

OPEN ACCESS



Educational Research and Reviews

10 March, 2019

ISSN: 1990-3839

DOI: 10.5897/ERR

www.academicjournals.org



**ACADEMIC
JOURNALS**
expand your knowledge

About ERR

Educational Research and Reviews (ISSN 1990-3839) is published bi-monthly (one volume per year) by Academic Journals.

Educational Research and Reviews (ERR) is an open access journal that publishes high-quality solicited and unsolicited articles, in English, in all areas of education including education policies and management such as Educational experiences and mental health, the effect of land tenure system on resource management, Visualization skills and their incorporation into school curriculum, Gender, education and child labour etc. All articles published in ERR are peer-reviewed.

Contact Us

Editorial Office: err@academicjournals.org

Help Desk: helpdesk@academicjournals.org

Website: <http://www.academicjournals.org/journal/ERR>

Submit manuscript online <http://ms.academicjournals.me/>.

Editors

Dr. Peter W. Wong

*Southern Cross University
Australia.*

Assoc. Prof. Manjula Vithanapathirana

*Faculty of Education
University of Colombo
Colombo,
Sri Lanka.*

Associate Editors

Dr. Melissa Vick

*School Of Education
James Cook University
Townsville,
Australia.*

Prof. Ogunsakin R. Ebenezer

*Department of Statistics
Ekiti State University
Ado Ekiti,
Nigeria.*

Dr. Maniam Kaliannan

*Faculty of Administrative Science & Policy Studies
Universiti Teknologi MARA (UiTM)
Selangor,
Malaysia.*

Dr. A. Kadir Maskan

*Dicle University
Ziya Gokalp Education Faculty
Department of Physics Education
Diyarbakir,
Turkey.*

Dr. Tavis D. Jules

*Cultural and Educational Policy Studies
School of Education
Loyola University Chicago
Chicago,
USA.*

Dr. Mohd Akhtar Siddiqui

*Institute of Advanced Studies in Education
Faculty of Education
Jamia Millia Islamia Central University
New Delhi,
India.*

Dr. Adams Onuka

*Centre for Peace and conflict Studies (CEPACS)
University of Ibadan
Nigeria.*

Dr. Yambo John M. Onyango

*University of Eastern Africa
Kamagambo Adventist College Campus
Baraton,
Kenya.*

Dr. Tolga Gök

*Torbali Vocational School of Higher Education
Dokuz Eylul University
Izmir,
Turkey.*

Editorial Board

Prof. García Mayo, María del Pilar

*Departamento de Filología Inglesa y Alemana y de Traducción e Interpretación
Universidad del País Vasco (UPV/EHU)
Paseo de la Universidad 5
Vitoria,
Spain.*

Prof. Frank Witlox

*Ghent University
Department of Geography
Gent,
Belgium.*

Prof. Georgios D. Sideridis

*University of Crete
Department of Psychology
Rethimno,
Greece.*

Prof. Andreas Veglis

*Department of Journalism and Mass Media
Aristotle University of Thessaloniki
Thessaloniki,
Greece.*

Prof. Mutendwahothe Walter Lumadi

*Curriculum & Instructional Studies
College of Education
UNISA,
South Africa.*

Dr. Miriam McMullan

*Faculty of Health and Social Work
University of Plymouth
Plymouth,
UK.*

Prof. Moshe Barak

*Graduate Program for Science and Technology
Education
Ben-Gurion University of the Negev,
Beer Sheva,
Israel.*

Dr. Hiam Zein

*Psychology and Education
Lebanese American University
Chouran-Beirut,
Lebanon.*

Dr. Joel O. Eriba

*Faculty of Education
Benue State University
Makurdi,
Nigeria.*

Prof. Bingjun Yang

*School of Foreign Languages
Southwest University
Chongqing,
China.*

Dr. Ernest W. Brewer

*The University of Tennessee
Educational Administration and Supervision
Tennessee,
USA.*

Prof. Gail Derrick

*Regent University
School of Education
Virginia Beach,
USA.*

Dr. Evridiki Zachopoulou

*Department of Early Childhood Care and Education
Thessaloniki,
Greece.*

Dr. Francesco Pastore

*Seconda Università di Napoli
Italy,*

Dr. Syed Iftikhar Hussain Shah

*Technical Education and Vocation
TEVTA Secretariat
Lahore,
Pakistan.*

Dr. Ravi Kant

*College of Teacher Education
Maulana Azad National Urdu University
Darbhanga,
India.*

Editorial Board

Dr. Dibakar Sarangi

*Directorate of Teacher Education and State Council
for Educational Research and Training
(DTE & SCERT)
Odisha,
India.*

Dr. Elisa Backer

*Faculty of Business
Federation University Australia
Australia.*

Dr. Ahmad Alkhaldeh

*Department of Curriculum and instruction
University of Jordan
Jordan.*

Dr. Mehmet Akif Sözer

*Department of Primary Education
Gazi Faculty of Education
Gazi University
Turkey.*

Table of Content

English teachers' opinions on problems encountered in English language teaching in schools: The case of Karabük

İrfan Tosuncuoğlu

An investigation of pre-service basic education teachers' learning styles in terms of different variables

Osman DALAMAN, Süleyman CAN and Erdil DURUKAN

High school students' seismic risk perception and preparedness in Savar, Dhaka

Mohammad Lutfur Rahman

The effect of tablet use on students' success in English as a Foreign Language (EFL) grammar classroom

Ulas Kayapinar, Sarp Erkir and Nurcan Kose

Full Length Research Paper

English teachers' opinions on problems encountered in English language teaching in schools: The case of Karabük

İrfan Tosuncuoğlu

English Language and Literature Department, Faculty of Letters, Karabük University, Turkey.

Received 2 January, 2019; Accepted 4 February, 2019

The opinions of English teachers on the problems encountered in English teaching in the schools in Karabük Province were examined in this study, by taking a variety of variables into consideration. There are 231 English teachers in state schools in Karabük. A total of 67 English teachers serving in the primary schools, secondary schools and high schools in the central districts of Karabük Province-Turkey in the 2018-2019 school year participated voluntarily in the study, in which the Scale for Challenges Encountered by English Teachers Regarding Their Field, developed previously was translated into English and used. According to the results of the analysis, it can be said that while English teachers do not struggle with difficulties regarding collaboration with families, institutions, organisations and people in immediate and distant vicinities for the most part, they do struggle with difficulties in terms of making plans that are compatible with English teaching programmes. It was found that there are no significant differences in the opinions of English teachers regarding the challenges encountered in English teaching according to the variables of age, level of education, marital status, term of office, gender and school type. In light of all these assessments, it is thought that the identification and resolution of problems by determining and evaluating the perceptions of English teachers regarding the challenges encountered in English teaching will provide contributions to studies directed towards ameliorating and improving the quality of schools and education.

Key words: English teaching, schools, teachers, programmes.

INTRODUCTION

In order to reach the level of contemporary civilisation and catch up with the standards of developed countries, well-planned economic investments are not enough by

themselves, being able to attain the projected standards also requires well-educated individuals. To this end, the supreme goal of educational systems these days is to be

E-mail: irtosun@yahoo.com.

Author(s) agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

able to cultivate the people of this *information age*. Additionally, in a world where the importance of information is rapidly increasing and transitioning into the information society, it is seen that the social, cultural, political and technological changes that are taking place are affecting education systems and that new approaches and trends are emerging in education. According to İşısağ and Demirel (2010), nowadays, when communication has gained a paramount level of importance, it has become an indispensable need for every society to speak one or more foreign language as well as to familiarise with and understand different cultures.

Gedikoğlu (2005), who has touched upon the importance of knowing a foreign language in terms of scientific studies along with cultural exchange in today's world, states that studies which can be a source for technological developments and scientific advancements are mostly conducted abroad in Europe, America or in certain countries in the Far East. In order to be able to keep up with the advancements in science and technology, communicate with other individuals and benefit from progress of information technology, learning the prevalent foreign languages is an absolute imperative of our age. Knowing a foreign language is not merely limited to the fields of science and technology, it is a skill that inevitably needs to be possessed by the modern person in the globalising world (Gedikoğlu, 2005). In this context, by virtue of the effect of globalisation, our country is also in intense political, economic and cultural interaction with the world. It is also seen that foreigners take an interest in Turkey for similar reasons and that the most preferred language for the focus of this interaction is English, as mentioned above (Arslan and Akbarov, 2010; Başat, 2014; Hamiloğlu, 2005; Özdemir, 2006; Turkish Ministry of National Education (MoNE)/MEB Yabancı Dil Çalıştayı 2006). With English having become a mutual language of communication (*lingua franca*), the young and old alike are making efforts in the name of learning English. Having a command of English is considered an indicator of power and status in our society, as it is for many others (Doğançay-Aktuna, 1998, cited in Yaman, 2018).

In modern times, when relations have increased in the economic, social and cultural areas within the international arena, it has become an unavoidable necessity to learn English, the common language of communication which proves to be the most important factor in regulating and actualising these relations. Therefore, the demands oriented towards learning English in our country are exhibiting an increase in parallel with this state of affairs. In this vein, there have been changes in the roles of English teachers also by far. English teachers' qualifications, skills and abilities are very important and they have big responsibilities for teaching purposes.

Foreign language teaching studies in Turkey

It is seen that studies in foreign language teaching in Turkey have been developing in parallel with efforts to integrate with the world. The 'Foreign Language Teaching Development Centre' was established under the Turkish Ministry of National Education (MoNE) Board of Education and Discipline in 1972. The foreign language programme which was subsequently developed began to be implemented in thirty-two schools in the educational year 1972-1973 and this practice which also continued between 1973-1977 was extended to all secondary education institutions. The English programme for Anatolian High Schools was prepared in 1983 and began implementation in 1984. The level system started in 1988 was abolished after one year. In 1997, English became one of the compulsory courses in the fourth and fifth grades of primary school and it became a compulsory course starting from the second grade of primary school in 2013 (Demirel, 2016; Kırkiç and Boray, 2017).

In the following years, the Bologna process expanded to include 48 different countries including Turkey (Aksoy et al., 2018). In all of the countries participating in the Bologna Process, which Turkey joined on 19 May 2001, foreign language education was incorporated into the compulsory courses and it was settled that these courses comprise 10% of the teaching programme (Durukafa, 2007).

In other respects, in the English programmes which were prepared in accordance with the contemporary developments and European Union (EU) standards, the behaviourist approach that held sway for years is being abandoned and a student-centered, process-oriented constructivist approach is being taken as a basis with communicative functions being incorporated. This programme in which the mixed-type programme development approach (structural, situational, subject-oriented, conceptual/functional, process/task and skill-oriented approaches) is used, can easily coalesce with the European Language Passport. This passport shows student proficiencies in foreign languages. Furthermore, it supports every foreign language programme aiming to develop student communicative proficiencies (Kıroğlu, 2008).

In the regulation of the Turkish Ministry of National Education Foreign Language Education and Teaching (2006), the aim of foreign language education and teaching in parallel with the English programme is stated as: "In conformity with the general aims and fundamental principles of National Education and by taking the aims and levels of schools and institutions into consideration in the foreign language that is being taught, ensuring that individuals gain listening-comprehension, reading-comprehension, speaking and writing skills, use the language learned and develop a positive attitude towards

foreign language teaching".

The teacher factor

Radical changes are being made in our education system with each passing day. The improvement, development and sustainability of the country is rendered possible by the materialisation of these changes, recognition of them, the healthy operation of this democratic structure along with the cultivation of qualified workforce. When a qualified workforce is mentioned in the globalising world, individuals who have knowledge and skill with regard to language come to mind, in addition to those with a view to technology. In foreign language teaching, English teachers are considered to bear key significance. This is because it is apparent that the language which has the most prevalent area of usage as the language of science and commerce is English. It is seen that the social, cultural, political, technological and economic changes affect education systems throughout the world, where the importance of information is rapidly increasing and where there is a transition into the information society.

The competitive environment that has formed as a result of globalisation has resulted in the necessity of training individuals who have superior qualifications. When it is taken into account that the way to endow these qualities is through education, the importance of training teachers on the global competitive scale will be better understood.

According to Aydın (2016), Takkaç (2014) and Yalçın (2017), the competitive environment that has formed as a result of globalisation in today's world has brought forth the necessity of training individuals who have superior qualifications and hence, an ideal foreign language teacher needs to possess certain qualities. First and foremost, foreign language teachers need to be proficient, well-equipped and competent in terms of fundamental language knowledge and skills. However, the teacher who enters the profession as highly equipped with regard to fundamental knowledge and skills, will not necessarily stay at the same level for his/her whole professional life. For this reason, the ideal teacher needs to commence the profession having gained an adequate level of research skills to guide them in the subsequent years. In other respects, Demirpolat (2015, cited in Alagözlü, 2017) and Seferoğlu (2006), state that teacher preparation is a complex task and requires careful planning and skilful adherence of a quality standard for pre-service training. This solution would enable the teacher to access to the target language in order to render them capable of establishing communication in the foreign language in the class, and to assess their teaching skills before commencement of a formal teaching program.

Routinely, language teaching is generally discussed

from the perspective of the teacher. It should not be forgotten that the purpose of teaching is to enable learning, and that learning is not an exact reflection of teaching. For as much as a teacher's beliefs, aims, attitudes and decisions regarding teaching affect their teaching, a student's beliefs, aims, attitudes and decisions regarding teaching and learning affect their learning. In the interpretation of many foreign language learning models, the student's beliefs regarding teaching and learning play the fundamental role (Akalin and Zengin, 2007).

In this study, the opinions of teachers regarding the challenges encountered in English teaching in schools have been evaluated. One of the most important aims of the study is to set forth the precautions to be taken by identifying the challenges encountered in English teaching.

Research Questions

The research questions of this study were composed as: "What are the perceptions of English teachers regarding the challenges encountered in English teaching in schools?"

The sub-problems categorised are as follows:

- 1) What are the opinions of English teachers regarding the challenges encountered in English teaching in schools?
- 2) Do the opinions of English teachers regarding the challenges encountered in English teaching in schools, exhibit significant differences according to the variables of:
 - a) Gender
 - b) Age
 - c) Level of education
 - d) Marital status
 - e) Term of office (experience)
 - f) School type

METHODOLOGY

Research model

The research is descriptive and was conducted using the survey model. Survey models are research models which aim to describe a situation from the past or still current (event, person, object) as it is and with respect to its own conditions. General survey models are survey arrangements which are applied in a population consisting of multiplexed members and carried out on the whole population or a group, example or sample to be taken out of it, with the aim of

reaching a general estimation about the population (Karasar, 2006).

Study group

Karabük is a small province with the population of more than 100000. Totally, 3149 teachers are available in Karabük Province (<https://karabuk.meb.gov.tr/>). Out of 3149, there are 231 English teachers work for state schools in Karabük. 67 English teachers in 20 schools accepted the participation voluntarily in the survey. These English teachers serving in primary schools, secondary schools and high schools in Karabük Province-Turkey in the 2018-2019 school year. The questionnaire was distributed among the participants and about five minutes were given to respond it.

Data collection tool

In the study, *The Scale for Challenges Encountered by English Teachers Regarding Their Field* developed by Özel (2011), has been adapted, translated into English by the author and used. Its validity value was found reliable. The questionnaire used in the study consists of two main parts. The first part of the questionnaire comprised of personal information questions (gender, age, level of education, marital status, term of office-experience, school/institution of affiliation). The second part of the scale comprised of questions verbalising the difficulties encountered by teachers regarding their field and scaled as *Yes (1), Partially (2), No (3)* in compliance with the 3-item Likert Scale.

Data analysis

The answers given to the data collection tool by the teachers were coded and loaded into the SPSS 22 statistics software pack. This program analysed the data given automatically. The 2 poles (ranges) on the scale for challenges encountered by English teachers regarding their field were divided into 3 options (2:3=0,66) and by adding the retrieved number onto the lowest number representing the options, it was evaluated as:

1.00 - 1.66= Yes, 1.67 - 2.33= Partially, 2.34 - 3.00 = No.

In the analysis of the survey questions, descriptive methods such as mean and standard deviation were used along with parametric tests (t-test and OneWay ANOVA for the independent groups) and the results have been expressed through tables. Since the Cronbach Alpha value of reliability which had been sought in order to determine the reliability and validity of the data was 0.90, the reliability of the data has been found to be high. In the interpretations, the arithmetic means of the groups and "p" significance value have been taken into account.

FINDINGS

Descriptive findings regarding the participants

The findings regarding the 67 participants who participated in the study and answered all of the questions in the survey are given in Table 1.

When the Table 1 was examined in detail, it was seen that 48 of the participants (71.6%) were female and 19 of the participants (28.4%) were male. It was determined

that 19 participants (28.4%) were in the 20-29 age group, 12 participants (17.9%) were in the 30-39 age group, 18 participants (26.9%) were in the 40-49 age group, 15 participants (22.4%) were in the 50-59 age group and 3 participants (4.5%) were aged 60 and above. It was ascertained that 57 participants (85.1%) attained undergraduate degrees, while 10 participants (14.9%) attained postgraduate degrees. It was seen that 41 participants (61.2%) were married, 26 participants (38.8%) were single, 18 participants (26.9%) had completed 0-5 years of service, 7 participants (10.4%) 6-10 years, 8 participants (11.9%) 11-15 years, 10 participants (14.9%) 16-20 years, 8 participants (11.9%) 21-25 years, 16 participants (23.9%) 26 years and above and 11 participants (16.4%) worked in primary schools, 16 participants (23.9%) in secondary schools and 40 participants (59.7%) in high schools.

English teachers' opinions regarding the challenges encountered in English teaching in schools

English teachers' opinions regarding the challenges encountered in English teaching in schools according to their perceptions are given in Table 2.

When Table 2 is examined in detail, it can be seen that while the participants responded to the proposition of *Making plans that are suitable for the English teaching programme*, with the lowest degree in the level of 'Yes' with a mean of ($\bar{x}=1,63$), they have shown a high level of participation to the proposition of *Collaborating with families and institutions, organisations and individuals in immediate and distant vicinities for students to use the foreign language*, with the highest degree in the level of 'Partially' with a mean of ($\bar{x}=2,33$). Thus, it can be said that while the English teachers do not encounter challenges for the most part in terms of collaborating with families and institutions, organisations and individuals in immediate and distant vicinities for students to use the foreign language, they do encounter challenges in terms making plans that are suitable for the English teaching programme.

The general mean is seen to be at the level of 'Partially' with a mean of ($\bar{X}=1,90$). Thus, it was extrapolated that the perceptions of English teachers regarding the challenges encountered concerning their field are at the level of 'Partially' and that they encounter challenges concerning their field from time to time.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the gender variable

The results of the t-Test carried out for the differences

Table 1. Descriptive analysis regarding the participants.

Variables	Category	Number	%
Gender	Female	48	71.6
	Male	19	28.4
Age	Ages 20-29	19	28.4
	Ages 30-39	12	17.9
	Ages 40-49	18	26.9
	Ages 50-59	15	22.4
	60 and older	3	4.5
Level of Education	Undergraduate	57	85.1
	Postgraduate	10	14.9
Marital Status	Married	41	61.2
	Single	26	38.8
Term of office (experience)	0-5 Years	18	26.9
	6-10 Years	7	10.4
	11-15 Years	8	11.9
	16-20 Years	10	14.9
	21-25 Years	8	11.9
	26 years and above	16	23.9
The School of Affiliation	Primary school	11	16.4
	Secondary school	16	23.9
	High school	40	59.7

Table 2. The perceptions of English teachers regarding the challenges encountered in English teaching in schools.

Propositions	N	\bar{X}	SS	Level of participation
Making plans that are suitable for the English teaching programme	67	1.63	0.76	Yes
Organizing the suitable settings for English teaching	67	1.75	0.79	Partially
Understanding what is read in English	67	1.76	0.72	Partially
Using materials and resources which are suitable to the process of English teaching	67	1.78	0.69	Partially
Ensuring that students speak English accurately and comprehensibly	67	1.78	0.71	Partially
Using methods and techniques that are suitable to the process of English teaching	67	1.79	0.59	Partially
Interpreting the assessment results directed to determining the language development of the students and providing feedback	67	1.79	0.66	Partially
Developing students' listening/watching skills	67	1.82	0.72	Partially
Carrying out formative assessment in English teaching	67	1.82	0.72	Partially
Preparing different tools and methods for assessment and evaluation that can be used in English teaching	67	1.82	0.78	Partially
Developing students' reading skills	67	1.84	0.69	Partially
Being a model for students in terms of speaking English fluently and accurately	67	1.84	0.77	Partially
Writing in English	67	1.84	0.79	Partially
Developing students' writing skills	67	1.87	0.76	Partially
Understanding what is being listened to in English	67	1.94	0.74	Partially
Using the assessment and evaluation tools and methods which are to be used in the teaching process by benchmarking them in terms of practicality, validity and reliability	67	1.96	0.68	Partially

Table 2. Contd.

Reflecting the studies he/she carries out which are directed to his/her professional development on the teaching process applications	67	2.03	0.74	Partially
Designing new assessment and evaluation tools	67	2.15	0.70	Partially
Knowing the culture of the language that is being taught	67	2.15	0.76	Partially
Preparing original activities which will improve the use of English in daily life	67	2.15	0.80	Partially
Collaborating with families and institutions, organizations and individuals in immediate and distant vicinities for students to use the foreign language	67	2.33	0.77	Partially

Table 3. The t-Test results according to the gender variable of the opinions of English teachers regarding the challenges encountered in English teaching in schools.

Gender	N	\bar{X}	S	SD	t	p
Female	48	40.21	8.24	65	0.596	0.553
Male	19	38.79	10.07			

* $p < 0.05$

according to the gender variable of the opinions of English teachers participating in the study regarding the challenges encountered in English teaching in schools are given in Table 3.

According to the analysis results in Table 3, it is seen that a significant difference does not manifest between the opinions of participants regarding the challenges encountered in English teaching in schools and the gender variable. [$t_{(65)}=,596$; $p > ,05$]. While the arithmetic mean of the opinions of female teachers regarding the challenges encountered in English teaching in schools is ($\bar{x}=40,21$), the arithmetic mean of the opinions of male teachers regarding the challenges encountered in English teaching in schools is ($\bar{x}=38,79$). The quantitative difference between them does not constitute a statistically significant difference. This finding can be interpreted as that the participants' genders do not cause any differentiation in the opinions of participants regarding the challenges encountered in English teaching in schools.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the age variable

The ANOVA results for the difference of the opinions of English teachers regarding the challenges encountered in English teaching according to the age variable are given in Table 4.

According to the results of the analysis in Table 4, it is seen that there is no significant difference between the opinions of the participants regarding the challenges encountered in English teaching in schools and the age

variable [$F_{(4-62)}= ,841$; $p > ,05$]. This finding can be interpreted as that the ages of participants do not cause any difference in the opinions of participants regarding the challenges encountered in English teaching in schools.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the level of education variable

The t-test results for the difference in the opinions of English teachers regarding the challenges encountered in English teaching according to the level of education variable are given in Table 5.

According to the analysis results in Table 5, it is seen that no significant difference manifests between the opinions of the participants regarding the challenges encountered in English teaching in schools and the level of education variable. [$t_{(65)}=1,299$; $p > ,05$]. While the arithmetic mean of the opinions of teachers who hold an undergraduate degree regarding the challenges encountered in English teaching in schools is ($\bar{x}=39,23$), the arithmetic mean of the opinions of the participants who hold a postgraduate degree regarding the challenges encountered in English teaching in schools is ($\bar{x}=43,10$). The quantitative difference between them does not constitute a statistically significant difference. This finding can be interpreted as that the participants' level of education does not cause any differentiation in the opinions of participants regarding the challenges encountered in English teaching in schools.

Table 4. One-Way Analysis of Variance (ANOVA) results for the difference of english teachers' opinions regarding the challenges encountered in English teaching in schools according to the age variable.

Variable	N	\bar{X}	S				
ages 20-29	19	37.00	7.99				
ages 30-39	12	39.67	11.63				
ages 40-49	18	40.61	9.15				
ages 50-59	15	42.33	6.84				
Age	60 years and older	3	40.67	5.69			
The Source of Variance		KT	SD	KO	F	p	Difference
Between Groups		259.533	4	64.883	0.841	0.504	
Within Groups		4780.944	62	77.112			--
Total		5040.478	66				

Table 5. The t-test Results of the Opinions of English Teachers Regarding the Challenges Encountered in English Teaching in Schools According to the Level of Education Variable.

Level of Education	N	\bar{X}	S	SD	t	p
Undergraduate	57	39.23	8.24	65	1.299	0.199
Postgraduate	10	43.10	11.09			

*p<0.05.

Table 6. The t-test results of the opinions of English teachers regarding the challenges encountered in English teaching in schools According to the marital status variable.

Marital Status	N	\bar{X}	S	SD	t	p
Married	41	39.90	7.75	65	,113	.911
Single	26	39.65	10.27			

*p<0.05.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the marital status variable

The t-test results for the difference in the opinions of English teachers regarding the challenges encountered in English teaching according to the marital status variable are given in Table 6.

According to the analysis results in the Table 6, it is seen that a significant difference does not manifest between the opinions of participants regarding the challenges encountered in English teaching in schools and the marital status variable [$t_{(65)}=,113$; $p>,05$]. While the arithmetic mean of the opinions of the married participants regarding the challenges encountered in English teaching in schools is ($\bar{x}=39,90$), the arithmetic

mean of the opinions of the single participants regarding the challenges encountered in English teaching is ($\bar{x}=39,65$). The quantitative difference between them does not constitute a statistically significant difference. This finding can be interpreted as that the participants' marital status does not lead to any differentiation in their opinions regarding the challenges encountered in English teaching in schools.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the Term of Office variable

The ANOVA results for the differences in English teachers' opinions regarding the challenges encountered

Table 7. One-way analysis of variance (ANOVA) results for the difference of English teachers' opinions regarding the challenges encountered in English teaching in schools according to the term of office variable.

Variable	N	\bar{X}	S
0-5 years	18	36.94	8.73
6-10 years	7	41.14	11.58
11-15 years	8	38.75	8.58
16-20 years	10	39.90	10.89
21-25 Years	8	40.63	6.80
26 years and above	16	42.50	7.03

Term of office	The Source of Variance	KT	SD	KO	F	p	Difference
	Between Groups	290.401	5	58.080	0.746	0.592	
	Within Groups	4750.077	61	77.870			--
	Total	5040.478	66				

Table 8. One-Way Analysis of Variance (ANOVA) Results for the Difference of English Teachers' Opinions Regarding the Challenges Encountered in English Teaching in Schools According to the School Type Variable.

Variable	N	\bar{X}	S
Primary School	11	36.55	9.41
Secondary School	16	41.56	8.67
High School	40	40.00	8.56

School Type	The Source of Variance	KT	SD	KO	F	p	Difference
	Between Groups	167.813	2	83.906	1.102	0.338	
	Within Groups	4872.665	64	76.135			--
	Total	5040.478	66				

in English teaching according to the term of office variable are given in Table 7. According to the analysis results in the Table 7, it is seen that a significant difference does not manifest between the opinions of participants regarding the challenges encountered in English teaching in schools and the term of office variable [$F_{(5-61)} = ,746$; $p >,05$]. This finding can be interpreted as that the participants' term of office does not lead to any differentiation in their opinions regarding the challenges encountered in English teaching in schools.

The comparison of the opinions of English teachers regarding the challenges encountered in English teaching in schools according to the school type variable

The ANOVA results for the differences in English teachers' opinions regarding the challenges encountered in English teaching according to the school type variable are given in Table 8.

According to the analysis results in Table 8, it is seen

that a significant difference does not manifest between the opinions of participants regarding the challenges encountered in English teaching in schools and the school type variable [$F_{(2-64)} = 1,102$; $p >,05$]. This finding can be interpreted as that the school type in which participants serve does not lead to any differentiation in their opinions regarding the challenges encountered in English teaching in schools.

DISCUSSION

Sixty seven English teachers serving in 20 schools which comprised of primary schools, secondary schools and high schools in the Karabük Province, participated in the study. 48 of the participants were male while 19 of them were female. The ages of the teachers in active service were between the band of 20 and the band of 60 and above. According to the data obtained from the English teachers, 11 of them served in primary schools, 16 of them served in secondary schools and 40 of them served in high schools.

The quantitative difference between the opinions of male and female teachers regarding the challenges encountered in English teaching in schools does not constitute a statistically significant difference. This finding can be interpreted as that the gender of the participants does not cause any differentiation in the opinions of participants regarding the challenges encountered in English teaching in schools. Moreover, it can be extrapolated that the ages of the participants does not cause any differentiation in their opinions regarding the challenges encountered in English teaching in schools.

Fourteen of the 67 English teachers who participated in the study held a Master's degree. The results have also been compared according to the level of education and it has been understood that the participants' level of education does not lead to any differentiation in their opinions regarding the challenges encountered in English teaching.

In other respects, there is not a considerable difference between the arithmetic means of the participants, 41 of whom were married and 26 of whom were single, regarding the challenges encountered in English teaching in schools again, according to the findings obtained, it was ascertained that the participants' terms of office does not cause any differentiation in their opinions regarding the challenges encountered in English teaching in schools.

As mentioned above, English teachers who served at the primary, secondary and high school levels participated in the study and it has been determined that the school type in which the participants serve does not cause any differentiation in their opinions regarding the challenges encountered in English teaching in schools. Hence, it can be stated that the opinions of English teachers regarding the challenges encountered in English teaching in schools, do not exhibit significant differences according to the variables of; gender, age, level of education, marital status, experience, school type.

Nonetheless, according to the results of the data, it can be said that while the students of the English teachers do not encounter challenges in terms of 'participating in collaboration with families and institutions, organisations and individuals in immediate and distant vicinities', they do encounter *challenges* in terms of 'making plans that are suitable for the English teaching programmes'. Thus, it was extrapolated that the perceptions of English teachers regarding the challenges encountered concerning their field are at the level of 'Partially', and that they encounter challenges concerning their field from time to time.

This inference corresponds to the views of: Işık (2008), who complained about there not being a proper foreign language teaching programme; Enginarlar (2014) who expressed that programmes should be revised; and Tütüniş (2014) who pointed out the curricular problems that are caused by not taking the opinions of English teachers at the stage of preparing teaching programmes

and course books. Moreover, Yılmaz and Yücel (2017) added that course books play a very great role in language teaching. In parallel with these, when the issue of English teaching in Turkey is viewed in a general sense, in the joint study carried out by the British Council and TEPAV (2013) called 'Turkey National Needs Assessment of State School English Language Teaching', problems such as English teachers not being able to reflect their potential to their classes, being too dependent on the course book and the teacher-centralism of education were mentioned. On the other hand, Unal and İlhan (2017), in their research on higher education state that "students and instructors' suggestions also centered upon 'educational system', 'instructional program' and 'learning environment', and there were very limited suggestions about teaching materials."

Conclusion

In this study, the teacher opinions regarding the challenges encountered in English teaching in schools in the Karabük Province and the responds for aforementioned research questions have been investigated. In the light of all of these assessments, it is thought that the identification and resolution of problems by determining and evaluating English teachers' perceptions regarding the challenges encountered in English teaching will provide contributions to studies directed towards ameliorating and improving the quality of schools and education.

Revealing the challenges encountered by teachers in the application of various curricula and presenting proposals for solutions with this study, will prove instructive for the more effective and successful implementation of the programme in the future. Within this scope, for as much as the study is presumed to contribute to the improvement of English teaching programmes, it is also considered that it will be an aid in the clarification of more effective, useful and realistic teaching programmes through the detection of the reasons that hinder the attainment of the specified goals and the corresponding solution proposals. The fact that information has shown quantitative and qualitative increase and that the individuals need to learn the information in a systematic manner has also increased, has laid the groundwork for the improvement and change of education programmes and learning approaches.

RECOMMENDATIONS

This research study aimed to identify the perceptions of English teachers who teach at primary, secondary and high schools. When it is taken into account that success cannot be achieved despite all the changes and

innovations made in foreign language teaching and programmes, this study will prove most instructive in order to make the best use of the labour, effort and economic resources allocated to education. However, this study is limited by the survey of Karabuk Province in order to understand the perceptions of English teachers regarding the challenges encountered in English teaching in schools, many more cities can be included for further studies in order to obtain a more general and common conclusion and to develop some generalizations.

ACKNOWLEDGEMENTS

I would like to thank the anonymous reviewers and the editor/s for their valuable feedback, and the participants who took part in the survey.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

REFERENCES

- Akalın S, Zengin B (2007). Türkiye'de Halkın Yabancı Dil İle İlgili Algıları. *Journal of Language and Linguistic Studies* 3(1).
- Aksoy E, Akbaş U, Seferoğlu G (2018). Adaptation of the Approaches to Teaching Inventory into Turkish and Analysis of Turkish Academics' Approaches to Their Own Teaching. *Education and Science* 43(194):81-99. DOI:10.15390/EB.2018.7253
- Alagöz N (2017). Türkiye' de İngilizce Öğretmeni Yetiştirme Sorunları. *Türkbilim* 34:241-247.
- Arslan M, Akbarov A (2010). Türkiye'de Yabancı Dil Öğretiminde Motivasyon-Yöntem Sorunu ve Çözüm Önerileri. *Selçuk Üniversitesi, Edebiyat Fakültesi Dergisi, Sayı/Number* 24:179-191.
- Aydın S (2016). Türkiye'de yabancı dil öğretmeni yetiştirme: Bir öneri. 4 Ulusal Yabancı Dil Eğitimi Kurultayı, 10-11 Mayıs, Çanakkale 18 Mart Üniversitesi, Eğitim Fakültesi, Çanakkale.
- Başat, G. (2014). Neden yabancı dil öğrenemiyoruz? *Aljazeera Türk Dergi*. Retrieved, September 27, 2019, at <http://dergi.aljazeera.com./2014/09/01/neden-yabanci-dil-ogrenemiyoruz/>
- British Council ve TEPAV (2013). Türkiye'deki Devlet Okullarında İngilizce Dilinin Öğretimine İlişkin Ulusal İhtiyaç Analizi. Ankara: Yorum Yayın.
- Demirel Ö (2016). *Yabancı Dil Öğretimi*. Ankara, Pegem Akademi.
- Demirpolat CB (2015). Türkiye'nin Yabancı Dil Öğretimi ile İmtihani. *Analiz*. Sayı,131. Seta Yayıncılık.
- Doğançay-Aktuna S (1998) The Spread Of English in Turkey And Its Current Sociolinguistic Profile. *Journal of Multilingual and Multicultural Development* 19(1):24-39.
- Enginarlar H (2014). Yabancı Diller Eğitimi Bölümlerinin (YDE) Dünü, Bugünü ve Yarını. (Haz.) Y. Bayyurt ve S. Akcan. *Türkiye'deki Yabancı Dil Eğitimi Üzerine Görüş ve Düşünceler*. Boğaziçi Üniversitesi, 3. Ulusal Yabancı Dil Eğitimi Kurultayından Seçkiler., 23-24 Ekim 2014, İstanbul
- Durukafa G (2007). Eğitimde Fırsat Eşitliği ve Yabancı Dil Öğretimi. *Türkiye'de Yabancı Dil Eğitimi Ulusal Kongresi Bildirileri içinde* (ss.374-376). Ankara: Gazi Üniversitesi.
- Gedikoğlu T (2005). Avrupa Birliği Sürecinde Türk Eğitim Sistemi: Sorunlar ve Çözüm Önerileri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi* 1(1):66-80.
- Hamiloğlu K (2005). Yabancı Dil Eğitimi mi, Yabancı Dilde Eğitim mi: Dünya Literatüründe Türkiye Örneği. *Uluslararası V. Dil, Yazın, Deyişbilim Sempozyumu, İstanbul* 24-25 Haziran.
- İşık A (2008). Yabancı Dil Eğitimimizdeki Yanlışlar Nereden Kaynaklanıyor? *Journal of Language and Linguistic Studies* 4(2):15-26.
- İşisağ K, Demirel Ö (2010). Diller için Ortak Başvuru Metninin Konuşma Becerisinin Gelişiminde Kullanılması. *Eğitim ve Bilim* 35(156):190-204.
- Karasar N (2006). *Bilimsel Araştırma Yöntemi*. İstanbul: Nobel Yayınları.
- Kırkıç KA, Boray T (2017). İngilizce Öğretiminde ve Öğreniminde Türkiye İçin İnovatif Bir Teknik: Boray Tekniği (BT), *Eğitim Kuram, Uygulama ve Araştırmaları Dergisi* 3(3):13-29.
- Kıroğlu K (2008). *Yeni İlköğretim Programları: (1-5.sınıflar)*. Ankara: Pegem Yayıncılık MoNE (Milli Eğitim Bakanlığı). *Haberler*. Yabancı Dil Çalıştayı 7 Aralık 2006.
- Özdemir E (2006). Türkiye'de İngilizce Öğreniminin Yaygınlaşmasının Nedenleri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi* 2(1). Retrieved from <http://dergipark.gov.tr/mersinefd/issue/17390/181751>
- Özel TT (2011). İlköğretim İngilizce Dersi Öğretim Programlarının Uygulanmasında Karşılaşılan Güçlüklerin Belirlenmesi (Ankara İli Örneği), *Yayınlanmamış Yüksek Lisans Tezi*, Ankara Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Seferoğlu G (2006). A Study of Alternative English Teacher Certification Practices in Turkey. *Journal of Education for Teaching* 30:151-159.
- Takkaç M (2014). Öğretmen Yetiştirme Programları ve Sorunları. (Eds). A. Sarıçoban, H. Öz Türkiye'de Yabancı Dil Eğitiminde Eğitim ne olmalı? Hacettepe Üniversitesi Eğitim Fakültesi İngiliz Dili Eğitimi Anabilim Dalı 1.Yabancı Dil Eğitimi Çalıştayı Bildirileri 12-13 Kasım, 2012.
- Turkish Ministry of National Education (MoNE)/MEB Yabancı Dil Çalıştayı (2006). 7 Aralık 2006, Retrieved at, <http://www.meb.gov.tr/haberler/haberayrinti.asp?ID=1133>
- Tütüniş B (2014). İngilizce Öğretiminde Yöntem Sorunları. *Yabancı Dil Eğitimi Çalıştayı Bildirileri (12-13 Kasım 2012)*, Ankara: Hacettepe Üniversitesi Yayınları s. 33-36.
- Unal M, İlhan E (2017). A Case Study on the Problems and Suggestions in Foreign Language Teaching and Learning at Higher Education. *Journal of Education and Training Studies* 5(6):64-72. doi:10.11114/jets.v5i6.2302
- Yalçın A (2017). Yabancı Dil Öğretimi İçin Önce Öğretmen. *Eğitime Bakış* 13(39):1-2.
- Yaman İ (2018). Türkiye'de İngilizce Öğrenmek: Zorluklar ve Fırsatlar. *RumeliDE Dil ve Edebiyat Araştırmaları Derisi* 11. Nisan.
- Yılmaz H, Yücel E (2017). Yabancı Dil Öğretim Sürecinde İdeal Ders Kitapları ve Özellikleri. (Eds.) H. Yılmaz , E. Yücel, S. D. Ügüten, F. Şanal, *Farklı Yönleriyle Yabancı Dil Öğretimi. Çizgi Kitabevi Yayınları*: 796. Aralık 2017. <https://karabuk.meb.gov.tr/>, Retrieved on November 25, 2018

Full Length Research Paper

An investigation of pre-service basic education teachers' learning styles in terms of different variables

Osman DALAMAN^{1*}, Süleyman CAN² and Erdil DURUKAN³

¹Department of Classroom Teaching, Ahmet Keleşoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey.

²Department of Classroom Teaching, Faculty of Education, Muğla Sıtkı Koçman University, Muğla, Turkey.

³Department of Coaching Education, School of Physical Education and Sports, Balıkesir University, Balıkesir, Turkey.

Received 14 January, 2019; Accepted 19 February, 2019

Learning process varies from student to student. In a related research, it is argued that one of the basic elements for this variation is due to student's distinct learning styles. Planning learning situations based on the knowledge of learners' learning styles can be more effective and efficient. With the learning-teaching process designed in accordance with the learning styles of students, it is possible to develop positive attitudes towards the courses and to increase academic success. Pre-service teachers' awareness of their own learning styles can be effective both for their own development during their pre-service training and for the development of their students during their in-service professional career. The purpose of the current study is to determine the learning styles of the pre-service basic education teachers and to examine the relationships between their learning styles and gender, age, program type, grade level and grade point average. In data collection, the Kolb Learning Style Inventory was used. The current study was conducted on 493 pre-service teachers randomly selected from among the 1st, 2nd and 3rd year students attending the Basic Education Departments of Classroom Teaching and Pre-school Teacher Education in the Education Faculty of Necmettin Erbakan University, in 2017/2018 academic year. In the analysis of the collected data, SPSS 24 program package was used. The pre-service teachers' learning styles are presented through descriptive statistics, frequencies (f) and percentages (%). Whether the pre-service teachers' learning styles vary significantly depending on the variables of gender, age, program type, grade level and grade point average was tested with Chi-Square Test. Of the participating pre-service teachers, 398 (80.7%) are females and 95 (19.3%) are males; 250 (50.7%) are from the department of classroom teaching and 243 (49.3%) are from the department of pre-school teacher education. The results of the current study have revealed that the participating pre-service teachers have adopted the "Diverging" learning style to the greatest extent and the "Converging" learning style to the smallest extent.

Key words: Basic education, student, learning styles, variables, evaluation.

INTRODUCTION

The learning process has always been one of the research subjects in terms of both individual development and social development. Research has led to the development of behavioral, cognitive or social-cognitive

theories and yielded many attempts to explain the learning process in terms of these theories. Despite many differences existing among these theories, the common aspect of all is that learning process occurs through the

experiences of an individual (Başbay et al., 2018). When these experiences are examined, it is seen that these experiences can vary depending on factors such as individuals' cultural backgrounds, societal roles, socio-cultural and economic conditions, epistemological beliefs; in this regard, individual differences are seen to be a variable directly affecting learning.

Individual differences cause learners to develop different responses to the same learning process. One of the reasons for this differentiation is the learning style of the learner (Ekici, 2002; Genç and Kocaarslan, 2013; Yazıcı and Kaya, 2010). Learning style refers to the learner's approach to learning process, his / her preferences in having access to and processing information. Learning styles are defined as ways followed by the individual to receive and process information (Kolb, 1976).

Scientists such as Carl Jung, Felder and Silverman, Gregorc, Kolb have developed various learning style models. In the current study, the learning style model developed by Kolb has been adopted. According to this model, one of the following ways is more strongly adopted to find a solution to a problem encountered; concrete experience, reflective observation, abstract conceptualization and active experimentation. The learner designs the learning process by feeling or touching in a concrete experience, watching in a reflective observation, thinking in an abstract conceptualization, and directly doing in an active experimentation. From these four modes of learning, one of the learning styles determines the dominant learning style of the learner: Accommodating, Diverging, Converging and Assimilating (Kolb et al., 2001).

Knowing which learning style the individual has will enable academic success to increase by providing easier and more effective solutions to the problems encountered in daily life, while leading to success in business and social life. Determination of the learning styles of the pre-service basic education teachers who will work in pre-school institutions and elementary schools, which make up the first level of education, is important for both their academic achievement and daily life. It is important to determine pre-service teachers' learning styles and strategies for them to develop their qualifications (Ünal et al., 2013). Thus, it is thought that pre-service teachers will be supported to acquire the required cognitive, affective and psychomotor basic skills.

In the current study, it is aimed to determine the

learning styles of the pre-service basic education teachers. To this end, answers to the following questions were sought:

- (i) What are the learning styles of the pre-service basic education teachers?
- (ii) Do the pre-service basic education teachers' learning styles vary depending on gender, age, program type, grade level, grade point average?

METHODS

Research model

This study employed the survey model to determine the pre-service basic education teachers' learning styles. The survey model aims to describe a past or a present situation as it was, or is. The event, individual or object that is the subject of research is described as it is (Karasar, 2014). This model is preferred in the current study as it is aimed to reach a description by surveying the collected quantitative data.

Study group

The current study was conducted on 493 pre-service teachers randomly selected from among the 1st, 2nd and 3rd year students attending the Basic Education Departments of Classroom Teaching and Pre-school Teacher Education in the Education Faculty of Necmettin Erbakan University in 2017-2018 academic year. Of the participating pre-service teachers, 398 (80.7%) are females 95 (19.3%) are males; 250 (50.7%) are from the Department of Classroom Teaching and 243 (49.3%) are from the Department of Pre-school Teacher Education; 177 (35.9%) are 1st year students, 186 (37.7%) are 2nd year students and 130 (26.4%) are 3rd year students.

Data collection instruments

In data collection, a personal information form and the Kolb Learning Style Inventory developed by David Kolb in 1971, revised in 1985 and adapted to Turkish by Aşkar and Akkoyunlu in 1993 were used. The inventory consists of 12 items and each item has four statements defining Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (SK) and Active Experimentation (AE). For each item, the respondent is asked to order these statements from 1 to 4. Thus, the total score to be taken for each component can vary between 12 and 48. Yet, in order to determine the learner's learning style, combined scores are needed. The combined scores are calculated by taking the difference between Abstract Conceptualization (AC) and Concrete Experience (CE) and the difference between Active

¹*Corresponding author. E-mail: osmndalaman@gmail.com.

Table 1. Learning styles of the pre-service basic education teachers.

Learning styles	<i>f</i>	%
Diverging	220	44.6
Assimilating	115	23.3
Converging	74	15.0
Accommodating	84	17.0
Total	493	100.0

Table 2. Correlations between learning styles and gender.

Gender	Learning styles				Total <i>f</i> (%)
	Diverging <i>f</i> (%)	Assimilating <i>f</i> (%)	Converging <i>f</i> (%)	Accommodating <i>f</i> (%)	
Female	175 (44.0)	94 (23.6)	63 (15.8)	66 (16.6)	398 (100.0)
Male	45 (47.4)	21 (22.1)	11 (11.6)	18 (18.9)	95 (100.0)
Total	220 (44.6)	115 (23.3)	74 (15.0)	84 (17.0)	493 (100.0)

$X^2=1.448$; $sd=3$; $p=0.694$; $p>0.05$.

Experimentation (AE) and Reflective Observation (RO). The scores to be obtained in this way can vary between -36 and +36. If the score obtained by combining AC and CE is positive, it means that learning is abstract; if it is negative, it means that learning is concrete. Similarly, if the score obtained by combining AE and RO is positive, it means that learning is active; if it is negative, it means that learning is reflective. By determining the intersection point of the combined scores, the dominant learning style of the learner is found. The pre-service teachers were informed about the inventory and then the inventory was administered to the ones who were voluntary to participate. The administration of the inventory lasted for 15-20 min. Within the context of the current study, Cronbach Alpha reliability coefficient was calculated for four dimensions of the inventory and the coefficients were found to be ranging from 0.76 to 0.85. These values show that the inventory is a reliable instrument to be administered to the study group of the current research.

Data analysis

In the analysis of the collected data, SPSS 24 program package was used. The pre-service teachers' learning styles are presented through descriptive statistics; frequencies (*f*) and percentages (%). Whether there are significant correlations between the participants' learning styles and their gender, age, program type, grade level and grade point average was tested with Chi-square test. This is because of the calculation of the combined scores obtained from the Learning Style Inventory. It was found that the students' learning styles are Diverging, Accommodating, Converging and Assimilating.

FINDINGS

The findings related to the first sub-problem of the current study "What are the learning styles of the pre-service basic education teachers?" are presented in Table 1. As

can be seen in Table 1, 44.6% (220) of the pre-service basic education teachers have the Diverging learning style, 23.3% (115) have the Assimilating learning style, 15% (74) have the converging and 17% (84) have the accommodating learning style. Thus, it seems that the pre-service basic education teachers have the Diverging learning style to the greatest extent and the Converging learning style to the smallest extent.

Findings related to the second sub-problem of the study "Do the pre-service basic education teachers' learning styles vary depending on gender, age, program type, grade level, grade point average?" are presented in Tables 2, 3, 4, 5 and 6 respectively. As can be seen in Table 2, no significant correlation was found between the pre-service basic education teachers' learning styles and gender ($X^2_{(3)}=1.448$; $p>0.05$). Both the female and pre-service teachers were found to have the Divergent and then the Assimilating learning styles the most while they have the Accommodating learning style the least.

As can be seen in Table 3, no significant correlation was found between the pre-service basic education teachers' learning styles and age ($X^2_{(3)}= 7.149$; $p>0.05$). The highest number of the pre-service teachers in the age group "19 years and under" have the Diverging learning style with 41.3% and the smallest number of them have the Accommodating learning style with 19%. The highest number of pre-service teachers in the age group "20-21 years old" have the Diverging learning style with 44.6% and the smallest number of them have the Converging learning style with 16.6%. The highest number of pre-service teachers in the age group "22 years old and under" have the Diverging learning style

Table 3. Correlations between the pre-service teachers' learning styles and age.

Age	Learning styles				Total f (%)
	Diverging f (%)	Assimilating f (%)	Converging f (%)	Accommodating f (%)	
19 years old and under	50 (41.3)	24 (19.8)	24 (19.8)	23 (19.0)	121 (100.0)
20-21 years old	129 (44.6)	76 (26.3)	36 (12.5)	48 (16.6)	289 (100.0)
22 years old and over	41 (49.4)	15 (18.1)	14 (16.9)	13 (15.7)	95 (100.0)
Total	220 (44.6)	115 (23.3)	74 (15.0)	84 (17.0)	493 (100.0)

$X^2=7.149$; $sd=6$; $p=0.307$; $p>0.05$.

Table 4. Correlations between the pre-service teachers' learning styles and program type.

Program type	Learning styles				Total f (%)
	Diverging f (%)	Assimilating f (%)	Converging f (%)	Accommodating f (%)	
Classroom teaching	116 (46.4)	45 (18.0)	48 (19.2)	41 (16.4)	250 (100.0)
Pre-school teacher education	104 (42.8)	70 (28.8)	26 (10.7)	43 (17.7)	243 (100.0)
Total	220 (44.6)	115 (23.3)	74 (15.0)	84 (17.0)	493 (100.0)

$X^2=12.581$; $sd=3$; $p=0.006$; $p<0.05$.

Table 5. Correlations between the pre-service teachers' learning styles and grade level.

Grade level	Learning styles				Total f (%)
	Diverging f (%)	Assimilating f (%)	Converging f (%)	Accommodating f (%)	
1 st year	75 (42.4)	35 (19.8)	30 (16.9)	37 (20.9)	177 (100.0)
2 nd year	86 (46.2)	49 (26.3)	21 (11.3)	30 (16.1)	186 (100.0)
3 rd year	59 (45.4)	31 (23.8)	23 (17.7)	17 (13.1)	130 (100.0)
Total	220 (44.6)	115 (23.3)	74 (15.0)	84 (17.0)	493 (100.0)

$X^2= 7.646$; $sd=6$; $p=0.265$; $p>0.05$

Table 6. Correlations between the pre-service teachers' learning styles and grade point average.

Grade point average	Learning styles				Total f (%)
	Diverging f (%)	Assimilating f (%)	Converging f (%)	Accommodating f (%)	
2.99 and lower	44 (51.2)	17 (19.8)	12 (14.0)	13 (15.1)	86 (100.0)
3.00 and higher	176 (43.2)	98 (24.1)	62 (15.2)	71 (17.4)	407 (100.0)
Total	220 (44.6)	115 (23.3)	74 (15.0)	84 (17.0)	493 (100.0)

$X^2=1.867$; $sd=3$; $p=0.600$; $p>0.05$.

with 49.4% and the smallest number of them have Accommodating learning style with 15.7%.

As can be seen in Table 4, there is a significant

correlation between the pre-service basic education teachers' learning styles and the department they are attending ($X^2_{(3)} = 12.581$; $p<0.05$). Both the pre-service

classroom teachers and pre-school teachers were found to have the Diverging learning style the most. While the pre-service classroom teachers have the Accommodating learning style the least, the pre-service pre-school teachers have the Converging learning style the least. As can be seen in Table 5, no significant correlation was found between the pre-service basic education teachers' learning styles and grade level ($X^2_{(3)}=7.646$; $p>0.05$). The first year students have the Diverging learning style the most with 42.4% and the Converging learning style the least with 16.9%. The second year students were found to have Diverging learning style the most with 46.2% and the Converging learning style the least with 11.3%. The third year students were found to have the Diverging learning style the most with 45.4% and the Accommodating learning style the least with 13.1%.

As can be seen, there is no significant correlation between the pre-service basic education teachers' learning styles and general point average ($X^2_{(3)}=1.867$; $p>0.05$). The pre-service teachers with a grade point average was "2.99 and lower" and the pre-service teachers with a grade point average "3.00 and higher" have the Diverging learning style the most. In addition, the pre-service teachers with a grade point average "2.99 and lower" and the pre-service teachers with a grade point average "3.00 and higher" have the Converging learning style the least.

DISCUSSION

In the current study conducted on the pre-service basic education teachers, it was found that the learning style possessed by the highest percentage of the pre-service teachers (44.6%) is the Diverging learning style. Other studies conducted on learning styles (Kılıç, 2002; Karakiş, 2006; Kaf-Hasırcı, 2006; Can, 2011; Genç and Kocaarslan, 2013; Bahar and Yıldırım, 2017; Dikmen et al., 2018), found that the "Assimilating" learning style is the one most adopted by students. In the literature, there are some other studies reporting that the converging learning style is the most possessed one (Mutlu, 2008; Bahar et al., 2009). In the current study, the Diverging learning style was found to be possessed by more pre-service teachers than the others are. Not much research has been found in current literature supporting this finding. The individuals having the diverging learning style have advanced skills of concentrating on the ideas of others and relating ideas to each other. They mostly focus on abstract concepts and ideas while creating products (Can, 2011). The individuals having this learning style tend to appreciate course materials depending on their experiences, interests and professional careers of future. These individuals ask the "Why" question more often (Kolb, 1976; Felder, 1996). Thus, the instructional environments for the pre-service basic education

teachers should be organized in such a way as to provide opportunities to ask more "Why" questions. Moreover, the course materials to be offered to these pre-service teachers should reflect their experiences and interests. For these reasons, pre-service basic education teachers should be provided with learning environments where they can express their opinions and establish relationships between these ideas through brainstorming.

CONCLUSION AND RECOMMENDATIONS

In the current study, it was found that the pre-service basic education teachers' learning styles do not vary significantly depending on gender. Both the female and male pre-service teachers have the Diverging learning style the most and the Accommodating learning style the least. This result does not concur with the findings reported by Arslan and Babadoğan (2005), Mutlu (2008), Can (2011), Ünal et al. (2013), Bahar and Yıldırım (2017) as well as Dikmen et al. (2018). Though in these studies, it was also revealed that the learning styles do not vary significantly by gender, they showed that both the female and male participants have the assimilating and converging learning styles the most. In this connection, it can be argued that gender is a variable not influential on the learning style possessed.

It was also concluded that there is no significant correlation between the pre-service basic education teachers' learning styles and age. This finding is similar to the findings reported by Arslan and Babadoğan (2005) and Eskici (2008) but differs from the findings reported by Ergür (2010) and Can (2011). It can be argued that students' being in different age groups is not an influential factor in the development of their preferred learning styles. In light of the findings of the current study, it can be argued that across all the age groups, the most dominant learning style is Diverging and the least dominant ones are Accommodating and Converging.

In the current study, it was found that there is a significant correlation between the pre-service basic education teachers' learning style and the department attended. This finding is similar to the finding reported by Gürsoy (2008) yet differs from the findings reported by Mutlu (2008), Bahar et al. (2009), Genç and Kocaarslan (2013), as well as Zengin and Alşahan (2011). The reason for the pre-service teachers from different departments having different learning styles may be because they are accepted to these programs based on different kinds of university entrance exam points and different curriculums and courses taught in different programs. Another reason for this difference may be that the pre-service teachers from different departments will teach different student groups in the future; thus, they can condition themselves differently in their learning. Another finding of the current study is that the pre-service

basic education teachers' learning styles do not vary depending on their grade level. This finding is similar to the findings reported by Kaf-Hasırcı (2006) as well as Arsal and Özen (2007) yet differs from the findings reported by Hamurcu (2002), Karademir and Tezel (2010) as well as Çelikkaya (2012). When the pre-service teachers' learning styles are examined, it is seen that the dominant learning style in three of the groups is Diverging.

Another finding of the current study is that the pre-service basic education teachers' learning styles do not vary significantly depending on grade point average. This finding concurs with the findings reported by Yenice and Saracaloğlu (2009) as well as Dikmen et al. (2018) yet differs from the findings reported by Snyder (2000) and She (2005). This might be because there are many other factors affecting the grade point average.

In light of the findings of the current study, following suggestions can be made for researchers and practitioners.

- (i) Instructional processes that can affect different learning styles should be developed.
- (ii) More specific research to be conducted by keeping some demographic features fixed will be important in terms of determining the variables leading to changes on learning styles.
- (iii) As there is a large amount of quantitative research in the literature, qualitative research and meta-analysis studies are needed more.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Arsal Z Özen R (2007). Sınıf öğretmeni adaylarının öğrenme stratejileri ve öğrenme biçimi tercihlerinin incelenmesi. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 7(2):151-164.
- Arslan B, Babadoğan C (2005). İlköğretim 7. ve 8. sınıf öğrencilerinin öğrenme stillerinin akademik başarı düzeyi, cinsiyet ve yaş ile ilişkisi. *Eğitim Araştırmaları Dergisi* 21:35-48.
- Aşkar P, Akkoyunlu B (1993). Kolb öğrenme stili envanteri. *Eğitim ve Bilim* 17(87):37-47.
- Bahar HH, Özen Y, Gülaçtı F (2009). An investigation on academic achievement and learning styles as to branches of education students. *Ankara University, Journal of Faculty of Educational Sciences* 42(1):69-86.
- Bahar HH, Yıldırım S (2017). İktisadi ve idari bilimler fakültesi öğrencilerinin öğrenme stilleri ile başarılarının cinsiyet, program ve sınıf düzeyine göre incelenmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 38:14-27.
- Başbay A, Bıyıklı C, Demir EK (2018). The investigation of learning styles and study habits. *Elementary Education Online* 17(2):848-863.
- Can Ş (2011). Sınıf öğretmeni adaylarının öğrenme stilleri ile bazı değişkenler arasındaki ilişkinin araştırılması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi* 41:70-82.

- Çelikkaya Ş (2012). Almanca öğretmeni adaylarının sözcük öğreniminde kullandıkları öğrenme stratejileri. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 28:71-76.
- Dikmen M, Bahadır F, Akmeçe AE (2018). Öğretmen adaylarının öğrenme stillerinin bazı değişkenler açısından incelenmesi. *Journal of Educational Reflections* 2(1):24-37.
- Ekici G (2002). Gregorc öğrenme stili ölçeği. *Eğitim ve Bilim* 27(123):42-47.
- Ergür DO (2010). Hazırlık sınıfı öğrencilerinin kişisel özelliklerinin öğrenme stillerine etkisi ve öğretim sürecine yansımaları. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi* 39(39):173-184.
- Eskici M (2008). Öğrencilerin öğrenme stilleri ile akademik başarıları ve cinsiyetleri arasındaki ilişki. (Yayımlanmamış yüksek lisans tezi). *Trakya Üniversitesi, Sosyal Bilimler Enstitüsü, Edirne.*
- Felder RM (1996). Matters of style. *ASEE Prism* 6(4):18-23.
- Genç M, Kocaarslan M (2013). Öğretmen adaylarının öğrenme stillerinin çeşitli değişkenler açısından incelenmesi: Bartın Üniversitesi örneği. *Türkiye Sosyal Araştırmalar Dergisi* 172:327-344.
- Gürsoy T (2008). Öğretmen adaylarının öğrenme stillerinin çeşitli değişkenler açısından incelenmesi. *Yayımlanmamış Yüksek Lisans Tezi, Adnan Menderes Üniversitesi, Aydın.*
- Hamurcu H (2002). Okulöncesi öğretmen adaylarının kullandıkları öğrenme stratejileri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi* 23:127-134.
- Kaf-Hasırcı Ö (2006). Sınıf öğretmenliği öğrencilerinin öğrenme stilleri: Çukurova Üniversitesi örneği. *Eğitimde Kuram ve Uygulama Dergisi* 2(1):15-25.
- Karademir E, Tezel Ö (2010). Sınıf öğretmeni adaylarının öğrenme stillerinin demografik değişkenler açısından incelenmesi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi* 28(2):129-145.
- Karakış Ö (2006). Bazı yükseköğretim kurumlarında farklı öğrenme stillerine sahip olan öğrencilerin genel öğrenme stratejilerini kullanma düzeyleri. *Yayımlanmamış Yüksek Lisans Tezi. Abant İzzet Baysal Üniversitesi, Bolu.*
- Karasar N (2014). *Bilimsel araştırma yöntemleri*. Ankara: Nobel Yayınları.
- Kılıç AGE (2002). Baskın öğrenme stili öğrenme etkinlikleri tercihi ve akademik başarıya etkisi. *Eğitim Bilimleri ve Uygulama Dergisi* 1(15):1-15.
- Kolb DA (1976). *Learning style inventory technical manual*. Boston, MA: McBer.
- Kolb DA, Boyatzis RE, Mainemelis C (2001). *Experiential learning theory: Previous research and new directions*. *Perspectives on thinking, learning, and cognitive styles* 1(8):227-247.
- Mutlu M (2008). Eğitim fakültesi öğrencilerinin öğrenme stilleri. *Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi* (17):1-21.
- She HC (2005). Promoting students' learning of air pressure concepts: The interrelationship of teaching approaches and student learning characteristics. *The Journal of Experimental Education* 74(1):29-52.
- Snyder RF (2000). The relationship between styles/multiple intelligences and academic achievement of high schools students. *High School Journal* 83(2):11-21. <https://psycnet.apa.org/record/2000-13471-002>
- Ünal K, Dilbaz AG, Özdemir FB, Çakır Ö (2013). Eğitim fakültesi öğrencilerinin öğrenme stil ve stratejilerinin çeşitli değişkenler açısından incelenmesi (Mersin Üniversitesi örneği). *Mersin Üniversitesi Eğitim Fakültesi Dergisi* 9(3):56-76.
- Yazıcı K, Kaya B (2010). Öğrencilerin sosyal bilgiler yazılı materyallerinden öğrenmelerini etkileyen bireysel faktörler. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi* 27:31-40.
- Yenice N, Saracaloğlu AS (2009). Sınıf öğretmeni adaylarının öğrenme stilleri ile fen başarıları arasındaki ilişki. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi* 6(1):162-173.
- Zengin R, Alşahan ÖL (2011). İlköğretim öğretmen adaylarının öğrenme stillerinin incelenmesi. *Erzincan Eğitim Fakültesi Dergisi* 13(2):143-153.

Full Length Research Paper

High school students' seismic risk perception and preparedness in Savar, Dhaka

Mohammad Lutfur Rahman

Department of Global Ecology, Graduate School of Global Environmental Studies, Kyoto University,
Yoshidahonmachi, Sakyo Ward, Kyoto, Kyoto Prefecture 606-8501, Japan.

Received 21 December, 2018; Accepted 4 February, 2019

People in Dhaka, where disaster risk of earthquake is the most due to its high population density and rapid urbanization, are in extreme danger of earthquake. However, the study on assessment of the real scenario of residents' perception of earthquake risk is very little. The purpose of this cross-sectional study is to assess the seismic risk perception and preparedness about earthquake among high school students in Savar, Dhaka. A questionnaire has been developed, and data collection has been done about a group of high school students in seven classrooms. The author uses a method of surveying students to identify and describe the factors that influence their knowledge and perception about earthquake. This study examines gender, grade and age differences in perceived risk and communication behavior in response to the earthquake. Female students' preparation, participation and communication with family are more frequent than those of male students. Female students are found to be more likely to learn about disaster than male ones. Higher grade students have more awareness but less preparedness about earthquake than the younger ones. Students' hazard awareness increases positively with increment of their age. This research concludes that, high school students are vulnerable to earthquake due to the lack of a seismic education program.

Key words: High school, awareness, earthquake, seismic risk perception, hazard, demographic characteristic.

INTRODUCTION

Bangladesh is one of the countries which are the most disaster prone (Ali and Choudhury, 1992; Paul and Bhuiyan, 2010). Its capital, Dhaka, is one among the most at-risk cities for earthquake in the world with its high population density and rapid urbanization (Asif et al. 2018). The earthquake disaster risk index has placed Dhaka among the 20 most vulnerable cities in the world (Davidson, 2000). This has created a growing interest in

the issue of disaster risk reduction among the entire population of Dhaka city (Ansary, 2005; Alam et al., 2008). Preparedness is not just the obligation of a country's government or NGOs, yet in addition of each individual from the network (Shimazu et al., 2018; Ampaw-asiedu and Norton, (2018); Yilmaz and Çaglayan, 2017), including the vulnerable population of children (Santos-Reyes et al., 2014). Also, as a matter of fact,

E-mail: rahman.lutfur.84a@st.kyoto-u.ac.jp. Tel: +819091101976.

Author(s) agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

each time calamity happened, masses of school children are harmed and a lot of them never come back again. For example, the mass casualties of Armenia Spitak Earthquake in 1988 killed more than 17,000 students while being in schools (Chen, 2003; Companion and Chaiken, 2016). In 2001, during Bhuj earthquake in India, 31 teachers and 971 students died (Chen, 2003). During the 2005 Kashmir Earthquake, 17,000 students died and 50,000 were injured (Tankut and Odasi, 2009). In 2006, an elementary school in the Philippines was covered in an avalanche and 245 children and educators were executed (Merchant, 2015). Also, in 2008, more than 10,000 children were killed in the Sichuan Earthquake of China (Acharya et al., 2014; Tuladhar et al., 2014).

In Bangladesh, the main objective of the national curriculum as well as the textbook entitled as "Bangladesh and global studies" for 9 and 10th grade is to build up the citizens with the knowledge of history, tradition, and the cultural values of the country and enrich them with a comprehensive lessons of the global events. In this textbook, Chapter 5; The Configuration of Land and the Climate of Bangladesh, Section 5.2: The Climate and Natural Disaster of Bangladesh explains the influence of climate over the people's lives and their livelihood in Bangladesh; elucidates the surmise of earthquake and its reasons; narrates situations of some countries termed as earthquake-prone regions; describes why Bangladesh is called as an earthquake prone region and explains preparedness and necessary steps of the country in confronting the risk of earthquake. The target of the lesson is that the learners will be brought up developing a desired competence to face the problem of the society through the practice of the subject of the curriculum (Patwari et al., 2012).

The children's conceptions about earthquake varies according to the different cultures of different countries. To the best of my knowledge, there are a very few studies about the conception of children on earthquake in Bangladesh. During an incredible earthquake happened in Nepal on 25th April 2015 where the range of tremor was from 6.6 to 7.9 on the Richter scale, the residents of other South East Asian Nations including India, Bangladesh and China also felt this one and consequent earth tremors. Bangladesh was shocked twice during these tremors. At one secondary school, students become frightened when their school building began to shake. At a primary school of Mymensingh, everyone attempted to leave the building during the earthquake and at least 12 school students were accounted for to be injured (Biswas et al., 2016). Therefore, providing children with disaster education along with implementation practice is the first step towards creating a culture of preparedness and fostering responsible citizens within the community.

The gendered dimensions of disaster have contribution to people's risk perception and preparedness levels

about earthquake. There are some studies that examined the differences of attitudes and perceptions about earthquake depending on gender and education (grades) (Santos-Reyes et al., 2014).

Among a lot of studies about the high school students' risk perception worldwide, a very few studies dealt about Bangladesh (Cvetković et al., 2015). Cvetković et al. (2015) study investigated the perception and actual knowledge of secondary school students in the Belgrade region, Serbia regarding earthquake as a cataclysmic event and security danger and recognized the components that impact their knowledge and perceptions. Cvetković et al. (2015) utilized a method of surveying to recognize and describe the elements that impact secondary school students' knowledge and perceptions about earthquake.

Moreover, several studies have shown that psychological aspects of awareness of seismic hazard fluctuate depending upon the demographic factors of the population, e.g., gender, education level and so on (Santos-Reyes et al., 2014). This quantitative research was done to examine the risk perception, actual knowledge and preparedness levels adapted by high school students in the Savar, Dhaka region with respect to earthquake as a natural disaster and to identify the factors that influence their knowledge and perceptions. To reach to the authentic decisions, the researcher applied a technique of surveying the high school students to inspect the impact of demographic characteristics, such as gender, education and age (Cvetković et al., 2015; Santos-Reyes et al., 2014) on their awareness and acquaintance about earthquakes.

METHODOLOGY

This research is intended to explore the knowledge of high school students on seismic risk perception and their preparedness level in Savar, Dhaka. The questionnaire survey was carried out within the seven classrooms of a high school. The schools are the places where we can learn from the ground up and in the right way about what earthquake is, how it occurs, how earthquakes affect the environment, what kind of needs to be done to protect against an earthquake (US Department of Education, 2010). Moreover, this is an impact study intended to examine the disaster knowledge depending on several aspects including risk perceptions, experiences about earthquake, preparedness, disaster-related knowledge (knowledge of turn off the gas, electricity and water, availability of first-aid kit, protection of themselves, risk of their home and city, and where to hide during earthquake, etc.), knowledge on available safety system (evacuation route or rescue map, etc.), behaviors of students, disaster preparedness of the families and communities. Independent sample t-tests, Chi-square statistical analysis, frequency analysis and correlation matrix were performed to examine the effects of gender, grade and age on the dependent variables. In the questionnaire, the answers of all questions were labeled as "Yes", "Partially" and "No". For the statistical analysis, author divided the answers in two groups; first group included only "Yes" whereas second group combined "Partially" and "No".



Figure 1. Study area map of Savar, Dhaka.

Study area

In Bangladesh, primarily there are three categories of education system: primary, secondary and higher secondary education. The primary, secondary (high school) and higher secondary level is from grade 1 to 5, from grade 6 to 10, and from grade 11 to 12, respectively. In overall secondary education program, there are mainly three streams such as humanities, science and business, beginning from 9th grade. The third public examination, named as Secondary School Certificate (SSC) examination which is held at the end of the 10th grade, must be passed by all students looking for moving to the two-year higher secondary level.

Dhaka was chosen as a study area for several reasons. As the capital city of Bangladesh, Dhaka is facing the extraordinary level of urbanization because of higher population growth and migration of people from the rural areas. As a result, the urbanization rate is increasing without proper planning guidelines and regulations. Buildings are designed and constructed without proper enforcement, which may cause extensive damage in future earthquakes. Dhaka is vulnerable to earthquakes. The frequency of earthquake events is increasing and information from historical earthquake events suggests that Dhaka may be affected by a strong earthquake in the near future (Ansary, 2005; Alam et al., 2008; Hussain et al., 2010; Islam et al., 2011). For these reasons, Dhaka was chosen as an area to conduct the survey. A school near National Martyr's Monument, Nabinagar, Dhaka was chosen because it was accessible to get permission for doing the survey and this area is a rapidly growing industrial area (Figure 1).

Data collection

After selecting seven classrooms from selected school in Savar, questionnaires were distributed to the students and the survey was completed (Figure 1). The author visited each class room to provide all the necessary explanations for the questionnaire. The author visited seven class rooms, three of them were girl sections and four were boy sections. Out of seven class rooms, six were in 10th

grade and one boy class was in 9th grade. Only the students who attended classes on the day of survey were included in this study and the sample size of the population was 307. The response rate was approximately 100%. The questionnaire survey was permitted from the governing body of the school.

Questionnaire

This survey was conducted in March of 2018. The questionnaire was as same as the previous survey which was conducted in the April-May, 2017. The questionnaire consists of three sections; the first section is the collected information about respondents' demographic characteristics, the second section gathers risk perception of earthquake as well as other hazards and the last section is about behavior analysis. In the questionnaire, there are 23 questions with the answers labeled as "yes" and "no" (Table 1). "Yes" is coded as one and "no" is coded as zero. Only Q16 has multiple-choice answers. The questionnaire was delivered to each class room and the researcher explained each question. Then the students provided answer of the questions naturally by themselves. If any student was unable to understand any question, the researcher explained it again to all students of that class.

RESULTS

Among participated 307 students, 159 (51.79%) students were male (boys) and 148 (48.21%) students were female (girls). The age range of students was from 15 to 17 years, mean \pm standard deviation [SD]: 15.37 ± 0.58 years. Out of 307 students, 209, 82 and 16 students were 15, 16 and 17 years old, respectively. 263 students were in 10th grade and 44 students were in 9th grade (Figure 2).

Analysis of the data was done with quantitative examination of the contents. The obtained results are

Table 1. Questionnaire survey on the knowledge of high school students about earthquake as well as other hazards.

-
- Q1.** Do you know what earthquake is?
Q2. Have you ever experienced any earthquake?
Q3. Do you know how to be prepared for the earthquake?
Q4. Are you prepared for a major earthquake?
Q5. Do you know how to turn off the gas?
Q6. Do you know how to turn off the electric power?
Q7. Do you know how to turn off the water?
Q8. Do you have a first-aid kit available at your home?
Q9. Do you know what to do to protect yourself during an earthquake?
Q10. Are you considering your current home to be at risk of earthquake damage?
Q11. Do you know where the exit doors are at your home?
Q12. Do you talk with all of your family members about what kind of damage an earthquake can cause to your immediate surroundings?
Q13. Do you think the level of risk for an earthquake is high in your city?
Q14. Do you believe that, you live in seismic-resistant buildings, which can easily sustain in great earthquakes?
Q15. Do you think that you would be prepared if you participate in earthquake training sessions or workshops?
Q16. Where do you think you will hide at home when an earthquake occurs (tick one only)?
 i. Under a table or chair or bed close to the window (near the pillar)
 ii. In a corner in the narrow space (storage, kitchen or toilet)
 iii. Behind the door on the balcony
 iv. Over the bed
 v. Run to outside, run to the elevator
 vi. Jump from the building
 About other hazards (cyclones, landslide, floods etc.)
Q17. Do you know/ do your area have evacuation route or rescue map?
Q18. Do the government or NGO conduct evacuation plans practicing program?
Q19. Do you ever join in any evacuation plans practicing program?
Q20. Do you know where the urban emergency shelters are?
 About behavior analysis
Q21. My attitude is: "Oh well, if the earthquake comes there is nothing I can do - whatever happens, happens."
Q22. My attitude is: "I want peace of mind and want to do the best I can. So, I am willing to prepare in advance."
Q23. My attitude is: "I know that preparing for a major earthquake is the single most important thing I can do for the safety of my family and friends"
Q24. My attitude is: "I am aware of that I can survive during an earthquake with more ease if I prepare rather than do nothing at all".
-

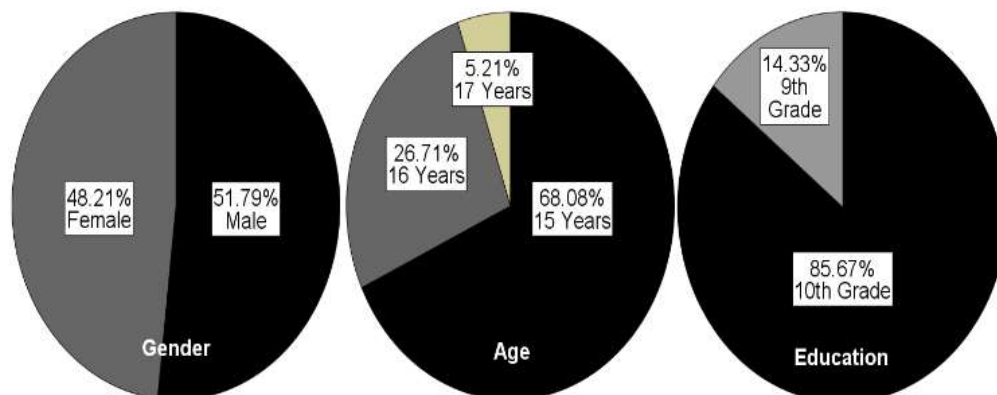


Figure 2. Analysis of category of high school students.

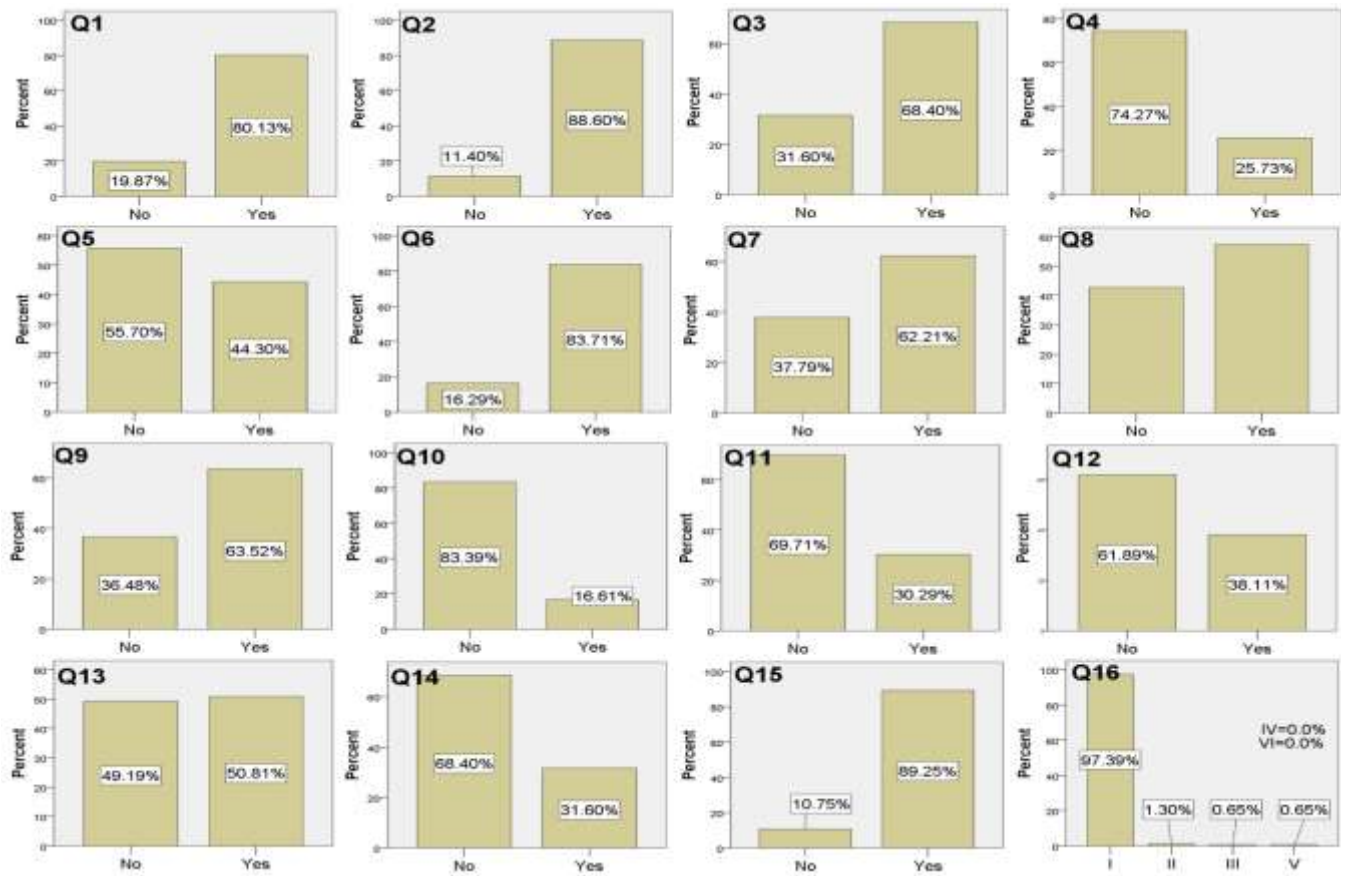


Figure 3. The influence of factors on the knowledge of high school students about earthquake.

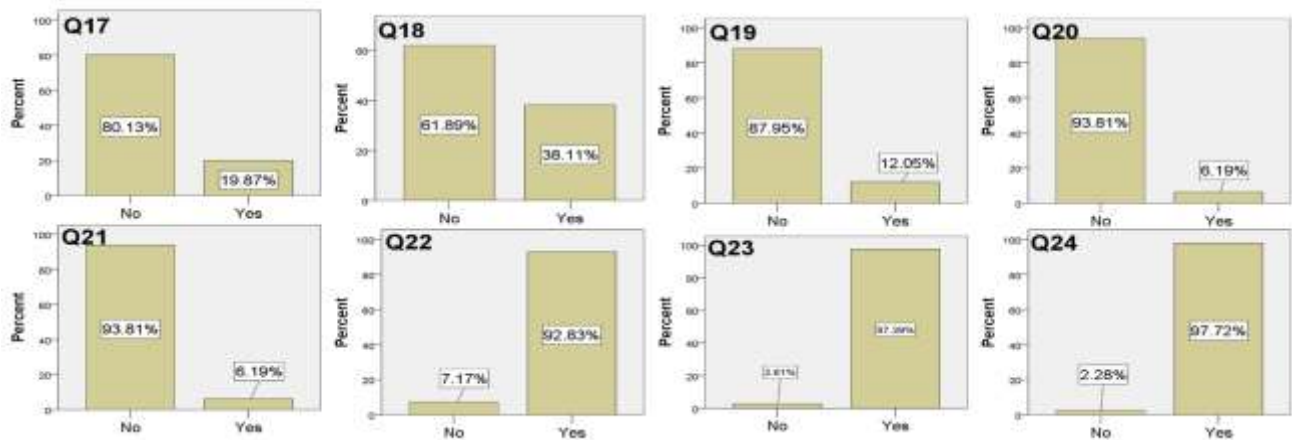


Figure 4. The influence of factors on the knowledge of high school students about other hazards and behavior analysis.

limited to only the students' responses who participated in the survey. The analysis of the data collected from the survey was based on the application of the method of

descriptive statistics, namely the determination of frequency and calculation of percentages (Figures 3 and 4).

In Figure 3, Q1 and Q2 show that 80.1 and 88.6% students have known about and experienced earthquake, respectively. Majority percentage of the students have experienced earthquake. Regarding Q3 which is about knowledge on preparedness for the earthquake; 68.4% students responded as 'Yes' but about Q4 only 25.7% students are prepared for the earthquake whereas most of the students remain unprepared. Q5, Q6 and Q7 show that 44.3, 83.7 and 62.2% students know how to turn off the gas, electric power and water supply, respectively. Q8 shows that 42.7% students do not have the first-aid-kit available at their home. About Q9, only 63.5% students know how to protect themselves during an earthquake, whereas Q10 shows that majority (83.4%) of the students think that their current homes are at risk of the earthquake. As for Q11, most of the students (69.7%) do not know where the emergency exits door is or they do not have any emergency exits door. Regarding Q12, almost 70% students have never discussed with their family about kinds of damage after an earthquake to their immediate surroundings. About Q13, only 49.2% students think that the level of risk for an earthquake in Savar is high but the percentage of the students may be larger if they take the Dhaka city into account. In response to Q14, 31.6% students said 'yes' and they think that they live in seismic-resistant buildings but their positive response may be due to lack of knowledge about seismic-resistant. Q15 shows, 89.3% students would like to be prepared for earthquake if they have chance for training sessions or workshops.

As shown in Figure 3, regarding Q16 most of the students (97.4%) chose the right answer. From Q17 to Q20 are the questions about the other hazards (cyclones, landslide, floods, etc.) (Figure 4). Q17 shows that 80.1% students remark that they do not know or they have no evacuation route or rescue map in their area. About Q18, only 38.1% students agreed that the government or NGO conduct evacuation plans practicing program. Regarding Q19, 87.9% students have never joined in any evacuation plan practicing program. Q20 shows that 93.8% students do not know where the urban emergency shelters are. In Figure 4, from Q21 to Q24 are the questions about the behavior analysis of the students. Q21 shows that very few (6.2%) students' attitude is "Oh well, if the earthquake comes there is nothing I can do - whatever happens, happens." About Q22, 92.8% students' attitude is to be prepared in advance for earthquake. Q23 shows that most of the students (97.4%) know that preparing for a major earthquake is the single most important thing which they can do for the safety of their family and friends. Regarding Q24, 97.7% students are aware of that they can survive during an earthquake with more ease if they are prepared rather than do nothing at all. Q21 to Q24 show students' positive attitude and willingness to be prepared in advance for the earthquake.

Gender

For earthquake preparedness, it is important to learn how students from the high school take steps toward mitigation, preparedness and recovery of the earthquake. It is, therefore, important to understand their gender (male and female) dimensions about risk perception and emergency management.

Table 2 shows that about Q3, Q6, Q7, Q8, Q9, Q11, Q12, Q13, Q17, Q19 and Q20, the F values for Levene's test are with a significant (p) value of 0.000 ($p < 0.001$). Regarding Q3, Q8, Q9, Q11, Q12 and Q13, there are significant differences between males and females about the knowledge to be prepared for the earthquake ($t_{294.24} = -5.36$), to have a first-aid kit available at their home ($t_{304.8} = -2.6$), what to do to protect themselves during an earthquake ($t_{303.9} = -3.89$), acquaintance about where the exit doors are at their home ($t_{259.08} = -6.89$), discussion with all of their family members about what kind of damage an earthquake can cause to their immediate surroundings ($t_{297.24} = -3.23$) and their thinking concerning the high level of risk for an earthquake in their city ($t_{303.83} = -3.68$); $p < 0.001$. The mean values indicate that about earthquake, the preparation, participation and communication with family are more frequent for females ($M = 0.8243$, $M = 0.6486$, $M = 0.7432$, $M = 0.4797$, $M = 0.4730$ and $M = 0.6149$) than the males ($M = 0.5535$, $M = 0.5031$, $M = 0.5346$, $M = 0.1384$, $M = 0.2956$ and $M = 0.4088$).

As for Q6, Q7, Q17, Q19 and Q20, there are significant differences between males and females about the knowledge on how to turn off the main switch of electric power ($t_{27.28} = 2.75$) and water supply ($t_{288.96} = 5.67$), have evacuation route or rescue map in their area ($t_{296.29} = 2.74$), ever join in any evacuation plan practicing program ($t_{258.22} = 3.57$) and information about where the urban emergency shelters are ($t_{250.38} = 2.51$); $p < 0.001$. The mean values indicate that awareness on and recovery from the earthquake as well as other hazards for females ($M = 0.7770$, $M = 0.4662$, $M = 0.1351$, $M = 0.0541$ and $M = 0.0270$) are lower than the males ($M = 0.8931$, $M = 0.7673$, $M = 0.2579$, $M = 0.1824$ and $M = 0.0943$). The remaining questions show no significant differences.

Grade

A Chi-square analysis was used to investigate whether there is any difference between 9 and 10th grade. Therefore, the researcher has discussed the results that indicate the current state and the impact of different grades on the knowledge and perceptions of high school students.

As for Q4, Q6 and Q7, there is a significant relationship between two grades about the preparation for earthquake;

Table 2. Impact of gender on risk perception of earthquake.

Question	Independent samples' test							
	Levene's test for equality of variances			t-test for equality of means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	
Q3	Equal variances assumed	103.440	0.000	-5.310	305.000	0.000	-0.270	0.050
	Equal variances not assumed			-5.360	294.240	0.000	-0.270	0.050
Q6	Equal variances assumed	32.780	0.000	2.780	305.000	0.010	0.120	0.040
	Equal variances not assumed			2.750	270.280	0.010	0.120	0.040
Q7	Equal variances assumed	55.810	0.000	5.700	305.000	0.000	0.300	0.050
	Equal variances not assumed			5.670	288.960	0.000	0.300	0.050
Q8	Equal variances assumed	15.290	0.000	-2.600	305.000	0.010	-0.150	0.060
	Equal variances not assumed			-2.600	304.800	0.010	-0.150	0.060
Q9	Equal variances assumed	45.720	0.000	-3.870	305.000	0.000	-0.210	0.050
	Equal variances not assumed			-3.890	303.900	0.000	-0.210	0.050
Q11	Equal variances assumed	159.310	0.000	-6.980	305.000	0.000	-0.340	0.050
	Equal variances not assumed			-6.890	259.080	0.000	-0.340	0.050
Q12	Equal variances assumed	27.940	0.000	-3.240	305.000	0.000	-0.180	0.050
	Equal variances not assumed			-3.230	297.240	0.000	-0.180	0.050
Q13	Equal variances assumed	0.710	0.400	-3.680	305.000	0.000	-0.210	0.060
	Equal variances not assumed			-3.680	303.830	0.000	-0.210	0.060
Q17	Equal variances assumed	31.750	0.000	2.720	305.000	0.010	0.120	0.050
	Equal variances not assumed			2.740	296.290	0.010	0.120	0.040
Q19	Equal variances assumed	57.610	0.000	3.510	305.000	0.000	0.130	0.040
	Equal variances not assumed			3.570	258.220	0.000	0.130	0.040
Q20	Equal variances assumed	26.330	0.000	2.460	305.000	0.010	0.070	0.030
	Equal variances not assumed			2.510	250.380	0.010	0.070	0.030

Table 3. Impact of grade on risk perception of earthquake.

Question	df	N	Value	10th grade (%)	9th grade (%)
Q4	1	307	6.190	23.1	40.9
Q6	1	307	9.992	81	100
Q7	1	307	4.954	59.7	77.3
Q15	1	307	5.043	90.9	79.5
Q17	1	307	11.361	83.3	61.4
Q19	1	307	8.124	90.1	75.0
Q20	1	307	4.907	95.1	86.4
Q21	1	307	4.907	95.1	86.4

Table 4. Correlation matrix of age among the variables.

Question	Age	Question	Age	Question	Age	Question	Age
Q1	-0.030	Q7	0.010	Q13	-0.060	Q19	-0.030
Q2	-0.050	Q8	-0.060	Q14	0.060	Q20	-0.050
Q3	-0.18**	Q9	-0.19**	Q15	-0.050	Q21	-0.16**
Q4	-0.12*	Q10	0.080	Q16	0.020	Q22	-0.040
Q5	-0.080	Q11	-0.17**	Q17	-0.050	Q23	-0.040
Q6	-0.040	Q12	-0.110	Q18	-.13*	Q24	-0.020

N=307; *p < 0.05; ** p < 0.01.

χ^2 (1, N=307) = 6.190, knowledge on how to turn off the electric power; χ^2 (1, N=307) = 9.992 and how to turn off the water supply; χ^2 (1, N=307) = 4.954, $p=0.05$. Compared to 10th grade, the 9th grade students are more likely to be prepared for the earthquake (23.1 and 40.9%), acknowledged about how to turn off the electric power (81 and 100%) and educated about how to turn off the water supply (59.7 and 77.3%) (Table 3). About Q15, Q17, Q19, Q20 and Q21, there are significant differences between the grades; χ^2 (1, N=307) = 5.043, χ^2 (1, N=307) = 11.361, χ^2 (1, N=307) = 8.124, χ^2 (1, N=307) = 4.907 and χ^2 (1, N=307) = 4.907, $p < 0.05$, respectively. Table 3 shows that, 10th grade students, in comparison with 9th grade, are more likely to be prepared if they have chance to participate in earthquake training sessions or workshops, less informed about evacuation route or rescue map, never join in any evacuation plan practicing program, less informed about urban emergency shelters and want to do something whenever there is earthquake (90.9 and 79.5%), (83.3 and 61.4%), (90.1 and 75.0%), (95.1 and 86.4%) and (95.1 and 86.4%), respectively.

Age

In Table 4, correlation matrix was computed among age and 24 questions. This correlation analysis was done to determine whether there is any influence of age on the

seismic risk perception of students. There is a statistically significant negative correlation between age and Q3, Q4, Q9, Q11, Q18 and Q21 which indicates that as compared to the older (16 and 17 years) students, younger (15 years) students have less knowledge about how to be prepared for the earthquake, less preparedness for a major earthquake, less awareness regarding how to protect themselves during an earthquake, less information about the exit doors at their home, less information about the conduct of evacuation plans practicing program by the government or NGO and students' negative attitude towards being prepared for an earthquake, respectively. In general, the results suggest that seismic risk perception of the students increase gradually with increment of their age.

DISCUSSION

This quantitative research found that the risk perception, awareness and knowledge of high school students in the Dhaka region about earthquakes as well as other disasters are different on the basis of gender, grade, and age.

A prominent number of students imagine that disaster knowledge is essential, yet just a few of the students were found to have considered no importance of disaster knowledge. The investigation shows that the gender

(male and female) differences have some influences on their knowledge about the seismic risk perception and awareness. Male students have more seismic risk perception and recovery about the earthquake and other hazards. At the same time female students are ready for the preparation, participation and communication about the earthquake. The sources of disaster information to male and female students are clearly distinct from one another. Mostly, students learn about disasters awareness from the radio, newspaper or the television advertisements. A higher number of female students appear to have been utilizing television, social media and community information as the major source of disaster information, though the male students depend more on surfing internet and sports channel (Tuladhar et al., 2014). After school, female students pass most of their time at home with their mother from whom mostly they have gathered knowledge about the disasters. Also, most of the free time they watch television which can be one of the major source of gathering knowledge.

The investigation shows that most (74.3%) of the students remained unprepared about disaster and their mitigation strategies. Although, 88.6% of the students have encountered a disaster, their assessments towards calamity adjustment and availability practices are somewhat unexpectedly surprising. Students should recognize what makes their school or community unsafe, and how might they make these places safe from catastrophes. This study found that even though 97.4% students know that preparing for a major earthquake is the single most important thing that they can do for the safety of their family and friends, 87.9% of the students have never joined in any evacuation plans practicing program. These results suggest that in addition to be educated about natural disasters, students ought to be proficient on what to do before, during, and after earthquake by participating in evacuation plans practicing program.

The study was also concerned to find out the level of risk perception and awareness about the earthquake and other hazards between 9 and 10th grade students of high school in Dhaka. The study shows that 9th grade students are more prepared for the earthquake than the higher grade. For the higher grade (10th grade) students, they have more awareness than that of lower grade students. When the attitude scores of the 9 and 10th grade students of the high school are examined, it can be said that the attitudes of the students are generally positive.

Regarding Q3, Q9 and Q11, there are some influences of gender and age on the knowledge about how to be prepared for an earthquake, how to protect themselves during an earthquake and information about the exit doors at their home, respectively. Moreover, as for Q4, education and age have some influences on being prepared for a major earthquake.

However, there is no proper emergency management procedure in practice. Unlike countries like Japan, USA, etc., who have a specific department to work on earthquake preparedness for schools, there is no specific authority in Bangladesh to take forward earthquake preparedness for schools in the national context. While there is a large emphasis placed on education in emergencies focusing on flood prone and cyclone prone areas which are mostly in the rural areas, there is a little knowledge and impetus of any form of preparedness and risk assessment for schools in urban areas. The Government of Bangladesh should place more emphasis on earthquake specific school safety program to be specially implemented in risky areas. Schools should encourage the government for more inputs and support for the preparedness activities including access to proper training and other facilities. The earthquake drills should be made compulsory in all schools on a monthly basis so that it is ingrained into every student and staff of actions to be taken in case the tremor strikes.

Conclusion

A survey shows that school education is important in enhancing knowledge and perception of earthquake. At the same time, self-education and community education are essential for actions in preparedness, high contribution for perception and developing of earthquake awareness. Knowledge of the next generation is the key factor for future disaster preparedness and responses. Hazard knowledge is particularly important for vulnerable populations such as students. Though earthquakes affect the whole community, it is the children who are affected the most. Teaching the students about how to be prepared for a major earthquake is the single most important thing that can help to reduce disaster risk and it can be the safety for themselves as well as for their family members and friends. Through the classroom lessons on disaster reduction and awareness, students can reduce some of the physical, emotional and psychological risks. And they can be prepared by themselves for earthquake by participating in evacuation plans practicing program.

In this study, gender, grade and age comparisons have provided the evidence that risk perception, awareness, and recovery issues about earthquake may be effectively enhanced but limited in preparedness level. Actions should be taken by government, NGOs, teachers, policy-makers and other stakeholders to develop public education in schools focusing on changes in preparedness level. The evacuation plan practicing program should be conducted by stakeholders in all schools, so that it could be adapted as the basic guidelines of earthquake awareness. In the school education, active education should be promoted for earthquake through

discussion among students and teachers, watching TV programs and associated facilities. These kinds of activities may help students to understand about the awareness of earthquake and make a good relationship with the society.

Based on the findings of this study, the research confirmed that initiatives that have taken for disaster education in Bangladesh are not enough. Bangladesh government and NGOs should play more roles to provide disaster education and information to students. To accomplish this aim, school students can be motivated to gain basic knowledge on disaster reduction, adaptation, awareness, and risk perception techniques. School disaster education implies that the students learn calamity management effectively, it makes risk perception portion to the student's life, their key advancement is the way of life of disaster preparedness, which in the long term encourages the grown-ups to take successful decisions and actions. More examinations and studies should be completed to further recognize the risk factors to give helpful proposals to effective risk communication.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

ACKNOWLEDGEMENTS

The author expresses his sincere appreciation to Professor Makoto USAMI, Graduate School of Environmental Studies, Kyoto University, Japan. He shows his sincere gratitude to Assistant Professor Md. Sayfur Rahman and Mohammad Bashirul Haque Bhuiyan for helping to do the survey. Special thanks go to Dr. Shamima Sultana for the support that she has provided to the author.

REFERENCES

- Acharya SP, Anderson JG, Ando M, Atakan K, Bevington J, Biasi GP, Bilham R, (2014). "Contributors." In *Earthquake Hazard, Risk and Disasters*, edited by John F Shroder and Max Wyss, xiii–xv. Boston: Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-394848-9.01002-6>.
- Alam MJ, Khan MAR, Ajoy P (2008). Seismic vulnerability assessment of existing RC buildings in GIS environment. In *Online Proc. of Fourteenth World Conference on Earthquake Engineering (WCEE)*, Beijing, China (<http://www.nicee.org/wcee/index2.php>).
- Ali Md H, Jamilur RC (1992). Tectonics and Earthquake Occurrence in Bangladesh." In *36th Annual Convention of the Institute of Engineers, Bangladesh, Dhaka 1:4-8*.
- Ampaw-asiedu L, Terri RN (2018). The Design of Safe Spaces in Healthcare Facilities Vulnerable to Tornado Impact in Central US 12(3):324-35.
- Ansary MA (2005). Recent Earthquake Related Activities in Bangladesh. In *Seminar on Tsunami and Seismic Risk Action for Bangladesh*.
- Asif AM, Zahidul A, Raquib A (2018). "Performance Analysis of Ferrocement Retrofitted Masonry Wall Units Under" 12(2):81308.
- Biswas A, Saidur RM, Koustuv D, Toity D (2016). "Response to an Earthquake in Bangladesh : Experiences and Lesson Learnt" pp. 1-6.
- Chen WF (2003). *Earthquake Engineering Handbook Fundamentals*. Edited by Wai-Fah Chen Charles Scawthorn. 1st Editio. CRC Press. <https://www.taylorfrancis.com/books/9781420042443> DOI: ISBN:1420042440.
- Companion M, Miriam SC (2016). *Responses to Disasters and Climate Change: Understanding Vulnerability and Fostering Resilience*. CRC Press.
- Cvetković VM, Slavoljub D, Marina P, Saša M, Vladimir J, Jasmina G (2015). "Knowledge and Perception of Secondary School Students in Belgrade about Earthquakes as Natural Disasters." *Polish Journal of Environmental Studies*. <https://doi.org/10.15244/pjoes/39702>.
- Davidson R, Carlos V, Cynthia C, Brian T (2000). A project to study urban earthquake risk worldwide. In *Proc., 12th World Conf. on Earthquake Engrg.* <http://www.iitk.ac.in/nicee/wcee/article/0791.pdf>.
- Hussain RR, Saiful Islam ABM, Syed IA (2010). *Base Isolators as Earthquake Protection Devices in Buildings*. VDM Publishing House Ltd. Benoit Novel, Simultaneously published in USA and U.K.
- Islam A, Jameel M, Jumaat MZ (2011). "Seismic Isolation in Buildings to Be a Practical Reality: Behavior of Structure and Installation Technique." *Journal of Engineering and Technology Research* 3(4):99-117. www.academicjournals.org/JETR/PDF/pdf/2011/Apr/Islam.pdf.
- Merchant A (2015). *Children and Disaster Education: An Analysis of Disaster Risk Reduction within the School Curricula of Oregon, Texas, and the Philippines*. MA IDS Thesis Projects, 103. <https://doi.org/10.1128/IAI.69.8.4759>.
- Patwari MS Husain SMA, Begum RZD, Das UK (2012). "Bangladesh and Global Studies." In *National Curriculum and Textbook Board*, edited by Rahhid Harun-or, 1st Editio, 73–89. National curriculum and textbook board. <http://sitestree.com/download-text-book-of-class-ix-x-all-pdf-national-curriculum-textbook-board-bangladesh/>.
- Paul BK, Rejuan HB (2010). *Urban Earthquake Hazard: Perceived Seismic Risk and Preparedness in Dhaka City, Bangladesh*." *Disasters* 34(2):337-59. <https://doi.org/10.1111/j.1467-7717.2009.01132.x>.
- Santos-Reyes J, Gouzeva T, Santos-Reyes G (2014). "Earthquake Risk Perception and Mexico City's Public Safety." *Procedia Engineering* 84: 662–71. <https://doi.org/10.1016/j.proeng.2014.10.484>.
- Shimazu K, Yasuhiro M, Tetsuya S, Daisuke T, Kenji M, Haruki S (2018). "A Challenge to Acquire Serious Victims 'Locations during Acute Period of Giant Disasters" 12(7): 483-487.
- Tankut T, İnşaat Mühendisleri Odası. 2009. *Earthquakes and Tsunamis: Civil Engineering Disaster Mitigation Activities Implementing Millennium Development Goals*. Edited by Tuğrul. Tankut and İnşaat Mühendisleri Odası. Springer. doi: ISBN: 9048123992.
- Tuladhar G, Ryuichi Y, Ranjan KD, Netra PB (2014). "Knowledge of Disaster Risk Reduction among School Students in Nepal." *Geomatics, Natural Hazards and Risk* 5(3):190-207. <https://doi.org/10.1080/19475705.2013.809556>.
- US Department of Education (2010). *A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Education Act*. Office of Planning, Evaluation and Policy Development. <https://doi.org/10.1080/03071840701472281>.
- Yılmaz MF, Çağlayan BÖ (2017). "Selection of Intensity Measure in Probabilistic Seismic Risk Assessment of a Turkish Railway." *International Journal of Civil and Environmental Engineering* 11(7):964-968.

Full Length Research Paper

The effect of tablet use on students' success in English as a Foreign Language (EFL) grammar classroom

Ulas Kayapinar*, Sarp Erkir and Nurcan Kose

Department of Liberal Arts, American University of the Middle East, Kuwait.

Received 17 December, 2018; Accepted 14 February, 2019

Integration of tablets in teaching English as a Second or Foreign language has been popular in recent years. However, there is limited evidence to prove the effect of tablet use on the acquisition of specific language skills. This paper aims to investigate the impact of tablet use on students' mastery of grammar skills. In order to answer the research questions, an experimental pretest-posttest with a control group design was employed at a private university in Turkey. The pre-test scores of both groups were compared with their post-test scores, and the post-test scores of the groups were also analyzed to look into a possible significant difference. The results indicate that there is no significant difference between the grammar achievement scores of the students in both groups. The findings were also cross-checked by using the views of the instructor and students of the experimental group on tablet use in the classroom. The instructor emphasized the influence of tablet use in learner autonomy, digital distraction, and network connection. Students mainly indicated that tablets can be supplementary, but they should not replace basic course materials such as textbooks and workbooks. The study can help raise awareness of curriculum designers and decision-makers generally about the effect of tablet use in the language classroom.

Key words: Tablet, effect, English Foreign Language (EFL), grammar, success.

INTRODUCTION

Mobile learning is the recent trend within the scientific community. From a conceptual approach, it has been defined as "learner and device mobility and flexibility, usually involving a mobile device and flexible user access to content and communication" (Brand et al., 2010). El-Hussein and Cronje (2010) similarly defined mobile learning as "any type of learning that takes place in learning environments and spaces that take account of

the mobility of technology, mobility of learners, and mobility of learning" (p. 20). Definitions of mobile learning do not go further than its technologies and hardware. This is the reason why it is difficult to come up with a final definition for mobile learning since it is an ongoing evolving concept. The constantly deriving types of technologies are used in various ways in relation to any current or future problem in the teaching and learning

*Corresponding author. E-mail: ulas.kayapinar@aum.edu.kw.

process (Guri-Rosenblit, 2005). For instance, various concepts like *mobile learning*, *m-learning*, *hypermedia-assisted learning*, *ubiquitous computing*, *mobile instruction technologies*, *handheld learning* and *e-learning* have been used in different studies in relation to a variety of functions and concepts (Alexander, 2004; Carver et al., 1999; Corbell and Valdes-Corbell, 2007; Dearnley et al., 2009; Guri-Rosenblit, 2005; El-Hussein and Cronje, 2010; Traxler, 2007; Vesisenaho et al., 2010; Zywno and Waalen, 2002).

Tablet use in learning and teaching

Mobile learning differs from other technologically driven approaches in that it is not limited to a specific location that provides Internet connection and power. It is the tool that unties the person from a specific location. Studies related to wireless mobile learning devices can be seen in different kinds of settings for various reasons. One of the latest mobile learning tools, the tablet, which is also referred to as tablet computer, is seen as a user-friendly device with multimedia functions, Wi-Fi / 3G/4G enabled network for easy connection, a touch screen that is easy to carry, and no built-in keyboard or mouse. Using tablets to improve learning conditions has become a crucial topic of interest not only for primary or secondary education but also for tertiary education. The convenience of tablets in terms of time and space as well as the possibility of having vast amounts of information that can be used in various ways has attracted the attention of the educational community. Roschelle (2003) states tablets have the potential to achieve large-scale impact on learning because of their portability, low-cost, and variety in communication features. Adoption of this type of learning (m-learning) has been experienced in formal classroom delivery in various universities (Schuck et al., 2017). Various learning approaches –from traditional to high-tech driven ones- have also made their way in language learning and teaching environments. Previous research on the use of tablets in HE has focused mostly on issues like attitudes, motivation or perceptions of different stakeholders leaving behind skills like reading, writing or grammar. Though, still in its infancy, because of the popularity of the tablet computer, it has been under examination for some time ranging from affordance of iPads (Churchill et al., 2012) or student perceptions of the benefits of tablet PCs to student learning (Van Oostveen et al., 2011).

Taken into consideration the interest in tablet use, it seems that tablets can have both negative and positive effects on learners and learning. A systematically reviewed research on the use of tablets in higher education (HE) done by Nguyen et al. (2015) shows that there is no correlation between the enhancement of students' learning experience and occurrence of better

learning. Challenges in current research were also spotted, and a lack of longitudinal and substantial evaluations considering the use of tablets in HE was dwelt on. Empirical and theoretical findings about the benefits of using tablets in education reported by Dhir et al. (2013) indicate that although some studies motivate and have positive impact on students, others signal that the long-term impact can be negative. Basing his study on Malone and Lepper's taxonomy of intrinsic motivation, Ciampa (2014) checked for students' perceptions on motivational affordance of using mobile devices for learning. The study resulted in showing that mobile technologies can be used to increase learners' motivation. On the other hand, Falloon (2013), in his study on the use of tablets, argues that there is a "complex matrix of influencing factors" for young people using tablets. Thus, he challenged the notion of tablets being always motivating and asked stakeholders to take actions accordingly. Bluestein and Kim (2017), in their study that required using iPads in a skills class, stated that tablet had shortcomings in meeting the requirements of the course. Their expectations from the use of the tablet could not meet the anticipated results from class activities and coursework. Butcher (2016), after piloting tablets on 64 further education (FE) students and 10 instructors across four courses, concluded that tablets do not have only one impact, but a mixture of impacts ranging from feeling more organized to feeling frustrated. Tablets have been found to not have the power to change education/learning dramatically. It was concluded that "the tablets' clear benefits were not automatically transformative, and engagement was not uniform" (Butcher, 2016: 1). Though tablets are still used widely in the field of education, they cannot claim to be the best solutions to learning.

On the other hand, another study by Chen and Kessler (2013) focused on the attitudes of students who used tablets to informal language learning. Ten undergraduate students of English participated in the study. The findings of the study revealed that students had positive attitude toward effectiveness of tablets as a learning tool. Similarly, Kim and Frick (2011) claim that the use of tablets in classrooms has the potential to enhance learning.

Obviously, there is a dearth of research on the effects of tablet use to enhance grammar learning. Grammar is a good starting point that might determine a tertiary students' level of his/her language proficiency. Some scholars highlight that being able to master a language requires good grammar knowledge (Shuib et al., 2015; Zhang, 2009). Yet, making grammar interesting is not the easiest job. According to BaSaeed (2013), "the question is not whether grammar should be taught to students, but rather how it should be taught" (p. 21).

In their study, Li and Hegelheimer (2013) described the implementation and development of a web-based mobile

application called Grammar Clinic for an ESL writing class. Though it was not directly related to the acquisition of grammar, it was mainly used for grammar exercises done outside class. The results of the study show that there is a positive correlation between the students' performance in Grammar Clinic application and their post-test results on grammar.

When it comes to how and why tablets can support language learning in terms of grammar, Engen et al. (2014) reported that 3rd year graders level of awareness of spelling and grammar rules seemed to be enhanced by the use of tablets. Similarly, in his study on the effectiveness of computer-assisted language learning (CALL) on learning grammar, Pirasteh (2014) trained two groups of students on various grammar points and the results show that e-mails can be an effective tool to cover grammar points successfully. Although Pirasteh (2014) did not use tablets but computers, the results can be easily adapted to tablets.

To be able to claim tablet computers as a cure-all, much more investigation is needed to gain meaningful insights on its application for language learning and teaching. Therefore, this study is specifically based on a mixed-methods design with a true experimental design to reveal the effect of tablet use in grammar achievement, a questionnaire answered by the students in the experimental group, and a follow up interview with the instructor of the students trying to answer the following research questions:

1. Is there any effect of tablet use on grammar achievement?
 - a. Is there a significant difference between the pretest and the posttest grammar scores of the students in the experimental group?
 - b. Is there a significant difference between the pretest and the posttest grammar scores of the students in the control group?
 - c. Is there a significant difference between the posttest grammar scores of the students in the experimental group and the control group?
2. Is there a change in the instructors' attitudes towards tablet use in teaching?
3. What are the views of the instructor of the experimental group on tablet use in the teaching and learning process?
4. What are the views of the students in the experimental group on tablet use in the teaching and learning process?

METHODS

Research design

Multiple methods are useful for this research as they provide better opportunities to find answers to research questions and lead to better evaluations of findings (Tashakkori and Teddlie, 2003). For

this reason, a mixed-methods research design was used in this research as there is a need to support, enrich, and/or complement results through an alternative method (Creswell and Clark, 2011).

The quantitative data of the study are derived from a true experimental design. Two groups were randomly assigned from a pool of subjects; one of them was randomly named as control group, and the other one was also randomly named as experimental group (Creswell, 2012; LoBiondo-Wood et al., 2014). The dependent variable in the experimental design is the grammar success of the participants, and the independent variable is the educational tablet use for grammar teaching. The experimental group used tablets for regular classroom practice while the control group did not have any exposure to use of tablets in daily classroom practice for 16 weeks within the same course calendar and content. An attitude scale was also employed to reveal the instructors' attitudes towards tablet use in the classroom prior to and after the process. A Likert type questionnaire was also used to collect data on the opinions of the students in the experimental group in order to record how they feel about tablet use in the classroom, what they think or believe before and after they use tablets in the classroom (Dillman, 2007). Moreover, the qualitative data are collected by using Patton (1987)'s Standardized Open-ended Interviewing with the instructor of the experimental group looking into the instructor's perspective on tablet use in the classroom.

Participants

The experimental phase of the study was held with the participation of the students in English Foundation classes at a private university in Turkey. All the participants were selected by using convenience sampling method considering their convenient accessibility, ease to reach (Patton, 1987), and English levels in grammar subtest of the entrance test. Later, pretest and posttest data were collected from 56 students including 28 students for each group. The experimental group was randomly selected between these two groups.

Prior to the process, students' pretest results were examined in order to establish the equality of the groups. No significant difference was found between the groups' academic achievement in grammar ($Z = -1.402$, $p = 0.161 > 0.05$). The results indicate that the groups were basically equal.

Two instructors were also selected and assigned randomly to the groups among 35 volunteer instructors. These instructors have 6 years of experience in teaching at a higher education institute taught along the program. The instructor of the experimental group was familiar with using a tablet, but still was provided with a two-hour educational session of using the tablet and the learning management system on tablet by an IT employee. The instructor of the control group did not take any training or educational session. These instructors volunteered to respond to an attitude scale which was employed prior to and after the process.

The instructor of the experimental group also volunteered to do an interview on tablet use process at the end of the application.

The questionnaire was responded to by the students in the experimental group. Twelve randomly selected volunteer students participated in the piloting process of the questionnaire, and all the students ($n=28$) in the experimental group responded to the questionnaire voluntarily prior to and after the process.

Procedure

The students in the program start with an A2 level proficiency which is based on Common European Framework Reference. The general goal of the program is basically helping the students to

reach a level of independent user; in other words, B2 level referring to the objectives in the following:

Independent user can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization; can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party; can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options (Council of Europe, 2001).

Based on the objectives above, the expected behaviours from students in grammar are non-systematic errors or minor flaws in sentence structure and a high degree of grammar control without mistakes which lead to misunderstanding within a framework of a 16-week course calendar.

During the process, the experimental group used tablets in the learning environment, and the control group followed the same course calendar without tablets, but coursebook materials. The tablets used by the students in the experimental group were provided by the management. Each tablet was preprogrammed by the IT staff with the assistance of the instructors and the researchers and presented with Internet access, a keyboard, a number of applications such as a word processor, an English-English dictionary, e-book pack including the coursebook, workbook, supplementary activities provided by the publisher, a note pad, and a search engine, and a learning management system. The learning management system included services for the students such as course syllabus, course calendar, emailing platform, forum, instant messaging, quiz builder, homework, supplementary materials, and communication tools between the students and the instructor. By using tablets, the students in the experimental group had access to the course material outside the classroom as a tablet is simply available for "anytime, anywhere" learning (Geddes, 2004). Another use of tablets by the experimental group students was the forum and instant messaging. The students were able to receive immediate synchronous and asynchronous peer and instructor feedback continually by using the forum and instant messaging anytime and anywhere. The students were also able to reach the course syllabus, the course calendar, their homework, and supplementary materials whenever and wherever they want.

The students in the control group used hard copies of the course book, the workbook, and their notebooks. They were also able to use the services of the learning management system such as course syllabus, course calendar, emailing platform, forum, instant messaging, quizzes, homework, supplementary materials, and communication tools between the students and the instructor. However, they had to use the computers in the library in designated library hours or their own laptops outside the classroom.

The instructor teaching the experimental group students used the tablet as the main teaching tool. All the course materials were presented online or digitally by using a tablet in daily teaching practice. The instructor was able to do class presentations, activities, quizzes and homework, communicate, give feedback, check students' work, and make announcements by using the tablet. The instructor of the control group used hard copies of the course material such as course book, workbook, and worksheets. At the end of the 16-week period, the post-test data and the opinions of the students and instructors were collected.

Data collection

For the pretest and the posttest, a grammar achievement test including 50 items were employed. The test was specifically

composed of four task types: completion of short conversations, cloze, error correction, and transformation. All the items were employed to measure the students' ability to comprehend and produce a text/conversation with a variety of grammatical structures, communicate with a high degree of accuracy, transform ideas with a high degree of accuracy, and detect errors which lead to misunderstanding. The internal consistency of the test was calculated as 0.82 ($\alpha = 0.82$).

Furthermore, an attitude scale called Scale of Attitudes towards Tablet Use in Teaching, developed by Kayapinar et al. (2018) was employed to reveal the instructors' attitudes towards tablet use in the classroom prior to and after the process. Online survey software was employed to collect the responses of the instructors. The scale is in Likert format ranging from "Strongly Agree (4)" on one end to "Strongly Disagree (0)" on the other on a 5-point scale. The scale has three factors defined as teaching practices, student learning, and faculty development. These three factors comprise 71.848 of the total variance. Cronbach's Alpha ($C\alpha$) reliability of the scale is .88.

Standardized open-ended interviewing was also employed for the instrumentation of qualitative data in order to reveal the views of the instructor of the experimental group of students on tablet use in the teaching and learning process (Patton, 1987).

Finally, a questionnaire was devised to examine the attitudes of the students again prior to and after the process. The questionnaire was developed based on the Scale of Attitudes towards Tablet Use in Teaching, and it is basically an adapted version of it. It is specifically composed of twenty items including learning practice, study needs, motivation, and participation. In the development of the questionnaire, four experts were employed. They examined the items considering the face validity and the content validity. After consensus, the questionnaire was given to 12 students for piloting. Based on the responses and the feedback from the students, minor modifications and amendments were made. Later, three experts revised the items and edited them to prevent possible confusions and enhance the comprehension by the respondents. Finally, a 20-item questionnaire was ready for the application.

Data analysis

To analyze the quantitative data, SPSS 23 was employed. A Wilcoxon Signed-Ranks test, which is a non-parametric equivalent to the t-test for dependent samples, was employed for examining the difference between the pretest-posttest scores of the same students in the experimental group and the pretest-posttest scores of the same students in the control group, and, to examine the difference between the post-test scores of the students in the experimental group and control group. Mann-Whitney U test, which is a non-parametric equivalent to the t-test for independent samples, was employed. Additionally, the descriptive statistics were calculated. The significance level for all statistical analyses was taken as .05. The total scores obtained from the attitude scale were also compared to support the findings of the experimental study. The questionnaire total scores of the students were analyzed by using percentages and discussed accordingly.

To analyze the qualitative data, content analysis was used with an attempt to analyze the data collected and identify core consistencies and meanings (Patton, 1987). First, the interview results obtained from the interview with the instructor of the experimental group were analyzed through pattern recognition in order to make categories and themes (Boyatzis, 1998). The transcript was analyzed line by line and memos were written (Strauss and Corbin, 1998; Glesne, 1999). Categories or labels were reviewed and recurring themes, core consistencies and meanings were identified by using pattern codes (Miles and

Table 1. Descriptive statistics for the experimental group students' pretest and posttest grammar achievement scores.

Parameter	N	Mean	Std. Deviation	Minimum	Maximum
Pretest	28	14.6071	4.30355	0.00	20.00
Posttest	28	22.0893	4.12771	16.00	30.50

Table 2. Results for the experimental group students' pretest and posttest grammar achievement scores.

Parameter	N	Mean rank	Sum of ranks
Posttest – Pretest	Negative ranks	0 ^a	0.00
	Positive ranks	28 ^b	408.80
	Ties	0 ^c	
	Total	28	

a Posttest < Pretest. B. Posttest > Pretest. C. Posttest = Pretest.

Table 3. Experimental group test statistics (b).

Parameter	Posttest – Pretest
Z	-4.625 ^a
Asymp. Sig. (2-tailed)	0.000

^aBased on negative ranks.
^bWilcoxon Signed Ranks Test.

Huberman, 1994; Patton, 2002).

RESULTS AND DISCUSSION

The results are given for each research question in the following:

“Is there any effect of tablet use in grammar achievement?”

The answer to this research question is discussed by using the sub-questions:

“Is there a significant difference between the pretest and the posttest grammar scores of the students in the experimental group?”

The descriptive statistics for the experimental group students' grammar achievement scores are given before the results of the Wilcoxon Signed-Ranks test to be analyzed clearly (Table 1).

The results of the Wilcoxon Signed-Ranks test to reveal a possible difference between the pre-test and the post-

test grammar scores of the students in the experimental group using educational tablets are presented in Table 2.

The ranks table provides some data on the comparison of experimental group students' pretest and posttest scores. The table's legend shows that all the students in the group had a higher score after the process as seen in positive ranks. To examine the possible difference between the two sets of scores made before and after the process, the test statistics were calculated as follows (Table 3).

By examining the test statistics table, the changes, due to educational tablet use in the classroom, led overall to a statistically significant difference in achievement scores. Therefore, a Wilcoxon signed-rank test showed that a 16-week tablet use in the grammar class elicited a statistically significant change in achievement scores ($Z = -4.625, p = 0.000$).

“Is there a significant difference between the pretest and the posttest grammar scores of the students in the control group?”

The descriptive statistics for the control group students' grammar achievement scores are given before the

Table 4. Descriptive statistics for the control group students' pretest and posttest grammar achievement scores.

Parameter	N	Mean	Std. Deviation	Minimum	Maximum
Pretest	28	13.6071	2.69037	7.00	18.25
Posttest	28	20.6250	3.00809	15.50	27.00

Table 5. Results for the control group students' pretest and posttest grammar achievement scores.

Parameter	N	Mean Rank	Sum of Ranks
Posttest – Pretest	Negative ranks	0 ^a	0.00
	Positive ranks	28 ^b	406.00
	Ties	0 ^c	
	Total	28	

- a Round 2 < Round 1.
- b Round 2 > Round 1.
- c Round 2 = Round 1.

Table 6. Control group test statistics (b).

Parameter	Posttest – Pretest
Z	-4.623 ^a
Asymp. Sig. (2-tailed)	0.000
Based on negative ranks.	
Wilcoxon Signed Ranks Test	

results of the Wilcoxon Signed-Ranks test to be analyzed more clearly (Table 4).

The results of the Wilcoxon Signed-Rank test to reveal a possible difference between the pre-test and the post-test grammar scores of the students in the control group are presented in Table 5.

The ranks table provides some data on the comparison of control group students' pretest and posttest grammar achievement scores. The table's legend shows that all the students in the group had a higher score after the process as seen in positive ranks. To examine the possible difference between the two sets of scores made before and after the process, the test statistics were calculated in Table 6.

By examining the control group test statistics table, the changes, due to regular daily practice in the grammar class, led overall to a statistically significant difference in achievement scores. Therefore, a Wilcoxon signed-rank test showed that a 16-week practice without educational tablet use in the grammar class also elicited a statistically significant change in achievement scores ($Z=-4.623, p=0.000$).

“Is there a significant difference between the posttest grammar scores of the students in the experimental group and the control group?”

The results of the Mann Whitney U test to reveal a possible difference between the post-test grammar scores of the students in the experimental group and the students in the control group are presented in Table 7.

The ranks table provides interesting data on the comparison of control and experimental group students' posttest grammar achievement scores. It indicates that most of the students in the experimental group can be considered as having higher scores after the process (Table 8).

By examining the final posttest statistics, it can be concluded that the scores of the students in the experimental group using educational tablets were not statistically significantly higher than the scores of the students in the control group ($U=309, p=0.173$). This might indicate that using tablets is not more effective than using coursebook materials, pen, and paper in the mastery of grammar skill although most of the students in the experimental group might have scored higher than the students in the control group.

“Is there a change in the instructors' attitudes towards tablet use in teaching?”

The answer to this question is given by the responses of the instructors to Scale of Attitudes towards Tablet Use in

Table 7. Posttest results for the experimental and control group students' grammar achievement scores.

Parameter		N	Mean rank	Sum of ranks
Posttest Exp.–	Tablet Use	28	31.46	881.00
Posttest Cont.	Regular Practice	28	25.54	715.00
	Total	56		

^aPosttest Exp.< Posttest Cont.

^bPosttest Exp.> Posttest Cont.

^cPosttest Exp.= Posttest Cont.

Table 8. Posttest statistics (b).

Parameter	Posttest
Mann Whitney U	309.000
Wilcoxon	715.000
Z	-1.363
Asymp. Sig. (2-tailed)	0.173

a Based on negative ranks.

b Wilcoxon Signed Ranks Test.

Table 9. Instructors' attitude scale scores.

Parameter	Total		Subscale 1 Teaching practices		Subscale 2 Student learning		Subscale 3 Faculty development	
	S*1	S*2	S1	S2	S1	S2	S1	S2
Instructor-EG**	57	76	28	36	17	24	12	16
Instructor-CG**	62	55	32	28	17	15	13	12

*Session. **EG, Experimental Group; CG, control group.

Teaching. In Table 9, the results can be seen to describe the instructors' scores prior to and after the teaching process.

The results indicate that the instructor of the experimental group had a lower scale total than the instructor of the control group in the first session which is prior to the process. However, the instructor of the experimental group had a higher scale total in the second session at the end of the process. Considering the subscales, it can be easily seen that the scores of the instructor of the experimental group went higher whereas the scores of the instructor of the control group went lower. The instructor of the experimental group on tablet use in the grammar classroom developed a positive attitude during the application process whereas the instructor of the control group scored less in the second session at the end of the process.

“What are the views of the instructor of the experimental group on tablet use in the teaching and learning

process?”

Standardized open-ended interviewing was employed for the instrumentation of the qualitative data in order to reveal the views of the instructor on tablet use in the teaching and learning process. It includes the same question –the same stimuli- in the same way determined in advance (Patton, 2002). The transcripts were analyzed line by line and memos were written (Strauss and Corbin, 1998; Glesne, 1999). Categories or labels were reviewed and recurring themes, core consistencies and meanings were identified by using pattern codes (Miles and Huberman, 1994; Patton, 2002). The themes were found as 1) learner autonomy 2) digital distraction, and 3) network connection.

Learner autonomy in this study can be defined as the “ability to take charge of one’s own learning” (Holec, 1981). The instructor who used tablets in the classroom provided valuable comments on tablet use and learner autonomy as in the following:

Students used recommended resources to do their homework. There are many exercises online, which allow the students to practice different grammar items. These materials were also downloaded from the learning management system. Therefore, the tablets gave students instant access to individual research, making a tremendous knowledge base available. After posting links on the learning management system, the students accessed them in class. These online exercises immediately graded student answers and sometimes even gave extensive explanations for the grammar point in question. This gave the students more independence, as they did not have to rely only on the instructor's explanations. We did not need to check the answers all together; they would see the correct answers automatically, after doing the exercise. Tablets also made it easier for students to revise at home. Students loved and enjoyed this opportunity. Albeit requiring extra preparation time, it was possible to create tests or exercises on online platforms such as Kahoot. The students needed to access these exercises from a computer or a smartphone previously, and the tablets were excellent for that purpose.

As Xiangming and Song (2018) state, in the education field, the portable tools have ubiquitous nature, and they enable learners to access information and feedback regardless of time and location, and mobile learning tools makes possible the combined synchronous and asynchronous learning activities and enriched engagement for participants in multiple learning contexts. Supporting this idea, the instructor states a variety of exercises online allow the students to practice different grammar items, and, with the help of tablets, students feel less reliance on the instructor which gives them the feeling of independence. They can use it wherever they want and whenever they want. In addition, since explanations are provided by the system in the tablet, it helps them to take their own decision which is a component of learner autonomy. The ability to be able to revise at home without the use of books/notebooks became a positive reinforcement. The students had also the opportunity to test themselves online easily anytime and anywhere with the existence of tablets. These are small steps towards individualized learning and self-direction. The opportunity of infinite access to materials and synchronous feedback seem to increase the enthusiasm and confidence in the teaching and learning process. Students who enjoyed and loved the opportunity to use tablets during their grammar classes may also easily relocate these opportunities into other courses.

In support of tablet use, the instructor reported that using tablets in class is helpful to quickly deliver engaging material to the students in real time in just a couple clicks. It seems that the instructor found tablets very useful for interactive controlled and autonomous practice. However, the instructor also noted that, because the book provided

for the Grammar module was in flat text and graphics format lacking structuring and interactive elements, the use of tablets was restricted in different ways. The instructor states:

If the grammar book provided had interactive features, it would be more engaging for the students. They could not do anything with pdf e-books except for highlighting and annotating. They could not write or do any tasks in the book. Another negative comment is that, often, tablets proved to be a cause for distraction; students would get quite distracted, and I had to repeat the instructions more. Although the students became quieter and calmer when they started using the devices, this was not necessarily good indicator, and it did not mean that that they were on task. It was only to be expected that it was more difficult to control what the students were doing. When they use books, if they are looking at the books, and the instructor can assume that they are reading or doing the task. But if they are looking at the tablets, they can be doing many different things. Therefore, I had to walk around much more when the students were using tablets or smartphones, to make sure students were really doing the exercises and not doing something else.

At this point, as the instructor states, a customized interactive version of the coursebook materials would be more useful in the process. It can increase motivation, engagement, and prevent distraction. When it comes to the second theme, digital distraction, within this context, it can be defined as "distraction due to electronic devices and media that breaks the concentration from the main piece of work that is being done (Agrawal et al., 2017). It is a well-known fact that nowadays students at every level are immersed in Information Communication Technology. These students, also called "Millennial Generation", have a vast amount of resources that help them with instant communication as well as a treasure of information. In spite of the benefits of these resources, they also can be distracting at some points. As the participant (instructor) has stated during the interview, students were distracted in two ways: lack of a powerful infrastructure and material. The lack of a powerful infrastructure affected the speed of the internet which seemed to be inefficient for the amount of tablets. When it comes to material, the participant stated that integrating technology into classes does not mean that it is used for its purpose. Students might be dealing with any other kind of stuff not related to the class at all. Use of tablets in classes made it more difficult for the instructor to control the whole class although the students were more silent and calmer than usual. Similarly, according to Montrieux et al. (2014) "instructors seem to have the fear of losing their class management by the introduction of tablet computers, as they think students are seduced to surf social network sites" (p. 485). As the instructor mentioned, "I had to walk around much more when the

students were using tablets or smartphones, to make sure students were really doing the exercises and not doing something else”, the instructor and even students who use their mobile devices for academic purposes can be concerned about the potential distractions of these devices (Dahlstrom and Bichsel, 2014).

The most frequently encountered problem of the technical nature was the need of the network connection as the instructor reported:

...One of the reasons for disengagement was that not all tablets were equally fast and while some students were already on the required link or page, others were still trying to start their device or connect to the Internet. In class, several students asked if they could use their smartphones rather than tablets, in order to access the online exercises. Because their mobile devices were faster and less prone to a glitch, some students, time to time, preferred their mobile devices over tablets despite the fact that tablets have larger screens.

Without the network connection, the tablets become completely obsolete as all the exercises were online. This might indicate that any teaching environment using tablets should make sure that the Internet service is powerful and provided all the time of teaching and learning. Another technical disadvantage noted by the instructor was about the battery life of tablets. Because tablets run on batteries, and batteries tend to run out of charge at the least appropriate moment, the instructor reportedly experienced interruptions. A strong network connection accompanying tablets during the teaching and learning process seems to be needed without any network problems.

“What are the views of the students in the experimental group on tablet use in the teaching and learning process?”

The students in the experimental group were given a questionnaire on tablet use including twenty items which focus on study needs, learning practice, motivation and participation, and they were asked to respond based on their tablet use experience in the grammar classroom. The results of the questionnaire prior to and after the process are given in Table 10.

Before using tablets in the teaching and learning process, student responses had a tendency of using tablets in daily classroom practice with a percentage of 61.7. Most of the students (64.3%) in the experimental group stated that educational tablets would meet their study needs. Examining the results of the two sessions, it is apparent that more students (46%) thought they would be comfortable with using tablets in the classroom practice; however, the results of the second session-which is after using the tablets for daily practice- indicate

that only some students (29%) in the experimental group feel comfortable with using tablets in the classroom. Similarly, in the first session of the questionnaire, when some students (15%) mentioned that tablet use would be a challenge for them, after the process, more students thought the same as this percentage increased to 29%. The idea that tablet use makes multitasking easier did not change a lot after the process. Almost one half of the students agreed and/or strongly agreed in both sessions. The number of the students who thought that tablet use would be beneficial for the courses they study slightly increased from 32 to 36%. The number of the students who said “Tablets should be used only as a supplementary studying tool” also increased from 46 to 54%. This result was supported with the result of another item stating “Tablets should not replace other studying tools”. The percentage of the responses to this item also showed an increase from 46 to 68%. In the first session, almost half of the students mentioned tablet use would add a lot to their study needs. There is a slight increase in this result from 46 to 50%. In addition, only some of the students mentioned in both sessions that tablet use would be helpful being a more creative and organized (25 to 29%; 36 to 25%) while there is a decrease in being organized in the second session. The number of the students who mentioned tablets would be useful for presenting their homework (43%). However, there is a high decrease in the number of students who state that tablets can be used to practice exercises (68 to 46%). Other interesting results are that the percentages did not change in the use of tablets as tablets provide functions that cannot be possible with textbooks (32% in both sessions), increase participation (29% in both sessions), and contribute to student learning (25% in both sessions). Still, there is a remarkable increase in the number of students stating the use of tablets increase motivation (25-to-36%). On the other hand, most of the students do not agree with the idea that tablets increase motivation in the entire teaching and learning process (64%).

Conclusions

As using tablets has increasingly become an integral part of people’s lives, the increasing availability and use of tablets in daily life has led the way to the use of tablets for teaching and learning in all levels of education and higher education. Institutions have been trying to provide support, enhancements, and transformations by using tablets in order to improve the learning outcomes. However, there is a challenge in providing scientific evidence behind these attempts, especially tablet use in different contexts in higher education. This paves the way to this study, and this study specifically aims at revealing the effect of tablet use in grammar acquisition with an experimental design having supportive evidence from the

Table 10. Students' questionnaire results.

S/N	Item	S*1	S*2
		Strongly agree /Agree%	Strongly agree /Agree %
1	I would be comfortable using a tablet for studying purposes	46	29
2	Tablet use would be a challenge for me when focusing on studying	15	29
3	A tablet would make me able to multitask easily	46	43
4	The courses I am studying would greatly benefit from the use of tablets	32	36
5	I would not feel comfortable with using a tablet in the classroom	39	43
6	Tablets should be used only as a supplementary studying tool	46	54
7	Tablets should not replace other studying tools	46	68
8	I do not think using tablets would add a lot to my studying needs	46	50
9	The courses I am studying would not benefit from the use of tablets	32	36
10	A tablet would contribute to my development being a more creative student	25	29
11	A tablet would contribute to my development being a more organized student	36	25
12	I would use a tablet for presenting my homework in the classroom	43	43
13	I would use a tablet for practicing the exercises in the classroom	68	46
14	A tablet would be a distraction in my studying practice	21	14
15	A tablet would contribute to organizing my studying material	32	21
16	A tablet would provide functions not possible with a textbook	32	32
17	A tablet would increase my interaction with the tutor in the classroom	29	32
18	A tablet would increase my participation in the classroom	29	29
19	A tablet would increase my motivation to learn the material	25	36
20	A tablet would contribute to my learning	25	25

S*, Session.

feedback of the instructor of the experimental group and students.

The statistical results basically revealed a significant difference between the pre-test and post-test grammar scores of the students in the experimental group and control group. Besides, the scores of the students in the experimental group using educational tablets were not statistically and significantly higher than the scores of the students in the control group at the end of the process. Considering the attitudes of the instructors towards tablet use, the instructor of the experimental group had a lower scale total than the instructor of the control group in the first session prior to the process. However, the instructor of the experimental group had a higher scale total in the second session at the end of the process. There are three themes found in the transcripts of the interview made with the instructor of the experimental group such as 1) learner autonomy 2) digital distraction, and 3) network connection. Tablet use enables the students to become more autonomous as they can access information and feedback with a variety of exercises online allowing the students to practice different grammar items. In this way, the students feel less reliance on the instructor which gives them the feeling of independence. Tablets can also prove to be a source of distraction. As

the instructor of the experimental group stated, students were distracted in two ways: lack of a powerful infrastructure and material, and a cautious plan of the use of tablets in the classroom would be more useful. Technical specification of tablets is also a point to consider carefully. The operating system for the tablets, in particular, has to be wisely selected. While students may be familiar with one operating system, the institution may prefer another system for the sake of consistency. If tablets do not support multitasking, several files or windows might be a challenge to lesson integrity. Another point is that tablets run on batteries, and batteries tend to run out of charge at the least appropriate moment. The instructor also emphasized that tablets also became completely obsolete without network connection as all the exercises were online. This might indicate that any teaching environment using tablets should make sure that the Internet service is powerful. Students' responses to the questionnaire also indicated that most students (29%) in the experimental group did not feel comfortable with using tablets in the classroom at the end of the process although they thought they would be comfortable with using tablets in the classroom practice prior to the process. More than half of the students in the experimental group mentioned that tablets should be

used only as a supplementary studying tool and should not replace other studying tools. Another interesting result at the end of the process was that most of the students did not agree with the idea that tablets would increase motivation in the entire teaching and learning process (64%).

The effect of tablet use in this study seems to hinge as much on the quality of the e-book or e-materials as other factors involved. In other words, the quality of the teaching resources used with the tablet directly plays an effective role in the effect of tablet use as an educational tool. Any institutional body that is looking into incorporating and adopting tablets as an educational tool for teaching grammar in the ELT classroom might need good interactive e-books that lend themselves to personalized usage. Clearly, a syllabus, based on interactive e-books or based on tablet-friendly online activities can be more convenient and motivating. In this study, one of the basic limitations was that the interaction was limited, and, most of the time, the students were demotivated when they could not write the answers as they were on task because the e-book was in flat text and graphics format, and it was not including structuring and interactive elements. Alternatively, developing a new syllabus which addresses the needs of the learners without having to rely on e-books would work better.

Despite the limitations, tablets offer new possibilities in the classroom. Using tablets in the grammar classroom helps instructors to quickly deliver engaging material to students in real time. Students use recommended online resources to do their homework. These materials can easily be downloaded from the learning management system. The tablets also allow students to instantly conduct individual research using the Internet, which is a tremendous knowledge base a few clicks away.

There are also some motivational factors for incorporating tablets into the classroom. It promotes independent learning and minimizes paperwork for the instructor. It may also be designed to offer personalized education opportunities and increase knowledge beyond books. When a tablet initiative is to be implemented, educational factors such as pedagogical and theoretical frameworks, accessibility of content, and instructor preparation and training seem to be of high significance. The initiative, without a focus on the hype around tablets, can be centered on the use to achieve the educational goals stipulated by the curriculum. In order to achieve these educational goals, instructors might need more time to prepare as preparing quality lessons and activities for tablets requires a lot of time and creativity. Still, it looks like an interesting and professionally enriching experience to try out new ways and methods of teaching as also mentioned by the instructor of the experimental group.

A simplistic approach to replace the tablet with the course book does not seem to work. To go along with the

technological changes, a change in teaching approach could be more helpful. Instructors, planners and curriculum designers can look into ways of utilizing tablets in ways that have added value over traditional pen and paper style. As they begin to ponder different ways of capitalizing on the uses of tablets in the grammar classroom, they can start asking the students to use the tablets to access the Internet in order to research some topics or to access online interactive exercises. This added value is what is the most appreciated by students as evidenced by the positive responses on tablet use in the questionnaire.

For future research, another experimental study excluding the limitations mentioned can be employed by researchers. Similar experimental studies can also be employed for different fields of education and skills such as reading, writing, math, and science using or adopting new strategies or procedures with the use of tablets. Further research can also focus on different levels of education in different lengths of time with possible additions of testing strategies and learner attitudes. Some other variables can also be added in future studies such as motivation, gender, age, learning strategies, and multiple intelligence.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Agrawal P, Sahana HS, De R (2017). Digital distraction. In Proceedings of the 10th International Conference on Theory and Practice of Electronic Governance pp. 191-194, ACM.
- Alexander B (2004). Going nomadic: Mobile learning in higher education. *Educause Review* 39(5):6.
- BaSaeed EA (2013). An Approach for Teaching English Language Grammar to Arab Young Learners. *IOSR Journal of Research and Method in Education* 1(2):20-30.
- Bluestein SA, Kim T (2017). Expectations and fulfillment of course engagement, gained skills, and non-academic usage of college students utilizing tablets in an undergraduate skills course. *Education and Information Technologies* 22(4):1757-1770.
- Boyatzis RE (1998). *Transforming qualitative information*. Cleveland: Sage.
- Brand J, Forder J, Hives L, Hrivnak G, Kenworthy A, Keyzer P, Kinash S, Rees M, Stirling A, Tom C, Watt B (2010). *mLearning@Bond: Report of the Academic Discussion Group on the Prospect of Mobile Learning at Bond University*. Gold Coast: Bond University.
- Butcher J (2016). Can tablet computers enhance learning in further education? *Journal of Further and Higher Education* 40(2):207-226.
- Carver CA Jr., Howard RA, Lane WD (1999). Enhancing student learning through hypermedia courseware and incorporation of student learning styles. *Education, IEEE Transactions on* 42(1):33-38.
- Chen XB, Kessler G (2013). Action research tablets for informal language learning: Student usage and attitudes. *Language Learning and Technology* 17(1):20-36.
- Churchill D, Fox B, King M (2012). Study of affordances of iPads and teachers' private theories. *International Journal of Information and Education Technology* 2(3):251-254.
- Ciampa K (2014). Learning in a mobile age: an investigation of student motivation. *Journal of Computer Assisted Learning* 30(1):82-96.

- Corbell JR, Valdes-Corbell ME (2007). Are you ready for mobile learning? *EDUCAUSE Quarterly* 30(2):51-58.
- Council of Europe (2001). Common European framework of reference for languages: Learning, teaching, assessment. Cambridge: Cambridge University Press.
- Creswell JW (2012). *Educational research: Planning, conducting, and evaluating quantitative (4. bs.)*. New Jersey: Upper Saddle River.
- Creswell JW, Clark VLP (2011). *Designing and conducting mixed method research*. Thousand Oaks, CA: Sage.
- Dahlstrom E, Bichsel J (2014). ECAR Study of Undergraduate Students and Information Technology, 2014. Retrieved from <http://www.educause.edu/ecar>
- Dearnley C, Taylor J, Hennessy S, Parks M, Coates C, Haigh J, Dransfield M (2009). Using mobile technologies for assessment and learning in practice settings: Outcomes of five case studies. *International Journal on E-Learning* 8(2):193-207.
- Dhir A, Gahwaji NM, Nyman G (2013). The role of the iPad in the hands of the learner. *The Journal of Universal Computer Science* 19(5):706-727.
- Dillman DA (2007). *Mail and internet surveys: The tailored design method*. New York: Wiley.
- El-Hussein MOM, Cronje JC (2010). Defining mobile learning in the higher education landscape. *Journal of Educational Technology and Society* 13(3):12-21.
- Engen BK, Giæver TH, Mifsud L (2014). I've never had so much fun at school": Using Tablets in the Language Learning Classroom. In *ICT for Language Learning*, 7th conference Edition pp. 120-124.
- Falloon G (2013). Young students using iPads: App design and content influences on their learning pathways. *Computers and Education* 68:505-521.
- Glesne C (1999). *Becoming qualitative researchers: An introduction*. New York: Longman.
- Geddes S (2004). Mobile learning in the 21st century: Benefit for learners. *Knowledge Tree E-Journal*. Retrieved from <http://knowledgetree.flexiblelearning.net.au/edition06/download/Geddes.pdf>.
- Guri-Rosenblit S (2005). Distance education and e-learning: Not the same thing. *Higher Education* 49:467-493. <https://doi.org/10.1007/s10734-004-0040-0>
- Kayapinar U, Spathopoulou F, Safieddine F, Nakhoul I, Kadry S (2018). Tablet use in teaching: A study on developing an attitude scale for academics. *Eurasian Journal of Educational Research* 78:219-234.
- Kim KJ, Frick TW (2011). Changes in student motivation during online learning. *Journal of Educational Computing Research* 44(1):1-23.
- Li Z, Hegelheimer V (2013). Mobile-assisted grammar exercises: Effects on self-editing in L2 writing. *Language Learning and Technology* 17(3):135-156. Retrieved from <http://llt.msu.edu/issues/october2013/lihegelheimer.pdf>
- LoBiondo-Wood G, Haber J, Cameron C, Singh M (2014). *Nursing research in Canada: Methods, critical appraisal, and utilization*. Elsevier Health Sciences.
- Miles MB, Huberman AM (1994). *Qualitative data analysis*. California: Sage Publications.
- Montrieux H, Vanderlinde R, Courtois C, Schellens T, De Marez L (2014). A qualitative study about the implementation of tablet computers in secondary education: The teachers' role in this process. *Procedia-Social and Behavioral Sciences* 112:481-488.
- Nguyen L, Barton SM, Nguyen LT (2015). iPads in higher education-hype and hope. *British Journal of Educational Technology* 46(1):190-203.
- Patton MQ (2002). *Qualitative research and evaluation methods*. California: Sage Publications.
- Patton MQ (1987). *How to use qualitative methods in evaluation*. California: Sage Publications.
- Pirasteh P (2014). The effectiveness of computer-assisted language learning (CALL) on learning grammar by Iranian EFL learners. *Procedia-Social and Behavioral Sciences* 98:1422-1427.
- Roschelle J (2003) Keynote paper: Unlocking the learning value of wireless mobile devices. *Journal of Computer Assisted Learning* 19:260-272.
- Schuck S, Kearney M, Burden K (2017). Exploring mobile learning in the third space. *Technology, Pedagogy and Education* 26:121-137.
- Shuib M, Abdullah A, Azizan SN, Gunasegaran T (2015). Designing an intelligent mobile learning tool for grammar learning (i-MoL). *International Journal of Interactive Mobile Technologies* 9(1):41-46.
- Strauss A, Corbin J (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. California: Sage Publications.
- Tashakkori A, Teddlie C (2003). *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, CA: Sage.
- Traxler J (2007). Defining, discussing and evaluating mobile learning: The moving finger writes and having writ... *The International Review of Research in Open and Distance Learning* 8(2):1-12.
- Van Oostveen R, Muirhead W, Goodman WM (2011). Tablet PCs and Reconceptualizing learning with technology: a case study in higher education. *Interactive Technology and Smart Education* 8(2):78-93.
- Vesisenaho M, Valtonen T, Kukkonen J, Havu-Nuutinen, S, Hartikainen A, Karkkainen S (2010). Blended learning with everyday technologies to activate students' collaborative learning. *Science Education International* 21(4):272-283.
- Xiangming L, Song S (2018). Mobile technology affordance and its social implications: A case of "Rain Classroom". *British Journal of Educational Technology* 49(2):276-291.
- Zhang J (2009). Necessity of grammar teaching. *International Education Studies* 2(2):184-187.
- Zywno MS, Waalen JK (2002). The effect of individual learning styles on student outcomes in technology-enabled education. *Global Journal of Engineering Education* 6(1):35-44.

Related Journals:

