applying:

- Understanding the importance and commitment of an organization to apply TQM in practice.
- Create organizational preconditions for TQM.
- Plan and application of effective Quality Management System (QMS) according to ISO 9001:2008 and ISO 9004:2009.
- Education of employees (lecturers, head of seminars, researches).
- Effective communication and teamwork between faculty departments.
- Motivation and reward of employees for achieved results.
- Continuous quality improvement at all departments of organization (Oakland, 2003).

Method of KAIZEN is method of continuous quality improvement based on the creative thinking of employees developed in Japan (KAI – improvement of processes, procedures, services, ZEN – continuous process refers to everyone).

The aim of KAIZEN method at university is continuous improving quality of teaching services for students, improvement of all processes in the value chain of teaching activities, effective using of university costs, mass initiative of all employees (teachers, researches, administrative staff etc.), effective motivation system, orientation on staff and increasing their performance and teaching activities, staff are holders and co-creators of university image.

Principles and methods of KAIZEN are similar to TQM philosophy:

- focusing on customers (students),
- application of TQM philosophy,
- quality circles (teachers, students),
- discipline during pedagogical process (teachers and students),
- continuous quality improvement of education process,

- effective cooperation between departments of faculty.

Method of KAIZEN requires to pay attention to any improvement of teaching services and participation of all university employees in improving processes and services. Any improvement is analyzed and the positive and negative impacts are examined. Basic management tasks are: creating and improving standards, frequent meetings to solve problems, strong support from top management, active work from bottom, motivation for improvement efforts and reward for creativity.

Reengineering is philosophy (developed by Hammer and Champy, 1993) based on fundamental rethinking and radical redesign of organization processes to achieve dramatic improvements in critical measures of performance such as quality level, cost and time. Reengineering was successfully implemented especially in production and service companies, but this philosophy can be implemented also at universities. The aim of this philosophy is finding new ways for maximal effects of offered services. Especially in university teachers must do a lot of administrative works instead of effective time using in pedagogical and research areas. Basic principles of reengineering are:

- effort to make headway,
- creativity of employees, especially teachers during the pedagogical process planning and realization,
- willingness to learn,
- effective communication and teamwork of all employees,
- monitoring and implementing of world trends concerning the education and research catching,
- application of information technology at university in education, research and administrative process.

The Common Assessment Framework (CAF) is total quality management tool inspired by the Excellence Model of the European Foundation for Quality Management (EFQM) and by the Model of the German Speyer Academy. The CAF model is provided to European public sector organizations as a simple tool to amply management techniques aimed at performance improvement. The CAF model is based on the assumption that organizations achieve extraordinary results in performance in relation to citizens/customers, employees and society on the basis of leadership, strategy and planning, employees, partnerships and processes. It provides a view of the organization from different angles and at the same time, it holistically analyses the performance of organization.

The CAF model has the following main aims:

- Introducing the principles of TQM into public administration, lead organizations methodically while understanding and applying self-assessment in the phase of transfer from a planning and performance system to a fully integrated PDCA cycle (PLAN-DO-CHECK-ACT) developed by Deming.
- Support self-assessment of public sector organizations in order to obtain a structured picture of the organization and subsequently, ideas for improvement activities.
- Serve as a bridge between various models used in quality management.
- Support bench learning between public sector organizations (Organization Excellence, 2009).

The structure of nine areas (figure 4) determines the main aspects requiring attention during any analysis of an organization. Criteria 1-5 relate to preconditions characteristics of the organization. These determine what the organization does and how it approaches its tasks in order to achieve the desired results. Within criteria 6-9, results achieved in relation to citizens/customers, employees and society are measured. Key performance results are evaluated using measurement and evaluation of internal indicators. Each criterion is divided into sub-criteria. The 28 sub-criteria define the main areas that must be considered during organizational self-assessment. Organizations with more than 70% points can participate on the competition for the National Quality Award.

Model CAF is useful to implement after development and implementation of Quality Management System (QMS) according to ISO 9001:2008. QMS represents very good basis for application of higher quality

management philosophy, like TQM, KAIZEN, reengineering and model CAF. Faculty of material engineering of SUT were in year 2009 in final step of the National Quality Award concerning the implementation of model CAF in Slovakia. My organization CEMAKS (Quality Management Centre in Construction), which is holder of QMS certificate according to ISO 9001:2008, uses model CAF as a tool for continuous improvement of quality products and services.

It is not important, which quality management philosophy at university will be implemented. The main activities must be focused into our customers-students and society, where our graduates will later work. University must involve all employees into process of quality improvement of all activities, especially education process, because by this process direct influences the quality of our graduates.

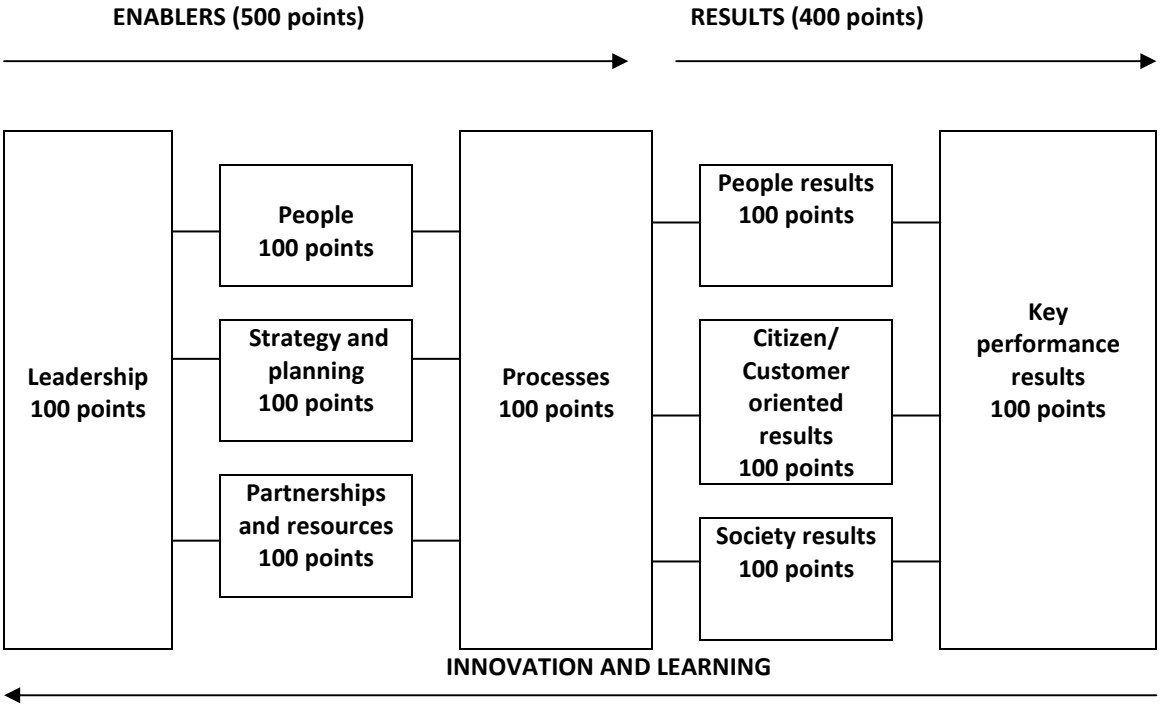


Figure 4: CAF Model Structure

CONCLUSION

In my contribution knowledge concerning the implementation of Quality Management System in education process at the Faculty of Civil Engineering of the Slovak University of Technology in Bratislava has been described. All quality factors analyzed in contribution helped us to increase quality of education. At this time we try implement the best features of higher quality management philosophies, which principles are also described at last chapter. I believe that these experiences and knowledge can help other education institutions to develop and implement quality management approach, which will lead into satisfaction of students, teachers and all society.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Jozef GAŠPARÍK is professor at the Faculty of Civil Engineering of Slovak University of Technology in Bratislava (Slovakia). At this time he is head of Department of Building Technology and guarantor of three study programmes: Building Technology and Management (bachelor degree), Building Technology (Master and PhD. Degree). He is founder and director of Quality Management Centre in Construction (CEMAKS). CEMAKS is a company with many years of experience in the field of quality management training and consultancy. Since 1996 this organization prepared more than 130 organizations to successfully obtain the certificate of quality management systems according to ISO 9001 and integrated management system (quality, environment, health protection and safety). CEMAKS was the first training centre in Slovakia certified in Quality Management System according to ISO 9001. This certificate was given by Bureau Veritas based in London. In 1991-92 worked at University of Brescia in Italy. In past years he was a responsible solver of three successfully completed scientific domestic research projects focused on quality area and in 1998-2004 was a coordinator of two successfully completed international Leonardo da Vinci projects focused on social aspect of quality management. Research results were presented at conferences and workshops in Italy, Portugal, Belgium, France, Spain, Greece, Turkey, Egypt, Croatia, Cyprus, Czech Republic and Poland.

Author is a member of executive of International Association on Automation and Robotics in Construction (IAARC). He won National Quality Award of the Slovak Republic for journalism in quality management field in 2008 and he was awarded as a professor of a year 2009 at the Faculty of Civil Engineering.

Prof. Dr. Jozef GAŠPARÍK
Faculty of Civil Engineering
Slovak University of Technology
Radlinského 11
813 68 Bratislava
E. Mail: jozef.gasparik@stuba.sk
www.cemaks.sk

REFERENCES

Paulová, I., Hekelová, E., Šatanová, A., Šalgovičová, J. (2008). Metódy zlepšovania efektívnosti a účinnosti TQM. Bratislava: STU Bratislava, 2008. ISBN 978-80-227-2857-7.

Oakland, J. S. (2003). Total Quality Management. Oxford: Elsevier Ltd. ISBN 978-0-7506-5740-

Hammer, M., Champy, J. (1993). Reengineering – A manifesto for Business Revolution. New York: Harper Collins Publisher Inc.

Organization Excellence. (2009). First information on the Competition for the National Quality Award of the Slovak Republic. Edition: UNMS Bratislava.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 7 ISSN 1309-6249

THE USE OF LEXICAL NETWORKS IN EFL VOCABULARY TEACHING

Dr. Hasan BAYRAKTAR,
Middle East Technical University
Department of Foreign Language Education
Ankara, TURKEY

ABSTRACT

This study has evaluated the effectiveness of vocabulary instruction via lexical networks and whether this approach aids text comprehension and vocabulary growth in an L2 reading and vocabulary course. The instructional use of lexical networks, more commonly known as semantic maps, was tested against the word-definition matching technique, an approach that focuses on lexical items in isolation, as independent units. The main interest of the researcher was whether the use of a lexical network approach can help students recognize lexical cohesive features of a text and consequently facilitate comprehension of a text and increase vocabulary retention. The results of the study showed that learners' identification of lexical networks in a text can be a useful vocabulary learning device for advanced L2 learners, helping them establish and strengthen the links not only between the items that were the focus of the explicit instruction, but also other semantically related lexical items in the text.

Keywords: Lexical Network, vocabulary teaching, reading comprehension.

BACKGROUND TO THE STUDY

Recent studies on the process of reading comprehension of L2 learners and text coherence has shown that information presented in a coherent way and awareness of the text organization can result in better reading comprehension scores and better retention of the received information (Stoller & Grabe, 1993). A few studies suggest that verbal and visual representations of information from a text improve students' understanding, memory and recall (e.g. Paivio, 1986; Sadoski, Paivio, & Goetz, 1991). This mental representation can be created through natural means, or it can be prompted by explicit instruction. One technique that proved effective for this purpose is designing graphic organizers that match specific text structures. Visual aids (graphics, diagrams, shapes and figures) have been found to be effective in helping students visualize the interrelationships among ideas and details in the text, leading to better text comprehension. One popular type of graphic organizers is a lexical network, usually referred to as a semantic map, which shows the lexical links in a text.

Semantic mapping has been defined as "a graphic arrangement showing the major ideas and relationships in text or among word meanings" (Sinatra, Stahl-Gemakel & Berg, 1984:22). As an instructional strategy it involves establishing the links between words and concepts in the text, grouping information and creating visual displays of these categories and their relations.

The present study explores the concept of lexical networks, which has its origin in Halliday & Hasan's (1976) discussion of lexical cohesion in text, and examines its application as a vocabulary reinforcement strategy. It draws its inspirations in the way words are clustered in the mental lexicon, and compares a word association learning strategy based on reading of a text to a conventional technique, listing of words in isolation and their definitions.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 7 ISSN 1309-6249

Lexical Networks: A Description

Halliday and Hasan (1976) first proposed lexical cohesion as one of the cohesive devices for text coherence and organization. Their idea was further developed by de Beaugrande & Dressler (1981) and Hoey (1991) who made a graphical analysis of the structure of texts by showing the connection and nodes of connection through lexical items or words by means of drawing lines and arrows.

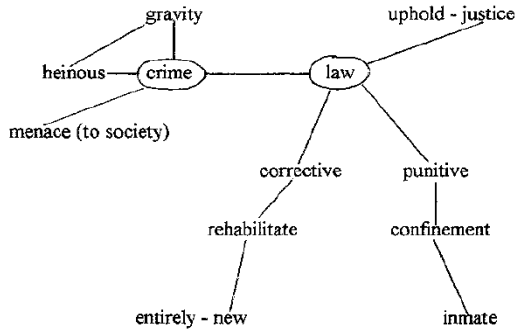
Words in an authentic text usually get linked in two different ways: paradigmatically and syntagmatically. Syntagmatic associations are those that would be related by a phrase or syntactic structure. Paradigmatic associations, on the other hand, involve the other words that could replace the target word. Common examples of paradigmatic associations are “black – white”, “man – woman”. On the other hand, “gun – shoot” can be considered a simple example of syntagmatic association. Paradigmatically related words bear a hierarchical connection to each other, and can usually fill the same syntactic slot in a sentence. Examples include superordinates (dog!animal), subordinates (dog!terrier), hyponyms (dog!cat), and so forth. Syntagmatic connections, on the other hand, exist in collocations and other types of connections which are typically from another word class, and commonly co-occur with a certain word (dog!bite, bark, furry, etc.). Studies in the mental lexicon mainly focus on the former, as evidenced in many of the studies in word association and in semantic fields (Clark, 1970; Meara, 1980; Channell, 1988; Aitchison, 1994).

The main claim of this study is that L2 readers who explore a text by noticing both the paradigmatic and the syntagmatic cohesion between the lexical items in the text would be at an advantage in terms of comprehension. By paying attention to both the paradigmatic and syntagmatic association between the lexical items used in a text, learners can process and remember the words better, too.

In presenting the paradigmatic and syntagmatic association of words used in a text, a visual, graphic display would be more explicit and impressive (Kameenui, Dixon & Gamine, 1987:143-144). By drawing arcs between words and forming nodes, lexical networks can be drawn up which graphically and vividly present the connection between the lexical items. The following gives an illustration of how to construct a lexical network from a text. Consider the following passage adapted from a text used by a reading skills course book with ten vocabulary items underlined and bold typed.

> The purpose of the law is to **uphold** justice. If a man commits a **heinous** crime like murder, and the court has found him guilty, he should be sentenced to a punishment based upon the **gravity** of his crime. Putting a man in prison should not only serve a **punitive** purpose but also a **corrective** one. In many modem societies, the government provides opportunities for prison **inmates** to **rehabilitate** and even offers prisoners opportunities for adult education. The idea is to punish the criminal and make him suffer for his crime by long-term **confinement** but at the same time rehabilitate him so that when he comes out of prison, he will be an **entirely** new person, more responsible and no longer a **menace** to society.

If we look at the ten vocabulary items chosen, they are mainly related to law and crime. Thus ‘law’ and 'crime' can be chosen as the topic or key peg words. The two words 'uphold5 and 'entirely' do not seem to link with the key peg words and the other words in the network easily because semantically they do not seem to belong to the same lexical set with the other words. One way to overcome this problem is to emphasize the collocational relationship of “uphold” with “justice” and of' “entirely” with “new” in the text. This produces the lexical network shown in Figure 1.



The lexical network activity is a post-reading, test-based, vocabulary consolidation activity. It demands that learners have already mastered the vocabulary items and understood the text. The semantic association of the lexical items is mainly determined by the way the words are used in the text, not pre-determined in the semantic field or the mental lexicon, as in the example of 'entirely - new' mentioned above. It is this characteristic that mainly distinguishes a lexical network from a semantic map. However, in this paper, both concepts are used interchangeably so as not to confuse the readers and take them away from the main points made in the study.

Teaching vocabulary via lexical networks may also have the potential to result in better comprehension of a text. Representation of vocabulary items in a text in a web-like diagram makes it possible for learners to activate their prior knowledge of the topic, which should, in turn, help them to grasp, internalize and evaluate information in the material (Johnson, Pittelman & Heimlich, 1986). It also helps learners thematically group the key vocabulary based on the concepts presented in the text. That enables learners to recognize the multiple functions that words have in the text and to identify the semantic relationships between ideas which are not explicitly shown. Considering that sentences central to the topic tend to contain a larger number of lexical links (Hoey, 1991), a visual framework of lexical links that contribute to the cohesiveness of the text should help students recognize the links between the concepts and identify important information in the text. A more coherent representation of a text is expected to make discourse processing easier for learners, enabling them to channel their cognitive resources to unknown words in the text, which again should enhance vocabulary development. In other words, a graphic presentation of the information in the text may facilitate not only learning of items presented in the network, but also implicit learning of novel words in the text. This study builds on the assumption that vocabulary treatment that exploits lexical links in the text can make a better learning environment than other forms of direct instruction where the target words are presented as discrete items.

The present study makes the claim that instruction that studies and visualizes information via the lexical network technique will be more effective in assisting text comprehension and vocabulary retention than an approach where learners are just required to pair the target words with their explanations or definitions.

Participants

The study involved 32 advanced Turkish adult learners of English as a foreign language (EFL) enrolled in the language preparatory school of a university. They attended EFL classes 4 hours during the weekdays. The study took place as a part of the reading lessons. The participants were randomly assigned to two classes: the lexical network (LN) group which consisted of 15 students and the word listing (WL) group with 17 students.

Materials

Four articles were selected from English magazines such as Time and Newsweek. All texts had universal topics. Familiarity of the topics was deemed important so that all the students had sufficient content schemata, which is believed to have contributed to the readability of the texts.

Selection of the Words

Vocabulary selection was done in two steps. First, ten words with the highest number of lexical links were chosen by the researcher from each of the four articles. The software "Vocabulary Profiler" was used to determine the items with the highest repetition rate in the text. This is because repetition is considered to be one of the most common types of lexical cohesion (Halliday & Hasan, 1976). Different inflectional forms were taken as a single word. Personal nouns and "delexicalized" content words (items such as *number, fact, issue* etc. which have a discourse-organizing function) and the words used in another language were eliminated from the analysis. Lexical-semantic relations among the remaining words with high intra-textual frequency were then established. The analysis relied on the models of lexical cohesion proposed by Halliday & Hasan (1976) and revised later by Hasan (1984). These items were the focus of explicit instruction offered either through classical word listing or lexical network approach. In the discussion that follows, these words will be referred to as the *treatment* words.

The aim of this study is to assess the lexical network activity as a technique for vocabulary instruction in the context of an advanced EFL reading class. By the very nature of the lexical links students will know many, if not most, of the words used in the semantic mapping exercise. Thus the value of the semantic mapping exercise in terms of vocabulary learning will not be reflected solely -- if at all -- in terms of how well it facilitates learning of those items in the network not previously known. Rather, of interest is the effect semantic mapping will have on reading comprehension and the incidental learning of new vocabulary in the text. The specific focus is on the potential facilitation that the relational information captured in the mapped links will have on reading comprehension and vocabulary learning.

Words with the highest number of lexical links are often the most frequent words that advanced learners are likely to be familiar with. Therefore, the attention was on the acquisition of other words in the text that may be acquired incidentally while students are completing the semantic mapping or word listing tasks. In addition to the ten treatment words, two experienced teachers of reading were asked to identify 20 words from each article that were likely to be new to the learners and were considered important for understanding of the text. In total, there were 120 items on the pre-test (30 test items per article). In the discussion that follows, these items are referred to as the implicit *target* words.

Experimental Design

The study used a pre-test – treatment(instruction) – post-test experimental design. The data collection consisted of four parts: (1) Vocabulary pre-test (translation into L1); (2) Vocabulary instruction (3) Comprehension post-tests (cloze summary test); (4) Vocabulary post-test (translation into L1).
Pre-teaching Vocabulary Test: In the pre-test, learners were asked to translate 25 target words into L1. The students were given 25 minutes to complete the task. Each correctly translated item was awarded 1 point.

Vocabulary instruction sessions: In order to ensure that both types of treatments were tested under fair and equal conditions, both groups were given equal exposure to the reading material and teachers provided equal input and interaction as well as equal class time assigned to the tasks.

Word-Definition Matching Approach: The treatment provided an L2 definition of the target words and how they are used in the authentic texts. The definitions were usually synonyms, antonyms, short explanations or paraphrases, and the sample sentences were taken from *The Longman Dictionary of Contemporary English*

Online. The students were first given examples from the dictionary, then a list of target words and a list of definitions and were asked to do the matching activity. After the instructor provided explanations where necessary, the students were asked to fill in sentences taken from the four articles from which the target words were deleted. In the end, the learners were required to look at the relevant sentences in the article and check their own responses. The time given for the task was 30 minutes.

Lexical Network Approach: The lexical network activity used in this study consisted of "nodes" that include the key words in circles and the links(arrows) that lead to supporting concepts. First, the students received a map in which only the main concepts and the subordinate links were shown, which implied the number of links from each subcategory. Students were also given a list of words from the text to be read and these words were related to the central concept and supporting links. They were made to work in pairs and complete the lexical network by putting the words from the list in the appropriate slots.

The instructor provided corrective feedback, focusing especially on the text-specific lexical links and the words that learners were not able to categorize themselves. Finally, students were told to find the words from the lexical network in the article. The time assigned for the activity was 30 minutes.

Measuring Reading Comprehension: Comprehension of the texts by both groups was measured by a cloze summary test. The texts had been summarized earlier by the researcher and then gaps had been left in the summary for completion by students. Every 7th content word was deleted in the cloze test. The students were given 20 minutes to complete the task. One point was given for each correct answer. “Correct item” was defined as a word that makes sense.

Post-Teaching Vocabulary post-test: The test followed the same format and scoring procedures as the pre-tests.

RESULTS

Results of the Pre-teaching Vocabulary Test (translation): In the pre-test, the learners were instructed to translate the English words into Turkish (L1). The average number of the “already known words” was relatively high – W-DM 47%; LN 43%. The results showed that both of groups had almost the same level of prior lexical knowledge. A similar calculation was also done on the 40 treatment words that would be the object of vocabulary teaching. As can be anticipated, a very high level of familiarity with the items was observed in both groups (W-DM 85%; LN 88.5%).

Vocabulary instruction sessions: Both of the groups were able to complete the tasks within the allotted time. In the LN group, some students initially reported some challenge and difficulties in understanding a lexical network and sorting the target words, but with help of their peers they usually managed to actively participate in the activity. Students involved in the lexical network drawing showed a higher level of interest than when they were working on more conventional tasks such as matching words with their definitions.

Post-Comprehension Vocabulary Test (translation): At the end of the six-week instruction, the learners were administered a vocabulary post-test. The average number of words recognized by the learners on the post-test was almost equal for both conditions (LN 63.5%; W-DM 61.3%). A further analysis was also run on the subset of 40 treatment words. The mean scores for all four articles were high in both of the groups (LN 95.2%; W-DM 94.4%), and little variation was observed in performance of individual learners. These results were already expected by the researcher as the treatment words were high frequency items already-known by most learners at the pre-test stage.

Comparison of Pre-test – Post-test results: The two vocabulary instruction techniques were also evaluated in terms of retention of the target items by the students. Of interest to the researcher was the number of words learners acquired during the sessions and any possible correlation between different types of vocabulary treatment, text comprehension and word retention. First, performance across the four articles was examined. Mean values obtained were somewhat higher for LN group (93.25%), compared to WL group (92.75%).

A considerable increase in scores was also observed in the subset of treatment words. The gains were most noticeable in Article 1, which had the lowest scores on the pre-test. Due to the ceiling effect, there was slight improvement in the scores in Articles 2, 3 and 4.

The percentage of correct answers on both tests was computed to be able to compare the results of the pre-tests and the post-tests on an individual basis. The scores on the post-tests were, as anticipated, found to be higher for all the learners who completed the experiment, pointing at a positive effect of explicit instruction on vocabulary development. The LN group performed better than the W-DM group in the vocabulary post-tests on all four articles. The scores in the LN group were also steadier, with the gains varying between 18% and 28%. In the W-DM group, the percentage of learnt words was between 12% and 19%.

Overall Comparison of the Results: The Wilcoxon Signed Rank Test was run to measure the statistical significance of the differences in the students' pre-test and post-test performance. A pair-wise comparison of group performance across the articles indicated that the pre and posttest differences for both the lexical networking condition and the word-definition matching condition were statistically significant at $p < .0005$.

Comprehension tests： The mean scores for the two groups were almost identical - on average the students were able to answer about 70% of the comprehension questions correctly. Standard deviation values showed that the LN group exhibited slightly less variance, although greater individual differences in the students' performance were observed in both groups.
Vocabulary knowledge and reading comprehension: In order to determine the extent to which vocabulary instruction is likely to contribute to reading comprehension of advanced learners, the correlation between vocabulary knowledge and comprehension test scores was examined before and after the vocabulary treatment sessions.

The correlation between comprehension tests and vocabulary pre-test results: Students' scores in the comprehension test did not correlate with vocabulary knowledge at the pre-test. For the LN group, the Spearman's rho correlation between the pretest and comprehension test scores was $r=.270$; for the W-DM group $r=.192$. Neither were significant at the conventional level $p <.05$ level.

The Spearman's rho correlation was also run between the pre-test scores for the treatment words subset and comprehension test results. For the LN group, the correlation was $r=.37$, statistically significant at $p<.05$ level. For the W-DM group the correlation was $r=.17$ and was not significant at $p<.05$ level. The results suggest that vocabulary knowledge may not always be a good tool to predict text comprehensibility.

Comparing the comprehension tests and vocabulary post-test results: The Spearman's rho was run to see if there is any correlation between comprehension test scores and vocabulary post-test scores. This correlation is important as it provides some insight into the extent to which students' lexical knowledge may influence their comprehension of an L2 text. The Spearman's rho correlation between the two variables was slightly stronger than the pre-test correlations. For the LN group, the Spearman's rho correlation between the pre-test and comprehension test score was $r =.36$ and for the W-DM group $r=.25$, both significant at $p <.05$. Though relatively small, statistically significant correlation between vocabulary posttests and comprehension test scores was found in both cases. The correlation was slightly stronger in the LN group.

DISCUSSION AND CONCLUSION

The aim of this study was to compare the success of lexical networking and word-definition matching approaches to vocabulary teaching and to determine whether they facilitate text comprehension and vocabulary learning. The possible reasons behind the results gained are discussed below.

With regard to the effects of treatments sessions on vocabulary learning, the observed superiority of the LN approach could be linked to the fact that a lexical network offers graphic representation of the lexical cohesive links. Knowing a particular word will almost always be at some stage between total ignorance and full knowledge (Nation, 1990; Schmitt & Meara, 1997). All these various pieces of lexical information have to be strengthened. Visualization of the lexical relations among words may take learners' attention to the semantic properties of the relevant sense of each lexical item, facilitating merging of these properties in the mental lexicon. Categorical placement and graphic representation place emphasis on how a word fits in a learner's semantic network, rather than on what it means or how it was used in a particular sentence (Pearson, 1985). Asking student to construct an entire conceptual network of relevant lexical items allows integration of new information into the existing knowledge, thus facilitating vocabulary growth.

In the W-DM approach, word meaning is studied through dictionary definitions, where the term is explained by identifying the concept to which it belongs and the unique characteristics that differentiate it from other members of its class. There are several challenges, however, resulting from this process. First, it is not easy to define words in psycholinguistic terms. Mental representations of words are still not completely understood (Jorgensen, 1990) and such mental processes are complex and not conducive to introspection (Miller, 1981; Johnson-Laird, 1987) which makes it extremely difficult to capture word meaning explicitly in a definition alone. Second, the W-DM technique sees words as individual items with the focus being placed on their meaning and use in a particular sentence. That also makes it difficult to see how these words may fit into the larger lexical network that is represented in the mental lexicon. As Kintsch (1998:43) pointed out "words become meaningful because of their relation to other words." On the other hand, the process of lexical network construction pushes students to relate the words to each other, which may have helped them establish and strengthen the links not only between the items that were the focus of the explicit instruction, but also other semantically related words in the text. Thematic organization and visualization of the lexical network may have made the process of integration and restructuring of the mental lexicon faster, resulting in more noticeable vocabulary gains.

The results of this study did not reveal any significant difference in the comprehension test scores of the two groups. It could be interpreted that both techniques can be an effective way of improving comprehension, though they may involve different psychological processes. In the W-DM approach, providing the learners with the dictionary definitions of the words as they were used in the articles probably increased the likelihood of the sentences being interpreted correctly. Moreover, the fact that during the treatment session the learners were asked to complete sentences from which the target words were deleted and then confirm their answers by finding the relevant sentences in the article may have helped them remember the target words in the cloze summaries with more ease.

The lack of correlation between the scores on the vocabulary tests and comprehension tests suggests that students' vocabulary size alone may not always guarantee higher comprehension rates. It is possible that the students have somehow learnt the new meaning and the form of individual words, but they may not have developed the ability to actively use this new word during reading comprehension. Recognition of individual words may not be enough to process a text smoothly. Advanced learners may have acquired the meaning of a large number of vocabulary items, but if these were are not well integrated and linked in the mental lexicon,

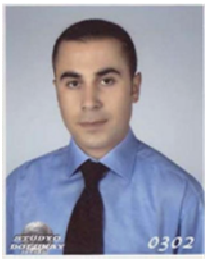
they still may report difficulties in understanding L2 texts, particularly in test situations. Thus, the tests that measure knowledge of words in isolation may not be the best predictor of the students' performance in reading. It is possible that quality of word knowledge –rather than quantity– may be a more relevant factor when it comes to text comprehension.

Another key issue that should be given attention while discussing the findings of this study is the effect of instruction on students' desire and readiness to learn. Learners' performance in the class indicates that vocabulary teaching through lexical network activity may keep the students more actively engaged in learning endeavors than traditional modes of instruction such as matching the words with their definitions. Creation of lexical networks seems to be a very effective tool in fostering pair or group work habits and thus collaboration among students. This is quite important because it is through group work, interaction and negotiation that learners can continue to expand their understanding of new words (Hunt & Beglar, 2005). Experimental studies (e.g. Newton, 1993) showed that combined lexical knowledge of learners in a class provides more extensive coverage of L2 vocabulary than the lexicon of any individual learner. What is more, group-based peer interaction offers a low-stress environment where learners are not afraid of making errors and without fear of exposing their weakness to the instructor (Long & Porter, 1985). Increased level communication and relations among the students may also be one of the grounds leading to better vocabulary scores in the lexical network group.

It seems apparent that simply telling students the meaning of new words is not enough to fully incorporate them into the mental lexicon. The results of this study suggests that, as a pedagogical tool, students may keep a 'vocabulary journal' in which they could write new words and all of the connections that they can think: part of speech; spelling, syllables and stress; words with similar meanings; opposites; categories the words belong to; words that usually connect to the word and personal experiences etc. By writing down all of these connections, the English learners would be assisting their mental lexicon in building stronger links between words which in turn would help them remember the new vocabulary.

To conclude, the results obtained in this study have indicated that the lexical network approach is a useful vocabulary-learning mechanism for advanced L2 learners. It assists consolidation of vocabulary and boosts motivation. However, the results of the study did not indicate that instruction through lexical network activities is necessarily more effective than more traditional treatments like matching words with their definitions when the main concern is improving text comprehension. It is possible that learners' gains in vocabulary knowledge do not directly result in better text comprehension and that students' comprehension test scores do not reflect their overall proficiency, either. It is hoped that the findings attained here will be useful to instructors and learners in similar instructional settings and encourage them to even further explore lexical network activities as a vocabulary teaching technique.

BIODATA AND CONTACT ADDRESS OF AUTHOR



Hasan BAYRAKTAR has recently completed his Ph.D. in English Language Teaching at the Department of Foreign Language Education, METU, Ankara, TURKEY. He has worked in the same department as a research assistant for nine years. He also worked as a Fulbright foreign language teaching assistant and academic writing center tutor (as an ESL specialist) at the University of Richmond, VA, USA during the 2003-4 academic year. His research interests include second language reading and writing, vocabulary teaching, language testing, educational technologies, and language teacher education. He is the author of two books on L2 reading: "The Role of Lexical Cohesion in L2 Reading Comprehension" and "A Communicative Competence Perspective on Difficulties in L2 Reading".

Dr. Hasan BAYRAKTAR
Middle East Technical University
Department of Foreign Language Education
06800 Ankara/ Turkey
E. Mail: bayraktarhasan@yahoo.com

REFERENCES

Carter, R. (1989). Vocabulary, cloze and discourse: An applied linguistic view. In R. Carter & M. McCarthy (Eds.), Vocabulary and language teaching (pp. 161-180). New York: Longman.

Collins Cobuild English Dictionary (1999). UK: HarperCollins Publishers.

Hague, S. A. (1987). 'Vocabulary Instruction: What L2 can learn from L1'. Foreign Language Annals, 20 (3): 217-225.

Halliday, M. A. K. and Hasan, R. (1976). Cohesion in English. London: Longman.

Hasan, R. (1984). 'Coherence and Cohesive Harmony'. In Flood (Ed.) Understanding reading comprehension (pp. 181~219). Delaware: International Reading Association.

Hoey, M. (1991). Patterns of lexis in text. Oxford: Oxford University Press.

Hunt, A. and Beglar, D. (2005). 'A framework for developing EFL reading vocabulary.' Reading in a Foreign Language, 17 (1): 1-31.

Johnson-Laird, P.N. (1987). 'The mental representation of the meaning of the words.' Cognition, 25: 189-211.

Johnson, D. D., Pittelman, S. D. and Heimlich, J. E. (1986). 'Semantic mapping.' The Reading Teacher, 39: 778-782.

Jorgensen, J. C. (1990). 'Definitions as theories of word meaning.' Journal of Psycholinguistic Research, 19(5): 293-316.

Kalgren, A. (1992). 'Semantic maps: The road to better writing.' Perspectives, 10: 16-18.

Kintsch, W. (1998). Comprehension: A paradigm for cognition. Cambridge: Cambridge University Press.

Long, M.H. and Porter, P. A. (1985). 'Group work, interlanguage talk, and second language acquisition.' TESOL Quarterly, 19 (2):207-228.

Machalias, R. (1991). 'Semantic networks in vocabulary teaching and their application in the foreign language classroom.' Babel: Journal of the Australian Modern Language Teacher's Association, 26(3): 19-24.

Meara, P. (1990). 'A note on passive vocabulary.' Second Language Research, 6: 150-154.

Miller, G. A. (1981). 'Trends and debates in cognitive psychology.' Cognition, 10: 215-225.

Nation, I.S. P. (1990). Teaching and Learning Vocabulary. U.S: Heinle & Heinle.

Nation, I.S.P. and Newton, J. (1997). 'Teaching vocabulary.' In Coady and Huckin (Eds.), Second language vocabulary acquisition (pp. 239-254). Cambridge: Cambridge University Press.

Newton, J. (1993). Task-based interaction among adult learners of English, and its role in second language acquisition. Unpublished PhD thesis. Victoria University of Wellington, New Zealand.

Oxford Advanced Learner's Dictionary (1995). UK: Oxford University Press.

Paivio, A. (1986). Mental representations: A dual coding approach. New York: Oxford University Press.

Pearson, P. D. and Johnson, D. D. (1978). Teaching Reading Comprehension. New York: Holt, Rinehart and Winston.

Sadoski, M., Paivio A. and Goetz, E.T. (1991). ' A critique of schema theory in reading and a dual coding alternative.' Reading Research Quarterly, 26: 463-484.

Schmitt, N. and Meara, P. (1997). 'Researching vocabulary through a word knowledge framework:Word associations and verbal suffixes.' SSLA, 19: 17-36.

Sinatra, R. C., Stahl-Gemakel, J. and Berg, D.N. (1984). 'Improving reading comprehension of disabled readers through semantic mapping.' The Reading Teacher, 33: 22-29.

Skehan, P. (1996). 'A framework for the implementation of task-based instruction.' Applied Linguistics, 17 (1): 38-62.

Spence, D. P. and Owens, K. C. (1990). 'Lexical co-occurrence and association strength.' Journal of Psycholinguistic Research, 19 (5): 317-331.

Stoller, F. L. and Grabe, W. (1993). 'Implication for L2 vocabulary acquisition and instruction from L1 vocabulary research.' In Huckin, Haynes and Coady (Eds.), Second language reading and vocabulary learning (pp. 24-44). US: Ablex Publishing Corporation.

Vocabulary Profiler. (http://www.er.uqam.ca/nobel/r21270/cgibin/webfreques/web_vp.html)

Wilks, C. and Meara, P. (2002). 'Untangling word webs: graph theory and the notion of density in second language word association networks.' Second Language Research, 18 (4): 303-324.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 8 ISSN 1309-6249

PROFESSIONAL CHOICE OF PUPILS WITH SPECIAL EDUCATIONAL NEEDS

Assoc. Prof. Dr. Zdenek FRIEDMANN
Department of Technical Education
Faculty of Education
Masaryk University Poříčí 7
602 00 Brno, CZECH REPUBLIC

Assoc. Prof. Dr. Bohumíra LAZAROVÁ
Department of Educational Sciences
Faculty of Arts
Masaryk University Arna Nováka 1
602 00 Brno, CZECH REPUBLIC

ABSTRACT

Pupils with specific learning difficulties and behaviour disorders are a relatively strongly represented group in Czech schools, which traditionally received special attention. This group of pupils has more serious problems when making educational and subsequently professional choices in the labour market. In the text we present data from a quantitative investigation focused on identification of specific features in professional aspirations of pupils with a mild disability, specific learning difficulties and behaviour disorders. Attention is paid to selected circumstances and influences which often play a role in the process of decision making, particularly the influence of counselling bodies.

Keywords: Pupils with a disability, special educational needs, school counselling.

INTRODUCTION

In recent years, special attention is paid to educational choices of pupils leaving basic school and career guidance in schools. External factors influencing educational and professional choices change from time to time, especially as regards school environment generally determined primarily by school politics (e.g. the possibility of multiple choice, quality of basic schools, the number and quality of secondary schools and branches), situation in the labour market (the rate of unemployment and entrepreneurial environment, formation of new professions etc.) and social politics (incentives and promotion). In the Czech Republic there has been a discussion about the decline of crafts and vocational schools and lower quality of secondary education. That accounts also for the high number of comprehensive secondary schools which do not set entrance exams and relax their requirements on their pupils in an effort to attract and maintain pupils (in the Czech Republic there is an ongoing debate about the school-leaving exams guaranteed by the state – the problem appears almost in every number of the journal on education *Učitelské noviny* – e.g. No. 13, 14, 15, 16, volume 113, 2010). Many leavers (not only) of these schools then search for a job in vain. Pupils with a disability might experience even a rather more complicated educational and professional path. In the Czech Republic, similarly to other countries, the integration of disabled pupils into mainstream classes is promoted and so-called inclusive schools are increasingly raised as an issue. At the same time the counselling role of the school is emphasized and in the last decade formation of so-called school counselling centres is endorsed, often financed from the European structural funds.

Within our research project Special needs of pupils in the context of the Framework Educational Programme *conducted at the Faculty of Education Masaryk University in Brno we focus on professional aspirations of pupils with special educational needs. The aim of this broadly conceived seven-year project is to identify a whole range of factors which influence the education of pupils with special educational needs and propose measures for their education in mainstream schools or guidance. The authors of the presented text are in charge of the field of technology education and professional aspirations of pupils. In this paper we present selected results of an investigation conducted in 2009, whose aim was to identify the specific features of educational choice of pupils with special educational needs. The focus of our attention were pupils with specific learning difficulties and behaviour disorders (further referred to as pupils with SLD and BD), who represent a relatively strong group in Czech schools. On average, there are 2 % of pupils with serious problems and about 2 % of pupils with a light form of a specific learning difficulty, in Czech schools. However, some of educators indicate that the number of children with these problems may reach 20 %, as not all the children manifest the same signs and difficulties of the disorder (Švancar, 2002).* The consequences of specific learning difficulties and behaviour disorders as reflected into school achievement of pupils are generally known (e.g. Matějček & Vágnerová, 2006; Pokorná, 2001; Zelinková, 2003). It is not a severe disability, rather a developmental deviation, nevertheless these pupils often encounter many educational problems which hinder decision making about their education and can also influence their job prospects.

ON THE DATA COLLECTION

To gain an insight into the problem of professional aspirations of pupils with specific learning difficulties and behaviour disorders we combined qualitative and quantitative methodology. Our intention in this part of the investigation was to answer the following questions:
What are the most frequent factors influencing educational choices in children with SLD and BD?
How informed are they about the chosen branch?
What do they consider most difficult in their choice?
What is the most restricting factor in the choice?
What support are they expecting?

We attempted to answer these questions by means of both quantitative methods (questionnaire) and case studies. In this paper we present only selected data – those gained from the questionnaire investigation. The questionnaire was distributed to 65 basic schools while we chose a special way of achieving the "random sample". We asked 42 students of our faculty to deliver the questionnaire to five basic schools close to their home. Thus, we achieved that there were both village and town schools, mainly from our county (85%). In the schools selected this way students were to ask teachers or pupils of the 9th (last basic school) year with a diagnosed specific learning difficulty (dyslexia, dysgraphia, dysorhographia, etc.) or a behaviour disorder such as the ADHD syndrome. It is estimated that in every class there are 1 to 5 pupils with this disorder. With their parents´ consent pupils filled in the questionnaire under the supervision of our student. In total we obtained data from 214 pupils, out of them 146 boys and 68 girls. This distribution roughly corresponds with the findings that SLD and BD are more often diagnosed in boys.

In order to allow at least crude comparison with the "healthy" population and be able to identify in quantitative terms several specific features of the choice we decided to distribute the same questionnaire in the group of "healthy" pupils (for the sake of simplicity we will use the term "healthy" pupils in comparison, although it is obvious that pupils with SLD and BD cannot be considered ill). As it is necessary to gain parents´ consent for data collection, we decided to facilitate the process by addressing seven schools cooperating with our faculties in big and small towns (ordinary basic schools) and via the teachers (our supervising teachers) we got back in total 102 questionnaires (59 boys, 43 girls). Both investigations were carried out simultaneously in the time of the year when the pupils of 9th grade had already submitted their applications for secondary schools.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 8 ISSN 1309-6249

PRESENTATION AND INTERPRETATION OF THE GAINED DATA

In this part of the text we briefly present the gained data and relate the results to the research questions. As we established only research questions for the complex research and not hypotheses and also owing to the fact there are two individual sets of data we do not have ambitions for mathematical-statistical calculations as far as the significance of differences are concerned between healthy pupils and pupils with specific learning difficulties and behaviour disorders. Not to exceed the limit of the number of pages we present only some simplified tables and no diagrams.

Selected data from school case history
Special attention is paid to pupils with learning difficulties and behaviour disorders in Czech basic schools, however, it is the severity of the disability that plays a role. In our sample 44% of the pupils were *integrated* (i.e. the school gets certain special subsidy for these pupils), 27% of the pupils attended a *club for children with dyslexia,* 34% received *after-school teaching,* 41% of the pupils were *evaluated in a modified way,* and 9% of the pupils relied on *allowances made for them during secondary school entrance exams.* Eight of the addressed pupils mentioned that they have an assistant teacher with them in the class.

Although certain allowances are made for the pupils with SLD and BD in their evaluation, their performance in school is worse (Czech grading scale: 1 – the best mark, 5 – the worst).

Table 1: Pupils´ achievement

Achievement	Pupils with SLD and BD	Healthy pupils
1,0 – 1,7	32%,	47 %
1,8 – 2,5	41%,	33 %
2,6 – 3,3	22%	14 %
Over 3,4	5%	6 %

Among *favourite subjects* of pupils with SLD and BD there are physical education (27.5%), mathematics (10.7%), history (9.8%), crafts and science education (7%), IT and art education (6%). There is a distinct preference for physical education among healthy pupils too, though slightly lower in percentage (21%), then mathematics (11%), history and geography (9-10%), languages (10%), science education (7%); the distribution of interest among all subjects is more even. Among *unpopular subjects* pupils with SLD and BD rank (not surprisingly) Czech language (47%), then mathematics (19%), foreign language (16%). Healthy pupils dislike mainly mathematics (30%), Czech language (27%) and then evenly other subjects (chemistry, physical education, physics, etc., 8-9%).

With regard to the main focus of our research where we examine also pupils´ interest in crafts and technology we aimed to find out how pupils evaluate *technology activities* conducted within the curriculum in basic school and which should arouse pupils´ interest in technology and crafts, i.e. branches with better prospects in the labour market. It was found that 22% of the addressed pupils with SLD and BD never encountered such subjects in the course of their school attendance (in healthy pupils it was even 24%) and if they did so, then pupils with SLD and BD evaluate the subject only slightly better than healthy pupils. 32% of pupils indicate the subject was excellent, 31% as mediocre and 15% as uninteresting. Only 7% of pupils with SLD and BD stated that subjects 'The World of Work' or 'Technology Activities' had direct influence on their choice (in healthy pupils it was merely 5%).

Choosing educational path

A relatively high number of pupils with SLD and BD apply for secondary schools with school-leaving examinations, although exact classification is rather difficult. At least 34% of pupils with SLD and BD apply for secondary schools with school-leaving examinations, from crafts there is greatest interest in the profession of a cook and waiter (14%) and professions dealing with machines (e.g. car mechanic 11%). 11% of pupils apply for schools with educational, social and medical focus (some of them with school-leaving examinations). Healthy pupils prefer comprehensive secondary schools more often.

Table 2: The choice of branch

Branches	Pupils with SLD and BD	Healthy pupils
Secondary schools and general upper secondary school	34 %	47 %
Cook, waiter	14 %	11 %
Traditional crafts – blacksmith, plumber, joiner…	12 %	7 %
Social and medical care	11 %	12 %
Car mechanic and machines	11 %	7 %
Electronics and computers	10 %	8 %
Others	8 %	8 %

Pupils with SLD and BD were asked what they know about their new school and their free responses were then categorized. A relatively high number of pupils admitted that they know quite little about the chosen school and referred to the experience of their friends or siblings (128 times), at the same time, however, many of them were able to name some school requirements and subjects taught there (68 times), approximately the same number of pupils listed advantages of the school (54 times - e.g. "*mathematics is not taught there*", "*you don´t have to take any entrance exams*", "*it isn´t far from home*" etc.), in 40 cases pupils mentioned good professional or academic prospects after leaving the school, in 35 cases they pointed out the prestige of the school or its good equipment and pleasant environment (pupils were to name more than one point).

Both groups of pupils were asked if they were *looking forward to their secondary school studies* and no differences were found between the groups. The highest number of pupils in both groups state that they are "rather looking forward" to their new school. Regarding *worries* 64% of pupils with SLD and BD express concern about the subject matter, 30% about new environment and schoolmates, only rarely are the worries related to commuting or practice. Healthy pupils express worries less frequently: 57% about subject matter and 27% about schoolmates. Only 22% of pupils in both groups are really worried that they will not be accepted by the chosen school. In the open questions we asked the pupils "what they are looking forward to most". Pupils with SLD and BD most often stated practice (94 times), new friends (76%), new subjects – theory (68%), new advantages concerning greater independence or "leaving" their old school (35 times), specific skills they will acquire and the job prospects or the "new life" after leaving secondary school (34 times). Pupils wrote that they were looking forward to their secondary school only scarcely (17 times) (there was space to list more alternative answers). Healthy pupils are more frequently looking forward to new theoretical subjects in better equipped schools (61 times), favourable job prospects or further studies after leaving secondary school (32 times), as well as friends (35 times), practical subjects (32 times) and the change of environment (24 times).

Greater differences between our groups were found as regards looking for *alternative choice.* More than a half of pupils with SLD and BD (54%) state that there is not an alternative and they do not know for which school they would apply if they were not accepted, or they do not express so much interest in the other alternative. In healthy pupils 62% of the addressed pupils mention an alternative of the same value to them and 48% do not see any alternative. Differences were also found regarding the *timing of decision making.* Pupils with SLD and BD more often decide at the last moment, their decision apparently takes more time and they hesitate more; 20% of the addressed pupils state they chose the branch at the last moment, in healthy pupils only 10% of the addressed pupils postponed the decision till the last moment.

35% of the pupils with SLD and BD have been convinced about their choice for more than a year, in healthy pupils it is by 11% more. It is possible that healthy pupils decide more quickly and earlier. Nevertheless, the results of the research do not indicate the choice to be easier for healthy pupils. In both groups, 35-36% of the pupils state that the choice was easy and only 12-13% found their choice very difficult. However, a few more healthy pupils confirm that their choice is *related to their interests* (65%), pupils with SLD and BD give similar answer only in 55%, but 40% say that their choice is related to the *experience of someone close to them* (in healthy pupils it is only in 30% of all cases). It seems that reference about the quality of school and experience with the potential future profession play a significant role, *Lack of finance* influences only 17-18% of pupils in both groups.

As expected, parents have greatest *influence on educational choices* of pupils; at the same time both groups of pupils state that the choice was primarily their wish. To a great extent the pupils apparently identify with the parents´ opinion. 61% of pupils with SLD and BD consider their choice mainly their own decision and only 9% write that they had only minimum say concerning this decision. The distribution is similar in healthy pupils; little influence is attributed to other circumstances (3%). Healthy pupils consider these other circumstances of influence chiefly commuting, finance etc., in pupils with SLD and BD it is most often namely their disability. The average influence is illustrated in table No. 3 (1 – has no influence, 5 – strong influence).

Table 3: Who influences the choice?

	Pupils with SLD and BD	Healthy pupils
Mother	3,2	3,3
Father	2,8	2,8
Friends	2,5	2,4
Other experts (psychologist, special education teacher	2,0	1,9
Teachers	2,0	2,1
Siblings	1,6	1,5
Doctors	1,3	1,2

It seems that the rate of influence of individual subjects on the choice is perceived almost identically by both healthy pupils and pupils with SLD and BD. However, we can assume that the *influence of experts,* i.e. teachers or doctors will be higher in pupils with a risk. This influence is by both groups considered low, while 41% of pupils with SLD and BD claim they had consulted an expert; in the group of healthy pupils the choice was

consulted with an expert only by 27% of pupils. Only 20% of pupils admit that their disability rather or significantly complicates the choice.

When inquiring the pupils about factors that would facilitate their choice we find out that some of their wishes cannot be easily met, e.g. "*I would like to try the job... to know if I will like it... to do mock practice*", etc. Only 1% of the pupils would appreciate greater interest of their parents, 9% greater interest of teachers and school, 11% the possibility to consult the choice with other experts, 25% would appreciate experience and good reference of their peers, others claim that they do not expect any further support.

Concerning *the future* only a little group of pupils with SLD and BD (4%) are considering university studies, 21% are thinking about doing business and others see themselves as future employees. These pupils with SLD and BD might face problems in the labour market as they do not choose a craft (34% and more) but secondary schools with school-leaving exams. The risk seems to be higher in this group because 21% of healthy pupils plan that in the future they will study at university. It is obvious that such plans are only preliminary; nevertheless they indicate a risk of choice general secondary schools.

CONCLUSION

The greatest influence on professional aspirations of pupils in 9th year is exercised by their parents, particularly mothers. Nevertheless, majority of pupils consider the choice their own wish, i.e. they identify with their parents´ wish. Almost a quarter of basic school pupils have no experience with technology activities, if they do so, then they evaluate them mostly as excellent or mediocre, however, usually without direct influence on their choice.

Pupils with SLD and BD do not consider the choice of their education difficult more often than their healthy peers, nevertheless, they more often postpone their decision till the last moment and have difficulties when searching the alternative of the same value to their choice. Also, they more frequently consult experts (psychologists, school psychologists and special education teachers), but consider their influence on the choice low, similarly to healthy pupils. The pupils with SLD and BD choose crafts slightly more often than healthy pupils (their average achievement is worse, too), they are more strongly influenced by the family tradition and less by their own interests than healthy pupils. Besides, their self-confidence is lower regarding university studies. Therefore, the risk of unsuitable choice and unemployment can be higher. The results of the research raise questions related to the role of the school and experts and provoke the discussion on what influence is actually expected from them. To gain a greater insight into the whole range of influences and pupils´ needs in this area we are conducting qualitative investigations (case studies) too within our research, and we present them in other papers.

IJONTE's Note: *This text has been elaborated within the research project MSM 0021622443* Special needs of pupils in the context of the Framework Educational Programme *conducted at the Faculty of Education, Masaryk University and supported by Ministry of Education Youth and Sports, Czech Republic.*

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 8 ISSN 1309-6249

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Zdenek FRIEDMANN works as Associate Professor at the Faculty of Education, Masaryk University in Brno, Czech Republic. He is the Head of Department of Technical Education and Information Science; his main professional interests are technology and crafts education, development of technical education in basic schools.

Assoc. Prof. Dr. Zdenek FRIEDMANN
Department of Technical Education
Faculty of Education, Masaryk University Poříčí 7
602 00 Brno, CZECH REPUBLIC
E. Mail: friedmann@ped.muni.cz

Bohumíra LAZAROVÁ is a psychologist; she works as an Associate Professor at Department of Educational Sciences, Faculty of Arts, Masaryk University in Brno, Czech Republic. Her main professional interests are teachers' collegial support, mentoring in schools, school psychology and counseling.

Assoc. Prof. Dr. Bohumíra LAZAROVÁ
Department of Educational Sciences
Faculty of Arts, Masaryk University, Arna Nováka 1
602 00 Brno, CZECH REPUBLIC
E. Mail: lazarova@phil.muni.cz

REFERENCES

Matějček, Z., Vágnerová, M. (2006) Sociální aspekty dyslexie. Prague: Karolinum, ISBN 80-2461-173-2.

Pokorná, V. (2001) Teorie, diagnostika a náprava specifických poruch učení. Prague: Portál, ISBN 80-7178-570-9.

Švancar, R. (2002) Prof. Matějček o dyslexii. Učitelské noviny, n. 37. Available at http://www.ucitelskenoviny.cz/obsah_clanku.php?vydani37&rok=02&odkaz=prof.htm/

Zelinková, O. (2003) Poruchy učení. Prague: Portál, ISBN 80-7178-800-7.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 9 ISSN 1309-6249

SECONDARY SCHOOL STUDENTS' OPINIONS ON PORTFOLIO ASSESSMENT IN EFL

Tolga ERDOGAN,
Hacettepe University,
Ankara, TURKEY

Assist. Prof. Dr. Irfan YURDABAKAN,
Dokuz Eylul University,
Izmir, TURKEY

ABSTRACT

Portfolio assessment has gained importance in the last twenty years and has been in use at different areas in education. Foreign language teaching is one of them. This study aims to find out the opinions of students on portfolio assessment. The study was implemented in a secondary school English preparatory class. As part of the study, portfolios and portfolio assessment activities were integrated into the program in a treatment group. The analysis of student responses showed that portfolio assessment is a fair method, compared to traditional assessments it is a more down-to-earth approach, it increases student responsibility and motivates students positively. On the other hand, student responses revealed some negative results, like portfolio studies take time, there is a need to include various types of a lot of tasks in portfolios, and self-evaluations, reviews and corrections of student work entail a lot of student and teacher effort.

Keywords: Portfolio, portfolio assessment, foreign language teaching.

INTRODUCTION

The theory of constructivism provides a wide theoretical framework from design of learning settings to construction of assessment processes. Part of that, in today's transition from traditional to student-centered learning settings, there are also innovations in assessment procedures, where there is a shift to formative assessment. These innovations involve alternatives that require questioning the learning process and using learning and assessment activities together. Boud (1995) stresses that the assessment process shouldn't be thought only as an instrument to give students a diploma, but it should also be viewed as a process that leads up to student development and better learning conditions and applications. Such alternative views have given rise to new assessment approaches like portfolio assessment.

A student portfolio represents a presentation of a student's best work, which functions in much the same way as an artist's, a model's, or a photographer's portfolio would. Student portfolios may be used to examine a student's needs with regard to curriculum objectives and to demonstrate growth and learning over the semester or school year (Pierce & O'Malley. 1992). Many educators, writers and researchers discuss the merits of using portfolios as an assessment instrument. For example, Calfee and Perfumo (1993) stress that using portfolios for assessment is important to show the learners' competence, rather than only choosing the correct answers and especially portfolio assessment provides more information about the learners. Portfolios orient the students to produce various types of more authentic work and urge them to be more creative; also portfolio assessment gives the learners more freedom and contributes to development and improvement of their higher order thinking skills and meta-cognitive strategies. Portfolios provide teachers opportunities to perceive students not only as readers or writers, but also as individuals with special interests and needs, and provide students with unique opportunities to advance their learning as well. Portfolios encompass some

assets like dream power, reflection, variety and individualism, which cannot be found in standardized and norm-based assessments (Irwin-DeVitis, 1996).

Besides, Valencia (1990) suggests that, when compared to recent studies of habitual standardized and quantitative assessments, portfolio assessment provides important evidence towards correct and valid assessment of student achievement. Also, according to Calfee and Perfumo (1993) and Bedir, Polat and Sakacı (2009), portfolio assessment used in one lesson, improves students' interests, motivation and confidence towards learning, and eventually serves students to become lifelong learners.

Results of many studies have shown that portfolio assessment has positive influence on learning (Gomez, 2000; Morgil, Çingör, Erökten, Yavuz & Özyalçın, 2004), facilitates authentic assessment of learning (Calfee & Perfumo, 1993), helps finding weaknesses and strengths in student learning and strengthens student-teacher relationship (Birgin, 2008), encourages students to reflect and self-evaluate (Herbert & Schultz, 1996) and improves meta-cognitive skills (Hamilton, 1994). Also Enoki (1992), Korkmaz and Kaptan (2002), and Deveci, Ersoy and Ersoy (2006) stressed that portfolios are more accurate, down-to-earth, and objective than standardized tests in assessing students' developments. Parallel to the findings in those studies, this research aims to identify qualitatively the students' opinions on portfolio assessment, the application of which is still considered new in Turkey.

Foreign Language Teaching and Portfolio Assessment

Foreign language teaching is one of the areas where portfolio assessment is used effectively. Gussie and Wright (1999) emphasize a gradual increase in the use of portfolios to assess the students' writing skills in foreign language teaching in the last twenty years. Authors like Chen (1993), Fenwick and Parsons (1999), Singer (1993) and Wolf (1989) stated that portfolio assessment is effective in foreign language teaching.

Considering the studies done on portfolio assessment, the positive results that were found could be summarized as: positive reactions of both teachers and students toward portfolios; positive attitude development toward learning and more successful than traditional tests in assessing student attainments; improvement of students' writing skills and positive change in students' study habits; increase in students' taking responsibility of their own learning; improvement in students' higher order thinking skills, critical thinking skills, problem solving strategies, and self-evaluation abilities; and evidence towards portfolios role in improving communication among students, teachers, administrators, and parents. Additionally, some researchers have stated that the real effects of portfolio use could only be observed in subsequent years, because it may not have immediate effects on students' achievement and their attitudes. They also pointed out that portfolio assessment would take a lot of time and would cost much more than standardized assessment; and that the teacher and students should have training and adequate effort should be reserved for the activities.

The Purpose and Significance of the Study

The studies about the use of portfolio assessment in foreign language training largely give evidence on that they do improve students' language skills. By courtesy of this study, it might be possible to compare the opinions of students on portfolio assessment with other study results. Within this framework, we tried to find answer(s) to the following question: "What are the opinions of students regarding portfolio assessment?"

METHODOLOGY

Method and Participants

This experimental research was implemented on a treatment group (n=22), chosen among 14 classrooms in a state secondary school in Izmir, a province located in the west of Turkey. Although the data collection process

depends upon a 12-session experimental study, it could still be evaluated as a qualitative research method because we analyzed the responses of students to 10 open-ended questions about portfolio assessment (Kuş, 2003).

In English lessons of this particular high school (secondary school), the main aim was to improve reading, listening, speaking and writing skills of students. During the 12-week experimental study, portfolio assessment applications were integrated into the curriculum. One of the researchers himself was the teacher in the treatment group. At the end of the 12-week implementation, the students were asked to write answers to 10 open-ended questions about their opinions on portfolio assessment. This paper aims to share those findings obtained from the student answers.

In literature, there are various approaches about the design and application stages of portfolio assessment. Even though there are different approaches towards portfolio assessment applications in literature, the approach suggested by Barnhardt et al. (1998) was taken as a model in this study. According to that approach, the stages of the portfolio assessment process are shown in Figure 1.

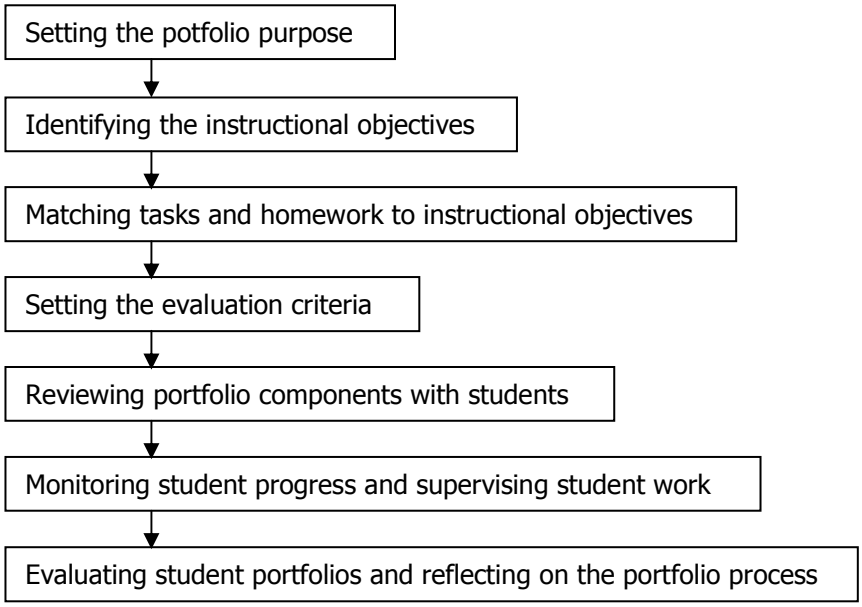


Figure 1: The Portfolio Assessment Process Model

For the purpose of the research, the lessons in each group were carried on as planned; 2 course hours (80 min.) were allocated to portfolio activities. Tasks and homework were assigned to students that matched the defined course objectives and topics in each unit. During the treatment; the problems of students, the general and individual explanations and reflections of both the teacher and the students, and controls of student homework were all done in those 2 hours allocated to portfolio applications. In the last two sessions of the 12-week treatment, each student presented his/her portfolio to class; hence they were given the chance to reflect on their efforts.

Instrumentation and Data Analysis

In this study, 10 open-ended questions about students' opinions on portfolio assessment were formed by taking the goals of this study into account and by examining the studies of such writers like Anselmo (1998), Rolheiser, Bower and Stevahn (2000), and Liu (2003). The questions were reviewed by experts and found appropriate for the research purposes. The responses of students were analyzed by using content analysis,

where the themes were ordered from the ones with high frequency to the ones with low frequency (Kuş, 2003).

FINDINGS

In this study, we sought for the opinions of students regarding portfolio assessment. The written answers of the students were examined through content analysis. The findings for each question are given below.

Which part of your portfolio did you like most? Why?

When the answers of those 21 students in the treatment group were analyzed, it was found that 33% of them (n=7) liked the reflection part, introductory part and the writing tasks themselves most. 23% (n=5) stated that they liked the reading part most and they added that they enjoyed preparing the reading part of their portfolios, because they thought it was quite helpful to them. 19% (n=4) of the students liked the speaking part most, because it helped to discover their spoken mistakes and improve their pronunciations. Another 14% (n=3) stressed that portfolio tasks urged them to do research and those tasks helped them so evaluate themselves. Only 9% (n=2) of the students specified the listening part as their most favorable part.

Ali
The best two parts of this study were that we could choose the items we wanted and writing the introductory and final sections. It is a wonderful feeling to evaluate the products after some hard effort spent on them. That's why I liked the writing part most.

Did the portfolio application help you get better organized this semester?

16 students (76%) revealed that portfolios urged them to study more, find practical methods, and manage their times better to finish their work on time. 4 students (19%) wrote that they planned their studies beforehand and one student stated that he was able to find his strengths and weaknesses during activities.

How did you decide what to put in your portfolio?

14 students (67%) wrote that they chose the items with the highest grades and they picked the items that best represented their improvements in language skills. A few students based their decisions on the content of the items (19%) and the time they spent on them (14%).

What challenged you during the portfolio study?

29% (n=6) of the students stated that portfolio preparation required intensive study in a limited time; 24% (n=5) found the speaking tasks challenging; 19% (n=4) found the self-evaluation of portfolio products difficult; %14 (n=3) found the task reviewing and task re-editing hard; and the rest of treatment group, 14% (3) of the students said portfolio study was difficult, because it was a first time experience for them.

Ufuk
What challenged me most was finding myself studying much more and doing a research. Rewriting homework for the lack of diligence I had shown, because I had to write it in a short time was difficult for me. Repeating homework is not nice.

Did the portfolio study help you take more responsibility during the English learning process?

48% (n=10) of the students said that their responsibilities increased because they needed to work harder to show their best and they felt the need to work harder on topics, which they were poor at. 33% (n=7) of them put forth that striving to do the best motivated them and inspired them to learn more. Only 2 students (9.5%) stated that they noticed they were learning now.

Ali
With the help of this portfolio study, we became aware of the homework we did before for the sake of doing it and the meaningless results of the exams and this gave us more responsibility and urged us to give more attention to our homework and showed us the necessity of planning before doing.

If you were to change any item in your portfolio, which one would it be?

Majority of students (62%) stated that they wouldn't change any item in their portfolios, because what they included best represented their efforts. Just few students would change their speaking (24%), writing and listening items (14%), because they said they could do better.

Would you like to present your portfolio to somebody? Who would that be? Why?

Almost half of the students (52%) stated that they would like to show their portfolios to their families and the other half to their previous English teachers (48%), just to show their present foreign language levels.

How is portfolio assessment different from other traditional assessments (e.g. tests and exams)?

67% (n=14) of the students presented that portfolio assessment was a more realistic approach, because unlike the momentary tests, it was based on studies done in a whole semester. Seven students (33%) stressed that carelessness, excitement and fear could have an influence on test scores and they added that this was not true for portfolio assessment.

Ali
The difference between portfolio and traditional assessments is like the temperature difference between Russia and Saudi Arabia. Portfolio studies help me to show my real achievement, which the exams can't and boosts my self-confidence.

Do you think your grades will be fair now?

71.4% (n=15) of the students wrote that the assessment based on portfolios would be fair, and attributed this to their studies they did the whole semester and to their products with which they could present their best work. 14% (n=3) of the students asserted that (portfolio assessment) is flexible compared to traditional assessments and their studies would not be in vain whereas 2 students (9.5%) stated that injustice would be minimum.

Hakan
We got several grades because of our studies and efforts. They are our real improvements and achievements. Our grades will be fair for sure with this type of assessment.

Do you have any ideas or suggestions that will help us in the future?

48% (n=10) of the students suggested that much more time should be allocated to portfolio studies; 33.3% (n=7) said it would be appropriate to include wide range of more products into the portfolios and those products should be more about the skills that need improvement; three students (14%) implied the necessity

of teacher help and explanations when the portfolio objectives were determined, and related tasks and homework were assigned for each individual.

Anil
While preparing my portfolio, I spent the time I reserved for my exams. If good results are expected out of these portfolio studies, there shouldn't be any exams, or at least the portfolio study should cover the whole year, not only one semester.

DISCUSSION

The aim of the study was to examine the students' views on portfolio assessment. For this purpose, the answers of students to 10 open-ended questions were analyzed. According to the analysis results, the opinions of students on portfolio assessment are: it is a fair method; it is a more realistic approach compared to traditional testing applications; it increases responsibility because of a need to do the best and to show improvement; it motivates and arouses learning desire; and the students liked the writing part most. The negative opinions, on the other hand, are: there is not enough time to do the best work; wider range of more products should be included in portfolios, students had difficulty in reading part of portfolio and in doing self-evaluation; it is difficult to review and correct the tasks and homework; and it is difficult, because it is a first time experience for the students. Finally, few students expressed that portfolio assessment would be a little unfair.

Many researchers (Alabdelwahab, 2002; Hall & Hewitt-Gervais, 1999; Spencer, 1999; Tiwari, 2003; Slater, Ryan & Samson, 1997; Liu, 2003; Barootchi & Keshavarz, 2002; Calfee & Perfumo, 1993; Korkmaz & Kaptan, 2002; Morgil et al, 2004; Deveci et al, 2006; Birgin, 2008; Bekir et al, 2009) have stated that portfolio assessment increases motivation for learning; establishes feelings of confidence, self-respect, and responsibility towards learning; and it is a much fairer approach compared to traditional assessment applications. The positive results obtained in this study agree with the results of these researchers. On the other hand, Juniewicz (2003), Ediger (1999), Fenwick and Parsons (1999), Bushman and Schnitker (1995), and Caner (2010) expressed their concerns over the fact that portfolio assessment could lead to some difficulties because it is a new assessment type and more time is required to get the best out of it. Some of the results of this study that represent the difficulties in portfolio assessment in a way support this opinion.

As a result, this study examined the opinions of students on portfolio assessment. We hope the findings would be beneficial to practitioners of portfolio assessment in EFL settings.

IJONTE's Note: This article was presented at International Conference on New Trends in Education and Their Implications, 27-29 April, 2011, Antalya-Turkey, and selected for publishing for the 3rd issue of IJONTE 2011 by ICONTE Science Committee.

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Tolga ERDOGAN is an English instructor and currently a PhD student in Educational Sciences at Hacettepe University in Ankara, Turkey. He graduated with honors from Bosphorus University English Language Teaching Department in Istanbul and received his Master's degree in Educational Sciences in Dokuz Eylul University in İzmir, Turkey. His main academic interests are program development and evaluation, constructivist teaching/learning, alternative assessment, lifelong learning, and English Language Teaching.

Tolga ERDOGAN
Nenehatun Cad. Plevne Apt.
No: 1B/18 Kucukesat
Ankara, Turkey
E. Mail: tolgasensei@gmail.com

Irfan YURDABAKAN is Assist. Prof. from the Educational Sciences Department of Buca Faculty of Education at Dokuz Eylul University, Izmir, Turkey. His major field of study is measurement and evaluation. Most of his studies focus on traditional and modern test development theories. However, he has been studying alternative assessment methods in education for the last nine years.

Assist. Prof. Dr. Irfan YURDABAKAN
Dokuz Eylul Universitesi
Buca Egitim Fakultesi
Egitim Bilimleri Bolumu
Buca, 35160 Izmir, Turkey
E. Mail: irfan.ybakan@deu.edu.tr

REFERENCES

Alabdelwahab, S. Q. (2002). Portfolio assessment: A qualitative investigation of portfolio self-assessment practices in an Intermediate EFL Classroom, Saudi Arabia. (UMI No: 3081894)

Anselmo, C. (1998). Experiences students encounter with portfolio assessment: A qualitative inquiry. (UMI No: 9836566)

Barnhardt, S., Kevorkiani, J. & Delett, J. (1998). *Portfolio assessment in the foreign language classroom.* (ERIC Document Reproduction Service No. ED448602).

Barootchi, N. & Keshavarz, M. H. (2002). Assessment of achievement through portfolios and teacher-made tests. *Educational Research*, 44(3), 279-288.

Bedir, A., Polat, M. & Sakacı, T. (2009). 7.sınıf fen ve teknoloji dersine ait bir uygulama çalışması: Portfolyo [Performance application of the 7th grade science and technology course: Portfolio]. C.B.Ü. Fen Bilimleri Dergisi, 5 (1), 45-58.

Birgin, O. (2008). Alternatif bir değerlendirme yöntemi olarak portfolyo değerlendirme uygulamasına ilişkin öğrenci görüşleri [Students' views on portfolio application as an alternative assessment method]. *Türk Eğitim Bilimleri Dergisi,* 6(1), 1-24.

Boud, D. (1995) *Enhancing learning through self assessment*. Kogan Page, London.

Bushman, L. & Schnitker, B. (1995). *Teacher attitudes on portfolio assessment, implementation, and practicability.* (ERIC Document Reproduction Service No. ED388661).

Calfee, R. & Perfumo, P. (1993). Student portfolios: Opportunities for a revolution in assessment. *Journal of Reading*, 36(7), 532-537.

Caner, M. (2010). Student views on using portfolio assessment in EFL writing courses. *Anadolu University Journal of Social Studies,* 10(1), 223-236.

Chen, L. (1993). Portfolios in second and foreign language classroom assessment. Retrieved October 21, 2005 from http://spectrum.troy.edu/~lchen/ papers/portfolio.doc.

Coombe, C. & Barlow, L. (2004). The Reflective portfolio: Two case studies from the United Arab Emirates. *English Teaching Forum*, 42(1), 18-23.

Deveci, H., Ersoy, A. F. & Ersoy, A. (2006). The views of prospective elementary school teachers on the use of portfolio assessment in teacher education. *Educational Sciences: Theory and Practice,* 6(1), 193-199.

Ediger, M. (1999). *Purposes in learner assessment*. (ERIC Document Reproduction Service No. ED429991).

Enoki, D. (1992). *Student portfolio and profiles: A holistic approach to multiple assessments in whole language classrooms*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED35343).

Fenwick, T. J. & Parsons, J. (1999). *Using portfolios to assess learning*. (ERIC Document Reproduction Service No. ED428398).

Gomez, E. (2000). *Assessment portfolios: Including English language learners in large-scale assessments.* ERIC Digest based on article published by the Northeast and Islands Regional Educational Laboratory at Brown University in "Perspectives on Policy and Practice" (March 1999). (ERIC Document Reproduction Service No. ED447725).

Gussie, W. F. & Wright, R. (1999). *Assessment of the implementation of portfolio assessment in K-8 school districts in New Jersey.* Paper presented at the Annual Meeting of the Eastern Educational Research Association, Hilton Head, SC. (ERIC Document Reproduction Service No. ED429996).

Hall, B. W. & Hewitt-Gervais, C. M. (1999). *The application of student portfolios in primary/intermediate and self-contained/multi-age team classroom environments: Implications for instruction, learning, and assessment*. Paper presented at the Annual Meeting of the American Educational Research Association, Montreal, Quebec, Canada. (ERIC Document Reproduction Service No. ED432598).

Hamilton, L. S. (1994). *Validating hands-on science assessments through an investigation of response process.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED376202).

Irwin-DeVitis, L. (1996). Literacy portfolios: The myth and the reality. Literacy assessment for today's schools: Monograph of The College Reading Association, 135-144.

Juniewicz, K. (2003). Student portfolios with a purpose. *The Clearing House*, 77(2), 73-77.

Korkmaz, H. & Kaptan, F. (2002). Fen eğitiminde öğrencilerin gelişimini değerlendirmek için portfolyo kullanımı üzerine bir inceleme [An investigation on using portfolio for assessing students' development in science education]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi,* 23, 167-176.

Kuş, E. (2003). *Nitel-Nicel Araştırma Yöntemleri* [Qualitative-Quantitative Research Methods]. Ankara: Anı Yayıncılık.

Liu, Y. (2003). A case study of selected ESL students' experiences with writing portfolios in college composition classes. (UMI No: 3115767)

Morgil, İ., Çingör, N., Erökten, S., Yavuz, S. & Özyalçın Oskay, Ö. (2004). Bilgisayar destekli kimya eğitiminde portfolyo çalışmaları [Portfolio studies in computer assisted chemistry education]. *The Turkish Online Journal of Educational Technology – TOJET,* 3(2), 105-118.

Moya, S. S. & O'Malley, J. M. (1994). A portfolio assessment model for ESL. *The Journal of Educational Issues of Language Minority Students*, 13, 13-36.

Pierce, L. V. & O'Malley, J. M. (1992). *Performance and portfolio assessment for language minority students.* NCBE Program Information Guide Series, 9 Retrieved October 17, 2005 from http://www.ncela.gwu.edu.

Rolheiser, C., Bower, B. & Stevahn, L. (2000). *The portfolio organizer: Succeeding with portfolios in your classroom.* Alexandria: Association for Supervision, Retrieved January 15, 2005 from http://site.ebrary.com

Singer, S. (1993). *Portfolio assessment in foreign language, pilot project*. Evansville-Vanderburgh School Corp., Ind. (ERIC Document Reproduction Service No. ED368197).

Slater. T. F., Ryan, J. M. & Samson S. L. (1997). *The impact and dynamics of portfolio assessment and traditional assessment in a college physics course*. Retrieved January 18, 2005 from http://solar.physics.montana.edu/tslater/publications/#jrst1

Spencer, D. M. (1999). *An exploration of portfolio assessment and its influence on children's writing.* Unpublished master's thesis, Regina University – Canada.

Tiwari, A. (2003). From process to outcome: The effect of portfolio assessment on student learning. *Nurse Education Today*, 23(24), 269-277.

Valencia, S. (1990). A portfolio approach to classroom reading assessment: The whys, whats, and hows. *The Reading Teacher*, 43(4), 38-40.

Valencia, S & Place, N. (1994). Portfolios: A process for enhancing teaching and learning. *The Reading Teacher*, 47(8), 666-669.

Wolf, D. P. (1989). Portfolio assessment: Sampling student work. *Educational Leadership*, 46(7), 35-39.

Zollman, A. & Jones, D. L. (1994). *Accommodating assessment and learning: Utilizing portfolios in teachers education with pre-service teachers*. Paper presented at the Annual Conference of the Research Council on Diagnostic and Prescriptive Mathematics, 21st, Fort Worth, TX. (ERIC Document Reproduction Service No. ED368551).

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 10 ISSN 1309-6249

ASSESSING THE RECEPTIVITY OF OPEN AND DISTANCE LEARNING PROGRAMMES AMONG ORDINARY AND ADVANCED LEVEL STUDENTS: A CASE OF THE ZIMBABWE OPEN UNIVERSITY

Richard BUKALIYA
Zimbabwe Open University,
Mashonaland East Region,
Marondera, ZIMBABWE

Farirai MUSIKA
Zimbabwe Open University,
Mashonaland East Region,
Marondera, ZIMBABWE

ABSTRACT

The present study was undertaken to establish Ordinary and Advanced level students` receptivity of Open and Distance Learning Programmes offered by Zimbabwe Open University. With the proliferation of several higher education institutions, which include among them the eleven universities in the country and at one polytechnic in each of the ten provinces of Zimbabwe, competition for students has become stiff as enrolments in some of these institutions continue to plummet. There was, therefore, need to establish how receptive these young adults were of the ODL mode, in light of the introduction of the Enhanced Tutorial Programme (ETP) as an innovation in the ODL system at the Zimbabwe Open University. A total of 100 student respondents made up the sample which consisted of 64 (64%) male and 36 (36%) female students whose age range was between 16 and 22 years. These were drawn from rural and urban schools located in Chegutu district. Results show that a slight majority of 56 students preferred to study with the ZOU because of their area of residence which was prohibitive for them to enrol at a conventional college. The respondents overwhelmingly rejected the notion that there was poor quality of education at the ZOU. Because ODL had a lot of flexibility and was convenient, the majority of the respondents preferred to study through the ODL mode. Some preferred the ODL mode because while some conventional institutions required above 10 points at Advanced level, ZOU only required 5 Ordinary level subjects, including English language, passed with a grade C or better. However, the most prohibitive factor as indicated by the majority of the students was lack of access and competence in the use of the internet and other forms of technology since their understanding of the ODL mode entailed the use of modern technology, which is not currently the situation at ZOU. Also inhibitive for most respondents, was the argument that there was little time for face-to-face interaction. These young adults needed to make and meet new friends and socialize with colleagues from various socio-cultural backgrounds, an adventure not always possible in ODL systems due to geographical distances apart.

Key Words: Open and Distance Learning, Ordinary and Advanced Level Students, Enhanced Tutorial Programme.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 10 ISSN 1309-6249

INTRODUCTION

The Zimbabwe Open University intends to introduce the Enhanced Tutorial Programme (ETP) which is meant to target Ordinary and Advanced level graduates who are predominantly young adults and who, after completing their studies at the two levels have basically two options at their disposal: looking for employment in the various sectors of the economy or opt for career development in the various tertiary institutions available in the country. Faced with a wide selection of tertiary institutions, which include among them the eleven universities in the country, there is need to establish how receptive these young adults are of the ODL mode, in light of the introduction of the enhanced tutorial programme as an innovation in the ODL system in Zimbabwe, as a means through which to attain their professional qualifications. The current study aims at establishing the students` perceptions and their views on why they would or would not enrol in an ODL institution for their professional development now that the latest ETP innovation seeks to address some of their concerns such as little contact time with tutors.

BACKGROUND OF THE STUDY

Distance education has been viewed as the panacea to the Third World woes of not being able to meet skilled labour deficits in the economic sectors of the affected states. In developing countries such as India, Nigeria, Tunisia, Zambia and Ghana, the distance education method has been adopted to circumvent the vacuum created by inadequate formal education systems (Agyeman and Dadzie; 2010). Yet in others, distance education is often hailed as the answer to African governments' problems of educational provision and claims have been made that distance education can improve the access to, and quality of, educational provision and at a lower unit cost. Also distance education been chosen because of its power to stretch educational resources and that it provides greater access to quality education at a lower cost than conventional education (Richardson; 2005).

Zimbabwe is no exception as the country has realized drastic changes in the employment sector as educated professionals compete for highly skilled jobs as opposed to the previous scenario whereby expatriates were hired , particularly soon after independence when foreign manpower sceptical of the new dispensation began packing their bags. Distance education has hitherto been credited for having churned out thousands of highly skilled professionals, many of whom have migrated to regional and international job markets where their expertise has been held without question.

However, despite all these good intentions, perceptions on distance education appear to continue to be negative. In Zimbabwe, the only accredited university to offer distance education is the Zimbabwe Open University (ZOU). The Zimbabwe Open University is an Open and Distance Learning (ODL) institution which was established to cater for a substantial component of people who, by design or unintentionally, could not be accommodated in conventional universities, by offering them the opportunity to study in their homes and in their workplaces through distance education. The ZOU was established on 1st March 1999 through an Act of parliament (Chapter 25:20), with an initial enrolment of 624 students registered for the Bachelor of Education degree programme. Between 1999 and 2001, ZOU had a student enrolment of 25000. By 2004 ZOU had become the largest university in the country and second largest in Southern Africa compared to University of South Africa (UNISA). However, between 2002 and 2008 there was a drastic downturn in terms of enrolment figures which saw student enrolment figures hovering at around 13 000. In 2010, however, the student population has started to pick up.

During the time of this study, in 2010, ZOU had four faculties as presented below:

- the faculty of Arts and Education,
- the faculty of Science and Technology

- the faculty of Commerce and Law and
- the faculty of Applied Social Sciences

These faculties are offering more than 30 undergraduate degree programmes, over 3 diploma courses, over 5 masters` degree programmes and Doctor of Philosophy degrees in all the four faculties.

ZOU has trained personnel currently holding forth in most sectors of the economy: banking and finance, education, mining and most parastatals and government owned enterprises are staffed with ZOU graduates. In the SADC region, ZOU comes second to the University of South Africa in terms of student numbers and popularity. ZOU`s record in the region and beyond speaks volumes about the success of distance education in Zimbabwe. With all these achievements, it was hoped that by now negative perceptions among the citizens about distance education would have changed. However, observations reveal that prospective students, particularly the young adults, still remain sceptical of the ODL mode of delivery as gateway to a professional qualification. These have remained conspicuously absent from the ODL system as they opt for conventional or parallel programmes offered by other tertiary institutions in the country and outside. With this scenario in mind, coupled with an unprecedented fall in enrolment, the Zimbabwe Open University has come up with an innovation yet to be tested in distance education in Zimbabwe.

As stated by Rekkedal and Dye (2007), distance education has developed in two major directions: the individual flexible teaching model and the extended classroom model. The former allows students to start the class at any time, study in isolation and communicate with instructors and classmates through asynchronous tools. The latter organizes students into groups, requires them to meet at local study centre, and allow them to use interactive technologies and meet face to face quite often. The ZOU has therefore, over and above sticking to the former, added the latter to its delivery mode for the specific purpose of making the programmes more appealing to the school leavers. This arrangement has been referred to as The Enhanced Tutorial Programme (ETP), which is a hybrid combination of distance and traditional education and as such flexible learning and hybrid learning systems have enlarged the scope and changed the nature of earlier distance education model.

The major features of the Enhanced Tutorial Programme (ETP)

All other basic tenets of ODL programmes are accommodated in this innovation. The main difference is that while the traditional ODL path at the ZOU requires only 3 hours of contact time per semester per course, the ETP would require that students have 36 hours per semester per course. This implies more contact hours with course tutors at the regional centres. However, there is still flexibility in that these contacts can still be arranged between course tutors and students. Whether they choose and agree to hold the tutorials during week days or over the weekend is entirely their decision as long as the 36 hours are made use of. What still needs to be borne in mind is that, unlike the traditional mode, this new mode has been put in place to accommodate the young adult who is just out of school and intending to pursue an identified career since there has been a general belief that distance education is for the working and family populations.

STATEMENT OF THE PROBLEM

To some sectors of the citizenry, distance education plays second fiddle to conventional education. In Zimbabwe, traditionally known as correspondence education, has been regarded in low esteem following the pronouncement of the Rhodesian government in the 1966 African Education Plan. The plan meant that 50% of those African children graduating from Grade seven in Rhodesia (now Zimbabwe) would fend for themselves in terms of educational finances, through correspondence if they so wished to continue with their education since the regime had no education plan for them. Since then, therefore, a negative political connotation has been attached to the distance mode of education thereby denting the good intentions of ODL. However, with the success scored ZOU in the provision of education through the ODL mode one would have expected some sizeable change of perceptions among the people. This present study therefore, seeks to establish the extent to

which the Ordinary and Advanced level students are receptive of the Open and Distance Education programmes offered by the Zimbabwe Open University.

RESEARCH QUESTIONS

The present study was undertaken to establish Ordinary and Advanced level students` receptivity of ODL programmes offered by ZOU. The following research questions were answered in an attempt to answer the main research question:

1. What influences the Ordinary and Advanced level student to choose between conventional and ODL institutions?
2. What are the perceived benefits/advantages of an ODL programme?
3. What are the perceived flaws of an ODL programme?
4. What characteristics of an ODL programme makes it attractive to the young adult?
5. How can ODL programmes be made more attractive to the young adult?

PURPOSE OF THE STUDY

This study was aimed at establishing the young adults` (also referred to as school leavers or Ordinary and Advanced level students) perceptions and opinions of ODL programmes offered by the Zimbabwe Open University. The study was meant to unearth their level of acceptance of ODL and to make recommendations on how to improve the receptivity of ODL mode of learning by school leavers who traditionally have opted to study with the conventional institutions.

LITERATURE REVIEW

Students' perceptions of the gains of ODL Programmes

Different people perceive the advantages of ODL differently, and their perceptions have influenced attitudes towards acceptance and use of ODL in the education system (Ojo and Olakulehin; 2006). The kind of attitudes and perceptions that students have toward a programme plays a very crucial role in assessing or evaluating the impact of the program and the effectiveness of the program (Smith 2001), but according to empirical evidence, however, there is no significant difference between learning outcomes that can be attained at traditional institutions versus distance learning (Verduin and Clark; 1991).

There remains concern, however, about the effectiveness of distance education for learners who may be considered less independent and thus may require direct interaction throughout the instructional process (Schmidt and Faulkner 1989). More often than not, perceptions of the distance learning system in the instructional process is influenced by an individual's beliefs about the advantages of distance education, for himself, as a student, as an employer (whose employees are also distant learning students), or as an educational planner (desirous of providing potent solutions to educational problems).

WHAT ENTICES THE YOUNG ADULT TO ENROLL WITH ODL INSTITUTIONS

Factors leading to the young adult`s choice of distance education as opposed to the conventional system may range from personal, social, academic to situational. These factors may influence students` intention to enrol for programmes offered by ODL institutions (Walker and Lowenthai, 1981). Findings from a study by Ojo and Olakulehin (2006) study reveal that prospective and current learners in Nigeria are favourably disposed to Open and Distance Learning institutions. The respondents to that survey indicated their interest in the unique features that make-up ODL institutions, such as open access, opportunity for flexible learning, provision of quality learning materials, and the use of multi-media and ICTs. Researches on the efficacy of these features and others to attract prospective students are discussed hereunder.

Geographical location of the prospective student

Although research findings elsewhere suggest that situational factors are the most significant inhibitory characteristics, they also suggest that institutional factors still affect students. This is in keeping with Thompson's (1998) finding that, "traditionally, distance education has attracted students whose geographic distance from a higher education institution discouraged or prevented enrolment in on-campus classes. A higher percentage of respondents in a research by Hunte (2010) identified the pedagogical issue of preferring small group interaction as a reason for studying at a distance. ODL institutions are in an excellent position to build positively on the favourable perceptions already held by many distance learning students. ODL can be everything to more people (Ojo and Olakulehin; 2006)

Failure to get places in conventional colleges

Owing to the existing great demand for places in conventional tertiary institutions, some students opted to study at a distance because they did not get accepted at a face-to-face campus and this suggests that there is a distinct group of individuals whose specific tertiary educational needs are being met effectively through distance education (Hunte; 2010). However, for some, getting the places at conventional colleges would not have counted as these do not have the time to study full time due to some pressing commitments (Sahoo and Khan; 1998)

CHARACTERISTICS OF ODL PROGRAMMES THAT ATTRACT THE YOUNG ADULT

Flexibility of the programmes

Findings by Ojo and Olakulehin (2006), point towards more relaxed entry point requirements in ODL, and students having the opportunity of deferring, programmes, and even examinations courses up until when they are ready, as some features of ODL that have attracted students to join. Stewart (1987) suggests that distance education students have greater freedom which entails that the student make a number of important decisions which would normally be made for them. Such flexibility is very difficult to achieve in the conventional universities because their activities and management systems are more rigid and thus restrictive by design. Various researchers have established that flexibility and convenience (time-shifting and associated advantages of time management) have often enticed students to enrol in ODL institutions. It was found out that a large number of distance education students were either already registered in regular classes, or were trying to work full- or part-time while earning degrees(Guernsey; 1998). Logistics was the second most common reason for enrolling in OD courses (Richards and Ridley; 1997). To a large extent, students felt that the ODL courses were "more convenient" than traditional courses (Hiltz; 1998). Richards and Ridley (1997) found out that to some students distance education was the only alternative hence these students enrolled in ODL courses.

Quality of education and materials used

According to Ojo and Olakulehin (2006), the tutorials in use in ODL were found to be as effective as the lecture methods used in the conventional system and this indicates that there was little difference in students' perceptions of lectures or tutorials used in the conventional institutions versus ODL institutions. This, therefore, suggests that students engaged in ODL would likely achieve learning outcomes similar to those offered by conventional educational methods. The counselling needs of learners were also better met in ODL than in the conventional higher education. Studies have found little difference in the quality of education received through distance learning versus conventional university classroom settings. Students perceived that the course materials used in their ODL study are of higher quality than the lecture notes provided by lecturers at conventional institutions. Studies have also shown that students taking distance learning courses perform as well as students taking courses via traditional methods (Gagne and Shepherd, 2001; Russell, 2002). In Pakistan, a large number of students were of the opinion that the delivery of material was in time, the contents of the courses were in a logical sequence and the printing quality of material was good and satisfactory. The respondents were of the opinion that course material of was relatively easy to understand and self-

explanatory. They were of the opinion that the material is according to the needs of distance learners. The quality of tutorials supported and facilitated understanding of the courses on offer. The tutorials were also helpful in motivating the students as they helped in removing difficulties and additional information and providing feedback (Gujjar; 2007). Owing to these factors, therefore, students held favourable perceptions towards ODL. However, some researchers have argued that owing to the high drop rates experienced in ODL programmes resulting in lower success rates in some courses, this disqualifies distance education as a high-quality option to traditional education (Perspective 2001) and Allsop (2008) concurs by remarking that the use of supplementary study material is often poor in distance education. However, according to Watkins (1991), the student who has prepared a certain number of lessons in the distance education institution knows more of the subject treated during lessons, and knows it better, than the student who has covered the same ground in the classroom. However, comparisons between distance education delivery methods and traditional forms of educational delivery have shown that there is "no significant difference" in student achievement (Meyer, 2002).

Better accessibility to the course tutors

Students perceive that they receive more individual attention from instructors. Some studies have shown that student attitudes toward distance education can be significantly affected by facilitating some degree of interaction among students and teachers. Hiltz (1998) found that 71% of students who had just completed an online course felt that ODL programmes provided better access to tutors. Students perceived that they would get better grades than in a face-to-face course (Valenta, Therriault, Dieter and Mrtek; 2001). Koch (1998) states that distance education students earned higher grades than students in conventional versions of the same classes due to constant contact with the tutors. These perceived benefits were enough to entice prospective students to opt for ODL programmes.

Other reasons for enrolling with ODL institutions are enumerated hereunder:

- Getting the opportunity to do the job and study simultaneously
- Being able to put the learnt material to immediate use while on the job
- Acquiring both experience and the professional qualification at the same time on the job
- Learners pursue their studies without withdrawing their services, as it tends to be the case when serving employees are admitted in a conventional face-to-face program(Sahoo and Khan; 1998, Chakwera and Saiti; 2005)

THE PERCEIVED FLAWS OF ODL PROGRAMMES

Perceived poor quality of education

Despite the rapid growth and increased popularity of distance learning, the quality of higher learning via distance education has been called to question (Dede 1996; Harrison 2001 as cited in Peat and Helland, 2002). There is "scepticism garnished with ridicule and hostility" of distance education universities (Young 1994). According to Allsop (2008) some employers have been misinformed about the perceived poor quality to the extent that some have become wary of hiring ODL graduates. However, according to empirical evidence, there is no significant difference between learning outcomes that can be attained at traditional institutions versus distance learning (Verduin and Clark 1991).

Lack of face-to-face interaction

Guernsey (1998) established that younger students had difficulties, particularly when ODL programmes were offered online. They rather opted to be with a "live person." Larson (1967) asserts that some students' need for face-to-face interaction. There remain concerns, however, about the effectiveness of distance education for learners who may be considered less independent and thus may require direct interaction throughout the instructional process (Schmidt and Faulkner; 1989) Hiltz (1998) reported that the majority of students felt that they made new friendships in courses with a face-to-face element, whereas this was not possible in the virtual

classroom. In the conventional system, students remain in close and easy contact with the institution, but in the distance education settings students are often isolated and contact with their university is, at best, infrequent and more often than not takes place at a distance. However, other distance education researchers (Keegan, 1988; Lewis, 1988) have questioned the need for too much face-to-face student and instructor interaction. These argue that a large amount of interaction as inhibiting the independence of the learner.

Cheating in ODL

A large percentage of the respondents taking part in a significant number of researches agree that ODL institutions provide ample opportunity for cheating (Keegan, 1988). This might be attributable to the fact that ODL students are at liberty to answer the Tutor Marked Assignment given to them in course materials provided. However, the same can be said of conventional universities in which students are required to answer questions in a face-to-face classroom setting. There is more room for academic cheating in ODL institutions. ODL students may cheat by hiring someone who has a greater understanding of the topic to write their assignments for them. Indeed, no one is there to watch over them and monitor their learning as is the case in conventional universities (Ojo and Olakulehin; 2006). Allsop (2008), therefore, attributes this factor to the poor take up of training vacancies in ODL by the young adults.

Technological Problems: Issues of access and capacity

Students new to a particular technology may initially exhibit some concern about the role of technology in the learning experience. If this occurs, these students typically demonstrate a reluctance to actively participate in the distance classroom areas (CEDL 1999). Mastrian and McGonigle (1997) found out that the most frequent negative comment related to the overall experience was the early frustration with the use of computers and other related technological gadgets, which in other instances may not be available. Most ODL institutions and students grapple with problems inherent in the digital divide; access to instructional technology and capacity to use such technology is negligible compared to those of developed nations (Yusuf and Falade, 2005).

Other challenges confronting prospective students

Although more flexible, the fact remains that this educational approach demands a great deal of personal sacrifice on the part of learners. It requires students to have good study skills, discipline, and self-motivation - attributes needed to attain learner autonomy (Collis, 1996). These attributes, in addition to learners' socio-cultural backgrounds, previous knowledge and learning experiences attained at conventional institutions, will likely influence their perceptions of, and attitudes towards, ODL. In many respects, however, ODL remains an alien system of inculcating knowledge to students in ODL because they tend to be more accustomed to conventional universities. Thus, because students are new to ODL and its innovations, opportunity for confusion exists (Ojo and Olakulehin; 2006, Collis; 1996). It, therefore, remains to be ascertained whether these and other factors impact on Zimbabwean youths` acceptance of ODL mode of professional development.

POTENTIAL REMEDIES FOR MAKING ODL PROGRAMMES MORE ATTRACTIVE

A number of possible solutions have been put forward as remedies for changing perceptions of all categories of potential and current students so that they view ODL and related innovations in good light. According to Valenta, Therriault, Dieter and Mrtek (2001), the success of long-distance learning hinges on its capacity to simulate a dynamic campus classroom. Students are not willing to sacrifice that shared experience merely for the convenience of studying at home.

There has also been much debate as to whether distance education produces quality learners as compared to the traditional mode. Some researchers have established that ODL delivered systems play second fiddle to the traditional systems. Effective organization and management measures must be adopted to expand and enhance the provision of quality distance education through ensuring the timely development and delivery of

quality course materials and improved student support services (Ojo and Olakulehjin; 2006 Keegan, 1988; Lewis, 1988).

Distance education has been shunned due to the perceived poor quality and this has had a devastating effect on its ability to lure students. Addressing quality concerns in ODL should be the first port of call if it is to regain its original credibility. One way of doing it, is through the administration of end-of-semester exams that are proctored in face-to-face settings as opposed to on-line exams. In short, the use of proctored examinations will help ensure ODL students' assessment of learning outcomes is 100 percent reliable (Ojo and Olakulehjin; 2006).

METHODOLOGY

This current study was a survey of schools in Chegutu District targeted at Advanced and Ordinary level students currently in their final years in the two different levels of secondary education. The descriptive survey design was the most preferred since this present investigation was concerned with the perceptions of respondents.(Leedy; 1996) The study aimed at tapping their opinions on how they perceived the newly introduced Enhanced Tutorial Programme at the ZOU, as a better option through which to attain a professional qualification. In order to solicit for data from the respondents, an interview schedule was made use of. Ten assistant researchers were employed, each being assigned to a section of the schools. Since a lot of marketing of the innovation had been done, the students already had an understanding of the ETP programme, making it easy for the researchers to extract the much needed data. However, other means of collecting data could have enabled the researchers to authenticate and validate the data. All the targeted 100 students were interviewed and data collated and analyzed.

POPULATION AND SAMPLE

The population for the current study consisted of 3200 secondary school students drawn from 34 secondary schools which included rural, peri-urban and urban high schools. In order to accord each school category a proportionate chance of being represented in the study, sampling of the schools was done through stratified random sampling. Three strata: one for the rural, the other for the peri-urban and third for the urban schools were established. Each stratum contributed to the sample of schools as follows: rural schools = 8, peri-urban schools = 5 and urban school =3. These contributed to a total of 100 students who were the respondents to the study. The student respondents were chosen through systematic sampling through the use of class daily attendance registers kept in each of the schools.

DISCUSSION AND PRESENTATION OF FINDINGS

Demographic data of respondents

The respondents consisted of 64 (64 %) male and 36 (36%) female students whose age range was between 16 and 22 years. The 16 to 18 years age range was predominately composed of “Ordinary Level” students in their final year (form four) and the 19-22 range had the Advanced Level students in their final year (form 6) in the majority. Out of the 100 (100%) respondents 60 (60%) were Ordinary Level students while 40 (40%) were Advanced Level students. Of these students 15 (15%) preferred to undertake careers in sciences, 63(63%) preferred commercials whilst 22 (22%) wanted to pursue Arts. All the areas are offered by ZOU through distance education. Forty-eight (48%) were currently located in rural schools, 35 (35%) in urban schools and 17 (17%) in peri-urban schools.

Table 1: Respondents` views on factors enticing them to enrol for ZOU ODL Programmes offered through the Enhanced Tutorial Programme

FACTOR	YES	NO
Geographical location of residence in relation to the location of conventional colleges	56(56%)	44(44%)
Failure to get a place at a conventional college	3(3%)	97(97%)
Flexibility and convenience of ODL	86(86%)	14(14%)
Relaxed entry points for enrolment in ODL institution	80(80%)	20(20%)
One can learn whilst he/she earns	90(90%)	10(10%)
Quality materials are offered, for example, modules used	86(86%)	14(14%)
Course content is of high standard	84(84%)	16(16%)
There are now more tutorial hours through ETP unlike in the traditional ODL mode	95(95%)	5(5%)
Low cost tuition	93(93%)	7(7%)
High pass rates in ODL	54(54%)	46(46%)

Table 1 above shows that a slight majority of 56(56%) students preferred to study with the ZOU because the location of their areas of residence was prohibitive to allow them to enrol at a conventional college. The majority of such responses were form the rural school based students who could not afford accommodation rates in residential areas around the conventional colleges, now that some of these conventional colleges were no longer providing college accommodation for various reasons. Only 3(3%) indicated that failure to secure a place at a conventional college would make them opt for ODL programmes. Findings elsewhere concur that distance education has attracted students whose geographic distance from a higher education institution discouraged or prevented enrolment in on-campus classes (Thompson; 1998). To the contrary, in South Asia, ODL students are most likely from the large pool of those unable to obtain places elsewhere, that is, in traditional conventional colleges (Allsop; 2008).

Because ODL had a lot of flexibility and was convenient, 86(86%) respondents preferred to study through this mode. Some 80(80%) preferred the ODL mode because while some conventional institutions required above 10 points at Advanced level, ZOU only required 5 Ordinary level subjects passed with a grade C or better. ZOU also offers tuition to mature students with experience in a given field despite not holding the pre-requisite Ordinary level subjects. ZOU also offers the Accreditation of Prior Learning to potential students who might have had some training in the areas they intend to study with the university. An overwhelming majority of 90(90%) respondents got attracted by the idea of earning while learning. There are perceived possibilities of combining employment with education which allow the students opportunities they might not otherwise have had (Allsop; 2008). Only 10(10%) did not get enticed by the idea at all. These felt they were too young to get employment since their age ranged from 16 to 18. Eighty-six percent of the students remarked that ZOU had good quality modules which they were using for their Advanced Ordinary level studies particularly the arts and commercial students. These students regarded the content in the modules as detailed, easy to understand and well illustrated. This agrees with the findings of Ojo and Olakulehin (2006) in which ODL students thought that the course materials used in their ODL study are of higher quality than the lecture notes provided by lecturers at conventional institutions. Sixteen percent thought otherwise. However, some studies have shown that students in ODL programmes perform as well as students taking courses via traditional methods (Gagne and Shepherd, 2001; Russell, 2002). There was a resounding appreciation of the ETP`s increased tutorial hours. Ninety-five percent of the students indicated their willingness to study through the ETP because of the long duration of contact. This would result in them interacting more than would have been the case in the traditional mode that only meant three hours of contact time per course per semester.

Asked if tuition fees charged by ZOU were motivating enough to make them enrol with the institution, 93(93%) agreed while a minority of 7(7%) indicated otherwise. Currently, ZOU charges USD$340 per semester for

undergraduate new students and USD$320 for the undergraduate returning student. A flexible payment plan is available in which the two groups of students pay USD$430 and USD$410 respectively (Accounts Department fees Document dated 18.11.2010). Conventional universities, on the other hand, are currently charging in excess of USD$500 for the same service, excluding accommodation and meals. The majority of families in Zimbabwe live below the poverty datum line and affording such an amount is just but a dream. Given such a scenario, these prospective students found it appealing to study through ZOU`s ETP. Distance education can, therefore, be at an economic advantage over conventional provision. In countries such as Nigeria acquiring initial professional qualifications by distance education has lower costs than conventional programmes (UNESCO; 2001). On the contrary, private costs taken on by students in most distance education institutions are high, limiting accessibility (Allsop; 2008).

The majority of the students, 54(54%), attributed their desire to study with the Zimbabwe Open University under the ETP because of the envisaged high pass rates. This perception can be attributed to the negative notion held by the general public that ZOU degrees are easy to attain. Students perceived that they would get better grades than in a face-to-face course and that they would earn higher grades than students in conventional versions of the same classes owing to the openness of the programmes which were prone and susceptible to cheating (Valenta, Therriault, Dieter and Mrtek,:2001., Koch; 1998). The remaining 46(46%), however, were not motivated by the pass rates.

Table 2: Respondents` views on the factors that might inhibit their enrolling for ZOU ODL Programmes offered through the Enhanced Tutorial Programme

FACTOR	YES		NO	
	Number	%	Number	%
Perceived poor quality of education	20	20	80	80
Little time for face-to-face interaction	73	73	27	27
The need to socialize with peers from a wide socio-cultural background	84	84	16	16
Cheating which is rampant in ODL institutions	2	2	98	98
Lack of technological capacity /Web and e-mail incompetency	83	83	17	17
Lack of access to technology	60	60	40	40
Prohibitive Costs	14	14	86	86
Geographical location of the tutorial and regional centres	71	71	19	19
General apathy to ODL programmes	43	43	57	57

Results presented in Table 2 help to unearth the factors that may inhibit school leavers` aspirations of undertaking studies in an ODL institution. Eighty (80%) of the respondents overwhelmingly rejected the notion that there was poor quality education at the ZOU, a factor that could deter prospective students from enrolling and employers from engaging employees trained through the ODL mode. However, most respondents were of the opinion that little time for face-to-face interaction and the need to make and meet new friends and socialize with colleagues from various socio-cultural backgrounds (84%) in conventional colleges, were very potent militating forces against their desire to enrol for studies through the ODL system. Guernsey (1998) states that younger students had difficulties with distance education courses especially on-line learners and felt that they needed to be with a “live person.” Larson (1967) established that some students need face-to-face interaction regardless of whatever material is available. Garrison (2000) questions whether an inert learning package, regardless of how well it is written, is a sufficient substitute for real communication with the teacher.

The majority of students felt that they made new friendships in courses with a face-to-face element (Hiltz; 1998). In spite of the existence of the face-to-face arrangement, Hiltz (1997) established that distance education students had better access to their professors and were appreciative of the convenience of learning from a distance (Hiltz, 1997).

Asked whether cheating in ODL made them shun the system, the majority (98%) disagreed. This could probably be due to ignorance of the ODL systems particularly on-line courses where students are at liberty to use any resource material available even in examinations where no invigilator is in attendance. Due to the openness of the programmes in ODL, the systems are often prone and susceptible to cheating (Koch; 1998). The majority of the students (83%) indicated that lack of access and incompetence in the use of web and other forms of technology were an inhibiting factor towards their joining ZOU. Zimbabwe, like any other Third World country, where most students grapple with problems inherent in the digital divide; access to instructional technology and capacity to use such technology (Yusuf and Falade;2005), still lags behind in ICT and the Zimbabwe Open University, despite attempts to put in place the ZOU on-line ITC facility, a lot needs to be done. Some students were confronted with early frustration in the use of computers and other related technological gadgets (Mastrian and McGonigle; 1997). However, in some countries, the use of instructional technology is one of the reasons leading to favourable findings on why students indicated their preference towards ODL (Ojo and Olakulehjin; 2005). In the USA, twenty-four percent of distance students have high speed bandwidth at home (Gunawardena; 1988).

According to table 1.2, the costs were not a factor against school leavers` intention to join ZOU`s ETP. Of the 100 respondents, 86(86%) indicated they were not swayed by the prohibitive cost of attaining education through the Zimbabwe Open University. These costs incurred included transport to and from the venue, tuition fees and other expenses. However, very often really effective distance education courses can be more expensive than the traditional face-to-face programmes (Hiltz; 1997).

The geographical location of the tutorial and regional centre was an inhibiting factor for the majority (71%) of the students. The present study was carried out in Chegutu district where some schools are located over 100 kilometres from Chegutu town centre. This, therefore, implies that students from such locations would be required to travel to Chinhoyi town, the Mashonaland West ZOU Regional Centre, located some 97 kilometres from Chegutu for tutorials and other services offered by the institution. In terms of costs, as established from 14(14%) of the students, this would curtail their endeavours to study with the Zimbabwe Open University through the Enhanced tutorial programme which entailed travelling for more hours than the traditional ODL programme mode. Forty-three (43%) indicated that there was general apathy towards studying with ZOU even with the advent of the ETP. Probed to detail their reasons for the apathy, the majority stated that they had a belief that learning entailed getting into a classroom and interacting on a day to day basis.

Table 3: Respondents` views on the possible remedies intended to make the Enhanced Tutorial Programme more enticing

REMEDY	NUMBER OF RESPONDENTS	
	Number	%
Decentralization of programmes to district and circuit centres	89	89
Reduction of tuition fees	38	38
Combative marketing strategies of programmes	36	36
Education campaigns on the merits of studying through ODL	49	49
Reduction in term length of the programmes	60	60

As the number of innovations the ZOU continues to increase, there appears to be a downturn in the numbers of students enrolling in the various programmes, hence the introduction of the ETP. It is against this

background that the O and A level students were asked to provide the researcher with their perceived remedies, which when implemented would pave way for an upsurge in enrolment figures particularly from the school leavers who traditionally are given to enrolling in conventional colleges and universities. Table 1.3 above shows that these prospective students were very much in favour of a decentralized system whereby tutorials and other services including writing examinations, were done at district and circuit centres as opposed to having all these services provided at regional centres. These regional centres were located in towns and cities not convenient to most of the students. Reduction of fees, as a measure to entice the prospective students was not a popular remedy as only 38(38%) indicated their desire to have fees reduced. These felt that fees were high. However, compared to fees charged in conventional colleges, ZOU fees were very low, an indication as to why the majority of the students did not put forward this aspect as a remedy. The majority (60) of the students felt the duration of study was very long and tended to discourage their joining of the ZOU. All ZOU undergraduate degree programmes are attainable after a period of 4 years. Only diploma courses are completed in three years.

CONCLUSIONS

This current study was undertaken in order to establish the receptivity of the Zimbabwe Open University`s new innovation of the Enhanced Tutorial Programme that has just been introduced for the benefit of the young adults who are school leavers and decide to study through distance education. Findings from this study reveal that this breed of prospective learners has generally embraced the ETP as one that may help them acquire qualifications that appear to be illusive in light of the exorbitant fees in other learning modes. The majority of the respondents were positive and welcoming to the introduction of the programme. The most appreciated characteristic of the ETP was the number of tutorial hours that was raised from 3 to 36 per course per semester. This would mean more time for associating with peers and interacting with tutors.

Students preferred to study with the ZOU through the ETP because of their area of residence which was prohibitive for them to enrol at a conventional college. The majority of such responses were form the rural based students who could not afford accommodation rates in residential areas around and near colleges since some of the colleges were no longer providing college accommodation services by government and university authorities.

As is the case with the traditional ODL mode at the ZOU, an overwhelming majority fell head over heels with the idea of earning while learning. Among the other features of the ETP that help entice the respondents were the following: high quality of learning material, flexibility and convenience. However, areas of contention still do exist. Although a minority of the respondent was scornful on the idea of studying through distance education, the following aspects prohibited them from undertaking courses through the ETP. Prominent among these were lack of technological/web capacity, little face to face contact and lack of socialization and the distant location of tutorial venues.

IMPLICATIONS

The trust and acceptance of the ZOU innovation of the Enhanced Tutorial Programme has a lot of implications for the future growth of the institution, if we are to realise the much needed gargantuan increases in student enrolments, particularly from the school leavers. Steps must be taken to adopt and introduce ICT courses to those intending to enrol so that prospective students do not get scared off by the technology once they enrol. This will also enable the introduction of on-line courses to an ICT literate population. Introducing ICT is seen as a step forward towards motivating the young adult since the current young generation has been found at the centre of ICT usage, particularly in instances where games and emailing are concerned. Cognizance should also be taken on the view that what motivates adult learners does not necessarily motivate the young learners. Appropriate and suitable activities must be introduced, however not deserting the principles of distance

education, all in the name of bringing on board the young adult. Conditions should be created to reinforce the positive perceptions manifested in favourable responses provided by the students. Parents and the community need to be educated about the facets of the ETP distance education mode and its advantages in terms of cost, flexibility and convenience. Decentralization should also be seen as a potentially enticing factor for the prospective ETP distant student. The institution should invigorate its efforts to establish study centres in districts, zones and circuits in an attempt to reduce travelling costs as well as travelling time to the regional centres, subsequently bringing the ETP of Open and Distance Learning to the student`s doorstep. Thus the Enhanced Tutorial Programme becomes the number one choice of learning mode for the young adult.

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Richard BUKALIYA (Mr.) is a lecturer teaching at the Zimbabwe Open University in the Faculty of Arts and Education. He is the Regional Coordinator for the Master of Education degree in Educational Management as well as Teacher Education diplomas and degrees. He holds a Masters Degree in Educational Administration, Planning and Policy Studies. He is also a Doctoral candidate of the Zimbabwe Open University. His research interests include issues in Distance Education and Primary and Secondary education. The researcher has, to date, published the following two articles:

- Content Analysis of Research Projects submitted by Undergraduate Students (2000-2009) at the Zimbabwe Open University: Implications for Quality Assessment (2010).
- The Potential and Challenges of Introducing New Technology in Distance Teaching and Learning (2011).

Richard BUKALIYA
Zimbabwe Open University
Mashonaland East Region,
P.O. Box 758, Marondera, ZIMBABWE
Tel: +26327921922
Cell: +263733686817/+263712501766
E. Mail: bukaliar@yahoo.com

Farirai MUSIKA (Ms) is an Assistant lecturer teaching at the Zimbabwe Open University in the Faculty of Social Sciences. She holds a Bachelor of Science Honours degree in Psychology. She is currently studying for a Masters degree in Counselling with the Zimbabwe Open University. To date, she has co-published "Content Analysis of Research Projects submitted by Undergraduate Students (2000-2009) at the Zimbabwe Open University: Implications for Quality Assessment" (2010). Her research interests include issues in Distance Education.

Farirai MUSIKA
Zimbabwe Open University
Mashonaland East Region, P.O Box 758,
Marondera, ZIMBABWE
Tell: +26327921922
Cell: +263734353277
E. Mail: farimusika@gmail.com

REFERENCES

Agyeman, B. & Dadzie, P. (2010). Providing Information Communication Technology Support to Distance Education Students: A case of the University of Ghana, Legon: TOJDE, Volume 11, Number 3, Article 6.

Al-Fahad, F. N. (2009). Students` Attitudes and Perceptions towards the effectiveness of Mobile Learning in King Saud University, Saudi Arabia, TOJET, volume 8 Issue 2 Article 10.

Allsop, T. (2008). "Can Open and Distance Learning help make South Asia competitive?" in Education Research Journal, DFID, UK.

Ampadu, E. (2010). An investigation into Students' Attitude towards Adult Education Programmes: the case of Ghana International Journal on New Trends in Education and Their Implications October, November, December 2010 Volume:1 Issue:3

CEDL (1999). Students` attitudes towards distance learning. Distance Learning Abstracts [serial online]. Available at: http://www.lucent.com/cedl/stdtatt.html

Chakwera, E. and Saiti, F. (2005). Training Teachers through the Distance Mode: The Experience of Domasi College of Education in Malawi. Domasi College of Education. Malawi

Garland, M. R. (1993). Student perceptions of the situational, institutional, dispositional, and epistemological barriers to persistence. Distance Education.

Gibson, C. C., & Graff, A.O. (1992). Impact of adults' preferred learning styles and perception of barriers on completions of external baccalaureate degree programs. Journal of Distance Education.

Guernsey, L. (1998). Distance education for the not-so-distant. Chronicle of Higher Education [serial online].

Hellman, J. A. (2003). *The* Riddle of Distance Education: Promise, problems and applications for development. Geneva: United Nations Research Institute for Social Development

Hiltz, S. R. (1998). Impacts of college-level courses via asynchronous learning networks: some preliminary results. Journal of Asynchronous Learning

Hunte, S. (2010). Profile of the UWI Distance learners: The implications for Online Curriculum Development, Teaching and Learning at the University. TOJDE, Volume 11, number 3, Article 4.

Keegan, D. (1996). Foundations of Distance Education (3rd Ed). London: Routledge.

Koch J. V. (1998). How women actually perform in distance education. Chronicle of Higher Education

Mastrian K. G. & McGonigle D. (1997). Older student perceptions of technology based learning. On-Line Journal of Nursing Informatics. http://cac.psu.edu/~dxm12/percep2.html

Ojo, D, A. & Olakulehjin, F. K. (2006). "Attitudes and Perceptions of Students to Open and Distance Learning in Nigeria". International Review of Research in Open and Distance Learning Volume 7, Number 1. National Open University of Nigeria.

Olcott Jr., D. J. & Wright, S. J. (1995). An institutional support framework for increasing faculty participation in post-secondary distance education. The American Journal of Distance Education.

Parker, A. (1999). A study of variables that predict dropout from distance education. International Journal of Educational Technology. http://www.ao.uiuc.edu/ijet/v1n2/parker/index.html. Retrieved October 15, 2010.

Peat, J. & Helland, K.(2002). Perceptions of Distance Learning and the Effects on Selection Decisions. Retrieved from: http://bus.utk.edu/iopsyc/pdf/Perceptions-of-Distance-Education-siop2003.pdf

Richards, C. N. & Ridley D. R. (1997). Factors affecting college students' persistence in on-line computer-managed instruction. College Student Journal [serial online]. December 1997

Richardson, J. T. E. (2005). Students' perceptions of academic quality and approaches to studying in distance education. British Educational Research Journal.

Rekkedal, T. & Dye, A. (2007). Mobile distance learning with PDAs: Development and testing of pedagogical and system solutions supporting mobile distance learners. International review of Research in Open and Distance Learning

Russell, T. L. (1999). The no significant difference phenomenon. Raleigh: North Carolina State University.

Ryan, R. C. (2000). Student assessment comparison of lecture and online construction equipment and methods classes. T.H.E. Journal, 27(6). Retrieved from http://www.thejournal.com/magazine/vault/A2596.cfm.

UNESCO (2001). Teacher Education through Distance Learning Technology-Curriculum-Cost-Evaluation Summary of Case Studies, Paris, UNESCO.

Valenta, A., Therriault, D., Dieter, M. & Mrtek, R. (2001). Identifying Student Attitudes and Learning Styles in Distance Education JALN volume 5, issue 2 - September 2001.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 11 ISSN 1309-6249

THE MOZART EFFECT IN THE FOREIGN LANGUAGE CLASSROOM A STUDY ON THE EFFECT OF MUSIC IN LEARNING VOCABULARY IN A FOREIGN LANGUAGE

Yasemin Yelbay YILMAZ
Ankara University,
Faculty of Languages,
History and Geography,
Department of Linguistics
Sıhhiye, Ankara TURKEY

ABSTRACT

Music being an important component of Brain Based Learning and its effects on vocabulary learning in a foreign language was explored in this study. The study was conducted at Hacettepe University, School of Foreign Languages and aimed at determining the effect of music on learning and retaining new vocabulary in a foreign language. A secondary aim was to find whether musical intelligence had any effect on learning vocabulary with a music-based syllabus. A syllabus based on brain based learning principles that comprises music as its main component for vocabulary instruction was devised and implemented for 6 weeks. The experiment group got music based vocabulary instruction while the control group followed the same syllabus without the music component. Data have been collected by means of pre and post tests; student written feedback and an interview with random selected students in the experiment group to collect qualitative data. It has been found at the end of the study that the experiment group outperformed the control group with the number of words they learned. The experiment group also retained more words as music acted as a means to code the new vocabulary into the long term memory.

Keywords: Brain Based Learning, Vocabulary, Mozart Effect, Music**.**

INTRODUCTION

Over the last two decades music and its effects on learning has become a subject that attracted many researchers in the interdisciplinary field. Growing evidence from neuroscience suggests that music is a biologically powerful tool which means that it can have a long lasting effect on nonmusical abilities (such as language, mathematics, attention and motivation) during the lifetime of humans. Importantly, these effects can be observed not only in people who received musical training but also in ordinary individuals who engage with music.

THEORETICAL BACKGROUND

The Mozart Effect

A lot of research has been done on “the Mozart Effect” and its effects on learning and memory. There has been a lot of controversy around the term. Some studies suggest that listening to Mozart has a short-term positive effect on spatial IQ (Nantais, 1997; Nguyen, Shaw, & Tran, 1996; Rauscher, Shaw, & Ky, 1993; Rauscher, Shaw, & Ky, 1995; Rauscher, Shaw, Levine, Ky, & Wright, 1994; Rideout, Dougherty, & Wernert, 1998; Wilson & Brown, 1997). However, there is controversy around the issue and many efforts to replicate and generalize this effect have been either unsuccessful (Kenealy, 1994; Stough, Kerkin, Bates, & Mangan, 1994) or had mixed

results (Wilson & Brown, 1997). Interest for the Mozart Effect aroused dramatically when Rauscher et.al. did an experiment on the effect of music and tested the effects of music on spatial task performance (Rauscher et al., 1993). They tested thirty-six college students' performance on a set of three standard IQ spatial reasoning tasks from the Stanford-Binet intelligence scale (Thorndike, Hagen, & Sattler, 1986). Before the tasks, each group was exposed to one of the following conditions: (1) listening to 10 minutes of Mozart's sonata for two pianos in D major, k488; (2) listening to 10 minutes of relaxation instruction; or (3) 10 minutes silence. Their results showed that the IQ scores following the music condition were significantly (8-9 points) higher than the other two conditions. They speculated that the complexity of the music was a factor of the increased performance and suggested that music lacking such complexity or that was repetitive might, in fact, decrease performance. They also noted that this effect was temporary and did not last more than 15 minutes. However, the findings of the study led to a lot of misconceptions and misleading information. Campbell (1997) claimed that listening to Mozart can temporarily increase one's IQ and in 1998 Zell Miller, governor of Georgia, USA announced that he proposes to provide every child born in Georgia with a tape or CD of classical music. In the following years Rauscher and her colleagues performed follow-up studies that replicated the results of their first study (Rauscher et al., 1995; Rauscher et al., 1994) however, in all of the studies, the effect was temporary. In an effort to replicate and extend the results of the Rausch et.al.'s study, Stough, Kerkin, Bates, and Mangan performed a similar study using 30 subjects (Stough et al., 1994). In order to test the hypothesis that repetitive music might decrease spatial IQ, the relaxation condition was replaced by 10 minutes of disco music that had a repetitive beat. The measurement was changed also from the Stanford-Binet test (Thorndike et al., 1986) to the Raven's Advanced Progressive Matrices (APM) (Raven & Court, 1992). The results revealed that although there was a small difference in the mean scores across the conditions, the difference was not significant. Nantais and Schellenberg (1999) examined musical preference as a factor in increasing arousal, therefore having a positive or negative effect on results. The auditory stimuli used were Schubert's *Fantasia for Piano in F minor, (D.940)*, Mozart's (K448) and silence. Their results indicated that students scored significantly better after the music stimulus, but there was no significant difference between the Mozart and Schubert stimulus.

The Effect of Music on Learning and Memory

There is a considerable body of evidence that associates academic achievement with music. Although there has been a lot of controversy around the Mozart effect, it is now an established fact that music -if not necessarily Mozart- has a significant effect on learning and memory (McIntyre, 2007; Schellenberg, 2005; Rainey & Larsen, 2002; Hetland, 2000; Davies, 2000; Weinberger, 2000; Adkins, 1997; Wallace, 1994; Falioni, 1993; Anton, 1990; Chazin & Neuschatz 1990; Guglielmino, 1986; Krashen 1985; Lozanov, 1978; Geschwind, 1970). Music can enhance various cognitive functions like spatio-temporal reasoning (Sarnthein et. al. 1997; Shaw & Bodner, 1999), attention (Drake et. al. 2000; Large & Jones, 1999) and memory (Kilgour et.al. 2000; Glassmann 1999, Deutsch, 1982). Wallace and Yalch note that text is remembered better when it is accompanied by music (Wallace, 1994; Yalch, 1991). In a study done with ninety 6 to 15-year-old boys it was found that those with music training had significantly better verbal learning and retention abilities and the longer the duration of the music training, the better the verbal memory (Ho, Cheung, & Chan, 2003). Music acts as a mnemonic tool for verbal learning especially during early development (Salcedo, 2002; Calvert & Billingsley, 1998). Patel refers to music as TTM (transformative technology of the mind) and states that "…Music should be regarded as a biologically powerful human invention or 'transformative technology of the mind". TTM theory claims that music is a human invention that can have lasting effects on such nonmusical brain functions as language, attention, and executive function, and is concerned with explaining the biological mechanisms underlying these effects (Patel 2010). Also Schellenberg's findings support the view that regular engagement with music influences a variety of nonmusical brain functions. Schellenberg argued that music training influences a variety of non domain-specific skills (e.g., memorization, fine motor skills) or general mental processes relevant to many different cognitive tasks, such as executive function (the ability to organize mental tasks, control impulses, etc.) and abstract reasoning (Schellenberg, 2005; 2006). Thaut et.al. (2005) conducted a study to test the effects of music as a mnemonic device on learning and memory. The findings of the study revealed a

significant difference between the spoken and music condition. They concluded that musical learning may access compensatory pathways for memory functions associated with learning and recall.

The Effect on Music on Foreign Language Learning

Connections between music and language have been of interest to many researchers across academic fields (Garfias, 1990; Borchgrevink, 1982; and Pribram, 1982), and TESOL (Teaching English to Speakers of Other Languages) professionals have long made use of music in their classrooms (Richard-Amato, 2003; Guiglielmino, 1986). Foreign/second language teachers have tried to identify effective uses of music in their classroom in order to help students more efficiently and effectively achieve higher language proficiency (de Groot, 2006; Salcedo, 2002; Ayotte, 2004). However, Falioni (1993) states that "all too often, music in the classroom has been relegated to recreation and entertainment status" suggesting that music should be considered as a much more powerful tool to teach a language (p.98). Similarly, Medina (1990) provides the following advice: "If music is a viable vehicle for second language acquisition to the same extent as other non-musical means, then songs can no longer be regarded as recreational devices, having little instructional value" (p. 18). Music positively affects language accent, memory, and grammar as well as mood, enjoyment, and motivation. Language teachers and music therapists alike should encourage the conjoined study of these natural partners, because communicating through a musical medium benefits everyone (Jourdain, 1997:293). In his study on the effects of music on children and language, Bygrave concludes that children who listened to music had significant improvements in learning new words and adds that music may be an effective learning medium for aspects of language development, especially students with reading problem (Bygrave 1995). Wallace (1994) performed a series of studies on the relationship between music, language, and memory. The first two studies examined two hypotheses: 1) music can aid the recall of text, and 2) some of this recall can be attributed to music's melody rather than only to a text's rhythmic qualities. Wallace concluded that music can be an effective aid on recall. Wallace also found that recall of text set to music is significantly better than when the same text is spoken in a rhythmic pattern. As many researchers agree (Wallace, 1994; Anton, 1990; Morrongiello & Roes, 1990; Serafine, et al., 1986), the tune and text of a song are to some extent integrated in memory rather than stored independently. According to McElhinney and Annett (1996), "The integration of the temporal aspect of a tune with the text might promote better organization of material and consequently enhance recall" (p. 399). Ensuring that vocabulary items are retained and recalled has always been a challenge in language learning and teaching. Many educational researchers agree that music is an effective way of enhancing vocabulary acquisition and comprehension, and emphasize music's ability to engage children in learning (Wiggins, 2007; Smith, 2000; Fountas & Pinnell, 1999; Miller & Coen, 1994; Page, 1995). De Groot (2006) found that studying a foreign language with music playing in the background can increase word recall by up to 11.6% with an average of 8.7%. Medina (1990) reported on the effectiveness of music and story illustrations in the English vocabulary acquisition of second-grade limited English proficient students. Data obtained one and a half weeks after treatment showed mean gain scores were still consistently higher for the combined effects of both music and illustrations. The investigation provided empirical support that music is a useful tool for especially vocabulary in second language acquisition. A good example is *The Alphabet Song* sung to the popular tune *Twinkle Twinkle Little Star* considering that millions of children learnt the alphabet with this song.

METHOD

In this study the following hypotheses were tested: 1) Vocabulary instruction based on brain based principles and the use of music as an encoding tool given to intermediate level students will be more effective than vocabulary instruction based on brain based principles but without the music component. 2) Learning vocabulary with this method will be independent from the musical intelligence as a factor and there will not be a significant difference between the scores of students who have musical intelligence and students who do not have musical intelligence.

Participants

The study was conducted with 56 intermediate level students who were enrolled in the School of Foreign Languages (SFL) at Hacettepe University, Ankara. The total number of girls was 33 comprising 58.9% of the group and 23 were boys comprising 41.1% of the group. The students were enrolled in various faculties and departments (engineering, business administration, nursing, medicine, actuaries, nutrition and dietetics, biology and social work). Students enrolled in SFL have to sit a placement test and classes are formed according to the results of this test. Thus, it was assumed that the students in the same class have the same level of English proficiency and the control and experiment groups were formed based on this assumption which relies on the results of the placement test.

Data Collection Methods

Quantitative data were collected by employing a test to determine whether each individual student in the experiment group had musical intelligence with the Teele Multiple Intelligence Inventory. The pre test showed the mean scores of both groups at the beginning of the application and the post test mean scores are used in order to determine whether the application justifies the research questions. Qualitative data were collected by interviewing students who represent a specific group of students (high scorers, average scorers and low scorers) to have a realistic sample of the group. Also, after each lesson written feedback is collected from experiment group students to evaluate their reactions to the lesson. Qualitative data was as important as quantitative data in this study as qualitative data provided an in-depth account of students' perspectives on the new syllabus tested. Myers concludes that the ultimate aim of qualitative research is to offer perspective of a situation and provide well-written research reports that reflect the researcher's ability to illustrate or describe the corresponding phenomenon (Myers, 2000).

Procedure

Two classes with close mean scores at the placement test results were chosen as control and experiment groups. The words that are used in the study were chosen from the units of the course book that were not covered in the lessons yet. Those units were not covered also during the study. A variety of word categories was chosen for the study including nouns, verbs, adjectives, adverbs and phrasal verbs. The pre-test was devised using these words as multiple choice vocabulary questions. A pilot study was conducted on 134 students other than the control and experiment groups and the pre test was tested for validity and reliability. The pilot study results were used for item analysis and the pre test was finalized after the items of the test were changed, improved or deleted based on the item analysis results. The final version of the pre test consisted of 60 multiple choice items with four options. The pre test was then given to both the control and experiment groups prior to the application. The pre test revealed that the means of the control group was 7.30 and the means of the experiment group was 10.10. Taking these mean scores into account and as the differences in the mean scores were not statistically significant, it was concluded that both groups were equal at the beginning of the application.

Another test conducted only on the experiment group before the study was the Teele Multiple Intelligence Inventory in order to determine whether each individual student has musical intelligence or not. The aim of determining the presence of musical intelligence for each student is to draw reliable conclusions based on the collected data. If the experiment group students had a high level of musical intelligence the results that support the hypothesis of the study could not be attributed only to the method used but to their level of musical intelligence and the experimenter eliminated that by determining the students' musical intelligence. The Teele Multiple Intelligence Inventory revealed that twelve of the students in the experiment group had musical intelligence. After the validity and reliability checks the final version of the pre-test was devised and used with both control and experiment groups.

The application of the method lasted six weeks and students were given vocabulary lessons twice a week for two hours. Both groups received instruction from the same instructor. The students of the experiment group

received vocabulary instruction with the new syllabus while the control group received the vocabulary instruction also with the new syllabus excluding the music component. Activities based on music were replaced by similar activities without music in the control group. At the end of each lesson students of the experiment group were encouraged to write some feedback about their reactions and feelings towards the lesson. Those feedback sheets were later used for qualitative data analysis. Music was used both as background music and as prompts to trigger certain moods in the classroom. The experimenter used music also as context while teaching new vocabulary in order to help students associate a certain type of music with a certain word e.g. an upbeat, cheerful music for words like blissful, exhilarated, enthusiasm, masterpiece etc; or a slower and more depressive music for words like severe, assassinate, misty, revolting etc. All music used during the lessons was without lyrics in order not to distract the students. 10 – 12 new words were introduced in each lesson. The experiment group listened music in the background during *all* activities, the music was chosen by the experimenter depending on the desired mood to be created that would help students associate a word's meaning with the music during the coding process. The activities used included but were not limited to: categorizing words under broader concepts, word formation activities, matching the words with their definitions, guessing the meaning of the words from context, spelling activities, rewriting a paragraph using synonyms of the target words, the Taboo game, making sentences using the new words, Tic Tac Toe with words, free association with words (students were given a word and asked to report what comes to their mind when they hear that word), the bidding game (students were given sentences with the wrong words and asked to guess which word should be changed or omitted), drawing the word (the teacher gave students a word and asked them to draw what that word reminds them of), writing a paragraph with the new words. Two activities were done only with the experiment group because they relied solely on musical coding of words. While the experiment group did those activities the control group chose one of the activities listed above. The two activities included matching the new words with a specific piece of music; and listening to authentic songs where the target words appear in lyrics. At the end of the application the pre test was given to both groups as the immediate post test. The same week the experimenter held interviews with some of the students from the experiment group about their reactions to the application and the method.

RESULTS AND DISCUSSION

The results of the post test revealed that the differences between the mean scores of the control and experiment groups were significant. As given in Table 1. the control group's mean score was 33,62 while the experiment group's mean score was 51,32. Test results revealed that the experiment group that received vocabulary teaching based on a syllabus with music learnt and retained more words than the control group. Thus it can be concluded that teaching vocabulary with music was a successful procedure and that music served as a powerful tool in encoding new vocabulary into the long term memory. The fist hypothesis of the study was found to be valid.

Table 1: Comparison of the control and experiment groups' mean scores.

	Mean	**SD**	**T**	**df**	**p**
Control Group	33.6296	12.8517	-6.301	53	.006*
Experiment Group	51.3214	7.3235			

*P>.05

To test the validity of the second hypothesis, the mean scores of the experiment group students who had musical intelligence were compared to the mean scores of the rest of the experiment group. It has been found that the mean score of the students with musical intelligence was 50.61 while the mean score of the students

with no musical intelligence was 50.53. This result was not statistically significant and it was concluded that the second hypothesis of the research is valid. Thus, it was concluded that teaching vocabulary with music is a successful application independent of the presence of musical intelligence of the individual students.

Table 2: Comparison of the mean scores of students with and without musical intelligence (MI).

	Mean	**SD**	**T**	**df**	**p**
Students with high MI	50.6154	8.2010			
			.023	26	.739
Students with no MI	50.5333	10.4940			

*P<.05

The comments of the students in the interview also revealed that the vocabulary instruction with music was successful. The students pointed out that music in the background helped them to remember the words; two students said that although music used to distract them while studying, the music used in the application did not. They said that this is due to the fact that all music used in the study was without lyrics. Some of the students said that when they heard the piece of music that was previously played during the lesson they could immediately recall the words learnt in that lesson. Students also liked the free association with words activity where they associated a piece of music with the words they were learning. To conclude, all students stated that the musical activities helped them to learn and recall words, increased their motivation to learn more words and helped them to build a positive atmosphere in the classroom. The feedback sheets showed similar reactions on the students' behalf. All students who wrote feedback wrote that the instruction was successful and they expressed their wish to continue with the lessons in that way.

The findings of the study were consistent with the literature on brain based learning, and using music as an encoding tool to learn a new language. Results of this study showed that music can actually be an instructional tool rather than being a fun activity. As Medina (1990) points out music is not only an entertainment tool in the foreign language classroom. It can always be used as a tool for setting the mood, entertainment, motivation even for class management however its powers go beyond these functions as data from brain based learning reveals (Jensen, 2000). The most important aspect of vocabulary instruction with music was how it touched the different pathways of the brain and thus aided long term recall. The written feedback of the students showed that learning words with music helped them to recall the situation these words presented in and then the words came to their mind almost automatically. The same idea was supported in McElhinney and Annet's research (1996) as well as De Groot (2006).

CONCLUSION

Using music in vocabulary instruction in a foreign language has been discussed by many researches and it is an agreed fact that it has a positive effect in learning new information like words. It can be suggested as a result of this study that foreign language teachers can use music not only as a recreational tool but as an active instrument that has the power to encode new data in the students' long term memory. As this has been the challenge of many teachers for a long time using music can be the solution. Most course books have an element of music included in their book series but few books use music as an aid for memory. Therefore, foreign language teachers who are aware of the impact of music could adapt the book by including music that they bring in. Teachers do not need to be experts of music as most of the cited studies which advocate for the use of music were simple enough to be implemented. The debate of whether the Mozart Effect exists or not should not make teachers hesitant towards using music in their vocabulary classes as it is now an established

fact that music aids long term retention whether the teacher plays Mozart or another type of music. Further research could be conducted on the effects of specific types of music and using music with different age groups of students.

Acknowledgement: This article has been presented at the 2nd International Conference on New Trends in Education and their Implications – ICONTE, 27- 29 April 2011, Antalya – TÜRKİYE.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Yasemin Yelbay YILMAZ has completed her BA at Boğaziçi University Faculty of Education and worked both as English teacher/ instructor and teacher trainer at various universities. She attended national and international conferences and workshops as presenter and she founded and worked at the Professional Development Unit's at two Turkish universities. She translated books from English and German. Her academic study areas are the human brain and language, the memory system and learning vocabulary in a foreign language. She is about to get her PhD degree from Ankara University, Faculty of Languages, History and Geography, Department of Linguistics.

Yasemin Yelbay YILMAZ
Ankara University,
Faculty of Languages,
History and Geography, Department of Linguistics
Sıhhiye, Ankara TURKEY

Phone: +90 533 642 86 64 / +90 312 235 92 58
E. Mail: yaseminyelbay@gmail.com

REFERENCES

Adkins, S. (1997) Connecting the powers of music to the learning of languages. *The Journal of the Imagination in Language Teaching and Learning,* IV. Retrieved January 26, 2010 from http://www.njcu.edu/cill/vol4/adkins.html

Anton, R. J. (1990). Combining singing and psychology. *Hispania,* 73, 1166- 1170.

Ayotte, S. B. (2004). The acquisition of verb forms through song. *Dissertation Abstracts International, A: The*

Humanities and Social Sciences, 65 (9), 3356-A.

Borchgrevink, H. M. (1982). Prosody and musical rhythm are controlled by the speech hemisphere. In Clynes,

M. (Ed.*), Music, mind, and brain: The neuropsychology of music* (pp. 151-157). New York: Plenum Press.

Bygrave, P. (1995). Development of Receptive Vocabulary Skills through Exposure to Music. *Bulletin of the Council for Research in Music Education*, 127. Winter 38-34.

Calvert, S.L.,Billingsley,R.L.,(1998). Young children's recitation and comprehension of information presented by songs. *Journal of Applied Developmental Psychology*, Volume 19, Number 1, 1998 , pp. 97-108(12)

Campbell, D. (1997*). The Mozart Effect: Tapping the Power of* Music *to Heal the Body, Strengthen the Mind, and Unlock the Creative Spirit*. New York. Avon Books.

Chazin, S., & Neuschatz, J. S. (1990). Using a mnemonic to aid in the recall of unfamiliar information. *Perceptual and Motor Skills*, 71, 1067-1071.

Davies, N. L. (2000). Learning ... The Beat Goes On. *Childhood Education*, 148-153.

Drake, C., Jones, M. R., & Baruch, C. (2000). The development of rhythmic attending in auditory sequences: Attunement, referent period, focal attending. *Cognition,* 77, 251–288.

de Groot, A. (2006). Effects of Stimulus Characteristics and Background Music on Foreign Language Vocabulary Learning and Forgetting. *Language Learning, 56*, 463-506.

Deutsch, D. (1982). Organizational processes in music, in: M. Clynes (Ed.), *Music, Mind, and Brain*, Plenum Press, New York, 1982, pp. 119–131.

Falioni, J. W. (1993). Music as means to enhance cultural awareness and literacy in the foreign language classroom. *Mid-Atlantic Journal of Foreign Language Pedagogy*, 7, 97-108. (Eric Document Reproduction No. ED 355 796)

Fountas, I. & Pinnell, G. (1999). *Voice on word matters: Good first teaching for all children*. Portsmouth, NH: Heinemann.

Garfias, R. (1990). Thoughts on the processes of language and music acquisition. In F. R. Wilson & F. L.

Roehmann (Eds.), *The biology of music making: proceedings of the 1987Denver conference* (pp. 100-105). St.

Louis, MO: MMB Music Inc.

Geschwind, N. (1970). The organization of language and the brain. *Science,* 170, (November 27), 940-944.

Glassman,R.B. (1999), Hypothesized neural dynamics of working memory: several chunks might be marked simultaneously by harmonic frequencies within an octave band of brain waves, *Brain Research. Bulletin.* 50 (1999) 77–93.

Guglielmino, L. M. (1986). The affective edge: using songs and music in ESL instruction. *Adult Literacy and Basic Education,* 10, 19-26.

Hetland, L. (2000). Listening to music enhances spatial-temporal reasoning: Evidence for the "Mozart effect." *The Journal of Aesthetic Education, 34*(3/4), 105--148.

Ho. Y.C; Cheung. M.C., Chan, A.S. (2003) "Music Training Improves Verbal but Not Visual Memory: Cross-Sectional and Longitudinal Explorations in Children,"; *Neuropsychology,* Vol. 17, No. 3. Retrieved from http://www.sciencedaily.com/releases/2003/07/030729080020.htm on 03.02.2011

http://Songsforteaching.homestead.com/Rationale html. Retrieved June 8, 2002.

Jensen, E. (2000), *Brain-Based Learning: The New Science of Teaching & Training*, The Brain Store, San Diego, CA.

Jourdain, R. (1997). *Music, the Brain, and Ecstasy*, Harper Prennial: New York.

Kenealy, J. B. (1994). Music and IQ Tests. *The Psychologist,* 7, 346.

Kilgour, A. R., Jakobson, L. S., & Cuddy, L. L. (2000). Music training and rate of presentation as mediators of text and song recall. *Memory & Cognition*, 28(5), 700-710.

Krashen, Stephen D. (1985). *The input hypothesis* . London: Longman.

Large, E.W. & Jones, M.R., (1999) The dynamics of attending: how people track time-varying events, *Psychol. Rev.* 106 119–159.

Lozanov, G. (1978). *Suggestology and outlines of suggestopedy*. New York: Gordon and Breach Publishing Company.

McElhinney, M. & Annett, J. (1996). Pattern of efficacy of a musical mnemonic on recall of familiar words over several presentations. *Perceptual and Motor Skills,* 82, 395-400.

McIntyre, J.M. (2007). Developing Literacy through Music. *Teaching Music, **15*** **(1),** 44-48.

Medina, S. L. (1990). The effects of music upon second language vocabulary acquisition. Paper presented at the Annual Meeting of the Teachers of English to speakers of other languages. San Francisco, CA. March.

Miller, A. & Coen, D. (1994). The case for music in the schools. Phi Delta Kappan, 75: 459-461.

Morrongiello, B. A. & Roes, C. L. (1990). Children's memory for new songs: Integration or independent storage of words and tunes? *Journal of Experimental Psychology*, 50, 25-38.

Myers, M. (200*0).* Qualitative research and the generalizability question: Standing firm with Proteus. *The Qualitative Report,* 4(3/4). http://www.nova.edu/ssss/QR/QR4-3/myers.html

Nantais, K and Schellenberg, E .G. (1999) 'The Mozart Effect: An Artefact of Preference', *Psychological Science* 10 (4): 370-373.

Page, N. (1995). *Music as a way of knowing.* New York: Stenhouse.

Patel, A.D. (2010). Music, biological evolution, and the brain. In: M. Bailar, (Ed.). *Emerging Disciplines.* Houston,

TX: Rice University Press (pp. 91-144).

Pribram, K. H. (1982). Brain mechanism in music: Prolegomena for a theory of the meaning of meaning. In Clynes, M. (Ed.), *Music, mind, and brain: The neuropsychology of music* (pp. 21-35). New York: Plenum Press.

Rainey, D.W., & Larsen, J.L. (2002). The Effect of Familiar Melodies on Initial Learning and Long-term Memory for Unconnected Text. *Music Perception, **20*** **(2),** 173-186.

Rauscher, F. H., Shaw, G. L., & Ky, K. N. (1995). Listening to Mozart Enhances Spatial- Temporal Reasoning: Towards a Neurophysical Basis. *Neuroscience Letters*, 185, 44-47.

Rauscher, F. H., Shaw, G. L., Levine, L. J., Ky, K. N., & Wright, E. L. (1994). Music and Spatial Task Performance: A Causal Relationship. *Los Angeles, CA: Presented at the American Psychological Association 102nd Annual Convention*.

Raven, J. C., & Court, J. H. (1992). Raven Manual. (1992 ed.). Oxford, UK: Oxford Psychologists Press.

Rideout, B. E., Dougherty, S., & Wernert, L. (1998). Effect of Music on Spatial Performance: *A Test of Generality. Perceptual and Motor Skills*, 86(2), 512-514.

Salcedo, C. S. (2002). The effects of songs in the foreign language classroom on text recall and involuntary mental rehearsal. *Dissertation Abstracts International, A: The Humanities and Social Sciences, 63* (11), 3890-A.

Sarnthein,J.,Stein,A., Rappelsberger P., Petsche,H., Rauscher,F.H., Shaw,G.L.,(1997) Persistent patterns of brain activity: an EEG coherence study of the positive effect of music on spatial-temporal reasoning, *Neurol. Res.* 19 (1997) 107–116

Schellenberg, E.G. (2006). Exposure to music: The truth about the consequences. In G.E. McPherson (Ed.), *The child as musician: A handbook of musical development* (pp. 111- 134). Oxford, UK: Oxford University Press.

Schellenberg, E.G.(2005). Music and cognitive Abilities. *Current Directions in Psychological Science*.Volume 14 – 6.

Serafine, M. L., Davidson, J., Crowder, R. G., & Repp, B. (1986). On the nature of melody-text integration in memory for songs. *Journal of Memory and Language,* 25, 123-135.

Shaw, G.L., Bodner, M. (1999). Music enhances spatial-temporal reasoning: towards a neurophysiological basis using EEG, *Clin. Electroencephal.* 30(1999) 151–155.

Smith, J. (2000). Singing and songwriting support early literacy instruction*. The Reading Teacher* 53: 646-649.

Stough, C., Kerkin, B., Bates, T., & Mangan, G. (1994). Music and Spatial IQ. *Personality & Individual Differences*, 17(5), 695.

Thaut, M. H. , Peterson, D.A., McIntosch, G.C. (2005*).* Temporal Entrainment of Cognitive Functions: Musical Mnemonics Induce Brain plasticity an Oscillatory Synchrony in Neural Networks Underlying Memory. *The Neurosciences and Music II: From Perception to Performance,* Volume 1060 published December 2005Ann. N.Y. Acad. Sci. 1060: 243–254 (2005).

Thorndike, R. L., Hagen, E. P., & Sattler, J. M. (1986). The Stanford-Binet Scale of Intelligence. Riverside, Chicago.

Wallace, W. T. (1994). Memory for music: Effect of melody on recall of text. *Journal of Experimental*

Psychology: Learning, Memory, and Cognition, 20(6), 1471-1485.

Weinberger, Dr. Norman. “The Mozart Effect”. *MuSica*. 2000, Vl.7 Iss.1.

Wiggins, D. G. (2007). Pre-K music and the emergent reader: Promoting literacy in a music-enhanced environment. *Early Childhood Education Journal* 35(1): 55-64.

Wilson, T. L., & Brown, T. L. (1997). Reexamination of the Effect pf Mozart's Music on Spatial-Task Performance. *The Journal of Psychology,* 131(4), 365-370.

Yalch, R. F. (1991). Memory in a jingle jungle–music as a mnemonic device in communicating advertising slogans, *J. Appl. Psychol.* 76 (1991) 268–275.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 12 ISSN 1309-6249

COMPUTER-BASED GLOSSES VS. TRADITIONAL PAPER-BASED GLOSSES AND L2 LEARNERS VOCABULARY LEARNING

Malahat YOUSEFZADEH
Islamic Azad University
Ardabil, IRAN

ABSTRACT

This study investigated the superiority of computer-based glosses in comparison with traditional glosses. 80 participants were divided into two groups(computer-based gloss group and traditional gloss group).Computer-based group received instruction through computer. i.e. new words were presented with their pictures and L1 translations and traditional group received instruction on the paper only with L1 translation. The results (pre and post-tests) were analyzed using a t- test. The results indicated the superiority of computer-based gloss group over paper-based gloss ones.

Key Words: computer-based gloss paper-based gloss, l2 learners, vocabulary learning.

INTRODUCTION

Harley (1996) mentioned that vocabulary knowledge is fundamental to the development of second language proficiency. Tozcui & Coady (2004) indicate that vocabulary knowledge is closely linked to reading proficiency, and additionally it leads to greater success in school. Within the scope of second language learning, glosses can be defined as information on important words through definitions or synonyms (Hee, 2005).

Review of the Related Literature

Hong(2010) states that researchers generally agreed that the use of vocabulary glosses in L2 reading materials is a common practice and glosses, facilitate reading comprehension and vocabulary learning in both printed materials and electronic materials. Yanguas(2009)explored the effects of multimedia glosses on both vocabulary learning and reading comprehension. The results of this study showed the all multimedia gloss groups (textual, pictorial, textual & pictorial) noticed and recognized significantly more of the target words than the control group (no gloss); no significant differences were fund among any of the groups in production of the target vocabulary items, the combination gloss group significantly outperformed all other groups in reading comprehension. Bowles (2004) mentioned one technique traditionally used to facilitate learner's text comprehension and promote incidental vocabulary learning is glossing, that is providing short definitions or explanation of the meanings of words in a given text. These glosses, traditionally placed in the margins of texts are intended to aid participants' comprehension and to limit dictionary consultation that may interrupt the L2 reading process. As Pachler (2007) says one of the advantages of electronic glosses in that on screen presentation can make lexical items and their linguistic feature salient. Razagifard (2010) confirmed that the combination of textual and pictorial glosses was more beneficial in facilitating the learning of second language vocabulary than providing only textual or pictorial glosses for learners.

Research Question

RQ: What are the effects of computer-based glosses vs. paper-based (traditional glosses) on vocabulary learning of second language learners?

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 12 ISSN 1309-6249

Alternative Hypothesis

H1: There are significance differences between computer-based gloss and paper-based (traditional) gloss in vocabulary learning of second language learners.

Independent and Dependent Variables

Independent variable was the gloss type (computer-based and paper-based) and dependent variable was students' scores measured by post-test.

METHOD

Participants: 80 students in Ardabil high school were randomly divided into two groups using two gloss types (computer-based gloss group=40 and paper based gloss group=40). All of them were at elementary level.
Materials: 60 new words derived from EnchantedLearning.com, were divided into two lists. One for computer-based gloss groups with pictures and L1 translations e.g.

Crooked: کج- بد شکل

Old lady: پیر زن swallow: قورت دادن-بلعیدن fly: مگس

and the other for paper-base gloss group was the same words on paper, only with L1 translation.Crooked: کج- بد شکلOld lady: پیر زن swallow: قورت دادن- بلعیدن fly:مگس

Procedure

All of the 80 participants were at elementary level, based on the results of Longman Placement Test administered by researcher (Dawson, 2005).Before the treatments all the participants underwent a vocabulary pre-test not only to compare its result with post-test , but also to choose unfamiliar words for glossing. The pre-test included 60 multiple-choice items. 40 new words were unfamiliar to all of the students. After words during treatments sessions half of participants received computer-based glosses (new words with pictures and L1 translation and half of them received the same passage with traditional glosses (only L1 translation). During the treatment sessions computer group participants were gathered in the school computer laboratory and the traditional group participants were taken to a classroom and presented with a printed paper of same words. After one week a multiple-choice post-test was administered. It included 20 multiple-choice questions. Both groups answered the post-test questions on the answer sheet.

Data analysis

Table 1: Means and Standard deviation obtained in post-test

	N	Mean	Std. Deviation
Computer-based group	40	17.85	1.13
Paper-based group	40	15.20	2.16

As the descriptive statistics in table 1 indicates, computer group had a higher mean and lower standard deviation in comparison with traditional paper-based group. This implies that computer-based group did better than paper-based group. Also result from a paired –sample t-test showed that there is a significant difference between the means of two groups. Since the two-tailed significance value of .002 is less than alpha=.05, we can support the alternative hypothesis.

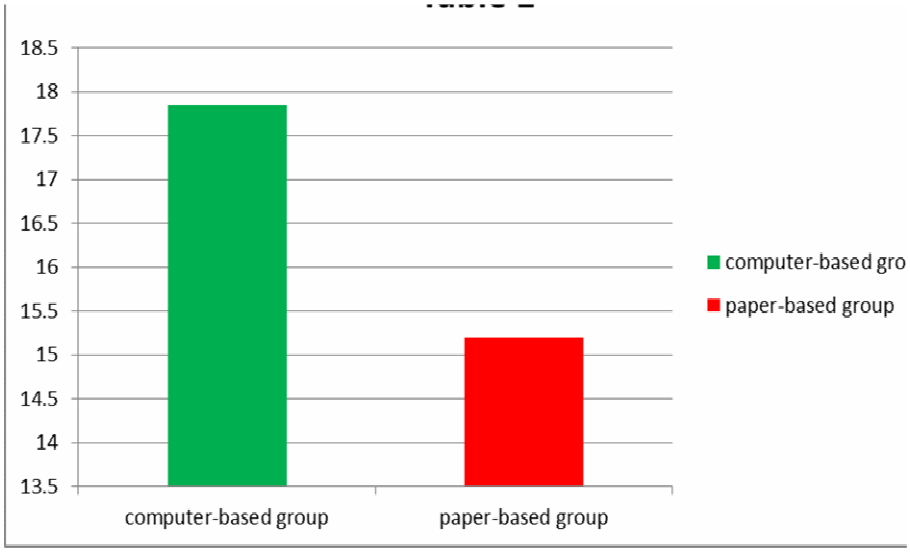


Figure1: Group's mean for post-test

The mean differences indicate the differences between the two groups. (Figure 1)

RESULTS AND DISCUSSION

The result of the present study showed that computer-based gloss group outperformed significantly than traditional gloss group in vocabulary learning. Online vocabulary teaching can further individualized the language learning experience and raising the awareness of strategies which they can use to learn on their own after they leave the language classroom as suggested by Atay and Ozbulgan (2007, as cited in, Kilickaya & Krajka, 2010). This result is contrast with Bowles (2004) who found that there is no difference between two groups. It is similar to Spirit (2008) compared WordChamp drilling with paper study of frequency word vocabulary. The result showed both method (WordChamp and paper study) are effective for acquiring vocabulary, the former is more effective than paper. Therefore we can conclude that computer plays an important role in vocabulary learning. We as a teacher should be aware of the benefits of technology in the language classroom.

Acknowledgements: I thank my dear son, Pouya, for his helping.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Malahat YOUSEFZADEH graduated from Islamic Azad University of Ardabil with an M.A. degree in teaching English as a Foreign Language (TEFL). Her research Interest is online learning.

Malahat YOUSEFZADEH
M.A. of teaching English as a Foreign Language (TEFL),
Phone: 00984517742164
Cell: 00989141970052
E. Mail: Yousefzadeh5351@yahoo.com

REFERENCES

Bowles, M. A. (2004). L2 glossing: To CALL or NOT To CALL. *Applied Linguistics, 87*(3), 547–552.

Dawson, N. (2005*). New Opportunities Placement Tests*. London: Longman.

Harley, B. (1996). Introduction: Vocabulary Learning and Teaching in a Second Language. *The Canadian Modern Language Review 53*(1), 3–11.

HeeKo, M. (2005). Glosses, Comprehension, and Strategy Use. *Reading in a Foreign Language, 17.*

Hong, X. (2010). Review of Effects of Glosses on Incidental Vocabulary Learning and Reading Comprehension. *Chine Journal of Applied Linguistics, 33*(1).56–73.

Kilickaya, F. & Krajka, J. (2010). Comparative Usefulness of Online and Traditional Vocabulary Learning. *TOJET: The Turkish Online Journal of Educational Teaching, 9*(2), 55–63.

Pachler, N. (2001). Electronic Reference Tools for Foreign Language Learners, Teachers and Users: Offline Vocabulary Look-up Programs. Language Learning Journal, 24, 24–29. Also in TELL&CALL, 4, 18–23.

Razagifard, P. (2010). Effects of Multimedia Glosses on L2 Vocabulary Learning. *International Journal on New Trends in Education and Their Implications,1*(3), 59–98.

Spirit, J. (2008). Online Study of Frequency List Vocabulary with the WordChamp Website. *Reflections on English Language Teaching, 7*(1), 2 –36.

Tozcu, A. & Coady, J. (2004). Successful Learning of Frequency Vocabulary through CALL also Benefits Reading Comprehension and Speed. *Computer-Assisted Language Learning, 17*(5), 473– 495.

Yanguage, I. (2009).Multimedia Glosses and their Effect on L2 Test Comprehension and Vocabulary Learning. Language Learning & Technology, 13(2), 48–67.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 13 ISSN 1309-6249

LEGAL EDUCATION AND MATHEMATICS

Prof. Dr. Z. Gönül BALKIR
Dean of Law Faculty, Kocaeli University,
Department of Labor Law
Umuttepe, Kocaeli, TURKEY

Dr. Eylem APAYDIN
Kocaeli University, Faculty of Law
Umuttepe, Kocaeli, TURKEY

ABSTRACT

There is a natural integrity between law and mathematics arising from mathematics' being the primary device in the area of technical law even though the character of relationship between them is debatable. Instrumental use of mathematics is extremely important for technical aspect of law. Mathematical logic, statistics, probability logic, simulation models cannot be used in legal context without establishing the mathematics and mathematical relations.

While the legal system with mathematics aims to create or construct a more comprehensive and systematic world than a complex system or chaos; mathematics is the universe of the abstract and perfectly formed numerical collocations. In this context, law is the system of formed human relations, which is tried to be created by social mind.

The necessity of mathematical understanding in legal world, on one hand, proves how important mathematics is in legal education and on the other hand, it demonstrates how similarly both legal and mathematical systems are formed. Law and mathematics emerged as the formed result of humanity's search for perfection.

Key words: Law Mathematics Integrity, Use of Mathematics in Law, Legal Logic.

INTRODUCTION

The history of legal philosophy is packed with legal approaches such as legal rationalism, neo Kantianism, legal positivism, and normativist positivism and the discussions of these approaches' supporters, which try to explain legal science with the likeness of mathematics.

Legal science and education are directly related to mathematics and logic like all the other disciplines in social sciences. This study aims to demonstrate the relationship between law and mathematics and this relationship's contribution to law and especially legal education rather than the mathematical analysis of law.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 13 ISSN 1309-6249

MATHEMATICS AND LAW AS A BRANCH OF LOGIC

Mathematics and Mathematical Logic

Mathematics as a branch of logic consists of arithmetic, algebra and mathematical analysis. Mathematics composed of arithmetic, algebra and mathematical analysis uses all the concepts of logic. All theorems of mathematics can be inferred by the principles of logic by adding infinity and axiom of choice. In this context, it can be said that mathematical hypothesis are correct as the result definition of the terms mentioned in these hypothesis or that mathematical hypothesis make, the features attributed by the definition to the mathematical concepts, explicit. Undisputed correctness of mathematical hypothesis is the same with the certainty of such hypothesis like 'all singles are unmarried persons'. Mathematics scores a glaring success in factual world. Progress of science is a kind of progress depending that the obtained results build up reliable knowledge and mostly relying on its power to use and apply mathematical methods (Yıldırım, 1988).

Mathematics is an indispensable device to prove the validity of empirical knowledge and furthermore to express them. Most of the important theories in empirical sciences especially the ones having a great prevision and applicability, can be expressed by the assistance of the mathematical concepts. It is apparent that functional relations between numerical system and various metrics variables are used in the formulation of these theories.

The most distinctive feature which distinguishes mathematics from empirical sciences and makes it known as the queen of sciences is the certainty of mathematics and imperativeness of its results. There is no such certainty and imperativeness even in the most advanced ones of the empirical sciences. Accuracy of a hypothesis regarding an empiric fact can be highly probable at most according to its basis of evidences and it cannot be a certainty. A hypothesis in science cannot be free of possibility of getting disproved one day by new observations regardless how strongly it is proved. Hence, all scientific hypothesis and theories are of temporary character and are deemed as correct unless they conflict the facts. Whereas, a theorem in mathematics obtains certainty once it is proved and it cannot be disputed by any observation regardless however it conflicts (Yıldırım, 1988).

Mathematical Reasoning

Logic is crowned by mathematical reasoning. The core of mathematical reasoning is inductive and deductive reasoning. In mathematical reasoning, generality is the result of necessity. Generality is also the basic feature of deductive reasoning. Deductive reasoning is initially to see that a relation is essential and general. Inductive reasoning attempts to demonstrate the action and observation of the problem by a present relationship constant with a series of process relying on an empirical ascertainment (Cuvillier, 2003). It can be inferred from this conclusion that inductive reasoning is obligatory because coincidence and contingency cannot be assumed to form an absolute uniformity. Similarly, we necessarily use the word of induction as mathematical induction or complete induction in order to explain the mathematical reasoning even though it has been changed by a qualifier. Analogy, used widely in logic, is not reasoning but a part, or period, or annex of an induction (Cuvillier, 2003).

Mathematical induction is verification of a processing with feedback. In mathematical induction, initially, a theorem is formed for n=1, later if it is correct for n-1, it is proved that it is correct for n too and thus it is inferred that it is correct for all the whole numbers. Rule of reasoning with feedback cannot be reduced to the principle of paradox. This rule cannot be generated from the experiment. The conclusion that the experiment can teach us that the rule is correct for say the first ten, first hundred number; it cannot reach the infinite series of numbers but it can reach either the more or less but always a limited part of this series (Cuvillier, 2003). Hence, induction used in physical science is always uncertain as it relies on the general order of the universe, which is an external order for us (Cuvillier, 2003).

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 13 ISSN 1309-6249

Mathematics as a Linguistic and Implication Device

Famous physicist W. Heitler examines the relationship between science and mathematics and says:

The more physics advances, the more it becomes abstract and hence the more it needs mathematics. At the level of abstraction in nuclear physics, it can be said that existence of an atom cannot be described as concrete in space but its abstractive existence is mathematically determinable…

Mathematics is not a natural science. We cannot identify the mathematical relations that we cannot find in nature with physical processes. At first sight, mathematics is a version of a pure invention of human mind like artistic works. Many branches of mathematics, when physics does not need them, were created by merely theoretical mathematicians, who were not interested in examination of the nature. What kind of relationship may mathematics, a product of our minds, have with nature and its laws? In this context, it should be regarded as a mind boggling miracle that that the outer world, which is independent form us, acts in compliance with the mathematical principles, which we solely create.

Nonetheless, it is not accurate that our mind and outer world are totally independent from each other, as generally assumed. One should remember that human mind is a product of the interaction which it has with the organism's environment and so it vaguely displays the environment's structural features. Therefore, it is not an unexpected that laws created in science and mathematics are compliant, even in different scales, with the basic character of the outer world. Indeed, it cannot be easily talked about the existence of a firm line of contrast between human and outer world. This contrast is not clear even at the simplest level of perception. The assertion cannot be acceptable that the mathematical objects and relations are only mental products, which are created by will. Doubtless, we owe the creation of these objects and relations to our mental activity. However, mind is not completely free in this creation. It is surrounded with some compulsoriness arising from outer world and subject's own necessities (Yıldırım, 1988).

It has been known that mathematic is an efficient expression device, an indispensable implication means, and a rich source of models for natural sciences so far since Galileo, even since Leonardo da Vinci, who said "a science is capable as much as it is mathematical"(Yıldırım, 1988).

The most distinctive function of mathematic in physics sciences is its being an appropriate device of language and expression. Mathematics as a language owes its efficiency to special symbols, and formulas and equations which turn natural laws into short, clear and certain explanations. Daily language, despite of its rich vocabulary and nuances, is away from the clear, obvious, and simple expression, which are sought in science. It also causes some kind of communication difficulties due to words' being vague or multi-meaningful. Whereas, mathematics, which may be deemed as an artificial language, provides a reliable expression and a convenient communication thanks to its use of symbols, whose meanings and areas of use are clear and limited.

Besides being a means of expression, mathematics is also important as an implication technique (Yıldırım, 1988). While attempting to explain the role mathematics in science, initially, the application power of differential equations stands out. Especially, the application emerged in physics by the use of these equations is truly astonishing. Indeed, it can be said that there is not any area of study which is not part of the application area of this technique, which constitutes the core of analysis

Mathematics also has a function to provide a model to sciences. Usability of a model is determined by its structural similarity by examined action or set of actions. Mathematical model's function is to express the set of objects or facts by equations and so to provide instruments for explanatory implications. Hence, any mathematical equation can be regarded as a model for another relationship as long as it is compatible. The same can be said for a proof or function. A model is valid as long as it serves its purpose of use. As the

compatible relationship can be mathematical, it may also belong to physical, biological, social or psychological facts world. (Yıldırım, 1988).

Relationship between Law and Mathematics

Understanding of the relationship between law and mathematics depends on the fact that both sciences' characters and features are comparatively known. While mathematics is science of the quantities as the science of numbers, law is, with its simplest appearance, a science related to norms and to technique of their applications (Can, 2005). Whilst law, by determining the allowed and prohibited acts, tries to reach the ideal with norms aiming to construct a design of social order, mathematics introduces a design of an abstract order with numbers. Mathematics creates an order consisting of abstract structures free from any embodiments. Both sciences aim and design an ideal order.

While concept of set, which provides the change from qualitative thinking to mathematical thinking, approximates mathematics to law, and directly relates to the technical aspect of law. Both law and mathematics use own peculiar languages. Mathematics is made up by a coded language with the symbols, which it uses. Similarly, law formed by a coded language with the qualitative content of the norms, which it introduces. While mathematical language is determined by its symbols, in other words, by the assistance of its form at its extension of abstraction, norm, which is only a meaning with its external appearance, reaches a complete concretion at the stage of enforcement (Can, 2005).

Independence of mathematics from human relations, as it only deals with `forms` by the means of symbols, can lead the decision makers in legal science to decide more fairly and guide them. Indeed, as mathematics is the extension of logic, or even logic itself, it can directly identify itself with law. Mathematical thinking is correct thinking. Mathematical thinking is achieved by mathematical understanding. Mathematical methods by abstracting the content focus the attention directly on "form". Correct thinking as a kind of mathematical thinking is essential in scientific areas like all areas of human life (Can, 2005).

It is essential to benefit from concepts and principles of logic and mathematics in law. Instrumental use of mathematics by law makes a significant contribution to technical law. Economic law, economics, statistics, informatics, probabilistic models, and simulation models are comprehended by mathematics. Similarly, mathematics models can be used to determine the frequency of a committed crime or to predict an outcome of a case. Since mathematics is quite functional in technical law, instrumental use of mathematics with objective structure provides instruments for an impartial justice and equality for legal practitioners.

Similarities and conceptual interactions between law and mathematics are incredible. Both sciences construct their systematic on logic, which is a subsection of mathematics. From a reductive point of view, it can almost be said that the core of law is mathematics. Indeed, the history of legal philosophy, as a consequence of this identity search, is filled with legal schools like legal rationalism, neo-Kantianism, legal positivism, and normative positivism and with conflicts and enhancements that they created.

Due to these interactions between law and mathematics, law was intended to be matched with mathematics by some theorists as the result of attempts to provide law with mathematical certainty and moreover, many theorists such as legal rationalists, neo-Kantianists, legal positivists, and normative positivists identified law with mathematics (Can, 2005).

Mathematics aims to create or construct a more comprehensive and systematic world than a complex system or chaos. Mathematics is the universe of the abstract and perfectly formed numerical collocations. In this context, law is the system of formed human relations, which is tried to be created by social mind. Law by establishing the order brings equality automatically. Legal system creates the equality by only considering the

outer appearances and differentiating the individual due to its formalism. As equality is the core of justice, it can be said that by basically establishing the order, law pretty provides the justice (Aral, 1987).

Objectivity and impartiality in law, which function in mathematics too, mean that a legal rule is directly applied to a specific case (Güriz, 2009). Our perception of justice and injustice and real cases lead us directly to the idea of equality, which is the visible element of justice.

The core of justice is the value of equality. The idea of equality forms the core and essence of justice. A case of natural equality is created by establishing the legal order. Order and equality have almost the same meaning in law. Indeed, regularizing the human relations is derived from the necessity of equality. As known, to regulate in law means 'to form'. On the other hand, to form is to deal with only the common aspects excluding the differing features. Hence, by excluding the individualities, only equality exists. This equality is almost the natural result of the regulating function of legal norms. There is no need for a specific equality principle and concern for this. As the result of regulating function, legal norms equalize all the relations and situation, which they are set forth. Equality exists in the character of law and indeed it determines the character of law. Therefore, equality before the law as a type of equality exists in every legal system (Aral, 1987).

MATHEMATICS IN LAW AND LEGAL EDUCATION

Methodology in Law and Legal Education

Legal methodology, besides explaining the legal norms and, are the methods, which also get them to be evaluated objectively and aim to provide solutions to the problem of being fair (Güriz, 2003a).

Positive law as the application of rules is the law, which is in force in a certain society and in a certain period and can be amended in time. What law is going to be is decided by its creators and they amend it when necessary (Aral, 2001). Positive law as the applied of law serves the purpose of identification of the will of law makers, which becomes apparent in Acts (Güriz, 2003b).

It is necessary to pass the idea of abstract justice to the idea of concrete justice and behavioral methods in order to evaluate the norm carriers and norm ideas in law. When examining the relationships between order, idea, and justice, the problem how to realize the upper justice principle and rule of law arises. In this context, it is essential to re-plan the arguments. Legal methodology can be regarded as a device in a changing environment.

While tending to the concrete in the way of becoming a science, law, besides only rational implications and indications, prefers using induction and deduction and sensing the individual cases from a general appearance (Timuçin, 2003). The conditions, which makes securely, freely and responsibly working possible for legal jurists in the process of producing of science, should be prepared as a systematic of rights (Ökçesiz, 2006).

Social reality accepted as a source of law, is objective and a significant part of existence. Law is a concept that law makers, indeed holders of power, call compulsory and is a product of their discretionary wills. In modern world, law can only be described literally as an order and arrangement, which is burdened to serve to justice. On the other hand, justice is an objective value settled in the humans' hearts (Aral, 2003).

It is the responsible of legal science to determine whether the social phenomena and actions, which are the theme of legal problems, are originally and bodily subject to reliable and unchangeable natural law, if they are, to establish which methods and mechanisms would be used to resolve the social phenomena and actions universally and constantly. Establishing law on the scientific basis depends on humans' nature or objects' nature or maybe, more truly expressed, it depends on the synthesis containing the integrity with social

humans' universal nature. Furthermore, legal legitimacy should be sought in these grounds and synthesis. (Öktem, 2005).

Social sciences host various disciplines such as economics, sociology, anthropology, social psychology, law, and ethics, whose study areas are different. Each scientific discipline chooses applicable methods in accordance with its own study area and hence it differs from the others. If it is accepted that the empirical method is one of the most important methods in social science, economics is the most successful one in using the empirical methods among the others. Compatibility of economics to be digitalized is the basic indication for this (Işıktaç-Metin, 2003).

The subject of logic and mathematics, which are concreted by the mere expression of concepts, take place among the ideal subjects. On the other hand, subjects of real sciences exist depending on their relationship with causality and time as they are eligible to be perceived by internal and external sensations. Sociology and natural sciences such as physics, chemistry, and biology are the primary example of real sciences. Ideal sciences deal with ideal subjects and real sciences deal with real subjects.

The rules of rationalism, which are not located in time and place, non-perceived, and abstract, can remove the possibility of their being used in real areas too. To sum up, mind, which is the instrument to reach the absolute result in ideal sciences, has to give ground for experiment or maybe more accurately, it has to be complemented by experiment. Different sources of knowledge in ideal and real sciences differentiate the methods used by ideal and real sciences too.

The criterion determining the content and limits of scientific method is its verifiability by facts. As qualifying features, science is factual, logical, objective, critical, generalizing, and elective (Işıktaç, 2006). As a known thing, reality exists individually and independently from human mind. Another perception of objectivity, origins from the elimination of subjective elements, blurs our mental perception (Fay, 1996).

Mathematics in Legal Education

In social sciences, rules of deduction method are applied to real incidents. In social sciences, social structures' and societies' and nations' history or their current situations are examined in by the assistance of other disciplines and common general rules are inferred (Öktem, 1985). On the other hand, law by the means of norms affects humans' free zone and law by the means of commanding proposition norms demonstrating how human behaviors should be, demands the individuals to adopt a certain type of behaviors. The structure of law and legal norm form the focus of some epistemological debates (Keyman, 2003).

Is the certainty in legal propositions a mathematical certainty? On the other hand in practice, is a complete certainty achievable in advanced mathematics? While rationalist natural lawyers, as they admire the mind's power, try to provide law with mathematical certainty and try to adopt the universal mathematics approach in law, they have to be careful that these two sciences' subjects and targets are different.

Although it is not possible to transform law into mathematics in real, as logic and mathematical logic embrace processes such as forming concept, setting a proposition, and making implications, and principles such as identicalness, no contradiction, the third possibility not, law inevitably uses mathematical analysis (Can, 2005). On the other hand, any social order rule cannot be created by analogies set by mathematical realities and by application of a so-called deduction without the considering the social conditions determining the factual 2005).

As a specific type of social cases, legal case has been struggling with many difficulties even though it is evaluated by legal sociology and empirical approach. Besides law being multi-sourced, different legal disciplines such as current positive law, law of custom and tradition, international law, and law of communities affect

decision makers' objective judgment and create chaos. An unbiased and fair decision requires objectively examining of all sources in this area. There is always a nuance between what law makers recognize as law and what the addressee' understand from law. That legal applications are not successfully subjected to statistics evaluation, and in addition, that the most basic legal research has not been completed in our country, drift the researchers in this area into the unknown (Işıktaç & Metin, 2003).

The abundance of variables in legal cases requires a strong legal logic and mathematical legal method for decision makers and legal practitioners. The problem of multi-variables and difficulty to make experiments in social sciences necessitates the use of legal logic and mathematics. The difficulty to access to information in social sciences and the problems about evaluation process can only be resolved by the principles and methods of mathematical logic. On the other hand, evaluation process stating the technical aspect of scientific research and resolving the security problem requires both objectivity and impartiality (Işıktaç & Metin, 2003).

Success of legal education in evaluation demonstrates the quality of the education and scientific research. Indeed, it is observed that some social sciences are luckier and more successful in evaluation. Use of statistics is highly dense in economics and politics and in fact it has become an indispensable method. The big problematic researches like system studies can become evaluable by statistical data. Statistics generally is used in law at the stage of making legal amendments in order to observe the result of previous applications. Statistical assessment is also possible in the evaluation of High Courts' Decisions and in the determination of the judges' behavior and their tendencies. It is necessary to say that works of Institute of Statistics in Turkey are used in some legal research as a general evaluation criterion (Işıktaç & Metin, 2003).

Mathematical Analysis of Law: a New Research Method

Deterministic rules are valid in law too. In law, it is tried to be determined certainly what is going to be classified as a crime and what is not. On the other hand, life and social incidents are based on complexity and uncertainty. It is almost impossible to reach the objective truth with given legal rules by interpreting a case from this complexity and uncertainty. One of the most difficult aspects of the legal education is to teach the students to take right and fair decisions in these ambiguities. Aristotle's' logic, which relies on one single truth, is unsatisfactory in understanding and analysis of legal realities, which rely on multi-values and multi-value judgments. Moreover, rather being unsatisfactory, this logic confuses the legal justice and leads to unfair and unequal consequences.

A more objective research method is required to assess ambiguities and complexities more efficiently and healthy. The principles and rules of mathematical logic and mathematical analysis of law can be used as a modern method for especially young lawyers and law students and those who are responsible for taking decisions in legal decision mechanisms to decide less risky and more confidently.

How is the equality in determination of the responsibilities of the multi-persons, multi-incidents and multi-realities will be provided in deciding aggravating circumstances and extenuating circumstances about incidents and intents while trying to establish justice and rule of law since it is obligatory to decide in accordance with the current law. A balanced and fair final decision can be taken and equality and justice can be provided as long as it is decided by considering these aggravating and extenuating circumstances and factors.

Rules of mathematical logic can be used in the interpretation of complex and multi-realities and in the applied comparison of scientific values. It is possible to take a fairer and more egalitarian decision in legal proceedings by rules and methods of mathematical logic. Instrumental use of methods of mathematical analysis and logic can provide a more true and realistic interpretation of human behaviors and processes in the complex perception and interpretation of legal realities.

Insufficiency and imperfection of lawyers' mathematical perception directly affect the concept of equality, justice and impartiality in law. Lawyers in legal process generally need mathematical analysis of law about the subjects related to logic and economics. Legal rules can be interpreted more truly and fairly by analytical logic of mathematical analysis. The applicable mathematical principles and methods in mathematical analysis of law establish the ground for realization of justice and equality values.

CONCLUSION

A legal practitioner in legal practice comes across many mathematical concepts with a glance for the search of a mathematical device. The eye coincides with the principle of equality first, and then, with the link of causality attached to the principle of equality. Without the link of causality, cause and result relation cannot be detected and legal system cannot be set. On the other hand, principle of equity as the core of individual law is the direct version of equality given to individuals. The eye, if it goes a little further, will find the network of mathematical relations of economic law.

Where one aspect of mathematical law relies on the four arithmetical operations and statistics, the other aspect especially in alternative claim and legal action forms of law requires a direct mathematical logic and view.

Decision processes and decisions taken by legal practitioners and decision-makers cannot be truly applied without equations for multiple unknown and a strong understanding and perception related to these equations.

It is essential to examine the relationship between law and mathematics to comprehend the role of mathematics in legal education. The concept of equality, which is the hearth of justice, and legal thought and legal system based on justice and equality, directly rely on mathematical thoughts and logic.

The responsibility of mathematical understanding in law proves how essential mathematics is in legal education and furthermore it also demonstrates that legal and mathematical systems are created similarly. Law and mathematics have accrued as a fictional consequence of human beings' search for perfection.

Methods used by law in mathematical analysis form a basis for legal proceedings and equity. Law's dependence on mathematics inevitably creates a unity of law and mathematics and an integrated structure including equality, generality, objectivity, and impartiality, which are common to both disciplines, in order to establish the justice. This relationship between law and mathematics requires them to act together in joint processes and application.

Integrity of law and mathematics and its complex and compelling character arisen from the dependence of law on mathematics legitimate the relationship between law and mathematics. However this relationship is controversial, there is an organic integrity between law and mathematics as mathematics is the most primary instrument in technical law. Instrumental use of mathematics is indispensably important for the technical aspect of law. In law, mathematical logic, statistics, probability logic, and simulation models cannot be applied without using the principles of mathematics and mathematical logic.

International Journal on New Trends in Education and Their Implications
July, August, September 2011 Volume: 2 Issue: 3 Article: 13 ISSN 1309-6249

BIODATA AND CONTACT ADDRESSES OF AUTHORS

Zehra Gönül BALKIR was born in Istanbul in 1956. After leaving İzmit High School, she graduated from the Istanbul University Faculty of Law in 1978. While she was working as an attorney at law between 1979 and 1994, she continued firstly her master studies between 1983and 1985 and then her PhD studies at the University of Istanbul between 1986 and 1989.

Having participated in the foundation of University of Kocaeli as a founder member with the title of assistant professor, she moved to the academic life in 1994. While she was acting as the Deputy Dean between 1994 and 2000, she gained title of Docent (Associate Professor) in the area of Labour Law and Social Security Law in 2000. She worked as the director of University of Kocaeli Kandıra Vocational High School between 2001and 2006. She was appointed as professor of Labour Law and Social Security Law and dean of Faculty of Law in 2006. She is still at these positions.

Researching on Labour Law and Social Security Law, Law of Earthquake, Law of Architecture, Women's Rights and Women Labour Law, and Legal Philosophy, Z. Gönül Balkır has published books named as "Disables' Participation in Working Life", "Social Rights in Constitutional Procedures", "Architectural Labour Law", "Development of Non-Governmental Organizations". Besides, she has made numerous presentations in national and international conferences, and has published many articles in local and national journals.

Prof. Dr. Z. Gönül BALKIR
Dean of Law Faculty,
Department of Labor Law
Kocaeli University,
Umuttepe, Kocaeli, TURKEY
Tel: 0 532 324 89 00
E. Mail: gonulbalkir@yahoo.com

Dr. Eylem APAYDIN, who was born in Kirşehir in 1979, left Kırıkkale Anatolia Teacher High School in 1996 and graduated from University of Ankara Faculty of Law in 2000. He completed his legal practice training in Ankara Bar Association in 2001. While he was working as a Candidate Judge in Ankara Courts, he went to the UK for higher education purposes thanks to his scholarship granted by the Ministry of National Education.

He was granted his LLM degree from the University of Kent in 2004 and his PhD award from the University of Leicester in 2010.

Dr. Eylem Apaydın has been working as a researcher at the Department of Civil Law at the University of Kocaeli Faculty of Law. Dr. Apaydın, maintaining his research on all areas of civil law, is expert on International Contract Law, Co-ownership and Trust Law.

Dr. Apaydın's book is being prepared to be published soon in the UK.

Res. Assist. Dr. Eylem APAYDIN
Kocaeli University, Faculty of Law
Umuttepe, Kocaeli, TURKEY
Tel: 05077468810
E. Mail: eyapaydin@yahoo.com

REFERENCES

Alatlı, A., (2001) "İkinci Aydınlanma Çağında Yeni Hukuk Anlayışı", 4 Aralık http://www.onarimcilar.net/j/index.php?option=com_content&task=view&id=50&Itemid=8 2010-06-26

Aral, V, (2003). "Hukuku Bilim Yapan Nedir?" HFSA 6, İstanbul, 19-20.

Aral, V, (2001). Hukuk ve Hukuk Bilimi Üzerine, İstanbul, 44-45.

Aral, V, (1987). Adaletli Yaşam, İstanbul, 18.

Can, C., (2005). "Hukuk ve Matematik", HFSA 13 , İstanbul.

Cuvillier, A. (2003). Felsefe yazarlarından Seçilmiş Metinler, İstanbul, s.506.

Fay, B, 1996, Çağdaş Sosyal Bilimler Felsefesi, İstanbul, 273-275.

Güriz, A, (2003a). Hukuk Başlangıcı, Ankara.

Güriz, A, (2003b). Hukuk Felsefesi , Ankara.

Güriz, A, Hukuk Başlangıcı, Ankara 2009.

Işıktaç, Y. & Metin, S, (2003). Hukuk Metodolojisi, İstanbul.

Işıktaç, Y, (2006). Hukuk Felsefesi, İstanbul.

Keyman, S, (2003). "Hukuk Felsefesinin Konusu" HFSA 6, İstanbul.

Korner, S., (1967). Laws of thought. In: Encyclopedia of Philosophy, Vol. 4. MacMillan, New York, 414-417.

Ökçesiz, H, (2006). "Hukuk ve Bilimi", HFSA 15, İstanbul.

Öktem, N, (2005). "Hukukun Bilimselliği", HFSA 11, İstanbul.

Öktem, N, (1985). Hukuk Felsefesi ve Hukuk Sosyolojisi, İstanbul.

Timuçin, A, (2003). Estetik, İstanbul.

Yıldırım, C, (1988). Matematiksel Düşünme, İstanbul.