TOJNED
THE ONLINE JOURNAL OF NEW HORIZONS IN EDUCATION

ISSN: 2146-7374

The Online Journal of New Horizons in Education

Volume 6 Issue 1
January 2016

www.tojned.net
01.01.2016

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Published in TURKEY

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January 01, 2016
Prof. Dr. Aytekin ISMAN
Sakarya University

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A STUDY OF EFFECTIVENESS OF SPIRITUAL INTELLIGENCE ENHANCEMENT PROGRAMME FOR TRAINEE TEACHERS

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ABSTRACT
Danah Zohar Coined the term "Spiritual intelligence" and introduced the idea in 1997 in her book '***Rewiring the Corporate Brain'***. Spiritual Intelligence constitutes about 16 fields, namely virtuous, vision and insight, commitment, Divinity, Compassion, Flexibility, Gratitude, Being Holistic Intuition, Self-awareness, Inquisitive, Resilient, Mission and Servant leader, Value, Field independent, Inner Peace and Contentment. By the practice of spiritual exercise aimed at the production of a new type of human being which is fearless, greedless and heatless. Therefore the investigator felt to improve SQ of Trainee Teachers. This paper reveals status of S.Q. of Trainee Teachers & Spiritual intelligence enhancement programme. For this study researcher used Experimental method & adopt single group design. A sample of 100 Trainee Teachers was selected & one year programme was implemented on them. Pre & post values of S.Q.was calculated by using Standardized Scale. Following are the objectives of the study

To measure the present status of spiritual intelligence of Trainee Teachers.

1. To develop a Spiritual Intelligence Enhancement Programme for enhancing Spiritual intelligence of Trainee Teachers
2. To implement Spiritual Intelligence Enhancement Programme for Trainee Teachers
3. To find out effectiveness of Spiritual Intelligence Enhancement Programme for enhancement of Spiritual intelligence of Trainee Teachers.
4. To compare pre and post situation of Spiritual intelligence of Trainee Teachers
5. To suggest development programmes for Spiritual Intelligent development of Trainee Teachers.

The impact of Spiritual Intelligence Enhancement Programme was studied and efforts was made for improvement in SQ of trainees during the research.
Keywords - Spiritual Intelligence, Spiritual Intelligence Enhancement Programme

INTRODUCTION

Spiritual Intelligence is a term used by some Philosophers, Psychologists and Developmental theorists to indicate Spiritual parallels with IQ (Intelligence Quotient) and EQ (Emotional Quotient). Danah Zohar Coined the term "Spiritual intelligence" and introduced the idea in 1997 in her book '***Rewiring the Corporate Brain'***.

Spiritual Intelligence is generally thought to be a concept related with religions, but there is very less inter-relation between these two things. Spiritual science means thinking over past experiences to try to find out what is truth. Whereas, Spiritual Quotient includes understanding the value ability and meaning of human life (Danah Zohar and Ian Marshell) An and Tendulkar says that, 'Spiritual Quotient' means thinking over the aims and objectives of life. "When I think likewise. I realize that life gives us many things to do it. I proceed on my path with an open mind, I feel Completeness".

Spiritual intelligence is the expression of innate spiritual qualities through your thoughts, actions and attitude. According to Vaughan, 2000 Spiritual Intelligence is the multiple ways of knowing and for the integration of the inner life of mind and spirit with the outer life of work in the world, Bowel, 2004 stated that Spiritual Intelligence in not just about 'What' we learn and 'how' we behave. It is about 'why' we do 'What' we do. Unless we are developing our level of self, we are missing the most precious resource of all our engagement in living.

Variations of Spiritual Intelligence are sometimes used in corporate settings, as a means of motivating employees and providing a non-religious, diversity – sensitive framework for addressing issues of values in the work place. According to Stephen Covey, "Spiritual Intelligence is the Central and most fundamental of all the intelligences because it becomes the source of guidance for the others.

The Universities have to redesign their teacher education programme so as to make them flexible, cost-effective and relevant to the new global dimensions. The qualitative improvement of teaching teachers essentially rests upon a new line of approach where finer techniques and latest strategies of teaching should be given due attention. As the Delor's Commission suggest "The importance of the role of the teacher as an agent of change, promoting understanding and tolerance has never been more obvious than today. It is likely to become even for

change from narrow nationalism to universalism, from ethnic and cultural prejudice to tolerance, understanding and pluralism, from autocracy to democracy in its various manifestations and from a technologically divided world where high technology is the privilege of the few to a technologically united world, places enormous responsibilities on teachers who participate in the moulding of the minds and characters of the new generations. The stakes are high and the moral values formed in childhood and throughout life become of particular importance."(Ref : Learning : The treasure within , UNESCO, 1996, P.141-42)

Religion is the discipline by which we are helped to overcome the discord in our nature and integrate our personality. By the practice of spiritual exercises, by fasts and prayers, aimed at the production of a new type of human being, fearless, greedless and hate less. Man is still evolving. Religion is a personal encounter with the Divine. Therefore the investigator felt to improve SQ of trainee teachers.

Origin of the research problem

At the beginning of twentieth century, as psychologists exposed ways and means to measure intelligence, Aristotle's definition of man as "a rational animal"developed into a obsession with IQ.In the mid 1990's,Daniel Goleman popularized research into emotional intelligence (EQ), explaining that EQ is a fundamental requirement for the appropriate use of IQ. At the end of twentieth century, there is growing collective evidence that there is a third Q i.e. 'SQ',or Spiritual Intelligence.

Zohar and Marshall(2001)defined spiritual intelligence as "The intelligence with which we address and solve problems of meaning and value,the intelligence with which we can place our actions and our lives in a wider, richer , meaning giving context, the intelligence with which we can assess that one course of action or one life path is more meaningful than another Use of spiritual resources on practical problems, enhance virtuous behaviour- forgiveness, gratitude, humility, compassion and wisdom.Therefore the investigator felt to improve SQ of trainee teachers

Interdisciplinary relevance

Spiritual Intelligence is relatively a new constuct of psychology. A person with high SQmight practice any religion,but without narrow-mindedness prejudice or discrimination. Equally a person with high SQ could have very spiritual qualities without being religious at all.Both IQ and SQ work with the confines of existing information and known.Only SQ is capable of thinking beyond the known.

No subject can be taught in isolation and so is the case with Spiritual Intelligence . Spiritual Intelligence has to a considerable extent become integrated with various streams of knowledge , which enables people to guide their life. An attempt has been made in recent years to bring about an integrated curriculum which has helped to bring various subjects closer but no efforts has been made in teacher education syllabus.The concept of Spiritual Intelligence is interdisciplinary in nature.It has related to human nature.It co-relates with Philosophy, Psychology, Sociology, Civics and our day to day life. Spiritual Intelligence contributed a lot to the social and mind advancement of our society.

Review of research and development in the subject

International status:-

T.Kumar and S. Pragdiswaran.(2002) :

Studied a problem- Effects of professional stress on spiritual quotient of executives. In this research, executives have been divided in to 3 groups. Excessive hard workers have extra stress. So their spiritual quotient is less. On the other hand the less hard workers have less stress and so their spiritual quotient is more.

Ranny Faisal (2002) :

Emotional and spiritual quotient effect the changing leadership of the managers in the North Malaysian University. As per the results, there is a striking co-relation between emotional and spiritual quotients on the changing relationship.

Vecor Selman (2005):

And his companions have expressed their opinions that in a person's thinking process, not only intelligence quotient but emotional, spiritual quotients are also important.

National status:

Sam Thomas Joy(Ph.D.),
The Maharaja Sayajirao University of Baroda, April,2011
Enhancement of Emotional Intelligence and spiritual Intelligence among B.Ed. students-Teachers

In this research, researcher has got a lot of response to implementation for the programme to increase student teacher emotional and spiritual quotient.

Definitions of spiritual intelligence

Definitions of spiritual intelligence rely on the concept of spirituality as being distinct from religiosity. Danah Zohar defined 12 principles underlying spiritual intelligence:

- Self-awareness: Knowing what I believe in and value, and what deeply motivates me.
- Spontaneity: Living in and being responsive to the moment.
- Being vision –and value-led: Acting from principles and deep beliefs, and living accordingly.
- Holism: Seeing larger patterns, relationships, and connections; having a sense of belonging.
- Compassion: Having the quality of "feeling-with" and deep empathy.
- Celebration of diversity: Valuing other people for their differences, not despite them.
- Field independence: Standing against the crowd and having one's own convictions.
- Humility: Having the sense of being a player in a larger drama, of one's true place in the world.
- Tendency to ask fundamental "Why?" questions: Needing to understand things and get to the bottom of them.
- Ability to reframe: Standing back from a situation or problem and seeing the bigger picture or wider context.
- Positive use of adversity: Learning and growing from mistakes, setbacks, and suffering.
- Sense of vocation: Feeling called upon to serve, to give something back.

Cindy Wigglesworth defines spiritual intelligence as,
"the ability to act with wisdom and compassion while maintaining inner and outer peace, regardless of the circumstances."

SHe breaks down the competencies that comprise SQ into 21 skills, arranged into a four quadrant model similar to Daniel Goleman's widely used model of emotional intelligence or EQ. The four quadrants of spiritual intelligence are defined as:

1. Higher Self/Ego self Awareness
2. Universal Awareness
3. Higher Self/Ego self Mastery
4. Spiritual Presence / Social Mastery

CORE ABILITIES OR CAPACITIES OF SPIRITUAL INTELLIGENCE

1. **Critical Existential Thinking**: The capacity to critically contemplate the nature of existence, reality, the universe, space, time and other existential/metaphysical issues; also the capacity to contemplate non-existential issues in relation to one's existence (i.e., from an existential perspective).
2. **Personal Meaning Production**: The ability to derive personal meaning and purpose from all physical and mental experiences, including the capacity to create and master a life purpose.
3. **Transcendental Awareness**: The capacity to identify transcendent dimensions/patterns of the self (i.e., a transpersonal or transcendent self), of others, and of the physical world (e. g., non-materialism) during normal states of consciousness, accompanied by the capacity to identify their relationship to one's self and to the physical.
4. **Conscious State Expansion**: The ability to enter and exit higher states of consciousness (e.g. pure consciousness, cosmic consciousness, unity, oneness) and other states of trance at one's own discretion (as in deep contemplation, meditation, prayer, etc.). [13]

Vineeth V, Kumar and Manju Mehta have also researched the concept, extensively. Operationalizing the construct, they defined spiritual intelligence as "the capacity of an individual to possess a socially relevant purpose in life by understanding' self and having a high degree of conscience, compassion and commitment to human values."

Need and significance of study

Spiritual Intelligence helps the students much in all spheres of life through its various constituents namely virtuous, vision and insight, commitment, Divinity, Compassion, Flexibility, Gratitude, Being Holistic Intuition, Self-awareness, Inquisitive, Resilient, Mission and Servant leader, Value, Field independent, Inner Peace and Contentment. By the practice of spiritual exercise aimed at the production of a new type of human being which is fearless, greedless and hatless. Therefore the investigator felt to improve SQ of trainee teachers.

Aim of study

To study impact of Spiritual Intelligence Enhancement Program among trainee teachers.

Objectives

1 To measure the spiritual intelligence of trainee teachers.
2 To develop a Value Education programme for enhancing Spiritual intelligence of trainee teachers.
3 To implement Value Education programme for trainee teachers.
4 To find out effectiveness of Value Education programme for enhancement of Spiritual intelligence of trainee teachers
5 To compare pre and post situation of Spiritual intelligence of trainee teachers.
6 To suggest development programmes for Spiritual Intelligent development of trainee teachers.

Hypothesis

There is no significant difference in the effectiveness of Spiritual Intelligence quotient before and after the implementation to *spiritual intelligence enhancement programme.*

Variables

- **Dependent Variable** :- Spiritual Intelligence quotient
- **Independent Variable** :- Spiritual intelligence enhancement programme.
- **Interveining Variables** :- Previous Knowledge of Spiritual Education
- **Controlled Variables** :- Classroom environment, No. of male & female, mean scores etc.

Scope & limitations

This study is related to Spiritual Intelligence Enhancement of trainee teachers. A wide coverage is not possible due to time limit. So, this study is limited to Govt. College of Education, Panvel students only. Spiritual Intelligence constitutes about 16 fields. Because of time constraint e present study delimited to Spiritual intelligence enhancement programme field only.

Research procedure

- Per test and post test single group design of Quasi experimental method was selected for the study.
- A purposive sample of 30 trainee teachers. 15 male + 15 female was selected for the study and Spiritual Intelligence Enhancement Programme was conducted.
- Standardized Spiritual Intelligence test designed by Tirath Singh, Arjinder Singh and Bindejit Kaur was employed in the present study. It was translated from English to Marathi. Content Validity after the translation was established by using experts opinion (Reliability 0.81 and validity 0.69)
- The scale was administered as pre test and post-test on a single group.
- Under Value Education programme Daily prayer, Weekly Paripath. Experts guidance, Maunas, Importance of Yoga and Vipashana, etc. activities were organized. These activities are part of Spiritual Intelligence Enhancement Programme.
- The developed Spiritual Intelligence Enhancement Programme was implemented on small pilot group with intention to have a try out.
- This programme was implemented on trainee teachers for five month and then data was collected from pre and post situation. Data thus collected, were subjected to statistical treatment . Later on compared this data and drawn inference.

About the programme

Researcher selected sixteen activities as a part of Spiritual Intelligence Enhancement Programme. After Discussion with Experts researcher finalized following schedule for five month.

Sr. No.	Spiritual Intelligence Fields	Name of Activity	Name of Expert	Duration	Date
1.	Virtuous	Narration of self experience		2 hours	2/10/2014
2.	Vision and Insight	Role Play	S. P. Patil	2 hours	12/11/2014
3.	Commitment	Lecture on Value Education	Sunita Bramhakumariji	2 hours	1/9/2014
4.	Divinity	Yoga/ Dhyan	Bramhakumariji	3 days/ 2 hours per day	2,3,4 Sept. 2014
5.	Compassion	Lecture on Value Education	Sunita Bramhakumariji	2 hours	1/9/2014
6.	Flexibility	Yoga/ Dhyan	Bramhakumariji	3 days/ 2	2,3,4 Sept.

				hours per day	2014
7.	Gratitude	Narration of self experience		2 hours	2/10/2014
8.	Being Holistic	Story telling	Prof. Shinde	2 hours	10/2/2015
9.	Intuition	Narration of self experience		2 hours	2/10/2014
10.	Self-Awareness	Diary Writing		Daily half an hour	For five months
11.	Inquisitive	Group discussion		2 hours	23/10/2014
12.	Resilient	Story telling	Prof. Shinde	2 hours	10/2/2014
13.	Mission and servant leader	Interviewed a Social worker working in cancer field	Dr. Deshapande	2 hours	27/1/2014
14.	Value	Daily prayer, Weekly Paripath. Experts guidance, Maunas, Importance of Yoga and Vipashana	Sunita Bramhakumariji	2 hours	1/9/2014
15.	Field independent	Group discussion		2 hours	23/10/2014
16.	Inner Peace and Contentment	Guidance on Vipshyna	Dr. Yugandhara Rajeshirke	3 days	15,16,17 Sept. 2014

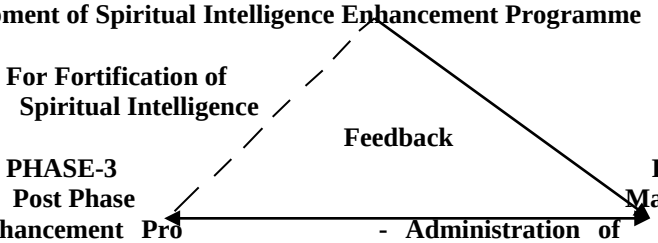
Digramatic representation of implementation of s.i. enhancement programme

Phase-1

Preparatory Phase

Translation of standardized S.I.Scale

Development of Spiritual Intelligence Enhancement Programme

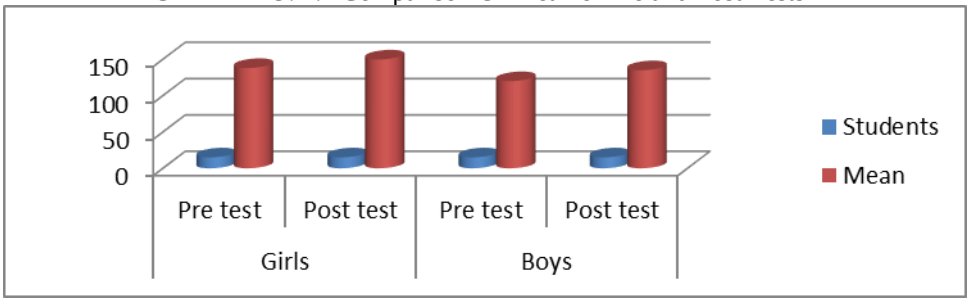


Data analysis

TABLE NO.2: "Comparative S.I.Scores of Boys and Girls"

		Students	Mean	S.D.	0.05 Level	0.01 Level	t-Value
Girls	**Pre test**	**15**	**138.00**	**12.74**	**1.70**	**2.46**	**2.99**
	Post test	**15**	**149.73**	**8.28**			
Boys	**Pre test**	**15**	**119.90**	**16.24**	**1.70**	**2.46**	**2.86**
	Post test	**15**	**134.90**	**12.24**			

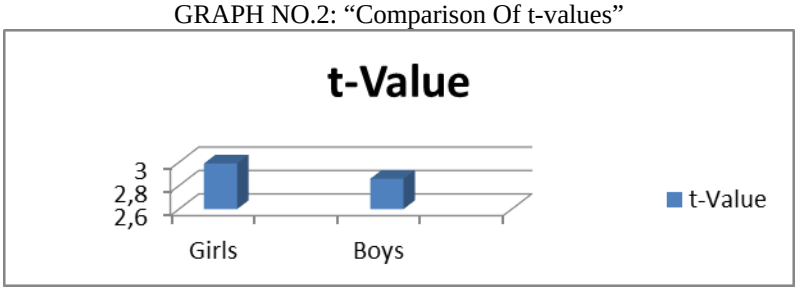
GRAPH NO.1 : "Comparison Of Mean of Pre and Post Tests"



CONCLUSION

Mean scores were seen increased in post test, there was significant improvement in scores of Spiritual intelligence.

GRAPH NO.2: "Comparison Of t-values"



RESULT

Use of Spiritual intelligence development activities proved effective and there is significant increase in S.I. scores s of both Girls and Boys in Post tests.

The Spiritual Intelligence Enhancement Programme is equally effective for Boys and Girls.

Major findings

1. Girls were significantly scoring higher than boys.
2. Both girls and boys are caring, supportive and enriching.
3. Girls are Spiritually stronger than boys.
4. Both girls and boys are goal oriented.
5. Girls perceived their Spiritual intelligence than that of boys.
6. Spiritual intelligence development programme was effective.
7. There is no significant difference between the means of pre-test and post-test of experimental group.
8. Growth of post test scores is the result of experimental treatment given to the experimental group.

Suggestions

- Teacher should encourage the pupils so that they can think independently, face any problematic situation confidently and portray Spiritually intelligent behavior.
- Trainee teachers should pursue their S.I.and should keep exercise, meditation and yoga for their healthy mind and concentration. They should be introspective.

General conclusion

It can be said to conclude that, personal ability of thoughts and decision making is considered while determining Intelligence Quotient. Whereas personal feelings in different situations are considered while determining Emotional Quotient.Thoughts about self existence and purpose of our being etc. are considered for spiritual Quotient.The impact of Spiritual Intelligence enhancement program will be studied and efforts will be made for improvement in SQ of trainee teachers during the research. Thus the research is aimed to help them become cultured and aware.

Spiritual Intelligence Enhancement Programme developed by the researcher became effective to develop Spiritual Intelligence of trainee teachers.

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ACADEMIC ANXIETY OF ADOLESCENT BOYS AND GIRLS IN HIMACHAL PRADESH

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ABSTRACT

The present research statement of the problem is "Academic Anxiety of Adolescent boys and girls in Himachal Pradesh**".** Main objectives were laid down for the present study: To study the nature of distribution of scores for Sen. Sec school boys on the variable 'Academic Anxiety'; To study the nature of distribution of scores for Sen. Sec school girls on the variable 'Academic Anxiety'; To study the nature of distribution of scores for total sample of Sen. Sec school students on the variable 'Academic Anxiety'; and to compare Sen. Sec school boys and girls with respect to their mean scores on the variable 'Academic Anxiety' This research is completed on senior secondary school students of Himachal Pradesh both sex. The purposive sampling method is used for the selection of the sample. The four hundred students are selected for the study. This research gender (boys and girls) is independent variable and Academic Anxiety is dependent variable. Academic Anxiety' Scale for Children (AASC): Developed by Dr. A.K. Singh and Dr. A. Sen Gupta is used. In short Sen.sec. School students differ in their level of 'Academic Anxiety'. Sen.sec. School boys differ in their level of Academic Anxiety. Sen.sec. School girls differ in their level of Academic Anxiety. Total Sen.sec. Students differ in their level of Academic Anxiety. It is further revealed that the nature of distribution of scores on the variable 'Academic Anxiety' is more or less and similar for sen.sec. school boys, girls and total sample.

Key words: Academic Anxiety , Adolescent.

INTRODUCTION

Anxiety is a generalized mood condition that can often occur without an identifiable triggering stimulus. Anxiety is a general term for several disorders that cause nervousness, fear, apprehension, and worrying. These disorders affect how we feel and behave, and they can manifest real physical symptoms. Mild anxiety is vague and unsettling, while severe anxiety can be extremely debilitating, having a serious impact on daily life. Usually anxiety is a response to outside forces, but it is possible that we make ourselves anxious with "negative self-talk" - a habit of always telling ourselves the worst will happen. People with anxiety present a variety of physical symptoms in addition to non-physical symptoms that characterize the disorders such as excessive, unrealistic worrying. Many of these symptoms are similar to those exhibited by a person suffering general illness, heart attack, or stroke, and this tends to further increase anxiety. Anxiety is not a bad thing. It is true that a high level of anxiety interferes with concentration and memory, which are critical for academic success. Without any anxiety, however, most of us would lack the motivation to study for exams, write papers, or do daily homework.

'Academic Anxiety' has four components –emotionality, task-generated interference, study skills deficits and worry. Emotionality is linked to biological signs, such as a fast heartbeat, nausea, sweaty palms and tense muscles. Study skills deficits result from inadequate study techniques that trigger anxiety. Task-generated interference is an outcome of unproductive behaviors that impede academic performance, such as spending too much time on questions you can't answer. Worry undermines academic success by distracting you from focusing on what needs to be done to perform well.

Youth today are living in an increasingly anxiety ridden atmosphere. They live in a world where nothing seems to be guaranteed with certainty and at the same time they are expected to perform at every front, the main being the academics. Adolescents often lack in academic motivation and performance, as their attention is divided among a lot many things especially at creating an identity for themselves. Once out of elementary school, they find their teachers, parents, and peers putting a new emphasis on deadlines, academics and mastery of large amounts of information. 'Academic Anxiety' is a common issue that students cannot ignore if they want to succeed in school. It often leads to problems concentrating while studying and remembering information while completing tests, which makes the students feel helpless and like a failure. *Devi (2004)* conducted a study on anxiety level among college going students. The objectives included 1) To study the anxiety level of students (Boys and Girls) in the age group of

16-18 years. 2) To study the differences in anxiety level between boys and girls in the age group, of 16-18 years. 3) To study the differences in anxiety level between the students of Imphal and Jorhat town. Random sampling technique was used for collection of data from grade XI and XII. The conclusions of the study are: 1) There is significant sex difference in anxiety level, with girls obtaining more mean anxiety score than boys. 2) Differences in anxiety level between students of Imphal and students of Johrat were non-significant. 3) Differences in anxiety level between boys and girls of Imphal were non-significant. 4) There is significant difference between boys and girls of Jorhat in anxiety level, with girls obtaining more mean anxiety scores. 5) Difference in anxiety level between students of Imphal and Jorhat were non-significant. 6) Differences in anxiety level between girls of Imphal and girls of Jorhat were non-significant. *Sharma and Mahajan (2008)* conducted a study to explore the anxiety among adolescent boys and girls, in terms of four selected areas viz. physical, social, emotional and educational. For this purpose 40 boys and 40 girls (15 to 17 years) were selected through a multistage stratified random sampling technique. The study revealed that 1) The adolescent boys and girls do not differ significantly as far as physical anxiety is concerned, 2) The boys and girls do not show a significant difference in social anxiety as well, 3) The adolescent girls and boys differ significantly in respect to overall emotional anxiety and 4) Girls were found to be more anxious about their marks and percentage as compared to the boys. *Trivedi and Bhansali (2008)* conducted a comparative study between boys and girls of 16-18 years to know the academic anxiety prevailing amongst them. A total sample of 240 adolescent, 120 boys and 120 girls from different high schools of Jodhpur city were selected. It was seen that girls on the whole had more incidences and intensity of academic anxiety in comparison to boys. *Neelam and Attri (2013)* have attempted to find out the academic anxiety and academic achievement of secondary school students. It was hypothesized that there exists a significant difference in academic anxiety and academic achievement of male and female secondary school students. For verification of these hypotheses, the data was collected from 200 secondary school students of Mandi district of Himachal Pradesh by adopting lottery method of random sampling by administering 'Academic Anxiety Scale for Children (AASC)' and their marks of class 9th were taken as academic achievement. . The statistical technique used was t- test. The findings of the present study revealed that there exist significant differences in academic anxiety and academic achievement of male and female secondary school students. Girls found to be more academically anxious and had better academic achievement than boys.

Objectives of the Study:

The following objectives were laid down for the present study:

1. *To study the nature of distribution of scores for Sen. Sec school boys on the variable 'Academic Anxiety'.*
2. *To study the nature of distribution of scores for Sen. Sec school girls on the variable 'Academic Anxiety'.*
3. *To study the nature of distribution of scores for total sample of Sen Sec school students on the variable 'Academic Anxiety'.*
4. *To compare Sen. Sec school boys and girls with respect to their mean scores on the variable 'Academic Anxiety.*

Hypothesis of the Study:

The following hypotheses were formulated for the present study:

1. Sen. Sec school boys differ in their level of 'Academic Anxiety'.
2. Sen. Sec school girls differ in their level of 'Academic Anxiety'.
3. Total Sen. Sec school students differ in their level of 'Academic Anxiety'.
4. Sen. Sec school boys and girls differ significantly with respect to their mean scores on the variable 'Academic Anxiety'.

Research Methodology:

This research is conducted on Sen. Sec. School students of both sexes. Descriptive survey research method is used for collection of the data. The research is comparative study among boys and girls in terms of their academic anxiety.

Variables of the Study:

It was showed as follows.

A) Independent Variables: Type of Gender: 1) Boys 2) Girls

B) Dependent variable: Academic Anxiety

Selection of the Sample:
In the present research, sample consisted of four hundred boys and girls. Out of four hundred samples, two hundred are boys selected and two hundred are girls. Purposive sample method is used for selection of the sample.

Limitations of the Study:
1. The present research is conducted on only Sen. Sec. schools 11th class students who will be considered as adolescents.
2. The study delimited to 400 students.
3. The study will be restricted to only four districts of himachal Pradesh i.e Kangra, Chamba, Una and Shimla.

Scopes of the Study:
1. The present research is conducted on sen sec school students of both sexes in terms of their academic anxiety.
2. The present study is completed on boys and girls students in Sen. Sec. School students.

Tools of the study:
The aim of present investigation was to study high school students with respect to the variables of 'Academic Anxiety'. Hence, the following tools were used in the present study to collect the relevant information:

'Academic Anxiety' Scale for Children (AASC) developed by Dr. A.K. Singh and Dr. A. Sen Gupta.
The 'Academic Anxiety' Scale for Children (AASC) has been developed for use with school students of class VIII, IX and X (age range: 13-16 years). The preliminary form of the 'Academic Anxiety' Scale for Children (AASC) had 30 items. After carrying out item analysis based upon Kelley technique (1939), only 20 items were retained and the remaining 10 were dropped.

Statistical Analysis and Interpretation:
The present study aimed at studying the *"Academic Anxiety of Adolescent boys and girls in Himachal Pradesh"*. In order to achieve this objective, a sample of 400 students comprising 200 boys and 200 girls studying in class XI in Senior Secondary Schools .
The details of analysis of data collected from the selected sample on the variable 'Academic Anxiety' is presented as under:

A. Distribution of scores for Sen. Sec school boys on the variable 'Academic Anxiety'
The distribution of scores for Sen. Sec school boys on the variable 'Academic Anxiety' is given in Table 1.1
H:1: Sen. Sec school boys differ in their level of 'Academic Anxiety'.

Table 1.1: Distribution of scores for Sen. Sec school boys on the variable 'Academic Anxiety'

Class Interval	Frequency	Cumulative Frequency	Percent	Cumulative Percent
19-22	0	200	0.0	100.0
16-19	6	200	3.0	100.0
13-16	43	194	21.5	97.0
10-13	68	151	34.0	75.5
7-10	65	83	32.5	41.5
4-7	15	18	7.5	9.0
1-4	3	3	1.5	1.5
Total	**200**		**100.0**	

Highest Score = 18
Lowest Score = 01
Range = 17

B. Distribution of scores for Sen Sec school girls on the variable 'Academic Anxiety'

The distribution of scores for Sen Sec school girls on the variable 'Academic Anxiety' is given in Table 1.2

H:2: Sen. Sec school girls differ in their level of 'Academic Anxiety'.

Table 1.2: Distribution of scores for Sen. Sec school girls on the variable 'Academic Anxiety'

Class Interval	Frequency	Cumulative Frequency	Percent	Cumulative Percent
19-22	0	200	0.0	100.0
16-19	6	200	3.0	100.0
13-16	48	194	24.0	97.0
10-13	77	146	38.5	73.0
7-10	51	69	25.5	34.5
4-7	17	18	8.5	9.0
1-4	1	1	0.5	0.5
Total	**200**		**100.0**	

Highest Score = 17
Lowest Score = 3
Range = 14

C. Distribution of scores for total sample of Sen. Sec school students on the variable 'Academic Anxiety'

The distribution of scores for total sample of Sen. Sec. school students on the variable 'Academic Anxiety' is given in Table 1.3

H:3: Total Sen. Sec school students differ in their level of 'Academic Anxiety'.

Table 1.3: Distribution of scores for total sample of Sen Sec school students on the variable 'Academic Anxiety'

Class Interval	Frequency	Cumulative Frequency	Percent	Cumulative Percent
19-22	0	400	0.0	100.0
16-19	12	400	3.0	100.0
13-16	91	388	22.8	97.0
10-13	145	297	36.25	74.25
7-10	116	152	29.0	38.0
4-7	32	36	8.0	9.0
1-4	4	4	1.0	1.0
Total	**400**		**100.0**	

Highest Score = 18

Lowest Score = 1

Range = 17

It is revealed from frequency distribution of boys, girls and total sample of Sen.sec. school students given in Tables 1.1, 1.2 and 1.3 that the scores on the variable 'Academic Anxiety' are distributed over a range of 17 for boys, 14 for girls and 17 for total sample of Sen.sec. school students. Thus, it may be said that Sen.sec. school students differ in their level of 'Academic Anxiety'. Hence the hypotheses that "Sen.sec. *School boys differ in their level of Academic Anxiety*", "Sen.sec. *School girls differ in their level of Academic Anxiety*" and "*Total* Sen.sec. *Students differ in their level of Academic Anxiety*" are accepted. It is further revealed from Tables that the nature of distribution of scores on the variable 'Academic Anxiety' is more or less and similar for Sen.sec. School boys, girls and total sample. This is evident from the fact that 91, 91 and 91.05 percent fall between the scores of (7-16) for boys, girls and total sample indicating almost similar concentration of scores in a limited range.

D. STUDYING THE SEX DIFFERENCES ON THE VARIABLES ACADEMIC ANXIETY

Table 1.4 presents the t-value for Sen. Sec school boys and girls with respect to their mean scores on 'Academic Anxiety' along with N, Mean, Standard Deviation and Standard Error of Mean for the two groups.

H:4: Sen Sec school boys and girls differ significantly with respect to their mean scores on the variable 'Academic Anxiety'.

Table 1.4: t-value for Sen. Sec school boys and girls with respect to their mean scores on 'Academic Anxiety'

Groups	N	Mean	SD	df	SEM	t-value
Boy	200	10.34	3.01	398	0.295	0.88**
Girl	200	10.60	2.89			

**** Not significant at 0.05 level of significance.**

From the above table No.1.4 . it is observed that, the boys mean value is 10.34 and SD value is 3.01. Like that the girls mean value is 10.60 and SD value is 2.89. Obtained 't' Value is **0.88** on academic anxiety. Which is not significant at 0.05 level of significance. Which is lower than the table value at 2.34 at 0.05 level. Table 't' value is greater than calculated 't' value. So, there is no significant difference between girls and boys on academic anxiety. So that the hypothesis no.4. ***"Sen Sec school boys and girls differ significantly with respect to their mean scores on the variable 'Academic Anxiety"*** is rejected. Because, boys have low level of academic anxiety than girls.

RESULTS OF THE STUDY:

1. The scores on the variable 'Academic Anxiety' are distributed over a range of 17 for boys, 14 for girls and 17 for total sample of Sen.sec. School students. Thus, it may be said that Sen.sec. School students differ in their level of 'Academic Anxiety'. Sen.sec. School boys differ in their level of Academic Anxiety.
2. Sen.sec. School girls differ in their level of Academic Anxiety
3. Total Sen.sec. Students differ in their level of Academic Anxiety. It is further revealed that the nature of distribution of scores on the variable 'Academic Anxiety' is more or less and similar for Sen.sec. School boys, girls and total sample.
4. This is evident from the fact that 91, 91 and 91.05 percent fall between the scores of (7-16) for boys, girls and total sample indicating almost similar concentration of scores in a limited range.
5. Sen. Sec school boys and girls differ significantly with respect to their mean scores on the variable 'Academic Anxiety. Because, boys have low level of academic anxiety than girls.

CONCLUSION: In short, Sen.sec. School students differ in their level of 'Academic Anxiety'. Sen.sec. School boys differ in their level of Academic Anxiety. Sen.sec. School girls differ in their level of Academic Anxiety. Total Sen.sec. Students differ in their level of Academic Anxiety. It is further revealed that the nature of distribution of scores on the variable 'Academic Anxiety' is more or less and similar for sen.sec. School boys, girls and total sample.

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AN OVERVIEW OF THE NATIONAL CURRICULUM DEVELOPMENT PROCESS FOR AZERBAIJAN

Elmira Aliyeva

INTRODUCTION

The need for developing stronger education stems from the social pressures for change on one hand and on the other hand, from the latest scientific development in various fields. The future of the Azerbaijan nation is contingent upon addressing the education needs of today's children in a way that meets these needs.

Social Need for Curriculum Development

Strong social changes are characteristics of present times. Governmental, political, and economic systems have changed so much that their effects have not gone unheeded by the Ministry of Education. Rapid changes in working and business conditions and resulting expectations demand a flexible attitude towards continuous education and the adoption of effective preparation in appropriate studies.

The government of Azerbaijan is committed to reform of education utilizing a 10-year educational reform strategy. The primary purpose of this reform is to address and improve the quality of education and realign with the emerging market economy and social conditions.

More specifically, this reform is comprised of five components: (a) quality and relevance of general education; (b) efficiency and finance reforms; (c) equity and access, upgrading schooling in less advantaged regions, school grant program; (d) management, planning, and monitoring capacity; and (e) project coordination and monitoring.

Scientific Need for Curriculum Development

The utilization of new technologies, the ability to pursue studies independently, a spirit of trying, sense of responsibility, and the ability to cooperate are important attributes in the world where individual and collective tasks and duties in working life are constantly changing and where responsibilities are redistributed in new ways.

The realm of knowledge is growing by leaps and bounds, which means the content of many subjects in public schools requires substantial and frequent revision in order to properly prepare today's youth. In addition, it is difficult to master the new subject matter in the absence of updated curriculum reflecting new teaching strategies, new methodologies, and new technology.

The Purpose of Curriculum

The overarching purpose of curriculum is to provide planned learning experiences for all children. The curriculum is the vital link between education and learning, between teacher and student. The more comprehensive the curriculum and the curriculum planning process is, the more the curriculum achieves its purpose as the vital link in education.

Perspectives of Education

John Dewey (1902) provides a descriptive definition of curriculum as "Curriculum is a continuous reconstruction, moving from the child's present experience out into that represented by the organized bodies of truth that we call studies…the various studies…are themselves experience – they are that of the race."

Franklin Bobbitt (1918) provides a prescriptive definition of curriculum as "Curriculum is that series of things which children and youth must do and experience by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be."

Gagne (1967) provides a concise definition of curriculum as "Curriculum is a sequence of content units arranged in such a way that the learning of each unit may be accomplished as a single act, provided the capabilities described by specified prior units (in the sequence) have already been mastered by the learner.

Hilda (1962) provides a comprehensive definition of curriculum as "A curriculum usually contains a statement of aims and of specific objectives; it indicates some selection and organization of content; it either implies or manifests certain patterns of learning and teaching… Finally, it includes a program of evaluation of the outcomes".

Tyler (1957) provides a definition of curriculum as "[The curriculum is] all the learning experiences planned and directed by the school to attain its educational goals."

Curriculum can be understood, as expressed by these educators, as an essential component of the educational experiences of the learner. Curriculum may be thought of as the path by which teacher and learner are connected. The more perfectly planned and developed this path is, the more the student experiences the necessary steps to educational success and the more perfectly the student will have gained the education necessary to meeting the national goals of educational reform.

Curriculum Development

The fundamental questions to address in developing curriculum are:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether and to what extent these purposes are being attained? (Tyler, 1949)

These four questions comprise the conceptual overview of curriculum. The curriculum framework is the document that provides the outline of the structure demonstrating the best practices for achieving the knowledge, skills, and processes, the student should know and understand about a particular discipline. The curriculum must be developed so that the student is able to continue with the appropriate studies at the next schooling level based upon the number of hours as defined in the national standards.

Concept Mapping

The State of Washington (2006) has developed an extensive process for curriculum development. In particular, the Curriculum Council provides an overview for concept mapping of curriculum design using the following qualities:

1. Information regarding missing and/or unnecessary components and themes of course content.
2. Holistic integration, continuity, and organization of meaningful, relevant, and pedagogically sound concepts and content areas for both teachers and students.
3. Guidelines for instructional materials, teaching strategies, and task allocations.
4 Visual representation of the relationship between course content and objectives.
5. Cross validation of faculty and student course purposes and content.
6. The relationship of theory to practice and multiple ways of conceptualization of content and pedagogy.

Steps for Planning Curriculum Development

The curriculum plan must contain (a) the goals, (b) rationale, (c) learner characteristics, (d) subject content, (e) learning objectives, (f) instructional plan, (g) list of materials, and (h) a plan for assessment or evaluation. These elements comprise the basic core and steps used to develop a complete curriculum.

These elements of the basic curriculum development are designed to offer a curriculum that is academically rich, student-centered, and cultural diverse, and recognizes the contributions from all of the shareholders of the Republic. The successful curriculum inspires children to realize their full potential by bringing together educational objectives, content, instructional strategies and evaluative techniques for all subjects covered in every grade level. Curriculum also must promote high expectations for teachers and students. When properly developed, curriculum becomes the foundation and heart of education and attains the capacity to serve as the underpinning of a successful society capable of meeting ongoing and new challenges.

Curriculum Framework

The curriculum framework provides an overview of the entire structure of the curriculum development process. This framework provides the vision to improve the learning outcomes of all students and to enable schools to develop learning and teaching programs that meet the needs of students and changes in society. The curriculum framework reflects contemporary thinking about what students need to learn in order to lead successful and rewarding lives in the 21st century and how schools and teachers can best help them to learn. The development of knowledge, skills and values is a lifelong process and occurs in many places besides school. The outcomes that all students need to attain in order to become lifelong learners, achieve their potential in their personal and working lives, and play an active part in civic and economic life must be described in the curriculum framework as well as the student outcomes at different stages in their schooling.

The primary components of a comprehensive curriculum framework for meeting the Azerbaijan educational goals are contained in the following sections and subsections.

Philosophy and Conceptual Principles

Philosophy is a discipline that cultivates critical thinking as a systematic endeavor that seeks an understanding of all human experiences. The philosopher strives after an understanding of self, others, and the world through an analysis of various domains of human experience and reflection. Thus, philosophy looks for the connections between art, science, mathematics, religion, politics, and human behavior and attempts to interpret these thoughts and experience within a holistic tableau. In sum, philosophy attempts to disclose rational meanings for the question "What is it all about?"

In order to provide the philosophical basis by which the national curriculum is to be developed, seminal principles guiding that development is established by acceptance of a mutual philosophy and principles. This process of development and acceptance begins with definitions of essential terms used to characterize the educational system to be improved through curriculum development.

Definitions

Education. Education is the process of training and developing the mind for knowledge and the character for proper actions. This process takes place typically in formal schooling, but also at home and throughout the day and lifetime of each person. The process of education is achieved by instruction, study, schooling, direction, tutelage, and training resulting in the edification of the student being served.

Curriculum. The curriculum provides the pathway for developing the skills, performances, attitudes, and values pupils are expected to learn from schooling. The curriculum includes the planned sequence that will be delivered to the students, the description of materials, and the expected outcomes and their evaluation. The curriculum also provides for sustained process of teaching and learning.

Framework. The curriculum framework represents in an outline form, a set of concepts linked together to demonstrate a plan or design describing the complete process of curriculum development.

Standard. Standards are used in curriculum development to refer to the average performance expected for a student of a particular age and may be divided into two general categories: (a) content standards, which are expectations about what the child should know and be able to do in different subjects and grade levels; defines expected student skills and knowledge and what schools should teach, and Performance standards, which are specific expectations specified at different performance levels or benchmarks.

Performance level. Performance levels refer to varying degrees of achievement in broad terms. These performance levels are identified by expected outcomes in the curriculum. Outcomes are metrics and thus must be measurable. These levels are frequently expressed as Advanced, Proficient, Nearing Proficiency, and Novice.

Performance level recommended for Azerbaijan. Three levels of performance are recommended, specifically, Novice, Apprentice, and Proficient. These levels are defined as follows:

1. Novice. (a) Demonstrate minimal understanding of rudimentary concepts and skills, (b) occasionally make obvious connections among ideas, providing minimal evidence or support for inferences and solutions, (c) have difficulty applying basic knowledge and skills, and (d) communicate in an ineffective manner.

2. Apprentice. (a) Demonstrate partial understanding of basic concepts and skills, (b) make simple or basic connections among ideas, providing limited supporting evidence for inferences and solutions, (c) apply concepts and skills to routine problem-solving situations, and (d) communicate in a limited manner.

3. Proficient. (a) Demonstrate general understanding of concepts and skills, (b) make meaningful, multiple connections among important ideas or concepts and provide supporting evidence for inferences and justification of solutions, (c) apply concepts and skills to solve problems using appropriate strategies, and (d) communicate effectively.

Conceptual Principles

The curriculum framework for schools in Azerbaijan is underpinned by seven key principles. These principles guide schools in whole-school planning and curriculum development.

Common Core Values
Common core values represent the basic principles that are believed to be essential to the complete development of the national curriculum. While recognizing and respecting that there is a range of value positions in a pluralistic society, there is also a core of shared values. These core values include:

Holistic. An encompassing or exhaustive view of curriculum is essential to the learning experience. The curriculum must be dynamic and inclusive of all learning experiences provided for the student. The curriculum includes the learning environment, teaching methods, the resources provided for learning, the systems of assessment, the school ethos and the ways in which students and staff behaves towards one another. All of these provide experiences from which students learn. Together, they add meaning, purpose and enjoyment to students' lives. Particular attention is required to ensure that there is congruence and integration between the various dimensions of curriculum.

These core values may be specifically identified as: (a) a commitment to the pursuit of knowledge resulting in a disposition ordered toward contributing to the pursuit of excellent; (b) learning respect for each person's unique potential-physical, emotional, aesthetic, spiritual, intellectual, moral and social; (c) demonstrating respect for others resulting in a commitment to exploring and promoting the common good, accepting social and civic responsibility; and caring for the well being of others; and (d) learning to contribute to democratic processes, social justice, and cultural diversity.

Inclusive. The national curriculum addresses the needs for all students in all schools, irrespective of educational setting, with access to a wide and empowering range of knowledge, skills and values. This curriculum recognizes and accommodates different starting points, learning rates, and previous experiences of individual students or group of students. Students' cultures, physical or mental challenges, race, class, and gender are respected individually while at the same fostering the common goals and aspirations of all students.

Flexibility. The curriculum must be adaptable to the particular needs of different schools and communities. It must also be responsive to social and technological change and meet students' needs arising from that change process. In particular, the curriculum must encourage effective use of new technologies as tools for learning and production. The framework provides the means to balance what is common to the education of all students with the kind of flexibility and openness required for education in the 21st century.

Collaboration. Education is the shared responsibility of students, teachers, parents, tertiary educators and the community. Successful implementation of the curriculum framework requires a collaborative approach to planning by all concerned and a collective responsibility for students' achievement of the intended outcomes.

Philosophy
The philosophy of education used to guide the national educational reform recognizes the seminal role education plays as the foundation of society. Society is served by education to the degree to which students are treated and treat others with respect, dignity, and core human values.

Effective education enables students to make connections between ideas, people and things, and to relate local, national and global events and phenomena. A holistic curriculum encourages students to see various forms of knowledge as related and forming part of a larger whole. While opportunities to specialize must be provided to allow for specific talents and interests, all students need a broad grasp of the various fields of knowledge and endeavor. They also need experience in building patterns of interconnectedness, which help them to make sense of their own lives and of the world.

Students develop and learn at different rates and in different ways, constructing new knowledge and understandings in ways that link their learning to their previous experiences. The developmental approach of a educationally sound curriculum framework accommodates these needs. At the same time, the framework provides students and their parents with a clear sense of the direction of students' learning, and through appropriate assessment and reporting procedures, of how students are progressing.

The specific components of an educational philosophy include many elements, the most important of which are summarized here in.

Curriculum
Curriculum philosophy is based on the belief that all students can learn and function successfully in society if given the appropriate pathway. The pathway for students to acquire these qualities is found in the curriculum;

therefore the curriculum is also an essential component in the foundation of education. The realization of each child's potential lies at the heart of the purpose and goal of all of curriculum policy and development.

Specifically, the philosophy related to curriculum development should ensure that students acquire mastery of basic learning in basic skills and the ability to think independently and critically. These outcomes should be ordered toward understanding and believing in the Azerbaijan way of life, to act democratically in their relationships with others, to develop in themselves attitudes of respect and helpfulness towards others, to want and to be able to perform well some portion of the work of the world, and to utilized the acquired knowledge and skills necessary to do this with satisfaction to themselves and society.

Teaching

Teaching is a professional activity that requires the recognition of both common likenesses as well as individual differences of students in order to engender achievement and progress towards the realization of the purposes and goals of the curriculum. Teachers must be committed to a student-centered relationship with their students in order to communicate the caring and respect necessary to lead the students down the path provided by the curriculum. This process must make their interactions with their students achieve meaningful learning; develop an appreciation for their country, and its language, culture, and community service experiences all framed within the context of a larger global perspective.

The most efficacious environment for the delivery of this curriculum is in modern facilities having current technological means available for students and teachers, small class sizes. The school environment promotes serving individual needs, self-respect, a strong work ethic, and a recognition of basic human values.

The following principles about learning and teaching are based on Azerbaijan national values and beliefs about the learning environment schools should provide and contemporary research and professional knowledge about how learning can be supported. As such, these principles should lead to school and classroom practices that are effective in helping students to achieve the outcomes in the curriculum framework: (a) opportunity to learn, (b) connection and challenge, (c) action and reflection, (d) motivation and purpose, (e) respecting individual differences and common needs, (f) independence and collaboration, and (g) supportive environment.

Learning

Essential to the process of learning is the exposure of students to experiences that allow them to gain an understanding of the sources of knowledge, an ability to search for and to create new knowledge, and evaluate the validity of that knowledge. A critical attitude towards knowledge and its truthfulness is further emphasized because as research in various fields continues, old knowledge has rapidly been replaced with new and more developed knowledge based upon research and resulting theoretical frameworks.

While teaching the content of the curriculum, the ultimate goal of learning is to understand the principles upon which the content is said to exist. When students achieve the ability to understand seminal principles and how to deduce from those principles, they become educated and achieve self-direction and life-long learning. This form of learning can be achieved by integrating the process-oriented curriculum with the outcome-oriented curriculum so that specific content and individual skills are not sacrificed in the process of understanding general principles.

Outcomes

Outcomes are the defined achievements expected of each student at different stages of the educational process. Outcomes provide both a guide for a suitable curriculum as well as identify areas appropriate for assessment.

Assessments

Assessment provides for judging the quality of education delivered to the students relative to the goals and expectations delineated in the curriculum. Both within and between assessments should be used with the first form of assessment, i.e., within assessment, based upon multiple classroom indicators. Within assessments provide information regarding the actual content of individual student achievement while between assessment provides for a rank or ordinal level of achievement relative to the population that has been used to establish the norm.

Crucial to the evaluation process is the understanding that evaluation serves to promote the students' growth in the direction of the objectives of the curriculum. The evaluation process contributes substantially to the continuous reform of education, particularly with respect to curriculum development and professional development for teachers.

The evaluation process must also contribute information back to the students and the students' families. This information is important information regarding the students' progress and essential to planning for future education and employment. Evaluation should always contribute to the well being of the person being evaluated.

Mission Statement
The mission statement assures that all students will acquire and demonstrate competencies in the areas of academic development, career development, and personal social development. Students will be educated in order to provide over their lifetimes the greatest opportunity to learn how to learn, how to work, and how to live in a productive manner consistent with human values and needs.

Vision Statement
The vision statement provides the future direction to which the present mission of the schools is to be ordered and directed. The vision appropriate to the national curriculum must be developed in order to meet the future needs of its citizens. This vision requires addressing the changes inherent in the global context of a national existence. The curriculum must provide an education that will foster the cognitive skills and attitudes that enable students to think critically, creatively, and constructively in order to establish and maintain a common bond among students, parents, administrators, teachers, staff, and community. This bond will be the seminal resource that provides our students and people with the ability to adapt to new situations and the ever-changing challenges of life.

Context of Curriculum Development
History
The history of curriculum development, design, theory, and practice provides the context in which this framework for curriculum development may be better understood. These topics are briefly discussed below.

Curriculum history deals with processes of describing, analyzing, and interpreting past curriculum thought and practice. By studying the past, it is possible to better understand the present as well as to profit from insights and approaches to problems that relate to similar circumstances today. History then places educators in a better position to analyze present conditions and chart future courses of action. Historical periods become the artifact of the historian's analysis: People don't live and events do not occur in neat chronological packages called "periods." Given this caution, an analysis of that century plus a decade of curriculum history seems to suggest that there were eight distinct eras, each with its own distinguishing features.

Date	Period
1890-1916	Academic Scientism
1917-1940	Progressive Functionalism
1941-1956	Developmental Conformism
1957-1967	Scholarly Structuralism
1968-1974	Romantic Radicalism
1975-1989	Privatistic Conservatism
1990-1999	Technological Constructionism
2000-present	New Privatistic Conservatism

These eras provide a way of examining the past century curriculum theory and practice that will facilitate an understanding based on an inquiry of what has occurred in the past. As described by Sarason (1990):

The significance of the historical stance is not only in what it tells us about the manifestations of a particular problem over time, or what one learns about the efficacy of remedial actions, but also in what one learns, about the systems quality-that is, the features of the system in which the problem arises and recurs, or remains constant but unremarked until it is seen [again] as destabilizing the system.

Curriculum Development
One of the most widely used labels in the field, sometimes taken to be synonymous with curriculum study itself, curriculum development, refers to the process of deciding what to teach and learn, along with all the considerations needed to make such decisions. Brought into full bloom in 1935 by Caswell and Campbell through their book entitled *Curriculum Development*, the term has been used in the titles of several of the most prominent curriculum texts: Stratemeyer et al. (1957); Smith, Stanley, and Shores (1957); Taba (1962); and Tanner and Tanner (1980). Each of these books symbolizes the vast array of consideration (historical,

philosophical, cultural, political, psychological, and economic) that needs to be taken into account in curriculum development. Moreover, each shows that all individuals in the process must be given careful attention, as well as the usual issues of purposes, content or learning experiences, organization, instruction, evaluation, and change.

Curriculum Design
Sometimes equated with curriculum development, curriculum design is usually more specific. The planning of curriculum guides, the analysis of instructional materials, the development of instructional of instructional units, the preparations of computer software, and the creation of instructional games and programmed learning materials all require attention to key elements of curriculum design: intent or objectives, content or activities, organization, and evaluation. The curricularist is concerned with design analyzes the consistency and congruence within and among each of these areas. Like Bobbitt, Tyler also placed an emphasis on the formation of behavioral objectives.

Since the real purpose of education is not to have the instructor perform certain activities but to bring about significant changes in the students' patterns of behavior, it becomes important to recognize that any statements of objectives of the school should be a statement of changes to take place in the students (Tyler, 1949).

These concerns translate into a nicely ordered procedure:

Step 1. Diagnosis of need
Step 2. Formulation of objectives
Step 3. Selection of content
Step 4. Organization of content
Step 5. Selection of learning experiences
Step 6. Organization of learning experiences
Step 7. Determination of what to evaluate and the ways and means of doing it. (Taba, 1962)

The attraction of this way of approaching curriculum theory and practice is that it is systematic and has considerable organizing power.

Curriculum Theory
The organization of schooling and further education has long been associated with the idea of a curriculum. The idea of curriculum is hardly new, but the way it has been understood and theorized was altered over the years and there remains considerable dispute as to meaning. Curriculum has its origin in the running/chariot tracks of Greece, i.e., literally a course or a path. In Latin curriculum was a racing chariot.

A useful starting point for us here might be the definition offered by Kerr and taken up by Kelly in his standard work on the subject. Kerr defines curriculum as, "All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school" (quoted in Kelly 1983; see also, Kelly 1999).

Glatthorn's (2006) four curriculum categories still hold up to scrutiny today and continue to help provide a road map for curriculum theory. Nonetheless, Smith (1996, 2000), author of "Curriculum Theory and Practice", Encyclopedia of Informal Education developed his own categories for understanding curriculum development. Smith's approaches are listed as follows: (a) Transmission of Information: Curriculum as a body of knowledge to be transmitted via a syllabus, (b) End Product: Curriculum as an attempt to achieve certain ends (product), (c) Process: Curriculum as a process, and (d) Praxis: Curriculum as a praxis (action that is committed). Further investigation into these approaches to curriculum theory may be enhanced in light of Aristotle's (1976) influential categorization of knowledge into three disciplines: the theoretical, the productive, and the practical.

In the late 1980s and the 1990s many of the debates about the national curriculum for schools did not show much concern how the curriculum was thought about as to what its objectives and content might be. The work of two American writers, Franklin Bobbitt (1918, 1928) and Ralph W. Tyler (1949), dominated theory and practice within this tradition. In the *Curriculum* Bobbitt writes as follows:

> The central theory [of curriculum] is simple. Human life, however varied, consists in the performance of specific activities. Education that prepares for life is one of that prepares definitely and adequately for these specific activities. However numerous and diverse they may be for any social class they can be discovered. This requires only that one go out into the world of affairs and discover the particulars of which their affairs consist. These4 will show the abilities, attitudes, habits, appreciations and forms of

> knowledge that men need. These will be the objectives of the curriculum. They will be numerous, definite and particularized. The curriculum will then be that series of experience which children and youth must have by way of obtaining those objectives. (1918)

A lasting impression on curriculum theory and practice has been made by Tyler. (1949) He shared Bobbitt's emphasis on rationality and relative simplicity. His theory was based on four fundamental questions:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?

Curriculum theory has many forms that may be derived from overarching philosophies, for example, pragmatism, idealism, realism, existentialism, phenomenology, scholasticism, and critical theory. Curriculum theory is often characterized as either prescriptive or descriptive. Prescriptive theory asks what is worthwhile to know, how it is known to be worthwhile, and how can its worth be justified? Prescription deals with the realm of *ought*. Descriptive theory deals with the realm of *is*; taking the cue from empirical science, descriptive theorists ask how can reality be modeled so that its salient features are known, thus enabling explanation.

Curriculum theory can also be interpreted as the act of clarifying meanings and the uses of language. Still another notion of curriculum theory refers to the act of theorizing and reflecting. Finally, a process known as *metatheory*, i.e., the comparative study of different conceptions of theory and categories used by theorists, provides an additional methodology by which to investigate curriculum theory (Schubert, 1986).

Curriculum Practice

The nature of curriculum theory appears to be a culmination of functions and approaches. The concept of schooling and education has long been associated with the idea of curriculum and curriculum theory. With no definite comprehensive theory that covers the field, a great deal of argument and discussion occurs in the field as to what curriculum theory is and what it is not.

To understand the concept of theory, it is essential to understand the nature of theory in general. A curriculum theory is a set of related educational concepts that affords a systematic and illuminating perspective of curricular phenomena. Thus, curriculum theory is a strange amalgam, and one finds a number of different orientations to it. As an overall position, Kliebard (in Lavatelli et al, 1972) stated well the general purpose of curriculum theory and its relation to curriculum studies:

The field of curriculum is devoted to the study and examination of the decisions that go into the selection of what is taught. Implied in such a study is the notion that curriculum may be planned with basic principles in mind. These principles, when they are reasonably consistent and coherent, constitute the essence of curriculum theory.

> Theory, philosophy, scientific basis, and assumptions are too often thought of as authoritative and controlling agents. Practice is too frequently viewed by scholars and administrators as the passive reception and implementation of wisdom from high places. Wisdom, compassion, and prudent judgment in the course of action by those who are intimately familiar with the situation are considered here to be of equal importance with theory that emanates from outside sources (Schubert, 1986).

Curriculum, as praxis, is a development of the process model. Praxis models deal primarily with practical deliberation and differentiated curriculum. Through the use of technological advances, curriculum leaders can access a body of knowledge, formulate content that is interdisciplinary, and provide a process of electronic communication that helps cut across cultural, economic, and social boundaries worldwide. The praxis concept encourages the student and teacher to reach a higher level of awareness through curriculum differentiation and with the use of technology to speed up the process. Curriculum differentiation is a broad term referring to the need to tailor teaching environments and practices to create appropriately different learning experiences for different students.

> Critical pedagogy goes beyond situating the learning experience within the experience of the learner: it is a process which takes the experiences of both the learner and the teacher and, through dialogue and negotiation, recognizes them both as problematic…

> [It] allows, indeed encourages, students and teachers together to confront the real problems of their existence and relationships…..
> When students confront the real problems of their existence they will
> soon also be faced with their own oppression (Grundy, 1987).

Technology

John Dewey can be thought of as the grandfather of Constructivism. Constructivism is an approach to teaching based on research about how people learn. Constructivism says that learners bring their personal experiences into the classroom, and these experiences have a tremendous impact on their views of how the world works. Learners construct understanding or meaning by making sense of their experiences and fitting their own ideas into reality. Children construct thoughts, expectations, and explanations about natural phenomena to make sense of their everyday experiences. Constructivists believe that actual learning takes place through accommodation, which occurs when students change their existing ideas in response to new information. (Schulte, 1996) Constructivism allows students to learn by asking questions and forming their own opinions.

Dewey was closely related to the Progressive Education Movement. Dewey believed curriculum should arise from students' interests. He favored a pedocentric strategy for education. Curriculum topics should be integrated rather than isolated from each other. To Dewey, education meant growth, a way of helping students understand and fulfill their roles in society. Today's interdisciplinary curriculum and hands-on methods utilizing technology are consistent with Dewey's belief about education. Dewey would approve of the use of technology in today's education because of the means by which technology engages the students.

Seymour Papert, a famous pupil of Jean Piaget, has profoundly influenced the field of educational technology. Papert came up with the idea of "logo," a programming language that allowed children to see cause and effect relationship between programming commands and the pictures that result. Logo is not used today but it did lead the way for the use of new technology methods.

Howard Gardner is a constructivist who attempts to define the role of intelligence in learning. He defined eight types of intelligence, which are linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, intrapersonal, interpersonal, naturalist. According to his theory, teachers should seek to learn the types of intelligences students have in order to effectively maximize their learning abilities individually. His theory works well with the trend toward using technology to support group work.

The advent of new media, such as the Internet and hypomedia, has brought about not only technological innovations, but also provides new ways of approaching learning and instruction. The use of technology also promotes investigative skills, makes learning more exciting, provides opportunities to apply knowledge, and prepares students for an increasingly technologically advanced world. Through a type of diffusion theory and process, technology is changing how we think of curriculum and how we think of education. (Leigh, 2003)

Technical advances are allowing teachers to move the focus of curriculum to thematic units that emphasize an interdisciplinary approach, an integrated learning approach, and encourage effective habits in mind. According to Hirsch (as cited in Unit Curriculum Theory, 2003):

> To give all children a chance to take advantage of the new technology means not only seeing to it that they have access to the technology, but also ensuring that they possess the knowledge necessary for them to make effective use of it.

Glatthorn (2006) utilized future theory to help explain curriculum development as follows:

> Future theorists can help describe, explain, and predict the teaching and learning process. They can also help provide the constructs necessary for analyzing proposals, illuminating practice, and guiding reform. In addition, they can help in developing strategies to transmit knowledge via a syllabus, focus on an end product, state and demonstrate a process of learning, as well as provide praxis by fostering a more dynamic milieu in the technological global classroom of the future. More important, they can provide dynamic models of teaching and learning that can elicit educational change worldwide. The key, then, is for future curriculum theorists to elicit an educational change via technology on a global scale that will allow us to develop new and meaningful ways of improving awareness and understanding throughout the world. (P. 99).

When viewing the potential of technology in the classroom of tomorrow, Howard Gardner (Scherer, 1999) probably said it best: "I believe that the computer revolution is already changing how students acquire and use information; if our schools do not rise to their technological opportunity and challenge, they risk becoming completely anachronistic."

Support Structure

The support structure necessary for the initiation, development, implementation, and ongoing refinement of a national level of curriculum development must include at least the following components: (a) curriculum council, (b) policy and approval process, (c) strategic plan, (d) curriculum center, and (e) professional development.

Curriculum Council

Curriculum development is generally overseen in the United States by a curriculum council. This council is responsbile for ensuring that the curriculum is developed in a way that is consistent with the philosophy, mission, and vision of the educational system for which the curricululm will serve. The purpose, membership, and functions of a typical curriculum council, specifically that of the Missoula, Montana School District (2006) is as follows:

Purpose

The Curriculum Council provides the development and implementation of a curriculum framework for schooling, taking account the needs of students, sets out the knowledge, understandings, skills, values and attitudes that students are expected to acquire; provides the development and accreditation of courses of study for schooling, and provides the assessment and certification of student achievement.

Membership

Membership consists of certified teaching and administrative staff. Membership is not less than 14 and consists of at least teachers from all grade-levels, administrators of all grade-levels and Director of Instruction and School Board Members. The council is chaired by two council members. The co-chairs chair meetings, facilitate discussions, plan meeting agendas, work with the Director of Instruction, report to the District Administrator and carry out other duties necessary to accomplish the previously stated Curriculum Council goals. Co-chairs agree to serve a two (2) year term, with one (1) co-chair being elected each year. The incoming co-chair begin duties at the first meeting in May.

The Curriculum Council will be a standing committee. The people on this committee may change from time-to-time, but each of the areas of membership must be represented at all times.

Functions

The following functions are assigned to the Curriculum Committee:

1. Consider new/revised programs and courses of study for the school, including interdisciplinary ones;
2. Consider recommendations to adopt instructional materials;
3. Consider recommendations to purchase program support that assist curriculum implementation;
4. Articulate curriculum development and textbook adoption recommendations at all levels;
5. Hear and respond to reports and recommendations regarding the use of human and material resources and facilities;
6. Hear and respond to reports of assessment of student achievement;
7. Hear and respond to reports of assessment of curriculum implementation;
8. Generate own proposals and solutions to curricular problems;
9. Make compromises among various proposals and solutions;
10. Synthesize recommendations that relate or overlap;
11. Set and make revisions to the curriculum cycle;
12. Consider impact on graduation requirements affected by changes in curriculum;
13. Review implementation of curriculum;
14. Report findings to the sections.

Policy and Curriculum Development

Definition of Policy

Policy is a political process where needs, goals, and intentions are translated into a set of objectives, laws, and programs, which in turn affect resource allocations, actions, and outputs, which are the basis for evaluation, reforms, and new policies.

Purpose of Policy

1. To enunciate the framework within which the school district operates. Regulations are provided to ensure the implementation of policies.

2. To provide the basis for consistent responses by the school administration to questions that arise in the operation of the schools

The following steps are found at the school district level in a typical educational policy development model:

1. Define the Issue or Problem
2. Gather Necessary Information on the Issue
3. Recommendations from Superintendent
4. Discuss and Debate at the Board Level
5. Draft Policy
6. Hold First Reading
7. Make Revisions
8. Hold Second Reading
9. Adopt the Policy
10. Distribute to the Public
11. Oversee Policy Implementation
12. Policy Evaluation and Revision or Modification

Policies are the principles adopted by the School Board to chart a course of direction for the district. They are broad enough to indicate a line of action to be taken by the administration; they need to be narrow enough to give the administration clear guidance.

Adoption of new policies and or revision of existing policies are solely the functions of the Board. From time to time, the Board of Trustees may amend, revise, change, or cancel certain policies. The Board of Trustees reserves the right to do so at any time. Nothing herein contained shall be construed to constitute a contract between the school district of the Board of Trustees and any individual, and none of the previsions of these policies or rules are intended to confer any special contractual right or privilege upon any person.

The basic responsibility for recommending new policies or policy modifications rests with the Superintendent. New policies or changes in existing policies may be proposed by any board of Trustee member, staff member, student or resident of the school district. Policies may be developed by the Policy Committee that may be the vehicle assigned to develop new or revise existing policies. The Board of Trustees shall adhere to the following procedure in considering and adopting policies to ensure that they will be examined before the final action.

Execution of adopted policies is delegated to the Superintendent who will implement the policies through the development of administrative regulations and procedures. In the absence of policy, the Superintendent is responsible for making appropriate decisions and is to notify the Board of Trustees of the absence of policy. Policy does not become a policy until all steps have been completed.

The Strategic Plan

The Strategic Plan sets out the school's directions for the next three to five years, expressed through goals and objectives. Strategy is a general framework that provides guidance for actions to be taken and, at the same time, is shaped by the actions taken. This means that the necessary precondition for formulating strategy is a clear and widespread understanding of the ends to be obtained. Strategic planning is important to curriculum development in order to proceed in an orderly and efficient manner.

The Curriculum Center

Prior to independence (1991) the concept of "curriculum" didn't exist in Azerbaijan education system as a pedagogical term. Now curriculum is understood and accepted as a conceptual document describing organization and implementation of all activities related to the learning process in Azerbaijan schools (in the present context, general schools). As described above Azerbaijan has undertaken a major reform program in the education sector, and more specifically in general education. The ESDP is focused on these reforms, and national curriculum reform is at the heart of the effort. In this regard, a Curriculum Center (CC) has recently been established at the Institute for Education Problems. The newly established CC has personnel with many of the capabilities required for output-oriented curriculum development, rationale of inclusion of each of the subjects in the curriculum, development of educational standards and design of teachers' guides on various learning methods. As related to

the overall curriculum framework (policy and concepts), the Ministry of Education wishes to focus on international best practices, while preserving its own strengths in general education. Personnel capabilities at the Curriculum Center, and within relevant units of the Ministry of Education, must be developed so the efforts with regard to development of curriculum framework (policy and concepts) can be undertaken with confidence.

Professional Development
Grant provides a definition of professional development that includes the use of technology to foster teacher growth:

Professional development …goes beyond the term "training" with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills, but also develop new insights into pedagogy and their own practice, and explore new or advanced, understandings of content and resources. [This] definition of professional development includes support for teachers as they encounter the challenges that come with putting into practice their evolving understandings about the use of technology to support inquiry-based learning… Current technologies offer resources to meet these challenges and provide teachers with a cluster of supports that help them continue to grow in their professional skills, understandings, and interests. (Citation unavailable)

High quality professional development supports education reform. Professional development is most effective when it is accessible to all educators and is part of a system-wide effort to improve teacher recruitment, selection, preparation, licensing and certification, and ongoing development and support. Strong professional development programs benefit from partnerships among schools, higher education institutions, and other appropriate entities to promote learning opportunities for all those who affect student achievement and combine resources to address diverse educational needs. Essential to this process is the recognition of the critical role teachers and other educators play in ensuring that all students achieve at high levels.

Effective professional development is: (a) directly focused on helping to achieve student learning goals, (b) supporting student learning needs, (c) differentiated, (d) school-based and job-embedded, (e) collaborative in planning and implementation.

The mission of professional development is to support increased student achievement, provide relevant curriculum materials and training for teachers, support staff, and administrators, offering academic services for parents and community members, coordinating and promoting leadership and extracurricular activities for students.

Learning Areas
The curriculum development process, having the appropriate philosophy, mission, and vision, now begins to apply these principles specifically to each individual area of study to which the students will be exposed. These areas include: (a) the arts, (b) English, (c) Health and Physical Education, (d) languages, (e) math, (f) science, (g) society and environment, (h) history, and (i) technology.

Language Arts
Language arts provide students with the skills necessary to learn about their world and the essential knowledge necessary to appreciate cultural aspects of their world. All students need to be skillful in language arts to learn successfully in school, to become productive members of society, and to achieve their full potential through life-long learning.

English as a second language
The English language increases the opportunity of students to interact with other peoples, to understand their culture, it can help them be open-minded, sensitive, well-educated citizens, and world languages learning develops the skills, and habits essential to the learning process creative inquiry, and critical thinking. It can help students participate more fully in the global community and marketplace.

Mathematics
"Mathematics helps children construct understanding of mathematical concepts and develop connections between their informal knowledge and the abstract symbolism of mathematical concepts." (Hunsader, 2004)

We live in a mathematical world. In such a world mathematical competence opens doors to productive futures, but a lack of mathematical competence closes those doors. Students need to learn a new set of mathematics basics that enables them to compute fluently and to solve problems creatively and resourcefully.

Science
Science is a way of making sense of increasing student understanding in the area of science processes and the nature of science. Learners bring their personal experiences into the classroom, and these experiences have a tremendous impact on their views of how the world works. Students come to learning situations with variety knowledge, feelings, and skills, and this is where learning should begin. This knowledge exists within the student and is developed as individuals interact with their peers, teachers, and the environment.

Social Studies
Social Studies is the integrated study of the social sciences to prepare young people to become responsible citizens. Responsible citizens display social understanding and civic efficacy.

Physical Education
Physical Education teaches students to add physical activity to their daily lives and exposes students to content and learning experiences that develop the skills and desire to be active for life. In addition, physical activities play an important role in improving muscular strength, endurance, and flexibility. Physical activity helps children establish gain a sense of self-respect and achieve goals they have set for themselves.

Technology
Technology is the key to be successful in our increasingly technological world. In our rapidly changing world, the economic vitality of communities and individuals will depend more and more on the ability to access information, build knowledge, solve problems, and share success.

Because technology will increasingly play a great key role in this process, students must develop the necessary skills to use computers capably while they are in school. This means that today's student must be prepared now for the technological world that will be a very real part of their lives in the future.

Summary
The heart of education is each child who is served by educators. The process of curriculum development is very time consuming and expensive; yet, nowhere is time better spent or investments better realized than improving the education and lives of today's youth. This investment is multiplied from generation to generation with the goal of providing for the constant improvement of common good one student at a time.

Appendix
The appendix appropriate for the curriculum development process includes acknowledgments, support documents, national educational statistics, and contact information for appropriate educational officials. This information is available and therefore included in the appendix at the conclusion of the development process.

Post Script
Special thanks to my mentor, Merle Farrier, Ed.D, who has helped me develop and refine the ideas and materials of curriculum. His helpful feedback and guidance, based on extensive experience conducting professional development in curriculum development has resulted in greater precision of language, clarity of examples, and supportive knowledge for me. I also owe a debt of gratitude to Cheryl Wilson, the Assistant Superintendent of Missoula County Schools and I especially appreciate her helpful advice provided by her courses of Curriculum Design, Implementation, and Evaluation.

I'd like to thank them for spending of countless hours and conversation as this article was brought to completion. Their helpful feedback helped me shape and sharpen the materials and the arguments. I understand that the curriculum development process is an endless process and I wish everybody success and patience in their professional work. Your good ideas, interesting articles, and books helped me to understand a lot about curriculum development. I would also like to thank all educators who devote themselves to the process of curriculum development and spend their lives in such a noble profession dedicated to educating our future generations.

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ANALYZING THE FACTORS THAT AFFECT THE OBJECTIVES OF PRE-SERVICE TEACHERS TO PERFORM LABORATORY PRACTICE IN SCIENCE LESSONS BY MEANS OF THE THEORY OF PLANNED BEHAVIOR

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ABSTRACT
Science lesson can be carried out in many settings both in classroom and out of classroom. Laboratory practice is usually carried out in laboratories out of the classroom or when necessary in the classroom. It is a necessity for science lessons because of the nature of science.

The aim of this study is, by using The Theory of Planned Behavior (TPB), to determine the objectives of pre-service Science teachers towards performing laboratory practices in Science lessons in the future.

In the study, to confirm the factors that affect the objective towards behavior, Relational Screening Model was used. As an assesment instrument, the scale consisting of 54 items which is in accordance with the Theory of Planned Behavior and which was developed by the researcher was used. Sample study group consisted of pre-service science teachers and primary education teachers from Kastamonu University and Zonguldak Bülent Ecevit University.

In the consequence of the study, it was confirmed that pre-service teachers' objective towards laboratory practice was generally affected by their attitude and this was analyzed considering the sights of the Theory of Planned Behavior.

INTRODUCTION
Laboratory practice is one of the most important parts of Science lesson. Without laboratory practice, Science lesson cannot be effective. It is a lesson which can be carried out both in classroom, laboratory and out of the school because of its nature.

Science laboratory is the place where the subject is taught artificially with the help of experiments or demonstrations. The existence of laboratories in schools is an efficient factor for the education. The basic philosophy of laboratory based teaching is doing experiment and observing the results (Ekici et all. 2002).

There are a lot of factors which affect laboratory practice. The physical condition of the school may be insufficient, the necessary materials may not be available. Teachers may regard laboratory as a burden, they may have difficulties in performing laboratory experiments or they may feel under pressure because of parents and school administration.

As it is not possible to test the behavior directly, with the help of The Theory of Planned Behavior (TPB), the factors which affect the behavior are found out and to what extent the behavior will be performed is predicted. In order for the behavior to be performed, there should be an objective. And the objective is affected by attitude towards the behavior, subjective norms and perceived behavior control. Planned Behavior Theory has been developed to test the factors affecting the behavior and to identify the possibility of being performed (Karademir, 2013; Ajzen, 2002; Ajzen 1977).

THE STUDY
The aim of the study is to determine the objective of pre-service teachers towards Science laboratory experiments, their attitude towards behavior, objective norms and perceived behavior control variables. Sample of study group consists of 3rd and 4th grade 238 pre-service teachers from Science and Primary Education departments in Kastamonu University and Zonguldak Bülent Ecevit University.

Relational screening model was used in the research. In order to collect data, in accordance with Planned Behavior Theory, the scale developed by the researcher consisting of 54 items with seven point likert was used. The Cronbach's Alpha of the scale was found 0,923, KMO was 0,907.

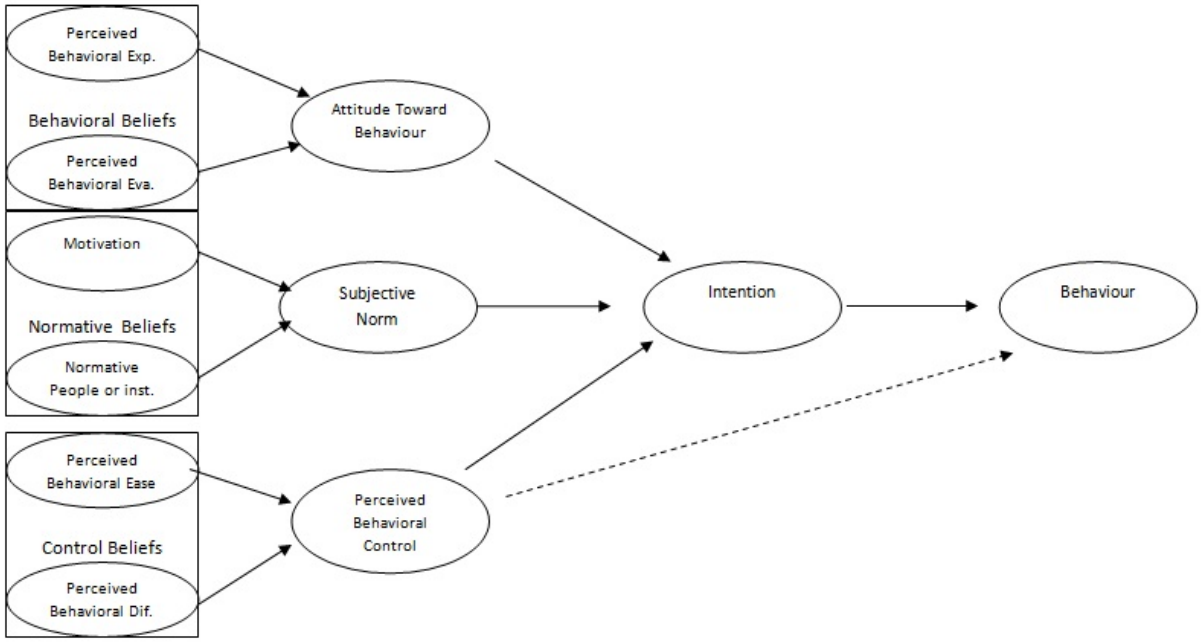

Figure 1. The theory of planned behaviour model (Erten, 2000)

FINDINGS

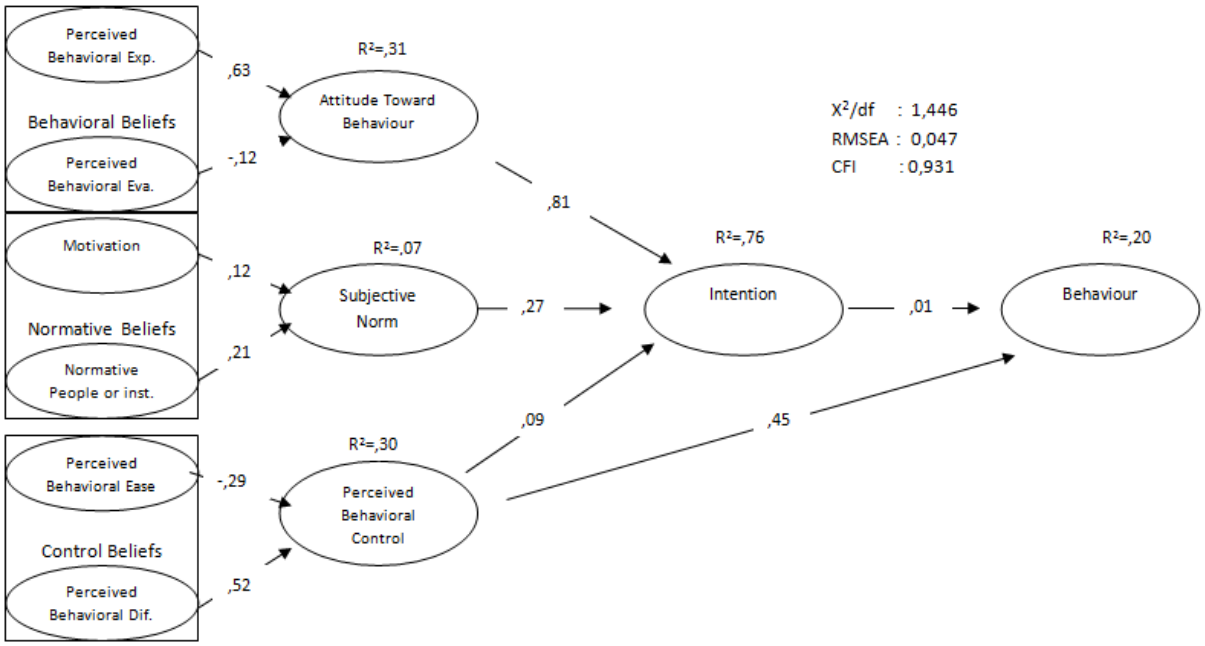

Figure 2. Pre-service teachers' structural equation model findings

As seen in the Figure 2, the fit indices are very suitable

Based on the obtained data,

- *Attitude Towards Behavior* is explained at moderate level by behavioral belief [R^2: ,31].
- *Subjective Norm* is explained at low level by normative belief [R^2: ,07].
- *Perceived Behavior Control* is explained at middle level by control beliefs [R^2: ,30].
- Attitude Towards Behavior has a high relationship with *Perceived Behavior Expectations* [r=0,63].

- Subjective Norm has a low relationship with *Normative Beliefs*
- Perceived Behavior Control has a high relationship with *Perceived Behavior Difficulty*[r=0,52].

When the intention is analyzed
- Perceived behavior control, subjective norm and attitude towards behavior explain the 76% of the objective [R^2: ,76].
- Based on the findings, the highest explanatory of the objective is attitude towards behavior and the lowest one is perceived behavior control.
- So, the objective of pre-service teachers towards performing laboratory experiments is mostly affected by their attitude towards behavior. It means, pre-service teachers aim at performing laboratory experiments mostly because of the results of the practice.
- The subjective norms of pre-service teachers affect their objective towards behavior to some extent. It means, pre-service teachers may perform the laboratory experiments because they may feel under pressure of some people or administration.
- The objective of pre-service teachers is affected by the perceived behavior control to the least extent.

Perceived behavior control;
- While perceived behavior control effect the objective towards behavior, it also has a great impact on that behavior. [r: 0.45].
- While perceived behavior control has a high relationship with perceived difficulty [r: 0.52], it has a negative low relationship with perceived behavior ease [r: -0.29].
- So, it means that pre-service teachers think the conditions of laboratory practice may be difficult and that feeling of the difficulty effects their laboratory practice behavior.

When we analyze the items of scale;
- Attitude towards behavior sight has a high relationship with the items;
  - It is important to me if the students are more interested in the lesson [r: 0.881]
  - Laboratory experiments make the lesson more enjoyable [r: 0.864]
  - Students find an opportunity to make observation [r: 0.860]
- At the subjective norm sight;
  - Pre-service teachers mostly express that they may feel a pressure mostly by the Ministry of National Education [r: 0.827]
  - Pre-service teachers express that the most important thing for them is the laboratory practice expectation of school administration [r: 0.939]. Then, their colleagues' expectations are important [r: 0.840], and later the Ministry of National Education 's expectations are important [r: 0.836]
- Perceived behavior control sight has a high relationship with the items;
  - It will be difficult because of the unsuitable physical condition of the school [r: 0.889]
  - It will be difficult because the classrooms are crowded [r: 0.840]
  - As the materials are not interesting, it will be difficult [r: 0.858].

RESULTS

As a result, the most efficient factor that affects the laboratory practice objective of pre-service teachers is the attitude towards laboratory practice. The meaning of why the effect of attitude towards the objective of the behavior is [0,81]: If the pre-service teachers find the laboratory practice better, they will most probably aim at performing laboratory practice. The effect of the attitude towards the behavior shows that it is not the people or the administration, but the attitude itself.

It is confirmed that the subjective norms of the pre-service teachers affect their objective at a low level. The pre-service teachers expressed that mostly the Ministry of National Education expect them to perform laboratory practice, but the expectations of school administration and the colleagues are more important for them. So, it can be stated that school administrations should take responsibility for performing laboratory practice. School administration and other teachers should encourage science teachers in laboratory practice. According to the result of the research, pre-service teachers care about mostly the administration and the other teachers.

While the perceived behavior control of pre-service teachers effect the objective towards behavior at a low level, it affects the direct behavior at a moderate level. Therefore, if pre-service teachers think they will encounter

some difficulties in laboratory because of the crowded classrooms and unsuitable physical situation of the schools, it is probable that they will have prejudice against laboratory practice.

For an efficient science lesson, the physical situation of the schools should be improved and the classroom size should be at a suitable level.

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ASSESSING THE EFFECTIVENESS OF DIRECT INSTRUCTION METHOD IN TEACHING STUDENTS WITH LEARNING DISABILITIES ABOUT CONCEPTS OF SCIENCE AND TECHNOLOGY LESSON

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ABSTRACT
It is evident that number of researches studying the effect of methods to be used in science lessons of individuals with learning disabilities on the success of students is limited in the literature. Thus the aim of the present study is to reveal whether direct instruction is effective in teaching students with mild learning disabilities about concepts of science lessons. It further aims to shed light on other studies thereof in the field. The present study used 'multiple-probe design with probe sessions' out of single-subject research and explored effectiveness and efficiency of direct instruction in teaching the subject of solar system to children with learning disabilities in science lesson. The present study was carried out with subjects who benefit from special education services and are diagnosed as 'student with learning disability'. Data was collected at the end of sessions applied to three students in accordance with multiple-probe design with probe sessionsand data was shown in graphs compliant with this model and they were interpreted according to the aim of this research. Findings of the research are as follows: 1) Direct instruction is effective for all subjects in teaching the subject of solar system in science lesson.2) Findings are observed to be supported by previous studies which examine the effectiveness of direct instruction in teaching students with mild learning disabilities about academic skills.

Keywords: Mild Learning Disability, Direct Instruction, Science, teaching individuals with special needs about concepts

1.INTRODUCTION

Learning is a chain of comprehensive and complex life-long processes, which occur related to developmental and individual characteristics of a person (Korkmazlar, 1999). Learning is the basis of systems which enable the person to control and limit himself/herself, make sense of his/her surroundings, watch the stimuli and react accordingly. Thus any deficiency in the main constituents poses a threat for the whole life of the person. If learning is basically defined as the act of acquiring knowledge, learning disability may be defined as a problem a person encounters while acquiring knowledge (Share and Silva, 2003).

"Learning Disability", a specific term of special education, has been of great interest to people in recent years (Kırcaali-İftar, 1992). Studies which point out that learning disability does not result from mental deficiency are rather new. The problem commonly known as "learning disabilitiy" was awakened by parents of children with normal intelligence but who failed in education in 1960s and it was introduced to the legislation since it was different from other disabilities (Bintaş, 2007). Complexity of the subject in terms of learning processes and prevalence of its effects in many fields result from difficulties such as the definition and solution of the problem (Özyürek, 2003). Furthermore lack of tests which may reveal the disability, inability to transform the situation in numbers and various characteristics of the students in this category complicate the existing difficulties (Özyürek, 2003; Şenel, 1995).

The term "learning disability" was coined by Kirk (1963). After Kirk (1963) defined the learning disability on educational grounds, further studies and tests emphasized the importance of this problem affecting the life of people. Unlike Kirk (1963), Bateman (1965) featured the difference between ability and achievement and referred to dysfunction of central nervous system as the reason behind (Cited byKorkmazlar, 1993). According to Hallahanand Kauffman (1994) individual with learning disability cannot develop and employ strategies required for solving academic problems, he is not aware of his own abilities and unconfident in featuring his abilities and he cannot pick strategies offered to him for enabling learning (Akyol, 1997: 16). Learning disorder is defined as follows in DSM IV (DiagnosticandStatisticalManual of MentalDisorders): "Individual's

achievement on individually administered, standardized tests in reading, mathematics, or written expression is substantially below that expected for age, schooling, and level of intelligence". These different definitions incorporate both different fields such as reading, writing, listening and speaking but also extensive academic and social development fields (Korkmaz 2000). Commonly recognized special learning disorder is defined as the following: individuals with special learning disorder have deficiency in one or more academic and psychological processes in listening, thinking, speaking, reading, writing or solving mathematical problems, comprehension or employing written or verbal language (Sarı, 2005). DSM IV (1994) classified the learning disorder under four categories according to academic features of the learning disorder. 1) Reading Disorder (Dyslexia): This category of disorder is characterized by omissions, distortions, substitutions, slowness and spelling, errors in comprehension while reading. There are two subcategories of dyslexia: a) Developmental Dyslexia: If an individual without any mental problem can never obtain reading ability or he obtains very lately or slowly and there is not any brain-related disorder, it is called "Developmental Dyslexia". b) Acquired Dyslexia: Reading disorder which occurs due to brain damage of individuals already knowing how to read is called 'Acquired Dyslexia'. 2) Mathematics Disorder (Dyscalculia): It is a scientific term used for calculation difficulty or poor sense of calculation. World Health Organization defines dyscalculia as the unexplained limitation of calculation skills due to general mental deficiency or insufficient education. 3) Disorder of Written Expression (Dysgraphia): Writing skills fall substantially below those expected given the individual's age, measured intelligence and education. 4) Learning Disorder Not Otherwise Specified: This category is for academic achievement disorders that do not meet criteria for mental deficiency, insufficient education or emotional deficiencies (Butterworth, 2005; DSM IV, 1994).

Although some of these students do not have problems in terms of visual, audial, mental, emotional and social aspects, they may encounter problems in one or more fields of reading, writing, speaking and arithmetic Korkmaz, (2000). While these problems hinder the educational success of students, both children and family are blamed for educational failure since the main reason of the failure is not known Korkmaz, (2000). Individuals that have difficulty in formal education, that feel different from his peers and that do not have sufficient relations with his parents and teachers also have deficiencies in the development of his own personality. Secondary psychological problems such as depression and anxiety disorders, low self-confidence and disturbed self-esteem complicate the existing problems (Trott, 2003).Thus they need a learning environment equipped with different teaching methods and tools.Learning environments designed according to features and performance of the students, are thought to overcome this problem.

One of the methods widely used for children with learning disability and bearing successful results is direct instruction. The term of "Direct Instruction" has been used by researchers since 1968 as a term summarizing methods used for teaching metacognitive subjects. "Explicit instruction", "systematic instruction" and "systematic education" are used interchangeably. All these terms refer an instruction method in which the teacher is involved, teacher corrects the errors and then instruction is carried out again and teacher acts as a guide (Kim andAxelord, 2005; Roseinshine, 2008). Model is not the end of instruction process but a course which equips the students in order to cope with complex learning activities (Rupley, 2009; Rymarz, 2013). The aim is to enable learning and generalization and frequent use of skills and thus activate the student regarding ordered tasks and enable them to speed up (Marchand-Martella, MartellaandAusdemore, 2005).Direct instruction differs from other methods since it organizes the content of a program which is aimed to be instructed under a discipline. Conventional methods for instance expository instruction organizes the subjects and content of a discipline by time frame. However, direct instruction has a spiral pattern regarding the organization of content. Thanks to the spiral pattern, more than one skill may be thought in one lesson; students have opportunity to use various concepts and skills on a wider basis since another skill is not initiated upon the completion of a skill (TuncerandAltunay, 2004).Instructional grouping, instructional time, written instruction processes, continuing evaluation factors should be met while organizing the instruction in order to enhance the instructional effectiveness. Direct instruction method has six instructional functions as follows (Rosenshine, 2008: 4; Hollingsworth and Ybarra, 2009:.13; Rupley, Blair and Nichols, 2009: 126)

1-Revision and analysis of previous work,
2- Presentation of a new subject,
3- Students' studying new texts under the guidance of teacher,
4- Provision of feedback with correctives,
5- Provision of independent practice,
6- Weekly or monthly revisions include detailed explanations, exemplification and guided practice in Direct Instruction Method.

Direct Instruction Method adopts the participation of all students (Watkins and Slocum, 2003). Students should be grouped according to their skills in order to enable the active participation of all students. It should be

possible to re-organize already established groups in order to enable the participation of different students according to the subject or transfer of some students from a group to another. It should be possible for students to transfer between groups according to their progress in a specific subject or skill. Thus teacher may provide instruction in line with the knowledge and skills of all students in the class, effective communication is ensured among the group and the communication of the teacher with the group is productive (Watkins and Slocum, 2003).

Scientific activities are important as they assist the students in understanding the relations between objects and events (Demiriz, 2001). Children' participation in scientific and natural activities helps the development of affective and psychomotor skills as well as cognitive skills, it will enable their learning and introduce them the skill to approach the events from scientific perspective (Gürdal, Çağlar, Şahin, ÖkçünandMacaroğlu, 1993). It is expected that children are enabled to actively participate in activities, make observations, take nature tours and acquire the main skills such as making comparison and classification, establishing cause and effect relation, paying attention to details, making observations and experimentation, hypothesizing. The sooner we stimulate the curiosity and pleasure through scientific instruction the better it will be for the individual. The individual then acquires the skill to catch the examples in the universe and infer main laws from observed systems. According to Soylu(1996), 'science' is the set of activities which question, explore and discover and explain the implicit systems of the universe. 'Science' may be considered as the act of modeling the truths (Çilenti, 1985; Temizyürek, 2003). Science is discipline based on observations, experiments and quantitative measurements for the comprehension of natural phenomena in the universe. Students get acquainted with the science lesson in the second stage of primary education namely 4^{th} and 5^{th} grades and they are involved in educational activities thereof uninterruptedly for five years until the end of 8^{th} grade. The basis of social and environmental development is firstly laid in Science lesson in primary schools. During these lessons, children get the opportunity to deal with the scientific and natural world they live in from a scientific perspective and to research it. Their adaptation to life depends on their extensive knowledge about scientific and natural world and learning the methods to benefit from it sufficiently. Accordingly students examine their surroundings through scientific methods in primary schools and they acquire the skill to think objectively and make accurate judgments about events and situations. This habit enables them to be helpful towards themselves, their families and the environment (Akgün, 2004).

The present study aims to reveal the effectiveness of direct instruction method in teaching students with learning disability about solar system in the science lesson. The research is considered to be important since knowledge is taught systematically in the science lesson. There is hardly any study on the effectiveness of direct instruction method in science lesson according to literature review specific to this field. However many students with learning disability continue their educational life without any systematic education regarding science during their primary education. This results in new knowledge problems for the students in the upper stage of the education. Scientific instruction is one of the most vital windows opening into physical world of the individual. Scientific instruction has an important function in raising individuals who do not just pay attention to objects and articles but perceive, analyze, question and deduce through synthesizing. This requirement is even more important for individuals with learning disabilities. As long as students with learning disabilities construe objects surrounding them, science lesson will turn out to be more pleasurable to learn.
Thus the aim of the present study is 1) to reveal whether direct instruction is effective in teaching concepts of science lessons to students with mild learning disabilities and 2) to shed light on other studies thereof in the field.

2. METHOD

Detailed information is given under this section about the research method.

2.1. Research Model

The present study used multiple-probe design with probe sessionsout of single-subject research. Primarily starting data is collected simultaneously in all sessions in multiple-probe model with probe sessions. Upon the stability of starting data, it is started to be implemented for first subject. After the criterion is met for the first subject, probe session is employed in all cases and data is collected successively in all three sessions. It is expected that probe data meet criterion in first subject and they are expected to be similar with starting level in other cases. Following the probe session, implementation is started for second case. When the criterion is met in the second implementation, probe sessions are again employed in all cases. It is expected that probe data meet the criterion in the first and the second case and they are expected to be similar with starting level in other cases. These steps are repeated for all cases (Tekin and Kırcaali-İftar, 2001). As Tekin and Kırcaali-İftar (2001) mentioned, the reason for selecting this method for this research is that the method allows the generalization of

findings for different subjects since an instructional or behavior-alternating practice is studied in terms of its effectiveness and the method has all advantages of multiple-probe method (Tekin and Kırcaali-İftar, 2001).

2.2. Study Group

The study group of the present study was composed of three students with learning disabilities from a Special Education Center in Konya. Three students who are 14-15-14 years old with learning disabilities participated in the study. These students attend different primary schools. None of the subjects have received systematic instruction through direct instruction method.

Subjects were required to perform following tasks as criterion;

1. Following the verbal instructions,
2. Concentrating on an activity for minimum 5 minutes,
3. Keeping the knowledge in mind
4. Using hands and fingers,
5. Reading one-digit and two-digit numbers,
6. Attending the school regularly.

Subjects were primarily observed in the classroom in order to detect whether they meet pre-requisite skills. Afterwards a session was held and prerequisite skills were evaluated by the implementing person through instructions and activities. Furthermore the teachers of the subjects were contacted and their regular attendance was investigated and students attending the school regularly participated in the study. Prior to study, families of the subjects were contacted, they were informed about the study and their written approval was obtained for the participation of the students. Detailed information is given about the subjects in the following sections.

Subject 1 (15 years old) is a male student with learning disability. The student had been diagnosed as 'requiring special educational services on a limited scale due to mild deficiency in mental functions and conceptual, social and practical harmonization skills'. Student is in the 7th grade in second stage of primary education. The student is able to perform self-care skills, fine-gross motor skills and whole communicative skills independently. He is able to distinguish objects of complex color and form and accurately explain the color and forms thereof. He is able to distinguish the group of objects by quantity and size. The student is able to perform some social skills independently such as using money, shopping, using social spaces, independent transportation.

Subject 2 (15 years old) is a female student with learning disability. The student had been diagnosed as 'requiring special educational services on a limited scale due to mild deficiency in mental functions and conceptual, social and practical harmonization skills'. The student is in the 8th grade in second stage of primary education. The student is able to perform self-care skills, fine-gross motor skills and whole communicative skills independently. Student has reading-writing and basic mathematical skills. The student is aware of colors and opposite concepts. The student is able to perform social skills.

Subject 3 (14 years old)is a male student with learning disability. The student had been diagnosed as 'requiring special educational services on a limited scale due to mild deficiency in mental functions and conceptual, social and practical harmonization skills'. In the medical report of the student, special educational program where the student may attend is specified as 'supportive educational unit'. Student is in the 7th grade in second stage of primary education. The student is able to perform self-care skills, fine-gross motor skills and whole communicative skills independently. Student has reading-writing and basic mathematical skills. He is adapted to social relationships but does not have many friends. He is able to perform skills such as using the money.

2.3. Data Collection Tools

An open-ended questionnaire composed of equivalent twelve questions was prepared in order to collect data in the present study. Questions were prepared according to the curriculum of Ministry of National Education and educational level of students with learning disabilities and equivalence of questions was determined by a group including an academician from the department of special education, an academician from the department of science teaching and a teacher of special education. A total of twelve questions were prepared and they were divided into three groups considering the similar features of the questions (questions are provided in Annex I).

2.4. Implementation Process

Teaching students with learning disabilities about science was the dependent variable of the research. Independent variable was instructional practices introduced to students with learning disabilities based on direct instruction method. In the present study, three students with learning disabilities were thought about science through direct instruction method. Experimental process of the research was composed of starting level,

instructional sessions, monitoring and generalization sessions. The implementation was carried out respectively as follows.

2.5. Data Collection
In this section, information is provided about the data collection within experimental process.

2.5.1. Probe Sessions
After prerequisite skills and scientific performance level were determined for each subject prior to instruction, simultaneous collective probe sessions were held. Probe data were collected at starting level by asking 1 group of questions out of 3 groups each composed of four questions out of equivalent twelve questions to all subjects for three days consecutively. Completely right answers of the students were marked (+) and wrong or approximate answers were marked (-). Instruction was sustained until right answers reached the stability level.

2.5.2. Instructional Sessions
The content of the research was derived from textbooks and periodicals compatible with the curriculum of Science Lesson in Primary Education and it was submitted for the opinion of experts. It was used for three students of study group considering the performance of them. Following steps are generally taken in science lessons taught according to Direct Instruction Method:

1) Motivating the students and stimulating the knowledge by reminding previous studies,
2) Presentation of new knowledge, teacher's performing an exemplary activity,
3) Students' performing new activities under the guidance of teacher
4) Teacher's correcting erroneous knowledge and concepts,
5) Students' studying independently,
6) Revision of outcomes,
7) Re-presenting/teaching of some practices when necessary,
8) Evaluation of the process.

Instruction followed the above-mentioned order and it was sustained until right answer reached the stability level. After stability was reached, implementation process was completed and collective probe sessions were held for all subjects. At the end of each day 1 group of questions out of 3 groups each composed of four questions out of twelve questions was asked again to all subjects and the number of right answers was recorded. Completely right answers of the students were marked (+) and wrong or approximate answers were marked (-).

2.5.3. Monitoring and Generalization Sessions
Monitoring sessions were held in order to analyze how subjects maintained learnt items upon the completion of instruction. Monitoring sessions were held as collective probe sessions by implementing person after 2, 4 and 5 weeks following the completion of instruction.

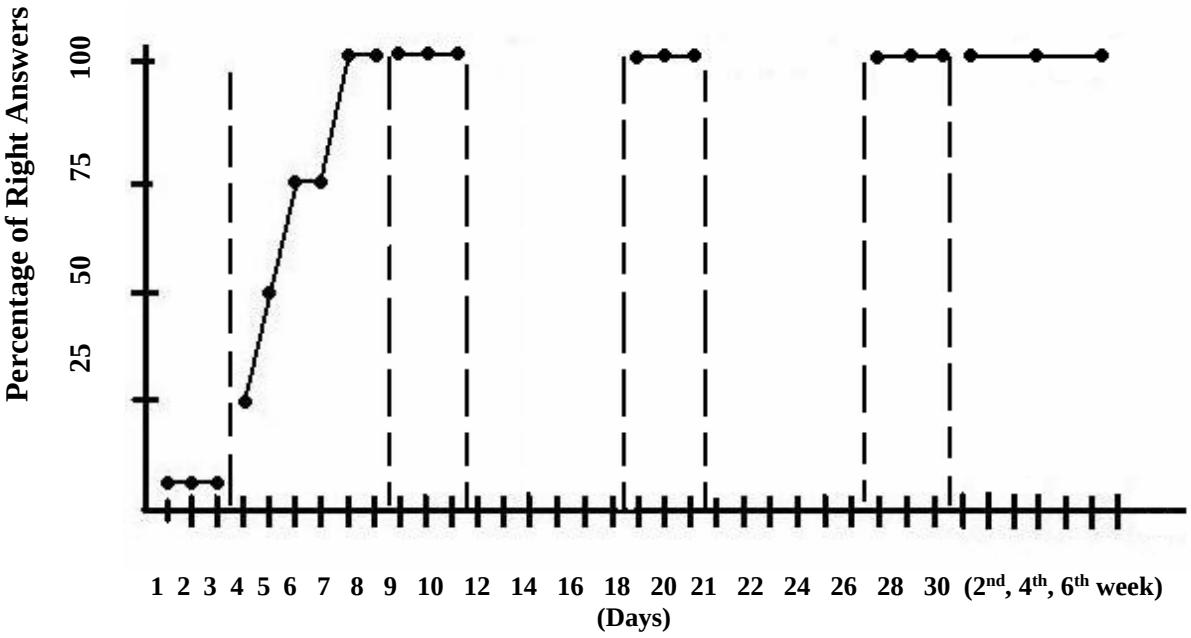
3. FINDINGS
Students with learning disabilities were asked to answer twelve questions summarizing the subject of solar system in science lesson and findings about the effectiveness and efficiency of direct instruction method are provided under this section.

3.1.Findings about Direct Instruction Method
In this research, data on the effect of direct instruction method were collected by means of multi-probe design with probe sessions and the data were shown in graphs compatible with this method. Starting level, implementation phase and monitoring phase of multi-probe design with probe sessions were shown in graphs. Three subjects of the study were asked to answer twelve questions summarizing the subject of solar system in science lesson both in first and second starting phase. Furthermore, three subjects were taught about the subject of solar system in science lesson through direct instruction method both in first and second implementation phase and they were asked to answer twelve questions summarizing the subject of solar system at the end of each implementation phase. Given the graphs, it was evident that all three subjects did not have performance level whose starting data meet the criterion. During the implementation phases, students were asked to answer twelve questions upon the teaching of solar system. Data were observed to have increased at a level to meet criterion. Thus direct instruction method was observed to be effective for all three subjects.

3.1.1Effectiveness of Direct Instruction for the First Subject
Data which were collected for teaching about solar system in science lesson through direct instruction method are shown in Figure 1. Information was provided about collected data, probe sessions, implementation sessions and monitoring sessions. Three sessions were held for the first subject at the preliminary starting level and three groups of questions each composed of four questions out of twelve questions summarizing solar system in

science lesson were asked during starting level. The first subject answered the questions with accuracy by 0% during collective probe sessions at the starting level. During the teaching session following the starting level, six consecutive sessions were held for the first subject by using direct instruction method and a rapid increase was observed in target learning level. Percentage of right answers reached the stability with the following percentages of accuracy: 25% in the first session, 50% in the second session, 75% in third session, 75% in the fourth session, 100% in the fifth session, 100% in the sixth session within the implementation phase. Then teaching session was ended. Collective probe phase was implemented for all students. During the collective probe phase, three groups of questions each composed of four questions out of twelve questions were asked respectively. The first subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the collective probe phase. Following the completion of first implementation for the second subject, collective probe phase was applied for all subjects. The first subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the collective probe phase. Following the completion of first implementation for the third subject, collective probe phase was applied for all subjects. The first subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the collective probe phase. Monitoring sessions were held in order to observe that learnt items were maintained during the 2nd, 4th and 6th weeks and the first subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% :ond session and 100% in the third session during the monitoring phase.

Figure 1.1: Percentage of Right Answers by Subject 1 during Sessions

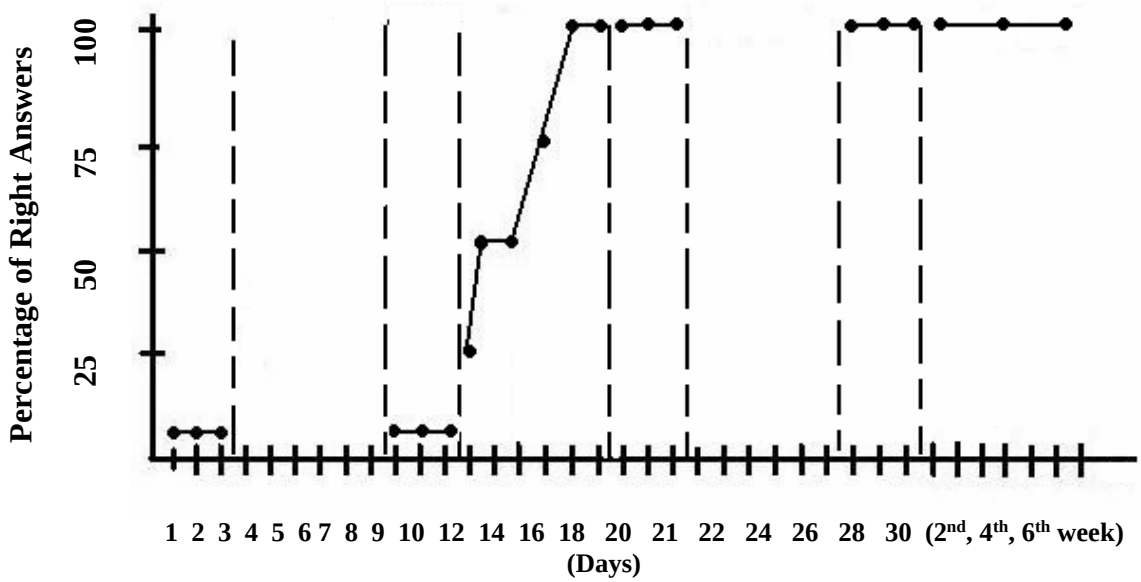


3.1.2. Effectiveness of Direct Instruction for the Second Subject

Three sessions were held for the second subject at the preliminary starting level and three groups of questions each composed of four questions out of twelve questions summarizing solar system in science lesson were asked during starting level. The second subject answered the questions with the following percentages of accuracy: 0% in the first session, 0% in the second session and 0% in the third session at the preliminary starting level. Following the completion of implementation phase for the first subject, collective probe phase was applied for all students. Three groups of questions each composed of four questions out of twelve questions were asked respectively during the collective probe phase. The second subject answered the questions with the following percentages of accuracy: 0% in the first session, 0% in the second session and 0% in the third session during the collective probe phase. During the teaching session following collective probe phase,six consecutive sessions were held for the second subject by using direct instruction method and a rapid increase was observed in target learning level. Percentage of right answers reached the stability with the following percentages of accuracy: 25% in the first session, 50% in the second session, 50% in third session, 75% in the fourth session, 100% in the fifth session, 100% in the sixth session within the first session during implementation phase. Then teaching session was ended. Collective probe phase was implemented for all students. During the collective probe phase, three groups of questions each composed of four questions out of twelve questions were asked respectively. The second subject answered the questions with the following percentages of accuracy: 100% in the first session,

100% in the second session and 100% in the third session during the collective probe phase. Following the completion of first implementation for the third subject, collective probe phase was applied for all subjects. The second subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the collective probe phase. Monitoring sessions were held in order to observe that learnt items were maintained during the 2nd, 4th and 6th weeks and the second subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the monitoring phase.

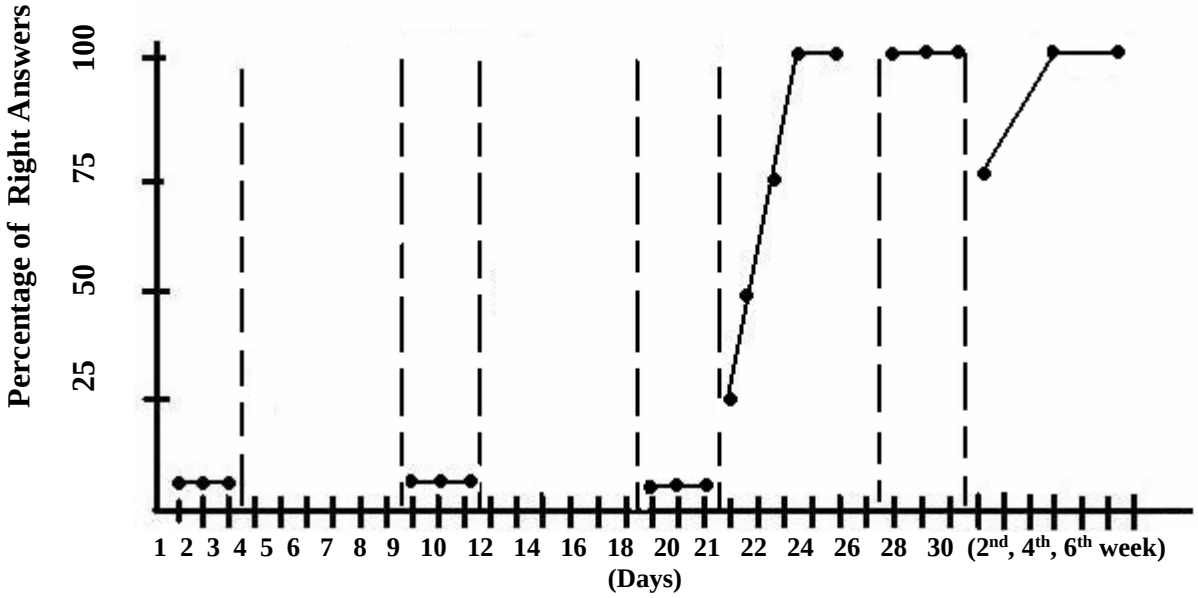
Figure 1.2: Percentage of Right Answers by Subject 2 during Sessions



3.1.3. Effectiveness of Direct Instruction for the Third Subject

Three sessions were held for the third subject at the preliminary starting level and three groups of questions each composed of four questions out of twelve questions summarizing solar system in science lesson were asked during starting level. The third subject answered the questions with the following percentages of accuracy: 0% in the first session, 0% in the second session and 0% in the third session at the preliminary starting level. Following the completion of implementation phase for the first subject, collective probe phase was applied for all students. Three groups of questions each composed of four questions out of twelve questions were asked respectively during the collective probe phase. The third subject answered the questions with the following percentages of accuracy: 0% in the first session, 0% in the second session and 0% in the third session during the collective probe phase. Following the completion of implementation phase for the second subject, collective probe phase was applied for all students. Three groups of questions each composed of four questions out of twelve questions were asked respectively during the collective probe phase. The third subject answered the questions with the following percentages of accuracy: 0% in the first session, 0% in the second session and 0% in the third session during the collective probe phase. During the teaching session following collective probe phase,five consecutive sessions were held for the third subject by using direct instruction method and a rapid increase was observed in target learning level. Percentage of right answers reached the stability with the following percentages of accuracy: 25% in the first session, 50% in the second session, 75% in third session, 100% in the fourth session, 100% in the fifth session within the first session during implementation phase. Thus sixth session was cancelled and the teaching session was ended. Collective probe phase was implemented for all students. During the collective probe phase, three groups of questions each composed of four questions out of twelve questions were asked respectively. The third subject answered the questions with the following percentages of accuracy: 100% in the first session, 100% in the second session and 100% in the third session during the collective probe phase. Monitoring sessions were held in order to observe that learnt items were maintained during the 2nd, 4th and 6th weeks and the third subject answered the questions with the following percentages of accuracy: 75% in the first session, 100% in the second session and 100% in the third session during the monitoring phase.

Figure 1.3: Percentage of Right Answers by Subject 3 during Sessions



4. DISCUSSİON

Direct instruction method was found to be effective in teaching students with learning disabilities about science in the present study. It was detected that subjects were able to maintain learnt items after two, four and six weeks following the teaching of solar system in science lesson. A significant relation was observed between order of instruction and the success of students. Accordingly it was concluded that success obtained during implementation phase by first and second subject for whom the first implementation was carried out was also stable in the monitoring sessions. A generalization was possible since the instruction of all subjects was carried out simultaneously in the same environment.

Other results of the study indicated that students with learning disabilities were not successful in science lesson according to their previous educational experience and it was resulted from the fact that an individual instruction method was not used considering the learning disabilities of the students. It was concluded that teachers should necessarily explain the importance of science lesson to the students and materialize the subject with visual materials as much as possible for the students. Some of the studies on the effectiveness of direct instruction for the students affected from the deficiencies within the field of special education are as follows:

Studies in the literature reveal the positive effects of direct instruction method on different students in different fields (Mitchell, 2008). For instance a study compared the educational behavior in preschool through twelve models such as analysis model, parental education model and comprehension model. The results indicated that direct instruction was not only superior to other models but it was also superior in adopting factors such as reading, mathematical abilities, superior comprehension abilities and self-confidence in the school (Mitchell, 2008).

Bintaş (2007) did a research on the effectiveness of Instructional Material prepared according to Direct and Cascaded Instructional Approaches in provision, continuity and generalizability of basic addition and telling time skills for students with mental disabilities. According to the results of the research, presentation with Instructional Material prepared according to Direct Instructional Approaches was more effective than the presentation with Instructional Material prepared according to Cascaded Instructional Approaches in providing basic addition and telling time skills and it enabled the continuity and generalization of the acquired skills.

Research of Köroğlu (2008)handled the effects of teaching students with mild mental disabilities about mathematics through structuralist approach by comparing with direct instruction method. Students were provided either with structuralist or direct instruction method for teaching mathematics. According to the results of the research, students made a significant progress during the whole education program in both cases. However students thought by means of direct instruction made a better progress compared with the student thought by means of structuralist approach. The results indicate that students with mild mental disabilities may benefit from structuralist approach however direct instruction seems to be more effective for them.

The study of Çelik (2007)compared the effectiveness and efficiency of Direct Instruction and Simultaneous Prompting in teaching about concepts. According to the findings of the research, both Direct Instruction and Simultaneous Promptingwere effective for three subjects however Direct Instruction was also effective for the remaining subject. Concepts which could not be taught to the remaining subject through Simultaneous Prompting were thought by means of Direct Instruction upon the completion of implementation. However Simultaneous Prompting was observed to be more effective than Direct Instruction in terms of trial number, number of errors and the duration of instructional sessions.

Thus this finding was also supported with previous studies (Batu, 2006; Carnine, SilbertveKameeui, 2004; Ekergil, 2000; Kelly, GerstenandCarnine, 1990; Haris, 1973; Gürsel, 1993; KırcaaliİftarBirkanandUysal 1998; Meyer, 1984; Moore andCarnine, 1989; Raymond, 2004; Varol, 1992; Çalık, 2008; Çelik, 2007; Dagseven, 2001; Güzel, 1998; Hastings, Raymond and McLaughlin, 1989; Kroesbergenand Van Luit, 2005) on the effectiveness of direct instruction in teaching about academic skills.

5. CONCLUSIONS and RECOMMENDATONS

5.1. Conclusion

Direct instruction method was found to be effective in teaching students with learning disabilities about the science lesson in the present study. It was detected that success of subjects was even stable after two, four and six weeks following the teaching of solar system in science lesson. A generalization was possible since the instruction of all subjects was carried out simultaneously in the same environment.

A significant relation was observed between order of instruction and the success of students. Accordingly it was concluded that success obtained during implementation phase by first and second subject for whom the first implementation was carried out was also stable in the monitoring sessions.

5.2. Recommendations

1. Findings of the research indicate that direct instruction method is effective and practical. Thus direct instruction method may be recommended for the teachers of special education and science teachers.

2. Direct instruction method may be recommended for teaching students with learning disabilities about skills to be taught step by step (such as academic skills and skills of daily life), knowledge of which limits are specified and defined, and concepts.

3. Teaching science should be attached more importance in order to attain a target thereof, develop mental skills of children and enable the children to understand the world in which they live better.

5.3.Recommendations for Further Studies

Direct instruction method may be implemented for teaching about other subjects included in the science lesson and also other lessons and the effectiveness of the method for children with learning disabilities may be researched. Effectiveness of the method may be researched by comparing the direct instruction method with other instructional methods.

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CHANGES IN ROMAN LEGAL EDUCATION

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ABSTRACT
In general meaning legal education is the education of persons who intend to become legal professionals and it provides them to have their law degree and to use in some fields related to law such as politics, academic or business. The Roman legal education system was based on the Greek system and it was popular all the time since fathers expected to have their children educated to some extent, and a complete advanced education was expected of any Roman who wished to enter politics

We see that it was an informal, familial system of education in the early Republic but progressed to a tuition-based system during the late Republic and the Empire. At the beginning many of the private tutors in Rome were Greek slaves or freedmen. And the methodology of Roman education was used in its provinces with the extent of Rome's power in this time.

During the late Republic and later the Empire, the Roman educational system gradually changed and found its final form. Formal schools were established, which served paying students; very little that could be described as free public education existed.

This paper examines the evolution of Roman legal education with different aspects and focuses on how Roman legal education changed within different eras.

Key words: Roman law, legal education, law schools, periods, development of law.

INTRODUCTION

From its first establishment, Roman law has been in a secular form. As being a written, central and legislator law; it has not only regulated the rights, obligations and prohibitions but also established institutions. It can be referred to a complete system due to the fact that this institutionalism not only regulates interpersonal relations, also regulates competence and government agencies. At the same time, in direct proportion to the development of the Roman civilizations that had been spanning over 1000 years and the nature of the Roman law, professional lawyers, the legal-science heritage and the legal system that was built in a cumulative manner via these studies should be mentioned. Thus, Roman law formed the basis of modern legal system in which we live today (Keskin, 2014, p. 599).

The role of lawyers is very high in the qualification Roman law in the current legal system, especially in private law. Roman law that is accepted as valid between the years of BC 753 and AD 565 should be analyzed in different periods of the obligation taking into account the changes in the social and political spheres. However, in each period, lawyers cannot be said that they have made the same level of contribution to the development of law. Constantly changing and evolving nature of the law was encountered in a more pronounced way in Rome and the lawyers could not be expected to remain behind this change and development. It can be expressed as the basic duties undertaken by the Roman jurists at this point that not only to keep track of the changes and evolution of the law, but also had to contribute directly to the development of law studies. (At the same time, this could be counted as an expectation of the lawyers of the political body as well as social one.)

Training lawyers is at least as important as being a lawyer in Rome. However, in each semester in Rome, it is unthinkable that the legal education was given in the same way. Therefore, the legal education has been encountered in different ways in different periods (Crook, 1967, pp. 88-90). In this study, it is aimed to examine the outline of the different features of the legal education in Rome in different periods.

KINGDOM ERA

In ancient Roman times, the Roman lawyers would be considered as being capable of thinking, and individuals dedicated themselves to law and justice. Indeed, one of the areas where Rome was superior from the Kingdom Era until the Roman Empire is law. Law and legal education in Rome was accepted as part of life and an important way of thinking.

In Rome's oldest periods, law and religion were considered as two inseparable parts of a whole and the same people were authorized in these matters. In Rome's ancient times, it was known that, firstly, law and legal education were in the hands of clergy and were given by the specially authorized priests and monks (Karagöz, 2010, p. 1).

As a result of the gradual development of secularism, discrimination between law based on religion and secular law has gained prominence. According to Livy, though the request from Roman people to make the secular law written, these demands were hidden by priest jurists (Livy 4, 3, 9). Indeed, it was observed that priest jurists put forward the law by a number of the sacred ceremony and refrained their information from sharing by blessing them (Mineo, 2015, p. 361). Therefore, the expectation of concrete clarification of the law to ensure justice emerged; because, except among people in the superior class, in the law knowledge of the Roman people, serious lack was concerned prior to the Law of the Twelve Tables (Pharr, 1939, p. 258).

It can be said that people were dependent on the monks for the implementation of any legal rights or claims of the individuals in real terms. But, it was not considered that Patricius, as the superiors, were not totally ignorant about the law, because the priest jurists were also in the same class.

REPUBLIC ERA

It can be specified that a liberal education of law has been laid the foundation with Law of Twelve Tables. Despite this, after the publication of the Law of Twelve Tables, to protect their privileges, priests for a while continued to see themselves as guardians of the law (Umur, 1982, p. 223).

Even though the holy words had the validity of the legal process in term of priest jurist, the slightest slip of the tongue or a word error could result in the loss of a lawsuit. In this system, because the demands of the correction of ordinary errors were not taken into account, he lost lawsuits and could not be opened again for sure. But, under constant and unbearable pressure from the needs of daily life, a necessary development in terms of the practice of law and law theory has occurred. In time, plebeians have become eligible for economic, social, legal and political areas. Meanwhile, when issues such as fair and equitable trial in front of the court and equality before the law gained importance, they have become increasingly knowledgeable about some basic legal forms or patterns afterwards.

Towards end of the BC 4th Century, Gnaeus Flavius, the son of one of freed people, had become Appius Claudius Caecus's private secretariat. Gnaeus secretly had the studies related to legal proceedings patterns and trial calendars carefully prepared by Appius and indicated in Ius civile and also published them. What is known about Appius is that he was responsible for making them printed, but it was used by Gnaeus (Pharr, 1939, p. 259).

After making this study printed, a person had knowledge about on which days he would open the trial, which legal patterns could be used and which ceremony would take place. After that, the number of young people who were avid to learn in Rome was seen to be increasing. They also were interested in procedural law together with the printed studies of legal cases dies and trial days in addition to the rules of substantial law that faced primarily in the Law of Twelve Tables (Pharr, 1939, p. 259).

Another decisive step was taken by the first plebeian-origin Ponitifex Maximus and Tiberius Coruncanius, the first law teacher especially in the area of the old era Roman public law in the year BC 280 (Dig. 1,2,35 and 38). Tiberius, the law instructor and also jurist consult, was only one legal educator to tackle the next period of the Roman law. However, his contributions to the area of law and its effects were very important. In his period, The Romans were the first to have a class of people who spent their days thinking about legal problems, and this is why their law became so "precise, detailed, and technical." (Crook, 1967, p. 88). After that, jurist consults, considering the public interest, gave free consultancy to investigators of the legal issues and gave free education to anyone willing to learn (Pharr, 1939, p. 260).

However, it should be noted that the removal of the legal activities of the priests has revealed the need to train the people who are more numerous and ability to solve the legal issues in the field law. The needs of the emerging changes in the legal field parallel to changes in the social and political fields could only be met depending on the training of affordable lawyers.

As seen, while there was little or no theoretical approach to law in this term, law enforcement was important on individual cases. Roman law, in almost every period, has maintained the connection to meet the social needs practically. But it was not permitted to intervene with the business life of Rome through the law.

It can be specified that those who provided an important contribution to the development of Roman law in time were the priest jurists, the lawyers' board and legal experts, respectively. These provided to shape the law with the contributions they gave more than the Magistrates did, to make Roman law science more effective with the information given about the law and to be recognized in today's world. Meanwhile, ahead of this development, it should be stated that this was a starting point for the preparation of the written law in line with the needs and demands of the little people on social class distinctions.

IMPERIAL ERA

When it comes to the first imperial era, with new measures and practices in the administrative area, it has seen rapid development in the theoretical and practical training of law (Jones, 1964, pp. 512-513). It has been prevented to be direct jurist consult without a permit from the emperor in Augustus era. In this term that emperor held the law in his monopoly, authorized individuals and people from the upper classes could be jurist consult (Dig. 1, 2, 49). However, in Tiberius period, though being from the lower class, the authorization of a lawyer named Massurius Sabinus as jurist consult indicated that this rule was not applied. We do not have detailed information about Sabinus Massurius's life and how he obtained this right, but it is known that towards the end of his life he got eques and he was the authorized one as jurist consult by Tiberius under the first senator (Pharr, 1939, p. 261).

From the Augustan period, in the period until the first half of BC 3rd century. the two law schools contributing to the development of jurisprudence were observed. There were two great jurists who have opposing views at the administration of these law schools; Marcus Antistuis Labeo and C. Ateius Capito. Rivalry that emerged because of these two great contrasting opinions they had, also continued between Massurius Sabinus who was Capito's student and Proculus who was Labeo's student and this rivalry continued vigorously in the politics field (Karagöz, 2010, pp. 17-18). Law schools were not entitled with the names of its founders. The Proculianus was used to call for those were included in Labeo's school, while the other was known as the Sabianus who belonged to the Capito's school (Umur, 1982, pp. 231-232).

There were no tangible sources to put difference between the two law schools in a precise manner. Although they were regarded as law school, it was notable for more scientific disputes, not with legal training. However, we do not have information on the basis of scientific dispute between the two law schools, too. Among them, there was no satisfactory justification of those who argue that there was difference of the principles and methods. The presence of different opinions between the two law schools in the resolution of the legal case was not generally sufficient to divide the scientific law. On the contrary, the discussion of the different legal interpretations and opinions in legal event has contributed significantly to the development of the science of law (Umur, 1982, pp. 231-232).

Period beginning with Sabinus is the beginning of a new era in the development of law and legal education. Due to the experience of poverty, Sabinus is known as the first jurist that gave legal education in exchange for fee. It is seen that since his era, legal education has become more systematic, the development of the theory of law in law school has made progress. Sabinus was the founder of the most famous one among law schools and therefore it was known as schola or secta Sabinianorum (Karagöz, 2010, p. 19). This law school has maintained its existence for hundreds of years. Sabinus doctrine was taken into consideration in written works in law area. Its effects on the law are seen with the adoption of his thoughts by the lawyers came after him. It can be said that Sabinus school had an effect on at least one-third part of Digesta, one of the parts of Corpus Juris Civilis that is the most important work of codification of Roman law, published 500 years after its establishment (Pharr, 1939, p. 261).

After Sabinus, individually many law professors have come forward. However, it is known to begin with the establishment of law schools in the 2nd century and beyond. These schools were founded first in Rome and then in Athens, Beirut, Alexandria, Carthage, Caesarea in Palestine, Antioch, and Constantinople (Pharr, 1939, p. 261).

The most famous one of these schools were in Beirut. Strangely, this law school has been effective in the last imperial development of legal theory and philosophy, because, Roman Empire during this period was influenced by Eastern culture in the field of law, as in many areas. The establishment of the law school in Beirut with the need for jurists, since the city was chosen to serve as a repository for Roman imperial edicts concerning the eastern provinces (Cameron, 2000, p. 254).

About 500 years before the publication of the Corpus Juris Civilis, in 39 BC, there was a compilation prepared by Alfenus Varus, the jurists consult (Hazel, 2001, p. 9). While this study is quite voluminous collection, it can easily be referenced by students and is utilized in law teaching. This study is much broader than the similar four compilation prepared by the jurist consults and legal experts appeared in the first two hundred years of the Roman Empire. In the era of Emperor Theodosius, it was possible to encounter emperor decree made with pedagogical

purposes. He also emphasized the legal field as Justinian (Pharr, 1939, p. 263).

Lawyers believe that codification works published in Justinian period was sufficient, because the study also included important works in the legal area from past to present. This is also valid for the work named Basilica prepared by Theodosius codex and philosopher Leo.

It was not known whether there were conditions set by the state in the subject of giving lecture as legal experts during the first empire. However, the emperor has assumed the responsibility for legal education as well as in all fields in accordance with the formation autocracy completely in time and the fully formed totalitarian form of government and population. In this period, certain quotas for the emperor to be law instructor, law students and lawyers have been introduced.

Until the year 533 AD, while private schools and public schools were lasting their existence, the schools in which legal education was given were removed during the Justinian period. Besides, in his time, all of the law schools except in Beirut, Rome and Constantinople have also been uninvolved (Cameron, 2000, pp. 253-254). In the period of Different Emperors, various privileges were granted to the law instructors. For example, they were not be assigned in heavy and hence tiring public service, as they were exempted from all kinds of taxes (Dig., Const." Omnem"7). Student fees and conditions required for admission to law schools began to be predetermined by the state from the Diocletian era. Legal education firstly was given for four years and then it began to be given continuously for five years (Jolowicz, 1932, p. 479).

CONCLUSIONS

Romans assumed that a powerful empire management from administrative, political and legal aspects had to have a solid foundation. In order to have a solid foundation of an empire in the legal aspects, lawyers, and in the meantime, the legal education has been given a huge importance in Rome. In the period of the Empire period from ancient times, Roman jurist was the one who has a certain reputation in the community, came from a wealthy family, could rise to high positions in government, could get the law improved for public interest with his deliberations and with other activities and did not accept fees in return for these.

Roman law does not confront us as a rest behind the social development. It may be specified that it continuously keep up with changes and developments according to the situations of the period. In parallel to the law in different periods in different ways, legal education appears to be in different ways and different times.

From the Kingdom Era to the Empire Period, in the first place of the transformation of education in the field of law, training lawyers in a freer media and in the light of more open rules in the secular legal system together with the decline of religious influence has come. At the same time, it is seen that the importance given to the legal education in the sense of administrative means also appears to increase further the imperial period. Making legal education more systematic has also been mentioned again in the coming period.

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DIGITAL NATIVE STUDENTS – WHERE IS THE EVIDENCE?

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1.0 ABSTRACT

The aim of this study was to explore pre-university students' experience in using digital technology and to assess whether they might reasonably be classified as Digital Natives and examine the nature of their classification. Data was collected through an online survey in which 191 pre-university students participated. The sample study consists of 84 males, 107 females; 135 from business/science school and 56 from engineering school. It was found that students are spending more time on-line on entertainment than on academic pursuits. Smartphones and mobile computers are the two most popular electronic devices among the students and they spend more than six hours per day surfing the Internet, calling and messaging. Surprisingly, female and science/business students were characterized to be more digital native compared to male and engineering students. Female and science/business students spent more time on entertainment. This study has found that pre-university students in Malaysia were 'being' digital natives because they were born after 1980 and 'doing' the digital native activities.

Keywords: digital native, gender, multitasking, digital immigrant, per-university, technology usage

2.0 INTRODUCTION

Advances in science and technology have gradually transformed our lives and how our society operates. As a result, today's university students are not the same as those in the past; they have been born into a digital age where technology forms an integral part of their lives. They are surrounded by digital technologies and spend a lot of their time watching television, surfing the internet, playing digital games, using mobile phones, etc. When today's students come into the classroom - instead of copying down notes, they are more likely now to take a snapshot using their smart phone or tablet PC; instead of having face-to-face conversations in the class, they post their updates and messages to Facebook; instead of going to the library to search for information in books, they use Google to search the Internet. Teacher complaints about students using their mobile phones and not paying attention in class now seem strangely ill-informed. The communication and learning approaches of today's young people have radically changed in the past 20-30 years. Whilst a lot of educators are aware of this, many find it easier to ignore, assuming students are the same as they have always been, and that consequently the same teaching methods will continue to work for the current generation of students (Prensky, 2001a, 2001b). In fact, Prensky goes further to claim that today's students (i.e. those born after 1980) are 'digital native speakers' of the digital language of computers, video games and the Internet, and they are no longer the people our educational system was designed to teach (Prensky, 2001a). There is an imperative on the education system to understand these digital native students, and consider how it needs to change as a result (Helsper & Eynon, 2010).

Malaysia is embarking on improving its education system, with a national vision of becoming a developed nation by the year 2020. Malaysian education policies are driving towards digitalization by gradually incorporating information and communication technology (ICT) into teaching and learning. Malaysia's initiatives of digitizing education have been contextualized within several national initiatives over the last 40 years (Cheah & Merican, 2012). In tandem with this, in recent years, there have been an increasing number of studies related to ICT use among Malaysian students (Eow, Wan Ali, Mahmud, & Baki, 2009; Hamat, Embi, & Hassan, 2012; Hashim, Hamid, & Rozali, 2007; Hew & Leong, 2011; Latif, 2007; Yuen & Song, 2009; Zakaria, Watson, & Edwards, 2010; Zulkefly & Baharudin, 2009). These studies explore students' competency and use of the Internet, mobile phones, digital games and social networking. However, the relationship between technology accessibility and characteristics attributed to the digital native generation in Malaysia is yet to be explored. Our search of the literature suggests there is next to no research on the digital native traits of Malaysian students. Helsper and Eynon (2010) did mention that many past research studies focused on young

people's usage of new technologies, but arguments regarding ways of supporting the digital native student tend to be minimal.

"Also not yet explored is the relationship between technology access, use and skill, and the attitudinal characteristics and dispositions commonly ascribed to the digital native generation" (Bennett, Maton, & Kervin, 2008, p. 778).

It is argued (Shariman, Razak, & Noor, 2012) that educators' acceptance of the 'digital native student' is a matter of pure conjecture with the existence of the concept still under some doubt (Bennett et al., 2008). For instance,

"The extent to which a person is a digital native is about date of birth or about a certain amount of exposure, experience or expertise with new technologies, is an important question for policy and practice. If characteristics of a digital native are determined by age then older generations are lost and a solution to a digital disconnect between adults and younger people is out of sight. However, if being tech savvy is determined by exposure and experience then collaboration and learning is possible in environments where younger and older generations interact" (Helsper & Eynon, 2010, p. 506).

The use of age to classify students as digital natives is a risky assumption and we should not presume that all current students are proficient in ICT, being 'technologically savvy'. Likewise, educators drawn from previous generations could be as competent as or even more so than some of the younger generation of students in their use of ICT, though this is likely to be geographically influenced. A study conducted in the United Kingdom (UK) found that there was no substantial difference between digital natives (i.e. born after 1980) compared to the older generation in technology usage (Helsper & Eynon, 2010). Another study conducted in Hong Kong discovered that students were competent in gaming, entertainment, advanced web or mobile and social features such as Facebook, whereas teachers were competent at work-related technologies and simple web functions (Mcnaught, Lam, & Ho, 2009). Consequently it would be dangerous to characterise all Malaysian students as digital natives without any strong empirical evidence. There is a difference between 'being' the digital natives based on their age and 'doing' the digital native in everyday practices (Helsper & Eynon, 2010).

The study we report on here focused on a new wave of Malaysian university students and it contributes to understanding rapidly changing student lifestyles and learning environments driven by fast changing information technology. There is little literature reported in Malaysia with regard to digital native characteristics. Though the term digital native is popular in Malaysia, not much research has been undertaken in this area and most of the data collected on digital natives has been conducted in the United States (Helsper & Eynon, 2010). For Malaysian higher education practice therefore, there is an urgent need to understand how current students react to technologies so that educators are able to assess students' desire and readiness in using technology for learning in the ways that exploit their skills as digital natives (Teo, 2013). This study contributes by giving some preliminary insights, and defines the extent to which Malaysian pre-university students may be characterised as digital natives.

3.0 REVIEW OF LITERATURE

3.1 THE DIGITAL NATIVE

The terms, 'digital native' and 'digital immigrant' were initiated by Prensky (2001a). *Digital native* refers to those students who were born after 1980 and are native speakers of the digital language of computers, video games and the Internet (Prensky, 2001a). Students at school and universities have grown up and spent their entire lives surrounded by computers, video games, cell phones and all other digital technologies, which have become almost seamlessly integrated into their daily lives. Interestingly, the rise of Web 2.0 applications has created the second generation of the digital native, children who were born after 1990 (Helsper & Eynon, 2010). Malaysian students have also been exposed to and are comfortable with Web 2.0 applications (Zakaria et al., 2010), and so could be possibly classified as the second generation of the digital native. Furthermore, digital native is also defined as 'someone who comes from a media rich household, who uses the Internet as a first port of call for information, multi-tasks using ICTs and uses the Internet to carry out a range of activities particularly those with a focus on learning' (Helsper & Eynon, 2010, p. 516).

Besides the term digital native, students and young people who are currently studying at school, college and university are also variously claimed to be the 'net generation', the 'Google generation', the 'millennials' (Helsper & Eynon, 2010) or the 'Facebook generation' (Ahuja, 2013).

Conversely, the term *digital immigrant* was used by Prensky to refer to those who were born before 1980, but have adopted and learned new technologies at some later point in their lives (Prensky, 2001a). 'The single biggest problem facing education today is that our digital immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language' (Prensky, 2001a, p. 2). Based on this argument, there is a gap or *digital disconnection* between the educators and the students; digital immigrant educators are characterised as left behind in the latest technological developments.

Prensky's classification of digital native based on age or generational difference has been debated and criticized by some researchers (e.g. Helsper & Eynon, 2010). A study conducted in the UK to explore whether being digitally native was determined by age, experience (i.e. using the Internet for the longest period of time) and breadth of use (i.e. the Internet is integrated into almost every aspect of their everyday lives) revealed that generation (i.e. age) alone does not adequately define whether or not someone is a digital native (Helsper & Eynon, 2010). It is argued that other factors such as gender, education, experience and breath of use, do play a part in explaining how a person is classified (Helsper & Eynon, 2010). On the other hand, other researchers have claimed that the existence of digital natives is based on two assumptions: (1) digital natives *possess sophisticated knowledge* and skills in ICT, (2) digital *natives have different learning preferences* compared to the earlier generations of students (Bennett et al., 2008).

Technologies do play a major role in changing the way young people communicate, socialise and learn (Helsper & Eynon, 2010). According to Prensky (2001b), digital natives received a considerable digital input while growing up, thus arguably some of the functioning of their brains are likely to be modified as they think and process information differently from the previous generation of digital immigrants who tend to shape technological usage around their practices, rather than vice versa. These natives have grown up with a 'hypertext mind', they 'leap around', and develop parallel cognitive structures (Prensky, 2001b). Digital natives are characterized as (a) used to receiving fast information, (b) like parallel processing, (c) used to multitasking, (d) think of graphics first, (e) are comfortable with random access, (f) function best when networked, (g) thrive on instant gratification and frequent rewards, (h) prefer games to serious work and (i) have a high twitch-speed (Prensky, 2001a, 2001b). Most importantly, 'today's kids are always multiprocessing - they do several things simultaneously - listen to music, talk on the cell phone, and use the computer, all at the same time' (Brown, 2000, p. 13). It is important to highlight that multitasking is not a new phenomenon as many of the parents of today's generations of students might have done their homework while watching television, or listening to the radio (Bennett et al., 2008). However, the learning behaviour of digital natives is greatly influenced by the digital technologies that have been constantly integrated into every aspect of their lives since an early age.

Digital native students are also claimed to learn so differently from the digital immigrants that the nature of education itself must change to accommodate the interests expectations and practices of these students (Prensky, 2001a). However, it is also contended that this is a controversial assumption because students' learning approach and preference is not fixed and may change depending on the context of the task given, thus generalizations of particular learning preferences (e.g. receiving fast information, multitasking, etc.) favoured by the digital native is questionable (Bennett et al., 2008). Despite these controversies between researchers (i.e. Bennett et al., 2008; Prensky, 2001a) in regards to learning preferences of digital natives, the preliminary and fundamental interest is to determine whether or not our students can be really characterised as digital natives and if so, what the implications are to learning and teaching.

Teachers have to be aware that today's students are different from those they might have encountered in the past. It has been contended that digital native students often have short attention spans when exposed to traditional teaching styles, but not for the things that interest them (Prensky, 2001b). Although this has arguably always been the case, it is the pace of change and scale of difference that today is greater than ever before. Students nowadays *think* and *learn* differently and perform many functions in quite distinct ways such that their teachers have a need to understand and communicate in the language of their students and use an adapted teaching approach that best fits into students' learning strategies. Teachers of course, must know how to grasp students' attention and interests in the classroom. In fact, understanding of how students react to technology in learning, social and collaborative situations is vitally important to allow teachers to accommodate their students' learning needs by employing more effective teaching approaches (Teo, 2013).

3.2 THE INTERNET AND FACEBOOK

Today's digital natives are also regarded as the 'net generation' or the 'Facebook generation'. For this reason, it may be worthwhile to discuss briefly, the Internet and Facebook before proceeding to technology possession of digital natives. According to Internet World Statistics, there are more than 3 billion Internet users worldwide (Stats, 2014). China has the largest group of Internet users (642 million), followed by US (277 million) and

India (243 million) (Stats, 2014). Increasing worldwide use of the Internet has increased in parallel with social media such as Facebook and Twitter. Facebook remains the largest social network in the world to date (BeginGroup, 2013). Since Facebook has been banned in China in 2009, the leading countries based on number Facebook users as of May 2014 were US (151.8 million), India (108.9 million) and Brazil (70.5 million) (Stats, 2014). In September 2014, Facebook reported 864 million daily active users on average and 1.35 billion monthly active users (Facebook, 2014), which means about 45% of the Internet users have a Facebook account. Male Internet users outnumber female Internet users by 7% (Indo-Asian, 2013), but surprisingly females have made up a larger share of Facebook users (58%) compared to males (42%) (Smith, 2014). Men are seemed to have higher accessibility and interest on the Internet, but women tend to prefer connection through Facebook.

In Malaysia, there are 20 million Internet users, which is about 67% of Malaysian population (Stats, 2014). This figure is higher than the 57% of Malaysian Internet users as reported earlier by Department of Statistics Malaysia (2013). Facebook is also the most popular social media in Malaysia, with 13.3 million Facebook users, 45.2% of the total Malaysian population (Stats, 2014). Obviously, the extent of Internet and Facebook penetrations into Malaysia are considered to be good compared to some Asian countries (Socialbakers, 2014).

Today, the popularity of the Internet and social media has changed society overall. The young generation of adults and students are spending a great deal of time on the Internet and social networking, and seem to be attached to their smartphone all the time. Today's digital native students will have spent over 10,000 hours playing videogames, over 20,000 hours watching television and over 210,000 hours communicating through emails, cell phones and instant messaging, but only spend at most 5,000 hours reading books, before leaving a college (Prensky, 2001b).

3.3 TECHNOLOGY USAGE OF DIGITAL NATIVES

Some studies have revealed that digital native students are spending more time on entertainment and less time on academic and health purposes. Research found that 63,600 university students spent 41 hours per week (i.e. a sharp increase from 25 hours in 2003) on social and leisure activities, but only allocated 28 hours on academic activities including studying outside of class and attending lecture (Shragge, 2010). Data obtained in the USA from the Kaiser Family Foundation in 2010 showed that between 8 and 18 years, children now spend more than 7.5 hours daily watching television, listening to music, surfing the web, communicating in social network and playing computer game (Ahuja, 2013). Conversely, according to the 2011 Bureau of Labor Statistics' American Time User, the high school students only spent on average less than an hour per weekday on sport, exercise and recreation (Ahuja, 2013). In fact, this is a global phenomenon, seen in many developing and developed countries. In Malaysia, a study (Yuen & Song, 2009) revealed that students were spending most of their time using digital technologies for communication or entertainment, and less for academic or collaboration. The researchers (Yuen & Song, 2009) claimed that Malaysian digital natives have similar traits as the USA and Australian digital natives. No matter where they are, students nowadays are more connected to the world than ever before and thank to the Internet, a global network linking people around the world by giving an illusion of a borderless world.

3.3.1 ACCESSING FACEBOOK

Today, the Internet has played a significant role in the life of many people around the world. Based on Brint's study, the largest amount of time spent on the Internet is on Facebook, with an average of 10.5 hours per week (Shragge, 2010). Another study conducted in the USA discovered a similar result, where students spent an average of 1 hour 41 minutes per day (11.78 hours per week) on Facebook and checked Facebook 5.57 times per day (Junco, 2011). In Malaysia, a study revealed that 80.8% of students had a social networking account and were spending more time on social networking than on learning (Hamat et al., 2012). Though Facebook is popular in Malaysia, the top four main activities of Malaysian Internet users were reported as posting information or instant messages (69.1%), using email (65.4%), searching for information about goods/ services (65.3%) and downloading multimedia or listening to music (64.6%) (Department of Statistics, 2013). According to Facebook, most of the Facebook users are mobile users, in which there are 703 million mobile daily active users on average and 1.12 billion mobile monthly active users (Facebook, 2014). Apparently, mobile devices such as smartphones or tablet computers have become an integral part of life for many of us.

3.3.2 CALLING AND MESSAGING WITH MOBILE PHONE

Past studies (Ahuja, 2013; Kennedy, Dalgarno, & Bennett, 2008; Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; Margaryan, Littlejohn, & Vojt, 2011; Mcnaught et al., 2009; Thinyane, 2010; Yuen & Song, 2009) also revealed that more than 80% of the digital native students owned a mobile phone. However, students' experiences in developed and developing countries tend to be different, for instance, in South African students tend to use more functionalities of mobile phones and about 84% of them used mobile phone to call and to send

SMS to people daily (Thinyane, 2010). In Malaysia, a study revealed that students spent 353.36 minutes on the mobile phone daily (Zulkefly & Baharudin, 2009). Students prefer messaging to calling, especially among the female students (Zulkefly & Baharudin, 2009). This may due to cheaper charges for sending messages compared to making a phone call. Furthermore, sending messages resembles an asynchronous communication that does not require activities to be taken place in real time.

3.3.3 PLAYING DIGITAL GAME

Video games have become a popular form of entertainment since the appearance of Super Mario in the 1980s. In the USA, university students spent 11.04 hours per week playing video game, whereby males played 16.87 hours per week and females played 6.34 hours per week (Sherry, Lucas, Greenberg, & Lachlan, 2006). Another study on massively multiplayer online role-playing games (MMORPGs), with a sample study from 45 countries, mainly the gamers from USA, UK and Canada between 11 and 63 years found that the mean time spent playing per week was 22.85 hours (males - 23.3 hours and females - 21.7 hours) (Cole & Griffiths, 2007). In Malaysia, about 47.9% of Malaysians reported playing computer games on the Internet (Department of Statistics, 2013). A study conducted in one Malaysian secondary school showed that 75.8% (91.3% boys; 54.1% girls) of the students played computer games and spent an average of 8.47 hours per week playing (Eow et al., 2009). Another study conducted in a public university in Malaysia showed that 54 % of those students were playing games on mobile phones (Hashim et al., 2007). A study in Malaysia also found that no evidence to support students' poor academic performance in school was due to playing computer games (Eow et al., 2009).

3.4 DIGITAL NATIVES AND DIGITAL IMMIGRANTS

Many studies investigate on the digital native students' accessibility and use of digital technologies, assuming that digital natives are technology savvy, 'think and learn' differently from digital immigrants. A few studies have defied this assumption however. In Australia, a study has revealed that the technological skills of digital native students were overestimated, because they were not familiar with several new evolving digital technologies (Kennedy et al., 2008). A similar finding was observed in a study conducted in Malaysia, in which majority of the students had moderate levels of ICT competencies in office applications (e.g. words, presentation, spreadsheet, database), the Internet, email, social networking, utility and computer maintenance (Hew & Leong, 2011). The impact and technology skills of digital natives could be overestimated; conversely, the impact and technology skills of digital immigrants could be underestimated. It was contended that the digital divide between the digital natives and digital immigrants was not as large as expected (Kennedy et al., 2008). This could be justified on the grounds that digital natives and digital immigrants are deemed to be proficient in different technological skills. A study in Hong Kong revealed that digital native students were better at advanced web activity, diverse use of mobile phones, social networking and entertainment, whereas the digital immigrant educators were better at digital technologies related to work and simple web functions (Mcnaught et al., 2009). In the UK, a study revealed that digital native students did use more digital technologies compared to digital immigrants, however, there was no evidence to support different learning preferences adopted by the digital natives (Margaryan et al., 2011). It was contended that digital natives' attitudes to learning were in fact influenced by the educators' teaching approaches (Margaryan et al., 2011). Returning to the preliminary idea, teachers' pedagogical approach plays a major role in exposing students to a range of learning experiences.

4.0 AIM OF THE STUDY

The purpose of the study reported here is to explore Malaysian university students' use of digital technologies and to determine the level at which students might be characterized as digital natives. A practical contribution of this study is to understand university foundation students' need to use technologies for learning in ways that characterize them as digital natives. The findings would inform the educators of the need of speaking the 'same language' as their students and to understand how the young generation could be educated more effectively. The objectives of the study were:

(1) To explore students' accessibility to digital technologies.
(2) To explore students' technology usage.
(3) To investigate the level at which students can be characterized as digital native.

This is a casual-comparative study that compares quantitative data in two or more groups (i.e. gender, nationality and course of study) of subjects from two different disciplinary schools. 'In casual-comparative research, investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals' (Fraenkel & Wallen, 2006). In this study, students' technology usage and digital natives attributes were compared against different groups of gender, nationality and course of study.

5.0 SAMPLE

The participants were pre-university students from a private university in Malaysia. There were 405 pre-university students aged between 16 to 18 years old and the majority of them have just completed their high school education (e.g. Malaysian Certificate of Education, O-level, etc.). The sample was selected based on convenience sampling. Convenience sampling is 'people who are available, volunteer, or can be easily recruited are included in the sample… individuals who can be conveniently selected' (Johnson & Christensen, 2008, p. 238) and readily available (Mertens, 2010). In fact, the most commonly used sampling method for quantitative give research is convenience sampling (Johnson & Christensen, 2008; Mertens, 2010) because most of the time, it is extremely difficult to select either a random or a systematic non-random sample (Fraenkel & Wallen, 2006).

6.0 DATA COLLECTION

Data was collected from pre-university students during their first semester of study between July and September 2013. An online survey questionnaire was posted in Google docs and all the 405 pre-university students were informed of the survey questionnaire during the first week of the semester. Due to low response rate from the students, they were reminded once again at the end of the semester. Finally, 191 students responded to the survey. The survey was completely anonymous and voluntary. In order to understand why some students were reluctant to participate in the study we had an informal chat with a few students. To our astonishment, they claimed that every week, they were invited to participate in one or more survey and they had become so irritated by those surveys. Some of the studies undertaken in the university rewarded participants with a small token of appreciation from MYR 5 to MYR 20, but the response rate enduring low. Though no reward or incentive was given to the research participants in this study, we explained to the students regarding the importance of the study for future teaching and learning in the university. Though not all students responded, the response rate was 47%, in which 191 out of 405 students. There are 84 males and 107 females with 164 local and 27 international students. In total there are 135 business/science students and 56 engineering students.

7.0 RESEARCH INSTRUMENT

In this study, survey questions on technology accessibility were adapted from (Kennedy et al., 2008), and the Digital Natives Assessment Scale (DNAS) developed by (Teo, 2013) was used to measure attributes of digital natives. Although, the DNAS was newly developed, it is statistically valid and reliable, and easy to administer. Furthermore, all the factors measured in DNAS are strongly related to the characteristics of the digital native defined by Prensky (2001a, 2001b). DNAS is a self-reported instrument designed to measure students' perceptions of the degree to which they see themselves as digital natives. The DNAS consists of 21 items with four subscales: grow up with technology [TEC], comfortable with multitasking [MUL], reliant on graphics for communication [GRA] and thrive on instant gratifications and rewards [INS]. A Likert scale is used to indicate the extent of students' agreement with each statement. A seven-point scale from strongly disagree to strongly agree (scored from 1 to 7) is used for all the subscales. The scores from these items can be summed (ranging from 21 to 147) and a higher score indicating a level closer to be a digital native. DNAS is cost effective and it is available to be used by educators to enable them to understand how their students react to technology in learning, social and collaborative situations (Teo, 2013).

8.0 DATA ANALYSIS AND DISCUSSION

Data is analysed and discussed in three sections, students' access to technology, students' technology usage and digital native assessments. Demographic characteristics of students who responded are shown in Table 1. In casual-comparative study, the recommended sample size is based on one of the following rules of thumb: (1) 64 individual per group (Mertens, 2010; Onwuegbuzie, Jiao, & Bostick, 2004), (2) minimum of 30 individuals per group (Fraenkel & Wallen, 2006), (3) minimum of 30 cases for statistical analysis (Cohen, Manion, & Morrison, 2007).

Table 1: Demographic of Students

Gender		**Nationality**		**Course of Study**	
Male	Female	Malaysian	International	Engineering	Science/Business
84	107	164	27	56	135

Based on Table 1, only International students could not meet the minimum requirement. Since statistical analysis requires minimum cases of 30 (Cohen et al., 2007), comparison between Malaysian and International students was excluded from the data analysis. Raw data from the questionnaires was entered into SPSS. Frequency tables were generated and differences between variables (e.g. gender and course of study) were analysed using non-parametric tests, Mann-Whitney U test, as the dataset including all subsamples are not normally distributed.

8.1 STUDENTS' ACCESS TO TECHNOLOGY

Students were asked about their access to a range of technology (desktop computers, smart phones, tablet PC, mobile computer, etc.) and their access to the Internet.

Table 2: Technologies accessibility in percentage

Technologies	Unrestricted Access	Limited Access	No Access	Not sure/ missing
Desktop computer	51%	31%	15%	3%
Video game console	16%	29%	48%	6%
Mobile computer	84%	13%	3%	1%
Tablet PC	37%	24%	36%	3%
MP3 Player	42%	18%	38%	3%
Portable DVD player	19%	26%	51%	4%
Digital/video camera	37%	30%	29%	4%
Cell phone	37%	16%	41%	6%
Smartphone	87%	5%	8%	0%
Home broadband	60%	22%	16%	3%
Mobile broadband	61%	23%	16%	1%

Table 2 reports on students' accessibility to different kinds of digital technologies: computers, mobile phones, electronic gadgets and the Internet access. The most common kind of computers in use is mobile computers such as laptop or notebook, with 84% of ownership, followed by desktop computer (51%) and tablet computer (37%). As expected, a very high proportion of students have unrestricted access to mobile computers (84%) as compared to desktop computers (51%). The result contradicts findings from other countries by (Kennedy et al., 2008; Margaryan et al., 2011; Mcnaught et al., 2009; Thinyane, 2010), in which students' accessibility to desktop computers were higher than mobile computers. In this study, about 51% of the students owned a desktop computer, which is lower than reported for students from Hong Kong, 98.7% (Mcnaught et al., 2009), Australia, 90% (Kennedy et al., 2008), U.K., 79.4% (Margaryan et al., 2011) and South Africa, 61.1% (Thinyane, 2010). Nevertheless, ownership of mobile computer (84%) by students in this study is reported to be higher than the students from Hong Kong, 63.9% (Mcnaught et al., 2009), U.K., 66.3% (Margaryan et al., 2011), Australia, 63% (Kennedy et al., 2008) and South Africa, 49.6% (Thinyane, 2010). Moreover, students' possession of desktop and mobile computers in this study is higher than what was reported in an earlier study in Malaysia, desktop computer (46.3%) and mobile computer (25.2%) in (Yuen & Song, 2009). This study shows a huge increase (58.8%) in the number of students who possess a mobile computer compared to the earlier result in (Yuen & Song, 2009). This is an indication that possibly mobile computing has gained in popularity very recently due to its affordable price and is now the device of choice of many students. This would be consistent with the statistics reported by Malaysia Communications and Multimedia Commission, in which most of the families in Malaysia owned a laptop (46.3%) compared to desktop computer (21%) or tablet computer (15.3%) (MCMC, 2014). According to the Department of Statistics Malaysia, majority 94.2% of individual Malaysians used a mobile phone (Department of Statistics, 2013). In an earlier study in Malaysia (Yuen & Song, 2009), all students were reported to own a mobile phone. In this study, however, mobile phone was classified into either cell phone or smartphone. Based on Table 2, students have the highest possession of smartphone (87%), but only 37% of the students owned a cell phone. Conversely, in a study conducted in the USA, 41% of the teenagers possessed a cell phone but only 37% of them possessed a smartphone (Ahuja, 2013; Madden et al., 2013). In our study, a higher percentage of students owning a smartphone may due to the cheaper price of smartphones in Malaysia in the recent years, and the cultural popularity amongst the youth.

In the USA, smartphones have quickly embedded themselves into the lives of many people (eMarketer, 2013) and they come with many new special functions and improved features that imitate many electronic gadgets. For instance, a popular social network such as Facebook has 82% of mobile users (Facebook, 2014). Though some earlier studies did not categorise mobile phones into cell phone or smartphone, students' possession of a mobile phone were also reported to be very high 89% to 99% in (Kennedy et al., 2008; Margaryan et al., 2011; Mcnaught et al., 2009; Thinyane, 2010; Yuen & Song, 2009).

With respect to the Internet access, 60% and 61% of students reported having unrestricted access to broadband Internet and wireless mobile Internet respectively. These results are slightly higher than the national statistics, in which 57% of individual Malaysians have access to the Internet (Department of Statistics, 2013). Students' accessibility to broadband Internet in this study is lower than Hong Kong, 92.6% (Mcnaught et al., 2009) and

Australia, 73% (Kennedy et al., 2008), but higher than South Africa, 46.3% (Thinyane, 2010). However, students' accessibility to wireless mobile Internet is higher than Hong Kong, 54.6% (Mcnaught et al., 2009) and South Africa, 43.3% (Thinyane, 2010), but lower than US, 74% (Madden et al., 2013). Obviously, students' accessibility to wireless mobile Internet is comparable to broadband Internet, as the smartphones and mobile computers enable Internet access at anywhere and anytime. Heavy internet usage among students is reflected in Table 3.

Other electronic gadgets possessed by students are a video game console, DVD player, MP3 player and digital/video camera. About 42% of students have unrestricted access to an MP3 player and 37% of students have unrestricted access to a dedicated digital/video camera. Surprisingly, this result is lower compared to that reported by (Kennedy et al., 2008; Margaryan et al., 2011; Mcnaught et al., 2009; Thinyane, 2010), whereby the possession of MP3 player was 49.6% to 76.2% and digital camera was 40.7% to 91%. However, this result is similar to an earlier study reported in Malaysia, 44.4% possession of MP3 in Malaysia (Yuen & Song, 2009). However, with the increasing functionality of smartphones, it is possible young people no longer need digital cameras or MP3 players.

Lastly, 19% and 16% of students reported having unrestricted access to portable DVD player and video game console respectively. Students' accessibility to a video game console is much lower compared to that reported by (Kennedy et al., 2008; Margaryan et al., 2011; Mcnaught et al., 2009; Thinyane, 2010), whereby the possession of video game console was 28.1% to 53.1%. A decline in the accessibility of electronic gadgets (i.e. MP3 player, digital camera) is not surprising with the recent mobile market penetration by smartphones. Possibly a majority of the students have no access to a dedicated DVD player (51%) and video game console (48%) because they download or watch films online, or play on-line games or because they own a desktop or mobile computer that can play DVDs and allow game playing. Interestingly, new laptop computers are now being produced without a DVD player because the DVD is being been replaced by a USB flash drive.

8.2 STUDENTS' TECHNOLOGY USAGE

In our survey, students were asked about their daily technology usage (surfing Internet, making phone call/ messaging, accessing Facebook, etc.) and academic activities. The results are shown in Table 3.

Table 3: Average of hours spent per day

	Male	Female	Sc/B	Eng	Total
ENTMT					
Internet	3.02**	3.93**	3.77**	2.96**	3.53
Phone call/msg	1.77**	3.76**	3.44**	1.54**	2.88
Facebook	2.12	2.60	2.58	1.92	2.39
Digital game	1.93	1.64	1.98	1.24	1.76
Watch TV	1.91**	2.53**	2.72**	1.14**	2.26
Listen to Music	2.12**	3.30**	3.00**	2.26**	2.78
Academic					
Homework	1.93**	3.05**	2.76**	2.08**	2.56
Revision	1.96**	2.72**	2.49	2.14	2.39

** Difference is significant at the 0.05 level (2-tailed).

Among all the non-academic activities, surfing the internet (3.53 hours per day) is the most popular activity among the students, followed by chatting on the phone or sending messages (2.88 hours per day), listening to music (2.78 hours per day), using Facebook (2.39 hours per day), watching TV (2.26 hours per day) and lastly playing digital games (1.76 hours per day). The number of hours (3.53 hours) spent on the Internet reported in this study is so much lower than what was reported in (Wearesocial, 2014) that reported Malaysian Internet users use an average of 8.7 hours per day on the Internet. Furthermore, number of hours (2.88 hours) spent on the mobile phone reported in this study is also so much lower than what was reported in an earlier study in Malaysia (Zulkefly & Baharudin, 2009), which was 5.9 hours daily use of mobile phone. While social networking has recently grabbed headlines in the media (BeginGroup, 2013; Protalinski, 2013), the number of hours (2.39 hours) spent on Facebook reported in this study is so much higher than the worldwide average which is 21 minutes per day (Smith, 2014) and also higher than previous findings in the USA of 1.5 hours (Shragge, 2010) and 1.68 hours (Junco & Cotten, 2012). Malaysians were reported to spent 3.3 hours daily on social media (Wearesocial, 2014) and based on the time spent (2.39 hours daily) on Facebook in this study, we can recognise Facebook as the most popular social media among the students. Television is also popular and common in Malaysia, whereby 97.7% (MCMC, 2014) or 98.2% (Department of Statistics, 2013) of Malaysians have access

to television. Nevertheless, students in this study only spent 2.26 hours per day watching TV compared to 5 hours in US (Shragge, 2010) and 3.5 hours in Greece (Economides & Grousopoulou, 2008). Students in this study spent as little as 1.76 hours daily playing digital games, but it is higher than that reported in the USA, at 1.58 hours (Sherry et al., 2006), Maltese students 0.88 hours (Bonanno & Kommers, 2005), Swedish students 0.79 hours (Bonanno & Kommers, 2005) and an earlier study in Malaysia, 1.21 hours (Eow et al., 2009). Nevertheless, time spent on playing digital games (1.76 hours) in this study is lower than what was reported in 45 countries mainly USA, UK and Canada, 3.26 hours (Cole & Griffiths, 2007). Conversely, hours spent on academic purposes was merely 2.56 hour per day on homework and 2.39 hours per day on revision. The result of this study coincides with findings of an earlier study reported in US (Shragge, 2010) and Malaysia (Yuen & Song, 2009), that students were spending more time on social and leisure activities, rather than for academic purpose.

A comparison between male and female students shows that females are significantly (p<0.01) spending more time on the following activities: chatting on phone or sending messages (r=0.40), doing homework (r=0.36), listen to music (r=0.28), revision (r=0.26), surfing internet (r=0.21) and watching TV (r=0.17). Effect size, r is 'some specific nonzero value in the population. The larger this value, the greater the degree to which the phenomenon under study is manifested' (J. Cohen, 1977, p. 10). These results show that females are moderately (r between 0.3 and 0.5) spending more time chatting on the phone/ messaging (3.8 hours) and doing homework (3 hours) compared to males (i.e. 1.8 hours on the phone and 2 hours doing homework). In Malaysia, more males (51.1%) than females (48.9%) own a mobile phone (Department of Statistics, 2013), but surprisingly, this study reveals that females are more likely than males to use the mobile phone. The finding coincides with an earlier study in Greece that female students (4 hours daily) made more phone calls and sent more messages than males did (3 hours daily) (Economides & Grousopoulou, 2008). In this study, females also reported to spend a slightly (r between 0.1 and 0.3) more time listening to music (3.30 hours), doing revision (2.7 hours), surfing internet (3.9 hours) and watching TV (2.5 hours) compared to males (i.e. 2.1 hours listening to music, 2 hours doing revision, 3 hours surfing internet and 2 hours watching TV). The finding aligned with Economides & Grousopoulou (2008) that females (4 hours) spent more time listening to music than males (3 hours), but contradicts with Economides & Grousopoulou (2008) that more males (2 hours) spent more time accessing the Internet than females (1 hour). Male Internet users outnumber female Internet users in the world as well as in Malaysia (Department of Statistics, 2013; Indo-Asian, 2013; Stats, 2014), but females in this study are reported to spend a little more time surfing the Internet. Initially our assumption was that females may spend more time on Facebook since females (58%) have made up a larger share of the Facebook users worldwide, compared to males (42%) (Smith, 2014) and women are more likely to use Facebook than the men in US (Guimarães, 2014). However, comparison between males and females in this study shows no significant difference in Facebook usage time. Lastly, for digital games that tend to be male dominant in Malaysia (Eow et al., 2009), this study found that males (1.93 hours) are spending more time playing digital games compared to females (1.64 hours), but the difference is not significant and this finding is coincide with (Cole & Griffiths, 2007). Though the result is not significant, males were reported play more digital games compared to females (Bonanno & Kommers, 2005; Phan, Jardina, Hoyle, & Chaparro, 2012; Sherry et al., 2006).

Further course comparison shows that science/business students are significantly (p<0.01) spending more time on the following activities compared to engineering students: chatting on phone or sending messages (r=0.36), watching TV (r=0.36), doing homework (r=0.17), surfing internet (r=0.16) and listen to music (r=0.15). These results show that science/business students are moderately (r between 0.3 and 0.5) spending more time chatting on the phone/ messaging (3.4 hours) and watching TV (2.7 hours) compared to engineering students (i.e. 1.54 hours on the phone and 1.1 hours watching TV). In this study, science/business students also reported to spend a slightly (r between 0.1 and 0.3) more time doing homework (2.8 hours), surfing the Internet (3.8 hours) and listening to music (3 hours) compared to engineering students (i.e. 2 hours doing homework, 3 hours surfing the Internet and 2.3 hours listening to music). However, there is no significant difference between science/business and engineering students in time spent on Facebook, digital game and revision. Generally, science/business students in this study tend to spend more time using the mobile phone, surfing the Internet, watching TV, listening to music and doing homework compared to engineering students. This finding contradicts a study in UK which discovered that engineering students are using more technology tools compared to non-technical students (Margaryan et al., 2011). In our study, science/business students were found to be more technology savvy. However, this requires further confirmation with DNAS whether science/business students are characterized to be more digital native.

In general, the students tend to spend more time on entertainment than for academic purposes. However, it has to be stressed that nowadays students tend to do multitasking or as mentioned in (Brown, 2000), kids nowadays are multiprocessing. For example, research done by Lorch (cited in Prensky, 2001b) shows that children do not

watch television continuously but in fact they can distribute their attention between other activities and viewing what was informative for them in the television program. Multitasking is one of the characteristics of digital native shown in Table 4.

8.3 DIGITAL NATIVES ASSESSMENT

Students were asked about their individual perceptions of the four factors used to measure students' perception of the degree to which they are digital natives: TEC - grow up with technology, MUL - comfortable with multitasking, GRA – reliant on graphics for communication, INS– thrive on instant gratifications and rewards. Cronbach's alpha of 0.92 shows that the instrument used has high internal consistency reliability.

Table 4: Digital Natives Assessment Scale

	Male	Female	ScB	Eng	Total
TEC	5.86**	6.15**	6.05	5.96	6.02
MUL	5.37**	5.95**	5.84**	5.36**	5.70
GRA	4.30**	5.00**	4.81	4.40	4.69
INS	5.35**	5.81**	5.74**	5.27**	5.60
DN:	109.75**	120.48**	118.03**	110.29**	115.76

**. Difference is significant at the 0.05 level (2-tailed).

Based on data shown in Table 4, surprisingly, female students are characterized to be more digitally native (p<0.01, r=0.32) compared to male students in all aspects measured but the differences are small (r between 0.1 and 0.3): TEC (female=6.15, male=5.86, p<0.01, r=0.20), MUL (female=5.95, male=5.37, p<0.01, r=0.26), GRA (female=5, male=4.3, p<0.01, r=0.28), INS (female=5.81, male=5.35, p<0.01, r=0.22). One of the reasons to explain this phenomenon could be because male students prefer more outdoor activities such as sports, travelling, etc. These results suggest that female students were more likely to agree that they grew up with technology, comfortable with multitasking, reliant on graphics for communication (e.g. using emoticons, smiley faces in messages) as well as to thrive for instant gratification and rewards.

Course comparison shows that science/business students are significantly characterized to be more digital native compared to engineering students but the difference between these two groups is small (p<0.01, r=0.23). Further investigation of the data shows that science/business students are significantly more comfortable with multitasking (mean score for science/business=5.84, mean score for engineering=5.36, p<0.01, r=0.21) and thrive for instant gratification and rewards (science/business=5.74, engineering=5.27, p<0.01, r=0.22) but the differences are small too ($0.1 < r < 0.3$). Engineering students were less likely to feel comfortable with multitasking and less likely to thrive for instant gratification and rewards. This may due to the nature of engineering courses that have trained the students for concentration and patience in doing their lab experiments and solving engineering or mathematical problems.

In general, students have the highest agreement in terms of growing up with technology [TEC], followed by being comfortable with multitasking [MUL], expressing a thrive for instant gratifications and rewards [INS], and finally being reliant on graphics for communication [GRA]. Overall, students obtained a mean score of 115.76 in this instrument (ranging from 21 to 147), whereby they generally agree that they are digital natives at a moderate level.

9.0 CONCLUSION

Being digital natives, pre-university students are spending approximately fifteen hours per day surfing the internet, making phone calls, text messaging, engaging in online social network, such as Facebook, playing digital games, watching TV and listening to music. Despite spending more time on entertainment purposes, students do spend about five hours per day on academic purposes. This phenomenon is not surprising and it supports the previous findings in (Ahuja, 2013; Shragge, 2010; Yuen & Song, 2009). The pre-university students are spending a total of 20 hours daily on entertainment and academic, and obviously they extensively do multitasking. Smartphones and mobile computers are in the top two of the most popular devices that enable them to communicate and access to computer and Internet at anytime, anywhere. Rapid advancement in technology diminishes the popularity of non-portable devices such as desktop computers and video games consoles. Portable DVD players, digital/video cameras, tablet PCs and MP3 players are widespread electronic gadgets but students' accessibility to these devices are minimal as all those features are available in laptops and smartphones. On the other hand, traditional cell phones are seen to be obsolete and old-fashioned without Internet access and without many smartphone applications. In general, multi-functionality of smartphones and

portability of mobile computers fulfil the needs of undergraduate students who spend most of their time on entertainment and academic pursuits. The top three activities favoured by the students are surfing the Internet, using the mobile phone and listening to music. This study also found that girls are characterised to be more digitally native than boys and female students are also spending more time on the computer for entertainment purpose. On the other hand, course comparison shows that science/business students are characterised to be more digital native compared than engineering students and science/business students are spending more time on entertainment. Further investigation using DNAS confirmed that the result substantial, the students are digital native at a moderate level. Moreover, the students could also be considered as the second generation of digital native as instigated by (Helsper & Eynon, 2010) because they were born after 1990 and they were familiar with Web 2.0 technology such as Facebook. The majority of the pre-university students surveyed who came to university are relatively familiar with and possess the latest emerging technologies such as the smartphone and mobile computers. This study has shown that the pre-university students surveyed are 'being' the digital natives and 'doing' the digital native activities.

These indications from our students are an important factor to inform us on how we should consider the future use of technological tools to design rich and engaging learning experiences for all students and as educators, we should adapt to the ever changing characteristics of our students (Kennedy et al., 2008). For instance, still our anecdotal experience is that some lecturers complain that students always come to class without bringing any lecture notes, books or tutorial papers. Knowing that the students would never forget to bring their smartphone, the lecturers could ask the students to access to the Universities virtual learning environment using their smartphone to download the lecture notes and tutorial questions. Alternatively, the students might just use their smartphone to take a snapshot of tutorial question from their friends. Furthermore, in a large classroom (e.g. 100 to 200 students during a lecture and lab), students who sit at the back are at a disadvantage because it is difficult to see the whiteboard. In this case, some lecturers could encourage the students to go in front, and use their smartphone or tablet computer to take a snapshot of the whiteboard. Lecturers may also face a problem whereby some students are very reluctant to access to the Moodle by giving a justification that the server or the Internet connection is slow. To overcome this problem, some lecturers could create a Facebook account for the module taught because they know that students would access to Facebook every day and night. Facebook used in proper way is beneficial for the students (Junco, 2011). Though students have a limited understanding of how technology may support learning (Margaryan et al., 2011), educators should learn to adapt to different students' learning behaviour influenced by the ever changing environment. Educators may be presumed as the digital immigrants that are being left behind by technology, and students may seem as the digital natives that are technology savvy. The differences, however, are not straightforward and the so-called digital natives are not always more digitally-oriented than the so-called immigrants (Mcnaught et al., 2009). Teaching is a life-long learning and understanding the students' learning behaviour is vital important for continuous long term personal development as educators. Future research could be improved by an increase of sample size and broadening the sample to include more diverse groups of students as technologies evolve over time.

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EDUCATIONAL ACHIEVEMENT WITH MEGA COGNITIVE INSIGHT IN READING STRATEGIES

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ABSTRACT
The purpose of this research is to study the Relation between Mega cognitive insight in reading strategies with educational achievement. The research project is the correlation and statistical population is whole junior female student of high school in Yasouj city. Sample of current research after calculation consists of 260 subjects. Assessment tool is Mega cognitive insight questionnaire relating reading strategies and spontaneous strategies in learning. Data have been analyzed by Pierson order correlation and Simple linear regression and Variance by SPSS software. Findings of this research are: There is a positive significant relation between Mega cognitive insight in reading strategies with educational achievement at $p<0.01$ level. It means, the more students 'Mega cognitive insight rate is , the more educational achievement rate increases.
Key words: cognitive, strategies, female, insight.

1. INTRODUCTION

Nowadays, reading is one of the most remarkable ways of comprehension . . it may result to leading a life with insight as well as success. It would be idealistic if someone is capable of reading. Most of information one gets is through reading provided that one has not been used to it (Naemi, 1377).

Hamil and Bartel propose : importance of reading results in majority of instructors consider improvement of literation" rather „ reading training". Literation refers to Learning process (Learning how to read) and Results of reading.

Ttechniques and methods of Reading include flexibility in speed, comprehension and memory maintenance, concentration, critical evaluation . What is the best way of reading? It depends on the aspect of reading. The most beneficial activity to help children's proper brain development, is reading. Obviously, children learn the effects of direct reading, theses effects not only lead to success in homework but it also helps them in their daily lives. While children learn how to read, they achieve to learn about the world around. Absence of this achievement causes them to be left behind. Reading strategies are listed as below:

PQ4R or PQ4R, Highlighting, Writing down, Marder , Interactional teaching and pair work.
In a research done by Slavin, it has been proved that reading strategies may cause increasing Students' learning. It ends up students asking and organizing questions. Slaven (1387) says that pair work may increase understanding and speed of learning, Seif (1388) also supports the idea of cognitive strategies of education on reading, comprehension and speed of learning. Duffy and colleagues (2003) say that successful readers use more reading strategies in comparison with others. Clearly, comprehension has main role in children's reading skill development leading to educational improvement.
Based on Steven and Shannon (2008), Mega cognitive strategies and teaching method which is significant, can make students improve their self-effectiveness. Weinstein and Hume (1998) have proved that instructors can help students to be better learners by teaching learning skills and cognitive and mega cognitive strategies. Cognitive abilities such as comprehension, perception, reading, etc have a positive relation with mega cognitive abilities, it also give the chance of one's improvement in following skills. When learners can make to learn the cognitive and mega cognitive then are able to learn properly.

2.METHODOLOGY

2.1.Statistical population, sample size and sampling method: The population of this study is 818 junior students of high school .they were selected by multistage random cluster sampling and the number of students was 260 people.

2.2.Research Tools: Meta cognitive Questionnaire based on reading strategies. This questionnaire is a new self-assessment which is used for evaluating the Sixth to Twelfth students' insight while students were studying scientific textbooks. By preparation specific information, we may increase students' insight in perception process, it helps instructors to know students 'needs.(Mokhtari and Richard ,2002; Navidi translation ,1383).

2.3.Data Analysis: After performance of test for sample group, data were analyzed by descriptive statics (average, standard deviation), inferential statistics (Pierson's correlation coefficient, simple- linear regression, variance and Touki follow-up test) and SPSS software.

3. FINDINGS

Hypothesis 1, there is a relation between educational achievement and reading strategies.

Table1.The results found in correlation coefficient between two variables, Meta cognition in reading strategies and educational achievement is as below

Numbers	Analyzed factors of Pierson's correlation coefficient	Variables	
0/35 **	correlation coefficient	General reading strategies	Mega cognitive insight factors in reading strategies
0/000	Sufficient level		
260	Numbers		
0/11	correlation coefficient	Problem solving	
0/058	Sufficient level		
260	Numbers		
0/30**	correlation coefficient	Supportive reading	
0/000	Sufficient level		
260	Numbers		
0/27 **	correlation coefficient	Total	
0/000	Sufficient level		
260	Numbers		

0/01**p<

Based on results in Pierson's correlation test (chart 1), there is a positive significant relation in p<0.01 level between Meta-cognition in reading strategies and educational achievement. Therefore, concerning %99 contingency we may reject null hypothesis, so research hypothesis will be acceptable. In other words, the rate of Meta cognition in reading strategies increases, the more students succeed in education. The chart above also demonstrates the same result.

Hypothesis 2, factors of Meta cognition in reading strategies predict educational achievement.

Table2.Summary of results in regression model between Meta cognition in reading strategies and educational achievement is as below

P)Coefficient level(	F	Coefficient of determination $)^2R($	P)Coefficient level(	Value t	Coefficient B	
0/000	**21/18**	**0/07**	**0/000**	**0/005**	**28/61**	Amount
			0/000	**4/60**	**0/02**	strategy

Regarding the contingency (p=0.000 and F=21.18), Meta cognition in reading strategies (R=0.07) defines %7 educational achievement.

CONCLUSION: Learning and reading are the people's skills that are used in different ways. Use of learning strategies and reading strategies in particular can lead students towards greater academic achievement. The results showed that meta cognitive insight in reading strategies and academic achievement are related.(ESLAVIN,2006), reading methods and techniques which are to increase students' learning, it also directs students to use effective learning strategies, the research concluded that meta cognitive teaching strategies have positive effects on student performance (academic achievement, comprehension and creativity, etc.). Seif (1388) Effect of cognitive strategies on reading comprehension and speed of learning was confirmed. Pakdaman and Sawji (1379) The influence of meta cognition on comprehension strategies in students demonstrated Met cognition strategies have a positive impact on comprehension, and Jacob (1383) , positive impact of meta cognition strategies help instructors to teach dyslexic students improving reading function. Ebrahim Abadi (1377), the use of cognitive strategies , meta cognition in reading , learning ,academic achievement and a significant positive relationship was observed. The expression of the cognitive strategies and meta cognition of learning of learners can improve academic achievement. Duffy (2003) has stated that the good readers use more

reading strategies and comprehension rather than poor readers. Palynskar (1982) Given the above discussion we can conclude that the strategies of Meta cognition in reading achievement and learning has a positive impact on students.Vinman and Dozeti (2006), the research proving relationship between met cognitive knowledge and skills in reading and mathematics shows Meta cognition and auto regulation as well as their learning strategies that can make students read and understand the mathematics performance . Aslavyn (2006) has stated that the students' use of reading strategies and methods will lead to effective learning strategies including the question of meaning and organization to use. Santrok (2004) the results of their research showed that by becoming aware of the thinking (Met cognition itself) students are led to improvement comprehension ,while reading, writing, problem solving, learning increases academic progress Plysis (1996) showed that students with a GPA higher than 55% in exam have significantly higher scores areas of learning and study strategies. The investigation further revealed that the processing of information by students and learning in their academic success have a significant positive relationship. Henrikh (2001) showed that motivation, test strategies, study guide and an average final scores were significantly correlated wuth ability of reading and writing. Significance of the relationship between motives and reading skills in research revealed (2007). He concluded that the skills and motivation to read, affect each other.

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EDUCATIONAL REFORMS AND INNOVATIONS IN AZERBAIJAN

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ABSTRACT
The focus of this article is made on the analysis of some important reforms and innovations implemented in the education sector by the government of Azerbaijan. During the Soviet period, Azerbaijan education system was based on standard soviet model imposed by Moscow. After the disintegration of the Soviet Union, Azerbaijan started successfully to move forward towards the development as an independent country. The country established the close relations with different international organizations and institutions, as well as started to learn the practice of developed countries in education and other fields. As a result, the government of Azerbaijan started the implementation processes of reforms focused on the improvement of the quality of education and development of international relations in the sphere of education in order to ensure compliance with international standards. In the early 1990s, Azerbaijan didn`t have enough resources to make the large-scale changes in education and we got support from various international organizations in order to begin the application of modern education systems in our country. Different projects, such as Education Reform Project, Education Sector Development Project, Second Education Sector Development Project, General Education Concept – National Curriculum in Azerbaijan Republic and other projects were conducted and still undergoing in collaboration with the Ministry of Education of the Republic of Azerbaijan and World Bank. This article provides a brief overview about the above mentioned programs, their application processes, as well as the results and their influences in our education system. Nowadays Azerbaijan with its recent development and the international support, is working towards providing a high quality education for its citizens.

INTRODUCTION

The progress of society has directly depended on the development of education and the correct assessment of its importance at all times. The demand of society has been strengthening the education's development, and scientific and technical progress raised more complicated duties to be solved in front of the education system. The role of education is increasing at a time when the competition in social and economic spheres of activity intensifies and natural resources is gradually exhausted in an information society where the scope of globalization is expanding widely. Unsurprisingly, the United Nations Organization has announced the XXI century "The century of education." The role of higher education in forming the human capital of higher intellect has received the significant importance.

Achievements in this field lay in the basis of important social and technological changes. The great attention paid to the education and its development in the Republic of Azerbaijan depends on the strategic importance of this sphere, the role of education in our society and the interests of major part of countries population.

Since the beginning of the XXI century Azerbaijan has become the most dynamically developing country of the region and post-Soviet space from educational point of view. After Azerbaijan gained its independence, the need for fundamental reforms in education as in other areas emerged. The start of transition process from the Soviet education system to modern and international standards education system goes back to the mid-90s of the last century.

The education system in Azerbaijan was established during the eighth century. Higher education was developed during eleventh and fourteenth centuries.

The modern education system of Azerbaijan consists of three historical periods: the first period being from 1918 to 1920, the next period from 1920 to1990 imposed by the Soviet Union, and the current education system which has been maintained since the country became independent from the Soviet in 1991.

Azerbaijan is listed among the countries with compulsory elementary and secondary education. The 1995 Constitution of Azerbaijan Republic regulates the rights to education (Article 42), according to which every citizen has a right to education and the State should provide free compulsory secondary education.

The Azerbaijan education has been changing radically since independence from the Soviet Union, and the large-scale projects have been designed and implemented. These projects have resulted in rapid and efficient progress during the short time, especially in preparing new textbooks, training aids, and learning and reading materials,

including transition from Cyrillic to Latin Scripts. Azerbaijan has been politically stable and it could engender more favorable conditions for educational reform.

The education reforms carrying out in our country since gaining independence have global nature and cover all its aspects. The President of the Republic of Azerbaijan approved "The Reform Program in Education" which aims to identify strategic dimensions of reforms in education sphere.

Azerbaijan had to strengthen international relations and mutual cooperation to make progress in education sphere and to bring the education system of Azerbaijan in a line with international standards. (May 4, 1999)

Nowadays, education like any other spheres of political, economic and social life breaks the previous stereotypes down by eliminating borders among institutions, economies and more basically among people. With an easier access to Universities, the education systems now are expected to provide better quality and meet the demands put forward by external environment. Reforms and innovations undertaken to improve the quality of education is a through process based on multiple and comprehensive approaches to elementary, secondary as well as higher education systems.

Azerbaijan's education welcomes global reforms. Integration of education system of European countries and formation of European higher education space demonstrate special urgency. From this point of view, Bologna process is very important among performed actions. The country joined the Bologna process in 2005. However, even before the signature of the Bologna Declaration, Azerbaijan's higher education had opened its doors to the 2-cycle education system: starting from early 1990s, many of the Universities set up education at the bachelor and master levels. The above-mentioned Education Law is a step forward towards the transfer to the 3-cycle education system harmoniously integrating the doctoral level into the European Higher Education Area.

In order to implement provisions of Bologna declaration, in accordance with the appropriate action plan for 2006-2010, was approved the structure of minimum state requirements to the content and quality of bachelor degree preparation, confirmed and prepared new generation state educational standards in corresponding fields.

After Azerbaijan joined to the Bologna process, a need to apply a credit system in higher educationhas raised. In accordance with the application of this system has been learned the experience of some foreign countries in order to create the legal-normative basis.

Furthermore, was prepared and approved "Regulation on organizing the educational process through a credit system in higher education institutions," and in the preliminary stage has been decided to experiment with the application of the credit system in the number of universities. Experiment started in 10 universities for 2006-2007, surrounded all specialties of the universities in the next years.Experience of several foreign countries on the direction of creation of legislative norm on application of this system, has been thoroughly learned.

The purpose of our universities was to undertake changes not only in form, but also in the content. Anyway, we understood from the beginning that in the long run, the Bologna process was about quality, and that introduction of the credit system was not a formal assignment of numbers to subjects, but was an internal conceptual restructuring of these courses. And the process of reforms required that for genuine implementation of the credit system to be understood and accepted by large communities involved in the education process.

It should be taken into account that all these reforms get considerable governmental support. However, the reform process itself has been able to boost the bottom-up approach at the universities. Many of the reforms now are being initiated from within the universities and successfully communicated to higher instances.

The involvement of the students in the decision-making process became a leverage for promoting quality control overall. Students' opinion was considered in curriculum design, students were able to select or reject a course, and student's assessment became an important part in course and teacher evaluation.

Furthermore, there have been implemented relevant measures on recognizing diplomas of students studied abroad in Azerbaijan. Thus, in accordance with the "Rules for recognition and determination of equivalence (nostrification) of qualifications in the higher education area of foreign countries" was established by Standing Commission in the Ministry of Education of the Republic of Azerbaijan.

Collaboration of the Ministry of Education with World Bank continues from 1999. Thus, the Ministry of Education of the Republic of Azerbaijan in cooperation with the World Bank has developed a Concept and

strategy on continuous pedagogical education and teacher training in the Republic of Azerbaijan within the Education Sector Development Project. The document was approved in 2007. After the approval of the concept paper, a number of activities have been carried out with regards to the implementation of reforms in the content of pedagogical staff training.

In general, solution of problems such as lack of teaching staffs at schools, and ensuring young specialists with work estimated as an important activity direction that will give a contribution to the future development of Azerbaijan education.

Therefore, the development program on the provision of comprehensive schools of the Republic of Azerbaijan with teaching staff in 2005-2009 had a special importance and played a special role in the solution of problems.

The main goal of the program was to successfully solve the problem connected with the lack of teaching staff at comprehensive schools of Azerbaijan within the next five years. Moreover, the prospective activity included some other problems as well. Different indicators, such as the existence of unqualified teaching staffs at schools and their involvement to the special training courses to improve their skill, as well as the increasing of their quality were taken into account. What is more, one of the goals was the preparation of small specialists to ensure the citizens with workplaces in the future.

Second Education Sector Development Project is being implemented since 2009. The objective of the Project is to enhance the effectiveness of teaching and learning conditions in general education schools through curriculum reform and teacher in-service training. Project covers 3 education levels and consists of 6 components. As in previous projects, departments and senior officials of the Ministry of Education are responsible for implementation of the Project. The Project closing date is March 31, 2016.

To facilitate the development of new social studies instructional practices, the Azerbaijan Institute of Educational Problems established a curriculum center that was responsible for the development of the scope and sequence of the national social studies curriculum. The Ministry of Education of Azerbaijan sentmany specialists to different countries to learn their experiences, to conduct research in their educational system and in curriculum development.

In 2005 the Curriculum Center prepared the standards and in 2006 they prepared curriculum of general education which was successfully implemented in Azerbaijan.

Azerbaijan Teachers Institute is one of the leading educational institutes in Azerbaijan for upgrading and retraining of teachers.The Institute has contributed very much to the development of scientific and pedagogical thought, enlightenment and national culture in Azerbaijan and plays an important role in additional and vocational education of teachers.
Founded at the end of the XX century the Institute has played an important role in improvement of their scientific and methodical level.

After the collapse of the Soviet Union Azerbaijan faced serious problems in the system of education, the lack of teaching staff in the rural mountain settlements, discrepancy within the common European standards caused the necessity of foundation of a new type of Higher Education Institution.

Azerbaijan Teachers Institute and its branches were established by the decree of Heydar Aliyev in 2000.

The National Leader who believed a teacher to be rescuer of nation used to say:"Being a teacher is both honorable and hard responsibility. Being a teacher at a HEI, which is being a teacher`s teacher is twice as honorable."

With opening 11 branches of Teachers Institute in different regions of the country, theInstitute not only solved the problems regarding the staff in the regions, as well as strengthened the staff potential.Currentlythe Institute continues to supportthe creation and increase of intellectual community possessing of new knowledge and prevents the migration of rural population to the industrial centers.

Rector of the Institute, Professor AgiyaNakhchivanli said: “Azerbaijan Teachers Institute (ATI) is an educational establishment focused on constant development and innovation.”These innovations put the student in the center of the teaching process. The student, not the programs, books, curricula, learning resources etc. now became the final product of the University. Nor was the professor/instructor the sole decision-maker on the goals of

teaching, and this made the student the main stakeholder in the new education market, where Azerbaijan Teachers Institute took an active part.

Azerbaijan Teachers Institute is one of the major higher educational institutions for higher education and teacher training in Azerbaijan. ATI is the only higher educational establishment with 11 branches in the country.

Education
Leaving behind 85 years of activity, ATI offers undergraduate, graduate and doctorate programs, as well as, advanced qualification and retraining programs in accordance with Bologna process and the credit system requirements.

There are three faculties with 10 specializations:

- The Pedagogical Faculty
  Teacher of Primary school
  Pedagogy and methods of primary education
  Teacher of mathematics and information science
- The Faculty of Philology and Psychological Assistance in Education
  Socio-psychological service in the education
  Pedagogy and psychology
  Preschool education and children's upbringing
  Pedagogy and methods of preschool education
  Teacher of Azerbaijani language and literature

- The Faculty of Advanced Qualification and Retraining

Additional education
The Institute plays an important role in additional and vocational education of teachers in Azerbaijan. Each year ATI organizes professional upgrading training, which involves more than 10,000 teachers from universities, colleges, secondary schools and preschool institutions.

Azerbaijan Teachers Institute promoted the sustainability of reforms also through the international partnerships. Many successful bilateral projects became a true external evaluation mechanism for our programs.ATI is the official UNEVOC Centre in Azerbaijan.
As EMINENCE (Erasmus Mundus – Integration of Neighboring Eastern Regions through Cooperation in Higher Education) consortium member in 2012 the Azerbaijan Teachers Institute was successfully selected for Erasmus Mundus External Cooperation Window Action 2 project with Adam Mickiewicz University in Poznan, Poland as a coordinating university.

The project lasted 3 years during which students and academic staff from eastern neighborhood region had the mobility within the partner institutions from Western Europe. Students and academic staff from Europe partner institutions have been involved in mobility within the institutions in the universities of countries of eastern neighborhood region.

With the purpose of improvement of the teaching quality of teachers of the Azerbaijan Teachers Institute regular meetings, round tables, courses and trainings have been organized through support of embassies of France, Germany, USA, and United Kingdom.

Azerbaijan, as a young country moving forward with the solid steps towards democracy, takes all necessary measures to improve the educational system as we clearly understand that higher educated citizens are the pillars of progress in all spheres of life.

There is a high attention to development of education in order to secure the country's future sustainable development. In the framework of these development processes the different regulations on (re)organization of education system, as well as reforms in international context are the essential part of continuing processes of improvements and innovations.

Today the representatives of the education system of Azerbaijan participate in the activity of UNESCO, UNICEF, UNEVOC, ISESCO and European Educational Fund; also our Republic collaborates with the bodies on education issues of the international organizations, such as the Council of Europe and the European Union using their practice and assistance.

Along with the reforms taken to improve the quality of education in Azerbaijan, the country's leadership takes necessary steps to ensure opportunities for young Azerbaijanis to study in leading Universities of the world. According to the strategy of transferring oil capital into humancapital onApril 16, 2007, the country`s President Ilham Aliyev signed a State Program on Azerbaijan citizens' education abroad for the period of 2007-2015.

The program is financed by funds allocated by the State Oil Fund. Under this program, the Azerbaijani young people have been sent for education to developed countries like Australia, South Korea, China, Malaysia, Singapore, the U.S., Germany, France, the Netherlands, Norway, Sweden, Finland, Italy, Belgium and Great Britain.

Through the period from 2007-2015 academic years 3185 Azerbaijani citizens were able to study at the Universities abroad and the efficient use of the potential of specialists educated abroad in the country's development is being ensured.

A new state program will be adopted on the education of young people in foreign countries for the period of 2015-2020.

Besides beginning of new reforms in the education system Azerbaijan has increased volume of funds allotted by the state in several times, in parallel to economic development of education in the country. An important part of the state budget expenditure on education is directed on construction of new schools, for the modernization of the educational infrastructure. As well as the more funds are allocated on construction of new schools in the country, repairing and modernization of the old ones by the Heydar Aliyev Foundation and the Reserve Fund of the President of Azerbaijan.

Starting its activity since 2004, the Heydar Aliyev Foundation has been actively participating in building a new society and contributing to the social and economic development of the country, by implementing various projects in the sphere of education. Today the President of Foundation is Azerbaijan's First Lady, Mehriban Aliyeva. At the same time, she is Goodwill Ambassador of UNESCO and ISESCO.

The major goal of the Program conducted since the year of 2005 has been to support the efforts aimed at addressing existing problems in education, establishing new training centers meeting the world standards in the country, eliminating the obstacles having a direct impact on the quality of education, and finding out the possibilities for cooperation among various social strata, as well as local and foreign companies in this field.

In the framework of the Support to Education Program, up to 400 school buildings were erected or renovated in the different regions of the country during 2005-2012, with an overall capacity exceeding 100 thousand school children. Each of the schools was equipped with up-to-date laboratories, libraries, cafeterias, state-of-the-art computer classes, workshops, gymnasia and playgrounds. Each school was equipped with its own heating system.

Development of education in Azerbaijan, providing of children and young people with world class education, training of highly qualified personnel comprise of important part of the strategy of the country's president on turning of oil capital intellect to development of professionalism.

The President of the Azerbaijan Republic issued an instruction on the preparation of the Development Concept "Azerbaijan – 2020: Look into the Future". The need to prepare such concept is due to the fact that our country has stepped into a new stage of development.

The formation of a modern education system in 2012-2020, the share of the funding for education will increase from year to year and reach the appropriate indicator in developed countries.

Work to construct and refurbish schools will continue and a special program will be drafted and implemented to rationalize the network of general education institutions. Transition to a 12-year general education system will be secured. Education at the level of full secondary education will be organized on the basis of specialization and individual developing programs will be created for talented children.

At the same time, various developing, correcting and inclusive education programs will be created for children who need special care and have limited physical abilities. University estates (campuses) and appropriate industrial parks will be created for institutions of higher education.

The computerization of the information system will always be in the center of attention as one of the main directions of establishing general education at a modern level. In 2013-2020, a state program will be adopted to computerize the education system in the Azerbaijan Republic. Within the framework of the state program, all the education institutions of Azerbaijan (including schools located in remote regions) will be provided with access to the Internet, as well as every education institution will be provided with the necessary technical equipment and connected to the single Education Network of Azerbaijan. Every classroom in schools will be provided with a laptop, projector and electronic table, while all pupils will be provided with a netbook or tablets within the framework of the project one pupil – one computer. The use of electronic education technologies will significantly expand and a virtual learning environment will be created for teachers and pupils.

The number of "electronic schools" will reach 1,000. To ensure the self-education and growing demand for lifetime education, libraries will be modernized and opportunities for using digital education resources will be expanded. The number of electronic libraries will increase, a Distant Education Centre will be created and the use of distant education in institutions of education will expand.

At the same time, an online TV channel Tahsil TV will be established and presented to the general public.

Taking into account that the factor of teachers is of special importance in the efficiency of the education and its achievements, special importance will be attached to the strengthening of teachers' training. All general education teachers will specialize in active/interactive teaching technologies and inclusive education, and a flexible system will be created to ensure that every teacher learns ICT skills. The training of Azerbaijani teachers will be brought in line with international standards, a stimulating refresher training system for teachers based on a new module-credit system will be developed and mechanisms that meet modern requirements will be created to ensure teachers' career development, stimulate their activities and spread the working experience of leading teachers.

Along with that, differential salaries and an awarding system based on results will be created.The new mechanism employed in the recruitment of pedagogical staff will be improved even further, and material stimulation measures aimed to providing remote village schools with pedagogical staff will be strengthened.

The integration of Azerbaijani education into world and European education will increase. Along with the unification of education standards and deepening of the Bologna Process, attention will be paid to the expansion of the international relations of Azerbaijani institutions of education, especially institutions of higher education, and the creation of appropriate conditions for their active involvement in international programs being implemented in the sphere of education.

CONCLUSION

Saying without any doubt, we believe and hope that at the twenty fourth year of the country's independence educational development is the highest priority on the agenda of the Government of Azerbaijan. Investments allocated in education are long-term and strategic importance. The Government takes all necessary steps, through improvement of quality in education, to increase the social welfare of its population and facilitate the country's progress. And this will be possible by preparing highly qualified professionals for various sectors of political, social and cultural life.

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EFFECT OF EDUCATIONAL PROGRAMME ON STUDENTS ACADEMIC PROCRASTINATION AND EXAMINATION ANXIETY

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INTRODUCTION

Present era is the globalization era. In the 21st century India is going through the age of liberalization, globalization and privatization. Competition is everywhere and it is unavoidable which upgrade the individuals. To live in modern age everybody should get educated and acquire various skills. Without these no one can make their position in the society. Similarly for getting position in the school student might face difficulties and if they do not overcome their difficulties it leads to academic procrastination. There could be many reasons for procrastination like difficulties faced in task, lack of time, lack of knowledge, stress and lack of interest in work. Academic Procrastination affects student's educational work, study as well as exam. It leads to generate examination anxiety among students. To remove Academic Procrastination and Examination Anxiety for students progress efforts has been taken.

Variables of the study:

Situation of Academic Procrastination, situation of Examination Anxiety (dependent) variables and programme for Academic Procrastination, programme for Examination Anxiety (independent) variables in the present research.

Operational Definitions of the Terms:

Academic Procrastination:

Academic Procrastination may be defined as any academic task that is delayed or voided as a result of the discrepancy between intention and actual behavior to extent that it produces negative effect on procrastinator. (**Binder**, 2000)

In the present study, when 9th standard students procrastinates or voided the work will called as Academic Procrastination.

Examination Anxiety:

Examination Anxiety refers to the distress one experience when being evaluated or when thinking about prospective evaluation which typically leads to reduced performance. (**Agrawal, Kaushal**, 1985)

In the present study when 9th standard students experiences pain, when he/she comes to know that he/she is being evaluated as leads to reduce, his/her Academic Performance called as Examination Anxiety.

Educational Programme:

Educational Programme is activity based comprehensive intervention programme based on (Vipassana based activity, lectures on Goal focusing guidance by expert, lectures on food and stress by expert, Home work based activity, Do it now based activity, Project competition and its presentation activity in a given period of a time, Activity based on student personal interest in the respective subject, Guidance about technical mistake committed by students while writing the exam paper, To enhance positive attitude towards educational work, Listen to pleasant music activity, Stress management activity) a group of intentional action or work aimed at removing academic procrastination and examination anxiety of secondary school students is called Educational Programme. Duration of Educational Programme was 128 hrs.

Secondary School Students:

Students belonging to 14+ and 15+ age group and studying in 9th standard are called as secondary school students.

Statement of the Problem:

Effect of Educational Programme on Students Academic Procrastination and Examination Anxiety

Scope and Delimitation of the Study:
In the present study psychological aspects of Academic Procrastination and Examination anxiety will be studied. Secondary school students affiliated to the SSC Board from Greater Mumbai in Maharashtra state from India. Students from pre-primary and primary classes have been excluded.

Rationale of the Study:
Through educational programme students' Academic Procrastination and Examination Anxiety were removed. The study will help student's progress teachers in case of to solve their teaching problems and progress of the educational institutions. Finally it leads to all round development of students and nation.

Aim of the Study:
To develop Educational Programme for Students to remove Academic Procrastination and Examination Anxiety.

Objectives:
1. To develop Educational Programme on students Academic Procrastination and Examination Anxiety.
2. To compare (pre-situation) pre-test and (post-situation) post-test score with reference to Academic Procrastination.
3. To compare (pre-situation) pre-test and (post-situation) post-test score with reference to Examination Anxiety.
4. To compute effect size of Educational Programme on the student's Academic Procrastination and Examination Anxiety.

Null Hypothesis of the Study:
1. There is no significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Academic Procrastination.
2. There is no significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Examination Anxiety.

METHODOLOGY
The experimental method is selected for present study. In the present study the pre-test –post-test, equivalent group, Pre-Experimental (Single group) design has be selected which is describe symbolically as follows.
O1 X O2
X- Experimental group (Treatment),
O1- Pre-Test
O2- Post –Test

Sample of the Study:
The present study the sample has been selected in Greater Mumbai secondary school students in Maharashtra state. Those school students were having high level Academic Procrastination and Examination Anxiety had been selected for the study.

Tool of the Study:
Academic Procrastination (Binder, 2000) translated by Kamble (2012)
Examination Anxiety (Agrawal, Kaushal, 1985) translated by Kamble (2013)

Techniques of Data Analysis:
The present research used statistical techniques such as 't' test and Cohen's 'd' formula. To compare the pre-test scores and post-test scores groups for dependent variable, 't' test used. Cohen's formula was used to measure the Effect of Educational Programme.

Testing of Hypothesis:
Hypothesis 1: There is no significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Academic Procrastination.

Table 1 Comparison of Pre-test scores and post test of Academic procrastination

Variable	Group	N	Mean	$Mean_a$ -$Mean_b$	't' ratio	df	p
Academic Procrastination	Pre-test	31	45.83	9.51	4.62	60	<.0001
	Post-test	31	36.32				

CONCLUSION

The proceeding table show that t-ratio 4.62 and p-ratio <.0001 is less than 0.05. Hence the null hypothesis rejected. It may be conclude that there is a significant difference in the pre-test scores and post-scores of Academic Procrastination. It is concluded that the mean scores of pre-test scores and post-test scores of Academic Procrastination do differ significantly.

Hypothesis 2: There is no significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Examination Anxiety.

Table 2 Comparison of Pre-test scores and post test of Examination Anxiety

Variable	Group	N	Mean	$Mean_a$ - $Mean_b$	't' ratio	df	p
Examination Anxiety	Pre-test	31	90.22	18.5	3.61	60	<.000626
	Post-test	31	71.72				

CONCLUSION

The proceeding table show that t-ratio 3.61 and p-ratio <.000626 is less than 0.05. Hence the null hypothesis rejected. It may be conclude that there is a significant difference in the pre-test scores and post-scores of Examination Anxiety. It is concluded that the mean scores of pre-test scores and post-test scores of Examination Anxiety do differ significantly. This is implies that the Education Programme for secondary school students is found to effective to reduce the Academic Procrastination and Examination Anxiety. This was followed by computing the effect size of the Educational programme using the Cohen's (d) formula.

Table 3

Variables	Effect size
Academic Procrastination Programme	1.1724
Examination Anxiety Programme	0.9172

The effect size of the Educational Programme is greater than 0.8 and there high in magnitude.

Conclusion of the Study:

1. There is a significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Academic Procrastination.
2. There is a significant difference between (pre-situation) pre-test and (post-situation) post-test score with reference to Examination Anxiety.
3. The Effect of the Educational Programme on students' Academic Procrastination and Examination Anxiety was very high.

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EFFECTS OF IN-SERVICE TRAINING ON THE POINTS OF SYMPTOM CHECK LIST 90-R APPLIED ON A GROUP OF TEACHER

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1.INTRODUCTION

It is important that employees have physical and mental health. Especially teachers who have significant duty as groving and educating children should be more attantive to maintain their mental health than the employees that belong to other professions.

In Turkey previous studies show that mental problems are seen in the amount of %20 and also it is seen that these problems are usually tend to proceed (Tezcan, Aslan,2000). These circumstances require an early diagnosis and therapy for the persons who have mental problems.

While there are many researches about "burnout" over teachers and managers in literature (Akçamete, Kaner & Sucuoglu, 2001),(Abel, Sewell, 1999), (Burke, Greenglass, 1993), (Chan, Ek, 1995) the researches about mental problems of teachers are limited.

The study which is done by Keçeli et al (1998) with the purpose of investigate the psychological symptomes over teachers by applying General Health Questinnaire (GHQ) presents the relation between the GHQ points and a marital status, duration of marriage, number of children, health problems of family, habits of using alchohol and smoking, graduated school, weekly course hours, condition about possessing a duty on management department.

It is seen that there are studies which are done with the purpose of determinate the "General State of Mental Health" on the other occupational groups and these studies carried out cooperation with long-distance drivers (Öztürk et al, 1997), traffic police (Filik et al,1995), intern doctors in Hacettepe University Faculty of Medicine(Şahin et al ,1996) and nurses

Mental problems are defined by using "Symptome Check List SCL-90". SCL-90 have 90 substance and 10 substrate and it is used as a self-promotion inventory in the studies which are done with varied patient groups and normals. Investigated symptomps are somatisation, obsessive compulsive disorder, interpersonal susceptibility, depression, anxiety, anger-hostility, phobic anxiety disorder, paranoia, psychoticism (Derogatis, Richels, Rock, 1976).

There are some studies which shows that individual's mental health and working performance are affined to each other(Altıntoprak al ,2008). Therefore it is important to determinate the general state of health of the individuals who belong to an occupational groups –especially the teachers- not only for theirselves but also their performance of professional lives.

Ministry of National Education find health declaration enough from newly-recruited teachers which state that there is not a situation constitute an impediment but attaches a condition such that "Whether the medical condition of teacher candidate is not convenient to teach during the inauguration, medical board report received from general hospital will be asked from teacher candidate informing the candidate is able to practise his/her profession as a teacher in every district of country and on entire climate conditons and will not be able to start a work without this medical release" (meb.gov.tr). Accordingly, candidate of teacher who has mental health problems will be able to start to teach in the event of stating that s/he is healthy and not finding any doubt about this statement. Besides, a teacher mentally healthy when s/he start to work is able to lose his/her mental health for a variety of reasons and maintains teaching under these conditions.

It is hard to identify whether the teachers have mental disorder or not after or before they started to work. Investigations and inquests about teachers who have communication problems due to their state of mental health can only be started whether there are complaints getting from students and parents. Inspectors and investigators are able to transact based upon the expert's report about a complainee teacher which declares if s/he is able to teach or not by referring her/him to a general hospital. Teachers who have mental disorders do not want to accept that they have problems and most often refuse the sending operations to a hospital. Occasionally, teachers are forced to be sent to hospital for students own benefits.

There is no guarantee to protect their mental health during the term office for the teachers who started to work as mentally healthy. They can be have a difficulties about personal, social and economic problems, working conditions of school, climate conditions, inability to deal with troubled students and parents. Determination and treatment of these problems without harming teacher, her/his students and their surroundings is highly important.

In this study it is not aimed to diagnose a disease, it is aimed to *draw an attention to parameters with volume over one by means of psychological symptom screen test SCL- 90-R and investigate the effects of a training and guiding practices which will be given to teachers for a year above said parameters.*

2.MATERIAL AND METHOD

This study has been done associated with 40 classes and teachers working in the primary schools of Alpaslan, Gölcükler, Menderes and Süleyman Çevik in Menderes district of İzmir province in the academic year of 2012-2013. Sample group consisted of 31 females and 9 males.

In the beginning of academic year of 2012-2013 Symptom Check List -90R reformed by Derogatis et al and known as SCL-90R is utilized with the purpose of determinate the teachers' general state of mental health.

Sample group which was determined in the academic year of 2012-2013 has been subjected to training and guiding practices at the time period of 45 hours at the begining of term and 3 hours every month during the term given by lecturers at the university about the topics of classroom management, anger management in children and adults, effective communication skills, adolescence problems and suggestions of solution, methods of effective learning. At the end of the 2012-2013 academic year, again SCL-90R was applied on the same sample group.

In the begining and at the end of academic year "Independent Groups t-Test" was applied for comparisons which are done through the answers of the same group.

In this context, results obtained from analyses are able to evaluate the differences between individuals who not received trainings (2012) and individuals who received trainings (2013).

Symptom Check List includes 90 substances of problem and 10 substrate.

Scoring of SCL 90-R: SCL-90-R is a scale consists of 90 questions. Individual who answer the scale marks every question with one of these answers: (0)Never, (1)Too little, (2)Intermediate, (3)Pretty much, (4)Advanced. Points of individual about subscale is found by dividing into number of substance at subscale after additioning the degrees of substances. This process is applied for all scales.

Credibility of SCL 90-R: Tufan (1987), found the correlation ratio as 0.83 as a result of his researches about credibility of inventory.

Validity of SCL 90-R: Derogatis et al (1976), found the correlation ratio amongst the various scales of SCL-90-R and M.M.P.I. (Minnesota Multiphasic Personality Inventory) between the values of 0.41 and 0.64 as a result of their researches (Kılıç, 1987).

Position of individual with regards to subscale is determined by additioning the numerical answer values of substances and dividing into number of substance at subscale. "General Symptom Average" is found by dividing summation of all the points obtained from subscales into 90.

In the years of 2012 and 2013 teachers answered the expressions of Symptom Check List on a five graded scale. In this scale while minimum point is 0, maximum point is 4. Therefore the scale enables maximum 4 points for each expression. Expression of scale are (*0)Never, (1)Too little, (2)Intermediate, (3)Pretty much, (4)Advanced.*

"Independent Group t-Test" is utilized in order to analyze the statistical differences between the averages of given answers for each substrates and also General Symptom Average both in the years of 2012 and 2013.

3.FINDINGS

Effects of in-service training which is given to study group of teachers during the academic year of 2012 about the topics above-stated on the points of Symptom Check List given in the tables below.

Table 3.1. 2012-2013 Differences of General Symptom Average

	Year	N	Average	ss	t	sd	P
General Symptom Average	2012	38	0,58	0,48	1,256	64,65	,214
	2013	31	0,46	0,32			

Table 3.2. 2012-2013 Differences of Somatisation

	Year	N	Average	ss	t	sd	p
Somatisation	2012	39	0,66	0,61	0,842	71	,403
	2013	34	0,55	0,45			

Table 3.3. 2012-2013 Differences of Obsessive-Compulsive Disorder

	Year	N	Average	ss	t	sd	p
Obsessive-Compulsive	2012	40	0,96	0,71	0,349	73	,728
	2013	35	0,90	0,54			

Table 3.4. 2012-2013 Differences of Interpersonal Susceptibility

	Year	N	Average	ss	t	sd	p
Interpersonal Susceptibility	2012	40	0,53	0,55	0,860	73	,393
	2013	35	0,43	0,43			

Table 3.5. 2012-2013 Differences of Depression

	Year	N	Average	ss	t	sd	p
Depression	2012	40	0,66	0,54	0,355	72	,724
	2013	34	0,62	0,45			

Table 3.6. 2012-2013 Differences of Anxiety

	Year	N	Average	ss	t	sd	p
Anxiety	2012	40	0,54	0,55	1,936	61,41	,058
	2013	34	0,34	0,29			

Table 3.7. 2012-2013 Differences of Anger and Hostility

	Year	N	Average	ss	t	sd	p
Anger- Hostility	2012	40	0,48	0,53	0,349	73	,728
	2013	35	0,44	0,48			

Table 3.8. 2012-2013 Differences of Phobic Anxiety

	Year	N	Average	ss	t	sd	p
Phobic Anxiety	2012	40	0,30	0,51	1,730	52,33	,090
	2013	35	0,14	0,20			

Table 3.9. 2012-2013 Differences of Paranoia

	Year	N	Average	ss	t	sd	p
Paranoia	2012	39	0,71	0,60	0,935	72	,328
	2013	35	0,58	0,50			

Table 3.10. 2012-2013 Differences of Psychoticism

	Year	N	Average	ss	t	sd	p
Psychoticism	2012	40	0,28	0,41	1,778	53,35	,081
	2013	34	0,15	0,16			

Table 3.11. 2012-2013 Differences of Additional Clause

	Year	N	Average	ss	t	sd	p
Additional Clause	2012	39	0,62	0,61	1,539	72	,128
	2013	35	0,42	0,45			

ALTERNATIVE TABLE (ALL RESULTS)

Table 3.12. PROBLEMS OF TEACHERS: STATISTICAL DIFFERENCES BETWEEN THE AVERAGES IN THE YEARS OF 2012-2013

	Year	N	Average	ss	t	sd	p
General Symptom Average	2012	38	0,58	0,48	1,256	64,64	,214
	2013	31	0,46	0,32			
Somatisation	2012	39	0,66	0,61	0,842	71	,403
	2013	34	0,55	0,45			
Obsessive-Compulsive Disorder	2012	40	0,96	0,71	0,349	73	,728
	2013	35	0,90	0,54			
Interpersonal Susceptibility	2012	40	0,53	0,55	0,860	73	,393
	2013	35	0,43	0,43			
Depression	2012	40	0,66	0,54	0,355	72	,724
	2013	34	0,62	0,45			
Anxiety	2012	40	0,54	0,55	1,936	61,41	,058
	2013	34	0,34	0,29			
Anger Hostility	2012	40	0,48	0,53	0,349	73	,728
	2013	35	0,44	0,48			
Phobic Anxiety	2012	40	0,30	0,51	1,730	52,33	,090
	2013	35	0,14	0,20			
Paranoia	2012	39	0,71	0,60	0,935	72	,328
	2013	35	0,58	0,50			
Psychoticism	2012	40	0,28	0,41	1,778	53,35	,081
	2013	34	0,15	0,16			
Additonal Clause	2012	39	0,62	0,61	1,539	72	,128
	2013	35	0,42	0,45			

4.DISCUSSIONS AND RESULTS

Before the evaluation of answers that study group has given to the inventory of SCL-90R, properties of substrates must be explained.

(a) SOMATISATION (SOM): Test consists of 12 substances (1.4.12.27.40.42.48.49.52.53.56.58) and represents the difficulties of function disorders in body systems of cardiovasculer, stomach, messentery, respirations and other systems. It also determines the functional and physical disorders occuring as a result of unsolved preclusion or conflict.

(b) OBSESSIVE-COMPULSIVE (O-C): Test consists of 10 substances (3.9.10.28.38.45.46.51.55.65) and represents the obsessive-compulsive symptoms. These are the considerations that individuals continously and overwhelmingly experienced despite they do not want to. By using this test, obsessive-compulsive disorders which are defined as repeating considerations and accusations can be identified.

(c) INTERPERSONAL SUSCEPTIBILITY (INT): Test consists of 9 substances (6.21.34.36.37.41.61.69.73). It represents negative considerations and emotions such as personal inadequacy and indignity. As a result of these emotions, an individual underestimate herself/himself and have some troubles with interpersonal relationships by comparison with herself/himself with others.

(d) DEPRESSION (DEP): Test consists of 13 substances(5.14.15.20.22.26.29.30.31.32.54.71.79). It represents living sensations including cognitive and somatic symptoms such as pessimism, despair, absence of motivation, suicidal ideas.

(e) ANXIETY (ANX): Test consists of 10 substances (2.17.23.33.39.57.72.78.80.86).It display symptoms and behaviors caused by clinical anxiety just as disorders, irritability, stress and fatigue. Anxiety is be able to defined as an emotion which makes individual feel like there will be bad news. Object and reason of anxiety is not clear. Literally an individual see waking nightmares.

(f) ANGER-HOSTILITY (HOS): Test consists of 6 substances (11.24.63.67.74.81). It emphasizes attributes such as anger, unrest, defiance, hostility, irritability, aggression and resentment.

(g) PHOBIC ANXIETY (PHOB): Test consists of 7 substances (13.25.47.50.70.75.82). It represents reaction of fear that an individual exhibits insistently to a specific object or situation.

(h) PARANOIA (PAR): Test consists of 6 substances (8.18.43.68.76.83). It represents the hostile, sceptical, centralist, reflector considerations and hallucinations or fears about losing self-dependence.

(i) PSYCHOTICISM (PSY): Test consists of 10 substrances (7.16.35.62.77.84.85.87.88.90). It represents the life-style carried out alone, autism and leaving himself/herself to loneliness.

(j) ADDITIONAL CLAUSES: Test consists of 7 substrances (19.44.59.60.64.66.89). It represents the symptoms related to sleep disorders, appetite disorders and guiltiness.

As it can be seen from the tables, General Symptom Averages of teachers which are obtained from the results of both in 2012 and 2013 are on the interval of 0,00 – 1,50 for each substrates. (normal). Also the tables given above shows that there is a decrease on the results of not only General Symptom Averages but also the averages of every 10 substrates in the year of 2013 by comparison with in the year of 2012. Nevertheless, differences between the averages do not make sense statistically (on the level of $p<0,05$).

In addition to this there are 3 substrates that approaching to the level of 0,05 statistical meaningfulness. These are anxiety (avg of 2012=0,54; avg. of 2013=0,34; p =0,058), psychoticism (avg. of 2012=0,28; avg. of 2013=0,15; p =0,081) and phobic anxiety (avg. of 2012 =0,30; avg. of 2012=0,14; p =0,090) respectively. Differences between the averages for each substrates that observed in the years of 2012 and 2013 can only be meaningful as long as the statistical meaningfulness is increased to the level of 0,10.

By analyzing the averages taken for each substrates it is observed that while minimum tendencies of teachers are Psychoticism (avg. in 2012=0,28 ; avg. in 2013=0,15) and Phobic Anxiety (avg. in 2012=0,30; avg. in 2013=0,14); the maximum tendency is Obsessive-Compulsive (avg. in 2012 =0,96; avg. in 2013 =0,90).

In-service training and supervisor support given to the teachers regularly during one year about the topics to overcome with adoloescence problems of 6th, 7th and 8th graded students, anger management, classroom management and how to communicate with students and their parents effectively contribute to differences approaching to the level of meaningfulness about teachers' section points of anxiety, phobic anxiety and obsessive-compulsive. This result shows that the in-service training is highly important for teachers in terms of given psychological support and indirect contribution to the students.

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"LEARNER – CENTRED APPROACH TO INSTRUCTIONS" A STRATEGY FOR REPOSITIONING EDUCATION IN NIGERIA

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INTRODUCTION

Teaching is as old as humanity, and it is generally accepted that teachers constitute the pivot of any school system. This is because, the successful system of education depend to a large extent on the number of teachers, their quality, their devotion to duty and their effectiveness on the job. It is as a result of this central position of the teacher that it is often said that no education system can rise above the quality of its teachers. It is ultimately the teacher who decides on what goes on in the classroom and transfers educational theories into practice. It is therefore, proper to begin by trying to identify the teacher. The Longman's Dictionary of contemporary English defines the teachers as person who teaches, guides, and coordinates class activities especially as a profession.

The current Nigerian national curriculum is activity-based and provides the framework for assessed. what should be taught, how is to be taught, and how learning outcomes should be. This is aimed at helping teachers to move away from the traditional "chalk and talk" and "minds-on" approaches to "hands on and learning by doing approaches". It has also been acknowledged widely that for pupils to do well and to develop practical skills, they must be actively involved in the learning process. What follows is a catalogue of mainly learner-centred methods that you can use in teaching various aspects of curriculum. We have gone straight to applications in each case.

One of the major weaknesses of the teaching profession in Nigeria is that once teachers complete their initial training, they hardly have the opportunity to continue to grow on the job professionally. But knowledge is dynamic and so also are pedagogical ideas. Only by exposure to interactive conferences and workshops of this type can teachers enjoy professional renewal. TESSA, 2012.

Although, many methods of teaching are at work in our schools, they all emphasized the need to actively involved learners, if they are to construct meanings, and if much learning is to take place. That is, must insist on learner-centeredness. "Learner-Centeredness" is the key word that summarizes all best practices in teaching today. Because we believed the term is often only narrowly understood as the opposite of Teacher-Centeredness, this approach is by no means new and has been adopted in various ways in many parts of the world, including Africa. It is quite possible that teachers are already learner-centred in teaching; perhaps in some ways more than others.

Learner-Centeredness includes more than allowing learner's opportunities to interact in the classroom. It is more of an attitude, or approach, to the learner, putting them at the heart of the whole school and even the community. A Learner-Centred school plans all the year around for the development of a "whole" learner i.e not just academic attainment but social, cultural, emotional, physical, aesthetic and spiritual growth. It works carefully at topics related to the safety of the learners at school and in their communities, and ensures that parents are fully involved in this thinking and planning.
TESSA stressed that, a Learner-Centred classroom is one that makes the learning space as attractive and clean as possible for the learners. However, small or struggling, the school tries to have posters, learners' work, reading corners or libraries, playing spaces and quiet spaces where learners can develop together. At this junction, one should be able to assess how far doing the continuum from Teacher-Centred to Learner-Centred you have moved, and why. However, you should feel confident about choosing to be Teacher-Centred when it is needed, and to allow learner's participation and involvement when it is appropriate.

Competing teacher-centred and learner-centred approaches to instructions:
Traditionally, **Teacher-Centred methods** emphasizes the importance of transferring knowledge,information and skills from the teacher to the learner. Emphasis is on the mastery of the subjects, and authority. The teacher is positioned in front of the class, using the blackboard, while learners, sit in rows facing the teacher. On the other hand, **Learner-Centred philosophies** are less authoritarian and moved focus on the individual learner's needs. They place the learner at the center of the educational process. Many educators still pay only lip-service to learner-centred teaching, while they themselves dominate the class talk. The differences between the two approaches are captured.

General characteristics of learner-centred approaches;
In general, learner-centred approaches/techniques **appeal to the learner's needs and interest, thereby motivating continuous learning**. They focus on the learner, encouraging participation throughout the lesson period, they are gender sensitive, interactive, collaborative and encourage sharing experiences. They encouraged critical thinking and practice-based activities throughout the lesson. As stressed by N.T.I (2012), not all these conditions always prevail in a learner-centred lessons, but a significant number do.

Distinction between teacher-centred teaching and learner-centred instructions.

		Teacher-Centred	**Learner-Centred**
1.	Classroom Set-up	* Desks in raws	* Desks are in small groups and learner's face each other.
2.	Teaching Style	* Teachers teaches learning as a whole group most of the time. * Teacher uses only one style of teaching.	* Learners learn in pairs or small groups as well as from the teacher. * Teacher adjusts instruction to learners learning style.
3.	Experience & Knowledge	* Learners experience and knowledge are not always fully used.	* Learner's experience and knowledge are regularly used in instruction.
4.	Learners' Creativity	* Learners' creativity rarely encouraged.	* Learner's creativity is encouraged much of the time.
5.	Checking Learner's Work	* Teacher stays in front of class, does not check learner's work.	* Teacher walks around and checks learners work; learners check one another's work.
6.	Teaching Styles	* Teacher uses one kind of instruction	* Teacher adjusts instruction to learner's individual learning styles.
7.	Questioning Techniques	* Closed questions only descriptive and not available questions	* Open ended and higher order (Evaluation reasoning and judgment).
8.	Assessment	* Teacher tests at the end of the term only.	* Learners are continuously assessed and assisted.
9.	Rapport	* Teacher talks to learners in class only; many not use names of pupils outside the class.	* Teacher enquires how learners are doing and used their names.
10.	Knowledge of the whole child	* Teacher does not know learner's profile (strengths, difficulties, health) or backgrounds (family conditions, problems with other pupils, etc).	* Teacher know learner's profile and background.
11.	Responsibility for learning and discipline	* Teacher assumes responsiblity for learning and discipline	* Leaners assume responsibility for learning and discipline.

TESSA, 2012.

Skills acquisation in learner-centred approach:

a) Learning through play

From an early childhood perspective, it is considered that all types of play are equally important for optimal child development. Early childhood teachers, plan both the indoor and the outdoor environment to encourage opportunities for a full range of play. They believed that the child's social development occurs through interaction with peers. Children can build their social understandings and bring what they already know about being with others to each new situation. When children engage in rich and meaningful play, they can exercise judgment, get to know and enjoy their power, and experience autonomy, mastery and competence. If they are unable to experience these emotions, their emotional development will be jeopardized Adekola (2006). From a constructivist perspective, cognitive development is also enhanced via play opportunities. Play provides opportunities for symbolic and conceptual manipulation. The cognitive skills which children learn to use as they play are necessary prerequisites for later academic learning.

As children persist in problem solving, they become creative thinkers, problem solvers and risk takers. Constructivists believe that play requiring active use of the body enables children to build their fine and gross motor control, enabling them to gain more and more control over their bodies. Children will practice the motor skills they have mastered and encounter new challenges requiring new skills, which are in turn mastered through further play. Children learn through relating space to their own body and movement, engaging large and fine motor skills as well as cognition.

Other early childhood educators who follow a developmental approach to children's learning believe that play is a developmental activity, where children move through a series of stages and along the way, discover their identity in relation to others. Advocates of this theoretical approach also believe that play has a positive impact on the learning of the young child. Children who are able to play will have more resources to draw on, both in childhood and adult life. Within this framework, dramatic play is seen as an important coping mechanism that allows children to process material that they do not understand and put it in a context that makes sense to them. It can provide a playful space where life can be experimented with and choices explored.

The value of play to the learning process has not been entrenched as widely within the primary school setting as in early childhood contexts, although there are some strong advocates for its inclusion.

If play is defined as intrinsically motivated, children who are directed will find it difficult to incorporate play into their classroom practices where there is an emphasis on procedure, timetabling and order.

B)using 'teachable moment' for focused teaching-learning

Problems of Emphasis is laid by UBEC (2004) to teachers to take on the role of facilitators rather than experts with the necessary knowledge to scaffold the children's learning and use 'teachable' moments for focused teaching and learning. Importantly, this principle underpins both the teach me and teach you curriculum approaches where the teacher is empowered to work alongside children in a collaborative manner, thus facilitating the co-construction of knowledge that these approaches strive for.

Planning for learner-centred instructions

In most of the times, teachers give considerable attention to what they intend to do in the classroom, rather than on what is demanded by the pupils. Before the teacher plan for his/her instructions, they must ask themselves 3 basic questions:-

1) **Whom am I going to teach?**
   This implies that a considerable priority is given to the learner in instructions more than any other thing. It involves knowledge of the learners by capability, sex, age, size of the class, and even by names. This is mandatory for any professional teacher to make sure that he/she is planning to cater for the all round development of the learners, so as to select appropriate content and resources for them.
2) **What am I going to teach?**
   The second question implies the content of the subject matter under treatment. Providing rightful answer to the first question, will open room for the teacher to pass judgment on the content under planning. For example, as a teacher, the knowledge of the learners will help the teacher in selecting the task that is accomplishable to the learners. It is an expectation on a professional-teacher to start from known to unknown and from easy to more difficult.
3) **How am I going to teach?**
   First and the second questions will be merged together to produce the strategy to employ in delivering a particular instruction, and to deliver well. Consideration must be given to the approach. In such a case, learner-centred approach is selected as the best approach to instructions.

Resources/media in learner-centred instructions

Resource-based instructions are more colourful, attractive and permanent (Robert et al, 1989). Teachers must learn to improvise instructional resources themselves, without waiting for any other party to provide resources for their instructions. The teacher is collaboration with the learners, improvised resources based on his/her knowledge of the class.

Note that; the instructional resources/media must be:-

1) A no-cost resource.
2) Available in the local environment
3) Attached with safety.
4) Bold and colourful.
5) Within the limit of age and capability of learners.
6) Sex friendly.
7) Directly proportionate to the learning atmosphere.

8) Learner friendly

Problems of education in Nigeria:

Education in Nigeria is faced with many and diverse problems.
Some of these problems, included:

1. Less provision of infrastructural facilities and learning resources.
2. Establishment and ownership of schools.
3. Teachers'qualifications.
4. Teacher morale. .
5. Resistance to new innovations.
6. Low or no motivation to teachers.
7. Less consideration to Professional Development of Teachers (in-house & outwards).
8. The politics in our educational management.
9. Mismanagement of funds
10. Analogue Teachers.

Strategies for repositioning education in Nigeria

The following strategies have been suggested for repositioning educational system in Nigeria.

1. Policies on education and their implementation should be research- based.
2. Monitoring or inspectorate divisions should be resuscitated and equipped with adequate facilities. Education is the "key to the success or failure of the whole society". However, serious attention must be paid to its sustenance.
3. The politicians should not be allowed to toy with this crucial aspect (education). Each state should set up units like the State Education Sector Project Units with professionals in education,and to be dominated by those who have had first-hand experience in educational set-up. Their tenure should be at least *5* years and the performance of the units evaluated yearly.
4. Effective and efficient implementation culture should be adopted with adequate quality assurance measures.
5. Universality implies the inclusion of both school children and out-of-school children. Access and equity demand considerations for all, because none should be denied quality educational opportunity.
6. Pre and post implementational survey on any innovation so as to weigh the effectiveness of the curriculum, and to cater for the societal needs.
7. Digital Teachers
8. There should always be follow-up on any educational delivery.
9. Foreign investors should continue to be interviening in the education sector.

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MERGING CULTURAL DIVERSITY ISSUES IN EFL CLASSES

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ABSTRACT

This study aims at developing a parallel teaching program for EFL classes merging cultural diversity issues in teaching foreign language. Project Based Learning, Advance Organizer, and Debates are the strategies suggested with a list of topics related to the actual cultural groups in Jordan, as a model for multi-cultural society. This program is addressed to elementary, intermediate and high-intermediate levels, enabling the achievement of general and specific goals of TEFL' such as connecting classroom learning to real life situations, knowing and accepting the "other", and building communicative skills in English language.
Key words: Cultural diversity, Project Based Learning, Advance Organizer, Debate.

INTRODUCTION

Jordan is a multicultural society; about 5% - 7% of its population is from different cultural backgrounds. Two religions (Islam and Christian), around five non-Arab sub-cultural societies, and Arabs from different Arab World origins constitutes Jordanian population. It is quite important for these people to know each other and accept each other. The civil rights of all citizens are preserved by the constitution, and all Jordanians feel equal and respected within the Arab-Islamic cultural framework and the Jordanian National Identity.

It is important for all societies, specially the multi-cultural ones, to develop various activities and programs to shorten the distance between these cultures, which brings unity, loyalty and affiliation. Educational institutions are the most responsible party to carry out this national task. It could be reasonable to integrate cultural diversity issues into English Language teaching lessons for several reasons; first, teaching English is teaching another language that carries another culture, and learners are exposed to a foreign culture already, second, designing different activities and assignments for language teaching lessons is open and variant that can achieve several objective at the same time, and third, English language activities can give the learners the opportunity to work together inside and outside classroom.

English language is an obligatory subject taught in Jordan from grade one throughout to grade twelve. This study aims at proposing some techniques and activities to be administered in English classes, so as to enable students to know and interact with all the sub-cultures in the country, shortening the distance between them, at the time they practice all language skills in real life activities.

Problem and Question of the Study

Whereas education is one of the national systems responsible for societal issues, it has to take its share in maintaining balance among the youth. The contemporary unstable situation in the Arab World imposes its conditions in a limited time and shortage of resources, to be involved in raising awareness among youth and adults. Understanding and acceptance of each other among societal groups is an essential value that needs to activate. Cultural diversity hasn't been given sufficient focus in curricula in Jordan, and the time factor is not very helpful to develop suitable textbooks, therefore, this study suggests cultural diversity issues, with related wide range of subjects, to be introduced, studied and investigated in English as a Foreign Language classes. English language teaching aims at encouraging learners to communicate and interact in English through real life situations in authentic texts.

The study raises the following question:

-How can cultural diversity issues be integrated into English Teaching activities?

The researcher proposes advance organizer (AO), Project Based Learning (PBL), and Debate as suitable teaching/learning strategies to integrate cultural diversity issues in English Language Teaching (ELT) classes.

Significance of the Study

Cultural diversity is a crucial topic in the modern life, academic studies have been conducted in Jordan and elsewhere in this domain. But to the knowledge of the researcher, it hasn't been mentioned in school curriculum or

communicative activities designed by and for English teachers in Jordan to be implemented. Significance of this study lies in its attempt to engage English language learners in cultural diversity topics through the school activities. The researcher believes that this could be a suitable field for employing English in a way that enables achieving higher level goals of education. Learners would understand the cultural diversity in the Jordanian society by detecting the details of each culture by themselves, knowing the similarities and differences between these cultures and the mainstream culture; Arab-Islamic culture. Human nature tends to accept what is known and reject the unknown, this will create unity in the society and affiliation with the national identity. This educational goal goes in parallel with emphasis given to practicing English in real life situation with authentic texts and material

I. Advance Organizer (AO)

The definition of advance organizer refers to the information that is presented prior too learning and that can be used by the learner to organize and interpret new incoming information (Mayer, 2003). The purpose using AO according to Ausubel (1963) is to facilitate learning of written material by relating it to the existing hierarchical cognitive structure of the learner. It is an instructional strategy usually used to promote the learning of a new lesson and the retention of information as described by Ausubel (1963:81):

"These organizers are introduced in advance of learning itself, and are also presented at a higher level of abstraction, generality, and inclusiveness, integrating, and interrelating the material the precede."

For the purpose of this study the operational definition of AO is the different cultural groups that constitute the Jordanian society, namely, the mainstream culture is Arab-Islamic, the sub-cultures are Chechens, Circasians, Armenians, Kurds, Assyrians, AL-Dorooz and Turks. The researcher suggests that the AO be used in the elementary level classes of EFL.

AO is a teaching/learning strategy that aims to provide the necessary scaffolding for students to learn new and unfamiliar material, and to integrate new ideas into relatively familiar ideas (a comparative organizer which compares and contrasts old and new ideas). It is an instructional tool used in teaching to help the learner recall and transfer prior knowledge to the new information (Joyce, 2000). The process begins with presenting information before instruction as a way to provoke previously existing schema, or get the learners restructure what they already know into a new schema as was first introduced by David Ausubel in order to facilitate learning through focus of mental learning. According to Joyce et al (2000), AO model has three phases of activities:

Phase I: Presentation of AO in three steps:
-clarify the aims of the lesson
-present AO
-prompt awareness of relevant knowledge

Phase II: Making links to/from AO in three steps:
-present the learning task or learning material
-make organization and logical order of learning material explicit

Phase III: Strengthening of the cognitive organization

Gagne's theory of "Condition of Learning" will be followed in its nine steps to implement AO. Cory (1996) explained how this theory breaks the conditions of learning into external and internal; the previously learned capabilities of the learner are the internal conditions, while the stimuli or the instructions provided to the learner are the external conditions. The essential components of teaching for Gagne are presenting the knowledge or demonstrating the skill, providing practice with feedback, and providing learner guidance. Gagne's nine general steps of instructions for learning are: (Gagne, 1985)

1- Gaining attention of the learners
2- Informing learners of the objectives
3- Stimulating recall of prior learning
4- Presenting the stimulus
5- Providing learning guidance
6- Eliciting performance
7- Providing feedback
8- Assessing performance
9- Enhancing retention and transfer

Review of Related Studies (AO)

Empirical research conducted on AO used in different teaching situations and disciplines reflect the beneficial outcomes in achieving the set objectives. Using the meta-analysis technique, Stone (1983) analyzed 135 studies that include reading introductory passages as advance organizer to enable students to organize, learn, and retain the read material concluded that AO facilitates both learning and retention. Herron's (1994) results of his study supported the use of advance organizer in both first and second language classes prior to listening to texts, reading, and introducing key vocabulary, in addition to cultural background issues. Chung and Huang (1998) pointed out that the focus should be on new words in preparing advance organizers for EFL students, it should also be concise and short for the longer warm-up period might decrease the attention of less motivated students. Herron et al (1999) investigated whether students learn culture embedded in a video-based second language program, and the results of the study supported using video in teaching culture in second language classes. And, Lin and Chen (2007) aimed to compare the effects of different types of computer-generated visuals and advance organizers in enhancing comprehension and retention of a content-based lesson for learning English as a Foreign Language (EFL). The results showed that the animation group outperformed the static visual group while the animation embedded with a question advance organizer had a marginal effect in facilitating the acquisition of L2 reading comprehension.

It is obvious that AO is a flexible strategy to be used in different levels and subjects, in addition to being attractive and interesting to students and teachers. It allows communication and brain storming among learners within a healthy and friendly environment.

Procedures for Implementing (AO)

Implementation of the Advance Organizer can take the following sequenced steps in EFL class teaching speaking. In order to integrate cultural diversity, the suggested title of the lesson is: Cultural Diversity in Jordan. The teacher (T) prepares the slides (to be explained during the lessen procedures) in advance, brings some flowers with him to the classroom, and pictures of butterflies and birds, and pictures that represent culture groups in Jordan in their costumes with some information about their origin, language, food, and related information. Procedures of the lesson will follow the steps presented by Gagne' as shown in the lesson plan in table (1) below.

Table (1)
AO Lesson Plan

No.	Procedure	Teacher	Pupils
1	Gaining attention	- writes the title of the lesson on the board. - gives the flowers, pictures of butterflies and birds to the pupils, one item for each according to their choice. - Asks P to give meaningful sentences about the flowers and pictures. - Writes the answers on the board. - Asks some questions: - Do you have a garden at home? -Are there any flowers in the garden? -What are the colors of the flowers? -What else do you see in the garden? - Writes answers on the board and corrects mistakes.	a- say a meaningful sentence using the item he has, like: -I have a red flower, it's a rose. -I have a butterfly. -My bird is singing. b-answer the questions.
2	Describing the goal	-write the goal of the lesson on the board: At the end of this lesson pupils should be able to speak about the cultural diversity in Jordan using the new words: culture, cultural diversity, Chechens, Circassians, Armenians, Kurds, Assyrians, AL-Dorooz and Turks in meaningful sentences. - asks the pupils if they know anyone of the mentioned groups. -What do you know about your friend Taymoor? Ellene? - What language does he/she speak? -Do they have different kinds of food? -Does his/her look different from others?	Answer the questions, give information, ask questions.
3	Stimulating recall of prior knowledge	Show the slides and ask questions a-The first slide shows a green field of grass without any trees or flowers. Q-What do you see here?	Answer questions, take notes, ask questions. Talk about the change after the third slide, brain storm

		b-The second slide shows one flower basin of one color. Q-What do you see here? Q-Are there any trees? birds, butterflies? Q- How does the picture look? Q-What shall we do? c-The third slide shows a colorful garden full of flowers from different types and some trees with birds, butterflies and bees. Q-What do you see now?	about the benefits we gain out of this change in terms of beauty, environment, etc.
4	Presenting the material to be learned	a-Hangs a map of Jordan. b-Gives an introduction about Jordanian society and its population in general, mainly the mainstream culture and National Identity. c-Distributes culture related pictures. d-Asks if they know anyone of the mentioned culture groups. -What do you know about your friend Taymoor? Ellene? - What language does he/she speak? -Do they have different kinds of food? -Does his/her look different from others?	a- take notes b- answer questions c-make sentences d-discuss, compare, connect information
5	Providing guidance for learning	a-asks pupils to hang the pictures of culture groups on the empty map of Jordan. b- makes the connection between the flower garden and Jordanian society. c-explains cultural diversity – -Cultural diversity means that the society is like the garden, and the cultures make the diversity in their colors and types. -The more these colors are in harmony with each other, the better they look. -The good relations and acceptance between the cultures in the society will affect the whole society's safety and good life, same as the butterflies and birds coming to the garden.	a- hang the pictures on the map. b- describe each cultural groups, features, costumes, food, traditions, etc. .
6	6-Eliciting performance	a-gives needed vocabulary for discussion like: bonds, democracy, belonging to the homeland. b- holds discussion and brainstorming through questioning and encouraging.	a-compare between the garden and Jordan. b-brain-storm about the benefits of cultural diversity c-discuss how to strengthen bonds between cultural groups d-enhance the belonging to Jordan e-Democracy
7	Providing informative feedback	a-what are the lessons learned from this experience? b- how can we develop this knowledge into actions?	a- summarize the results of the discussion. b-present recommendations.
8	Assessing performance	It is up to the teacher to test his students in a short quiz, or ask them to prepare short dialogues to check their performance.	-do the quiz or prepare a dialogue.
9	Enhancing retention and transfer	An assignment could be given to the learners for the next class, to prepare some information about other cultures in the world, or carry out a debate of the similarities and differences between these sub-cultures, or with the mainstream culture.	Prepare an assignment about any other culture.

II. Project Based Learning (PBL)

Project based learning is an instructional learner-centered strategy of teaching and learning. Instead of using a rigid lesson plan that directs a learner down a specific path of learning objectives, PBL allows in-depth investigation of a topic. (Harris & Katz, 2001). This method of teaching enables learners to have more autonomy over what they learn maintaining interest and motivating them at the same time to take more responsibility for their learning (Tassinari, 1996; Wolk, 1994; Worthy, 2000). With more autonomy, learners "shape their projects to fir their own interests and abilities" (Moursund, 1998, p.4).

The theoretical foundation of PBL goes back to the 1900s, and John Dewey afterwards supported "learning by doing". This idea is also reflected in constructivism and constructionism. Constructivism explains how the individual constructs knowledge through interaction with the environment in a different way than others (Perkins, 1992; Piaget, 1969; Vygotsky, 1978). It is through conducting investigation, conversations and activities, an individual learns by constructing new knowledge and building on the current knowledge.

Constructionism takes the notion of construction knowledge one step further. It posits that individuals learn best when they construct a personally- meaningful artifact that can be shared with and reflected upon others, (Harel & Papert, 1991; Kafai & Resnick, 1996). By focusing on the individual learner, PBL strives for "considerable individualization of curriculum, instruction and assessment, in other words, the project is learner-centered" (Moursund, 1998, p4).

The seven essentials for PBL (Larmer & Mergendoller, 2010) were chosen for the purpose of this study. Driving question or challenge

1- Need to know
2- Inquiry and innovation
3- 21st Century skills
4- Student voice and choice
5- Feedback and revision
6- Publicly presented product

Review of Related Studies (PBL)

The reviewed studies emphasized the accuracy of PBL and its effect on the learners. Gallagher & Stepien (1996) found that secondary students who studied using PBL in American Studies showed deeper understanding of the content than those who received a traditional model of instruction. Ertmer & Simons (2005) described ways to overcome and simplify PBL problems in identifying the driving questions, structuring students' research efforts, motivating students, creating collaborative classroom atmosphere, and assessing their learning with rubrics and classroom reflections. Barron & Darling-Hammond (2008) reviewed studies on inquiry based learning outcomes and the best practices in applying project based learning, problem based learning, and design based instruction, suggesting evidence based approaches to support inquiry based teaching in the classroom, that will help students evaluate their own against standards. Hung (2008) introduced in his study the nine-step problem design process to help participants to detect whether the PBL problems could affect students acquire of sufficient content knowledge, activate appropriate knowledge, and properly direct their own learning in using PBL. Hernandez-Ramos & De La Paz (2009) results showed significant gains in content knowledge and historical-thinking skills for students engaged in PBL curriculum compared to students who received traditional instruction among university students from Santa Clara University and the University of Maryland. Finkelstein, Hanson, Huang, Hirschman, & Hang (2010) studied the effect of PBL economics curriculum on student learning and problem solving, indicating that both students and teachers benefited from PBL curriculum.

Procedures and steps for Implementation of PBL

Implementing PBL in EFL classes integrating cultural diversity issues in teaching English for the intermediate and higher intermediate level can take the following steps and procedures:

1- Driving Question or Challenge

After the discussion about inharmonious cultures within one society that lead to clashes and un-stability, the teacher brainstorming with students suggests possible solutions, such as enacting laws, understanding each other, and raising public awareness about the cultural groups in the society. Students create a driving question to focus their efforts, focusing on a specific local area: How can we reduce the tension within the society? What do we know about each other?

2- A Need to Know

The teacher introduces the project by telling students that they will be learning more about cultural diversity in Jordan, referring to the problems faced by other countries in the region because of lack of understanding and accepting each other.

3- Inquiry and Innovation

More detailed questions will be generated by students. Teacher guides them to add to this list as many as they discover new insights. As the students find answers, they raise and investigate new questions. Students synthesize the information they gather and use it both to inform their individually written papers on the driving question, and to help create their team's product related to that question.

4- 21st Century Skills

Students form teams of three or four and plan what tasks they will do and how they will work together. As they work, each team regularly pauses to review how well they are collaborating and communicating, using rubrics they had developed with the teacher's guidance. Teacher guides students on how to use time and task organizers. They practice oral presentation skills, and in writing journals, students reflect on their thinking and problem-solving processes.

A project should give students opportunities to build such 21st century skills as collaboration, communication, critical thinking, and the use of technology, which will serve them well in the workplace and life.

5- Student Voice and Choice

On the limited-choice end of the scale, students can select what topic to study within a general driving question such as cultural aspects of each culture group, the languages, the features and characteristics, etc. The teacher might provide a limited menu of options. On the "the more, the better" end of the scale, students can decide what products they will create, what resources they will use, and how they will structure their time. Students could even choose a project's topic and driving question.

6- Feedback and Revision

As they develop their ideas and products, student teams critique one another's work, referring to rubrics and exemplars. Teacher checks research notes, reviews rough drafts and plans, and meets with teams to monitor their progress.

7- A Publicly Presented Product

Teams present their projects in cultural diversity issues and proposals for addressing the problem in a celebration inside or outside the school. The invited audience may include parents, peers, and representatives of community, business, and government organizations. Students answer questions and reflect on how they completed the project. They should come up with recommendations on how to preserve the Safety and unity of the society by understanding and accepting all the cultural groups in the society. They should present their own work talking about what they gained in terms of knowledge and skills—and pride.

III. Debate

Debate is a structured discussion that tends toward dualism; there are usually two teams of at least two people each; one team, the affirmative, supports the resolution; and the second team, the negative, opposes it. It can be an effective teaching/learning strategy for higher education level, enabling students to take an active part in their own learning. Gibbs (1992:10) identifies four key elements essential for deeper learning: motivation, learner activity, interaction with others, and a strong knowledge base. Debate as a teaching/learning method creates a pedagogical environment for cooperative learning through interaction that develops critical thinking skills.

According to Nunan, (1981) language learning happens more successfully when it occurs in a meaningful, authentic and supportive context. Using classroom debate offers opportunities to negotiate meanings, and allows students to have more access to employ linguistic knowledge to promote effective language learning. Jacobs & Farrell (2003) refer to debate in language learning offers an active learning environment through authentic interaction as a learner-centered approach.

Teachers usually feel that debate is a complicated type of interaction in which high level of discourse skills need to be applied. The Teacher's Guide to Introducing Debate in the Classroom presents steps and procedures for teacher to manage different types and levels of classroom debates. For University students it is recommended that the

type entitled "The great debate" is chosen to discuss the matter of cultural diversity. This style of debate gives the students an opportunity to prepare and debate in a formal style. It takes 2-4 classes to do the research.

Review of Related Studies (Debate)

Park, Kier, & Jugdev (2011) contributed to the field of research on debate as an instructional technique, the findings showed that the use of debates in text-based courses at the online undergraduate and graduate levels can contribute to improved learning outcomes and student satisfaction. Rai (2011) examined the benefits of using in-class debates as an instructional strategy. These benefits include mastery of the content and the development of critical thinking skills, empathy, and oral communications skills. Fournier-Sylvester (2013) discussed teacher's viewpoints about avoiding using debates in classrooms for the unpredictability of students' reaction, accusation of trying to include political agenda, and the insufficient knowledge or skills to employ debates. The study illustrated the positive impact of debate on students' critical thinking skills and democratic commitments, advising teachers that with some preparation and facilitation techniques their concerns will be open to use the strategy in current events and social issues. And, Alén, Domínguez, & De Carlos (2014) reported that academic debate presents students with an interesting opportunity to develop diverse and relevant learning and critical thinking abilities through active learning.

Procedures and steps for implementing Debate

Before going through the steps of carrying out a debate in the classroom, following is a quick look at the role of both the teacher and the student.

The teacher's role:

- Providing the topic
- Facilitating brainstorming sessions and building skills activities.
- Helping students organize information by note-taking, preparing worksheets, reviewing and giving directions)
- Providing practice time prior to the debates
- Invite audience – parents, administrators or other honored guests to judge.

The student's role:

- Receive topic, begin research, interview experts
- Look up resources
- Review materials and mark it; affirmative or negative
- On the worksheet, establish needs for change and develop a defendable plan
- Review the affirmative case from the negative point of view, and, on the worksheet, prepare negative responses and evidence, at the same time test the affirmative case
- Plan questions and practice presentation arguments

The procedures of implementation, takes the following steps:

1- Choosing topics

Students are given the opportunity to be involved in the choice of debate topics. Teacher creates a variety of cultural diversity related topics, then allows the class to vote for the ones they are the most interested in. Examples of some topics:

a. Cultural diversity affects positively/negatively social unity.
b. Cultural diversity in Jordan threatens social harmony.
c. Cultural diversity affects the national culture.
d. Jordanians accept cultural groups with all their differences.

2- Choosing groups and assigning related topic for each group

- Groups can be allocated randomly, or students choose their own groups, or the teacher assigns the groups
- A groups organizer is allocated, and that person set times and dates for meetings.
- Members of the group will be given their topics, and told which side of the argument they will be supporting (negative or positive)

3- Preparing the students

- Debate format

Standard debate structure includes:

- An opening statement
- Rebuttal question
- Allotted time
- Closing statement

Each member of the team should be responsible for one aspect, and all members should speak.

- Preparatory tutorials/lectures and debate documentation

It is suggested that preparatory lectures be at least 2 hours per week. The first hour is devoted to a lecture on relevant issues of cultural diversity in Jordan. The second hour is tutorial in which the debate takes place. Feedback from students at the end of the sessions will help them establish research papers.

- Group monitoring

The group organizers should arrange meetings and ensuring that preparatory work is being done and all group members are involved. Any problems encountered need to be discussed with the teacher in time to remedy before the actual debate is due.

4- Assessing the debate

A marking rubric is to be prepared to assess the whole work which includes the following:

1. Presentation structure

Timing

Logical flow

2. Content

Depth and understanding of topic

Relevance of arguments

Originality of content

Coverage of key arguments

Evidence of external referencing/referral to Laws and case study examples

Use of examples and quotations

3. Delivery

Self- presentation

Voice projection and expression

Eye contact/body language

Handling of questions

4. Supporting Materials, transparencies, handouts

5. Substantial shift in end vote

On the assigned date of the activity to take place, students will be ready to deliver their information in the style of debate in front of audience (if possible). The teacher will facilitate and observe the activity without interference or comments unless the case developed negatively. Audience will be given time to ask questions to the students. The final stage of the debate will conclude with recommendations and suggestions such as:

1- The best way to preserve and maintain social.
2- More research to be conducted.

CONCLUSION

Three instructional strategies were introduced by the study to promote English language skills among three levels of learners; elementary stage, intermediate, and university students. The topic chosen for these three strategies was Cultural Diversity in Jordan. It is expected that using these strategies will enable students from understanding contemporary cultural situation in the country that affects the well-being of the society. At the same time they will be directed towards understanding the others, creating the traditions of democracy and tolerance, and appreciating the unity of stability of the society. Practicing English in real life situation through discussion and research will be more

beneficial than traditional instructions. Moreover, they will develop critical thinking skills and team work experiences that will help them in their future lives.

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MIDDLE SCHOOL STUDENTS' SCIENTIFIC EPISTEMOLOGICAL BELIEFS

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ABSTRACT
The purpose of this study is to investigate fifth, sixth, seventh and eighth grade students' scientific epistemological beliefs. For this purpose, descriptive study method was used. Sample of the study involved purposively selected 431 middle school students from convenient schools. The data of the study was collected by a Likert type scale called as "Scientific Epistemological Beliefs Scale". The findings showed that students had sophisticated beliefs about verification aspect of the beliefs while they were naive about the aspects; source of knowledge, development of knowledge and certainty of knowledge.
Key Words: Scientific epistemological beliefs, descriptive study, middle school students.

INTRODUCTION

In today's world, people need to be knowledgeable about different aspects of science because of the constant growth of products in science fields. Being knowledgeable about science helps with choosing what knowledge is needed in life, understanding scientific knowledge, knowing where and how to find the necessary scientific knowledge and how to use scientific knowledge properly. However acquisition of scientific knowledge is not enough to make informed performance or decisions regarding science in life. Also the beliefs regarding scientific knowledge and science as a way of knowing are of great importance in using scientific knowledge properly. Beliefs regarding science and scientific knowledge are studied under the title of "epistemological beliefs", epistemological beliefs involves beliefs about knowledge and knowing (Hofer & Pintrich, 2002, s.3). Individuals should develop coherent and sophisticated epistemological belief system to acquire and to use knowledge in their daily life. Actually individuals believing in existence of only right or wrong knowledge, fragmented or associated structure of knowledge, authoritarian transfer or personal construction of knowledge and simple or complex structure of knowledge have a basis for their further decisions and performances regarding acquirement and use of knowledge (Deryakulu, 2002). Studies of epistemological beliefs in education field link epistemological beliefs to cognitive and motivational learning outcomes, and achievement (Muis, 2004; Tsai, 2000; Topçu & Yılmaz-Tüzün, 2009; Özkal, Tekkaya, Çakıroğlu & Sungur, 2009). Studies related to epistemological beliefs mention three different characteristics of epistemological beliefs (Hofer & Pintrich, 2002):

1. Epistemological beliefs have a developmental nature.
2. Learning is affected by individuals' epistemological beliefs.
3. Epistemological beliefs might be defined as individuals' theories regarding knowledge and knowing, and their epistemological resources. These beliefs affect learning by activating tendencies to learn in associated contexts with the beliefs.

Number of the educational studies on epistemological beliefs increased in the last 20 years (Hofer & Pintrich, 2002). Actually studies on epistemology were first started with Perry (1970)'s study on moral development of the college students. Perry created an epistemological model for development of epistemological beliefs of individuals. According to this model, in terms of their epistemological development levels, individuals first believe in one side (right or wrong) of dualistic nature of knowledge and authority requirement to reach true knowledge, then they reach to second level (multiplicity) involving acceptance of uncertain and tentative nature of knowledge, partial believe in unchanging external reality, partial belief in uncertain knowledge of experts and ability of everybody to structure his or her own knowledge. In following level (relativist), individuals accept that knowledge might be true or wrong in its specific contexts and individuals make their own meanings without an external authority. At the highest level (commitment), individuals believe in relativity of knowledge and flexibility of knower in terms of changing his or her knowledge by commitment.

After the Perry's model, Belenky, Clinchy, Goldberger and Tarule (1986) created another model called as model of women's ways of knowing. Five-dimension epistemological beliefs model of Schommer-Aikins (1990), Kuhn (1991)'s argumentative reasoning model, reflective judgment model of King and Kitchener (1994) and Kuhn (2005)'s intellectual values model are the other models for explaining epistemological beliefs. In spite

of the models for explaining epistemological beliefs of students, five-dimension epistemological beliefs model of Schommer (1993) is the most common preferred model for studying epistemological beliefs in Turkey and it provides an explanatory frame for studying epistemological beliefs in Turkish culture. The model has five partially independent dimensions;

1. Structure of knowledge (Simple vs. Complex knowledge): It is about accepting knowledge as simple with unrelated components or as complex with connected components.
2. Certainty of knowledge (Certain vs. Tentative): This aspect is consisted of beliefs about whether knowledge is precise (unchanged) or tentative (changeable).
3. Source of knowledge (Authority vs. Individual Construction): In this aspect, beliefs about source of knowledge as authority or individual construction process are in focus.
4. Speed of knowledge acquisition (Learning suddenly happens vs. Learning needs time): This aspect is about believing whether learning suddenly happens or learning needs time.
5. Control of knowledge acquisition (Fixed learning ability at birth vs. Improvable learning ability): In this aspect, learning ability as knowledge acquisition factor might be accepted as unchanged and fixed factor at birth or as changeable and improvable with experience over time.

Schommer (1993)'s model was tested by studying epistemological beliefs of undergraduate students. However followers (Conley, Pintrich, Vekiri & Harrison, 2004) of Shommer's models in science education field tested the model by applying it to elementary school students and the researchers found that four-dimension structure was observed. They named the dimensions as resource, certainty, improvement, and verification. In resource dimension beliefs about source of scientific knowledge is involved while certainty aspect is about trust to scientific knowledge as the true and only one right answer of questions or not. For the improvement aspect beliefs about whether scientific knowledge is tentative or unchanged while verification aspect involves beliefs about supporting ways (experiments or multiple ways) of scientific ideas. Evidence from the studies (Muis, Franco & Geirus, 2011; Stahl, 2009) focusing on domain-dependency of epistemological beliefs provided empirical support for domain-dependent nature of epistemological beliefs. Hence Conley et al. (2004)'s model has advantage in our study due to the fact that it is focused on science domain. Another reason of choosing this model as a framework is that it has been applied to elementary students and it has been tested in the culture we have made the study.

By using Conley et al. (2004)'s model, we have purposed to determine the epistemological beliefs of middle school students about learning science and scientific knowledge. It was thought that evidence of this study might inform science teachers in designing their courses in line with scientific epistemological beliefs of their students and might provide another set of evidence to the researchers studying on epistemological beliefs regarding scientific knowledge.

Studies on Epistemological Beliefs

Different types of studies have been carried out on the importance of epistemological beliefs in terms of learning and teaching processes (Tsai, 2009; Tsai, 2000; Topcu & Yılmaz-Tüzün, 2009). Tsai (1999) made research to investigate whether lab activities of eight grade students (n=25) changed their scientific epistemological beliefs. The researcher found that the students with nontraditional beliefs made more frequent discussions and sharings with their group members than their counterparts with traditional epistemological beliefs. Also the students with nontraditional beliefs preferred more free and student centered learning environments than their counterparts with traditional epistemological beliefs. This evidence refers to importance of scientific epistemological beliefs in teaching preferences of the students and activities of them in science labs. One year later Tsai (2000) examined the effect of epistemological beliefs of ninth grade girls (n=101) on learning outcomes in two different teaching application groups; teaching by science-technology-society oriented applications and ordinary teaching. The findings showed that the students with nontraditional epistemological beliefs gained more than the students with traditional epistemological beliefs in teaching by science-technology-society oriented applications.

Another line of studies made descriptive and correlation studies about epistemological beliefs. Kurt (2009) differently studied on relationship of epistemological beliefs with gender, grade and field of education. Her sample involved 1557 sixth, eighth, and tenth grade students. At the end of the study it was observed that beliefs of tenth grade students about source of knowledge, certainty of knowledge, and development of knowledge were more sophisticated than the beliefs of sixth and eighth grade students. Also the students in mathematics-science dominated educational field were found to have more sophisticated beliefs about verification of knowledge than their counterparts in literature-social science dominated educational field. Conley, Pintrich, Vekiri and Harrison (2004) in their study investigated 187 5th grade students' scientific epistemological beliefs by applying their instrument including four dimensions (certainty, improvement, verification and resource). They applied their instrument in two points of nine-week period. Their results showed that beliefs of students about resource and certainty of knowledge dimensions became more sophisticated over time. Choi and Park (2013) investigated 700 Korean middle

school students' epistemological beliefs. Their findings showed that the participants had sophisticated beliefs regarding 'learning ability is depend on effort or not' and but they did not see authority as a valuable knowledge resource. In a different culture, Yenice and Özden (2013) determined 355 Turkish 8th students' epistemological beliefs. Researchers used scientific epistemological beliefs as their instrument to collect data. The findings showed that the participants had sophisticated beliefs about 'authority is a knowledge resource or not" and 'knowledge is tentative or not'.

Özkal, Tekkaya, Çakıroğlu and Sungur (2009) determined scientific epistemological beliefs of 8th grade students (N=1152). Findings of the study showed that the students believing in tentative scientific knowledge perceived their learning environment more constructivist place. Hence scientific epistemological beliefs are seen to be associated with learning environment preference of the students. Topçu and Yılmaz-Tüzün (2009)'s study involved four grade levels of elementary school (4th, 5th, 6th, 7th and 8th grades). Their purpose was to study the relationship among science achievement, metacognition, and epistemological beliefs of 4th, 5th, 6th, 7th and 8th grade students (n=941). In the study two different instruments were utilized. They were Epistemological Beliefs Questionnaire of Schommer (1990) and Junior Metacognitive Awareness Inventory prepared by Sperling, Howard, Miller& Murphy (2002). Results of the study represented that epistemological beliefs of the students were associated with their science achievement. In study of Chen and Pajares (2010) relationship of epistemological beliefs with academic motivation and science achievement. Their study involved 508 6th grade students. The result from path analyses showed that epistemological beliefs played mediator role between association of implicit theories of ability with achievement goal orientations, self-efficacy, and science achievement.

When looked at the literature about epistemological beliefs, they are mostly focusing on 'general epistemological' beliefs (Schommer-Aikins, 2004; Topçu and Yılmaz-Tüzün, 2009; Özkal 2009). But some of the studies on epistemological beliefs supported domain-dependent nature of the beliefs (Hofer, 2000; Muis, Franco & Geirus, 2011; Stahl, 2009). Hence there is a need to examine scientific epistemological beliefs of middle school students by using a domain-focused frame and more current instrument. At the same time providing more current data about scientific epistemological beliefs of middle school might be useful for science teachers in designing their courses in line with epistemological beliefs of their students and might provide evidence for existent literature. Therefore the purpose of this study is to determine scientific epistemological beliefs of middle school students.

Rationale of the Study

Buehl and Alexander (2006) assert that individuals have both domain-general and domain-dependent epistemological beliefs. Hofer (2006) classifies domain-dependent epistemological beliefs as disciplinary beliefs and discipline-specific epistemological beliefs. When considered discipline-specific nature of epistemological beliefs, value of assessing science-specific epistemological beliefs can be seen as a requirement for further decisions about the relationship between the scientific epistemological beliefs and, teaching and learning science. Studying the relationship between the scientific epistemological beliefs and, teaching and learning science has importance since scientific epistemological beliefs of the students are associated with their perceptions of learning environment (Tsai, 2000), use of deep or surface learning strategies (Chen & Chen, 2014), self-efficacy in learning physics and attitudes towards physics (Kapucu & Bahcıvan, 2015), use of science for their daily life problems and science achievement (Evcim, Turgut & Sahin, 2011). We have limited number of the studies focusing on the relationship between scientific epistemological beliefs of the students and other variables regarding learning science. Before making further researcher on the relationships determining scientific epistemological beliefs by using more current and science-specific instruments might be useful for the researchers and science teachers who are interested in scientific epistemological beliefs of middle school students. This way might also contribute to the studies focusing on defining scientific epistemological beliefs.

Method of the Study

In this study descriptive cross-sectional research method was used. Four hundred thirty one middle school students participated in the research. To make the research feasible for the researcher (time, effort and money), a convenient sampling method was used (Frankel & Wallen, 2006). In the research the data about students' personal characteristics and their epistemological beliefs were collected by personal information form and scientific epistemological beliefs scale. Descriptive values about participants are represented in table 1.

Table 1. Descriptive values about participants.

Grade Level	Number of the Participants		%	
5. grade	34		7.9	
6. grade	138		32.0	
7. grade	110		25.5	
8. grade	149		34.6	
Gender				
Female	227		52.7	
Male	204		47.3	
Parent Educational Level	**Mother**	**Father**	**Mother (%)**	**Father (%)**
Illiterate	13	6	3.0	1.4
Literate without schooling	13	7	3.0	1.6
Elementary school	157	105	36.4	24.4
Middle school	69	70	16.0	16.2
High school	108	123	25.1	28.5
University	64	100	14.8	23.2
Master and PhD Degree	7	20	1.6	4.6
Classes taken about epistemology				
Yes	0		0.00	
No	431		100.0	
Participation in conferences about epistemology				
Yes	0		0.00	
No	431		100.0	
Total	***431***		***100.0***	

When table 1 is examined it can be seen that the study mostly consists of sixth and eighth grade students. Also the percentages of male and female students are very close to each other, and the parents are mostly elementary school, high school or university level graduates. Moreover none of the students participated in a class or conference about epistemology before.

Instruments

In the study personal information form with questions regarding grade level, gender, parent educational level, and class and conference participation situations about epistemology was prepared by the researchers. The form was applied before collecting data by the scientific epistemological beliefs scale. Scientific epistemological beliefs scale was developed by Conley, Pintrich, Vekiri and Harrison (2004) and adapted into Turkish by Kurt (2009). The scale involves Likert type 26 items. Despite the fact that the scale was adapted into Turkish before, reliability and validity evidence regarding our sample were collected again due to a new group for scale application. The scale items are seen in table 2.

Table 2. Items of scientific epistemological beliefs scale.

	Read the sentences below and put an X on the box you personally think is correct. Put a single X per question.	I definitely disagree.	I disagree.	I am hesitant.	I agree.	I definitely agree.
1	All people have to believe in what scientists say.*					
2	İn science all questions have only one correct answer.*					
3	In scientific experiments ideas, events are thought of and come forth from curiosity.					
4	Today, some scientific thoughts are different from what scientists thought of in the past.					
5	Before starting an experiment there is benefit in having a idea about it first.					
6	You have to believe what is written in scientific books.*					
7	The most important part of a scientific study is to reach a correct answer.*					
8	Information in scientific book can change sometimes.					
9	In scientific studies there can be different ways to test thoughts.					
10	In science class everything the teacher says is correct.*					
11	Thoughts in science come forth from your own experiments and questions you ask yourself.					
12	Scientists know practically everything there is to know about science, there's nothing left to learn.*					
13	There are some questions that even scientists cannot answer.					
14	Experimenting and scientific studies are an important part of learning how things happen.					
15	You can be sure that everything you read in a science book is corrent.*					
16	Scientific information is always correct.*					
17	Scientific thoughts may sometimes change.					
18	To be sure about results, it is good to redo experiments.					
19	Only scientists know for sure what is correct in science.					
20	The result a scientist receives from an experiment is the only answer.*					
21	New discoveries may change what scientists thought to be true.					
22	Good ideas in science are not only from scientists but may also be from normal people.					
23	Scientists always agree upon what is correct and what isn't in science.*					
24	Best conclusions are based on evidence obtained from the results of different experiments.					
25	Scientists may change what they accept as correct in science.					
26	Experimenting is the best way to be sure if something is correct or not.*					

*: Negative items

Validity Study

Confirmatory factor analysis was applied to validate the scores taken from the scale. Original scale has four dimensions; verification, improvement, certainty and resource. Table 3, table 4, table 5 and table 6 represent the items per dimension.

Table 3. Verification dimension

Item number	Items
3	In scientific experiments ideas, events are thought of and come forth from curiosity.
9	In scientific studies there can be different ways to test thoughts.
11	Thoughts in science come forth from your own experiments and questions you ask yourself.
14	Experimenting and scientific studies are an important part of learning how things happen.
18	To be sure about results, it is good to redo experiments.
22	Good ideas in science are not only from scientists but may also be from normal people.
24	Best conclusions are based on evidence obtained from the results of different experiments.
26	Experimenting is the best way to be sure if something is correct or not.*

*: Negative items

In table 3 the verification dimension is represented with 8 items. Items of improvement dimension are shown in table 4.

Table 4. Improvement dimension

Item Number	Items
4	Today, some scientific thoughts are different from what scientists thought of in the past.
8	Information in scientific book can change sometimes.
13	There are some questions that even scientists cannot answer.
17	Scientific thoughts may sometimes change.
21	New discoveries may change what scientists thought to be true.
25	Scientists may change what they accept as correct in science.

Table 4 shows the development dimension with 6 items. The items of resource dimension are shown in table 5.

Table5. Resource dimension

Item Number	Items
1	All people have to believe in what scientists say *
6	You have to believe what is written in scientific books.*
10	In science class everything the teacher says is correct.*
15	You can be sure that everything you read in a science book is corrent.*
19	Only scientists know for sure what is correct in science.

*: Negative items

In table 5 the resource dimension is represented with 5 items. The items of certainty dimension are shown in table 6.

Table 6: Certainty dimension

Item Number	Items
2	In science all questions only have one correct answer.*
12	Scientists know practically everything there is to know about science, there's nothing left to learn.*
16	Scientific information is always correct.*
20	The result a scientist receives from a experiment is the only answer.*
23	Scientists always agree upon what is correct and what isn't in science.*

*: Negative items

In table 6 the certainty dimension is represented with 5 items. Based on the study of Conley, Pintrich, Vekiri and Harrison (2004), shape of confirmatory factor analysis model was determined as in the following figure (Figure 1).

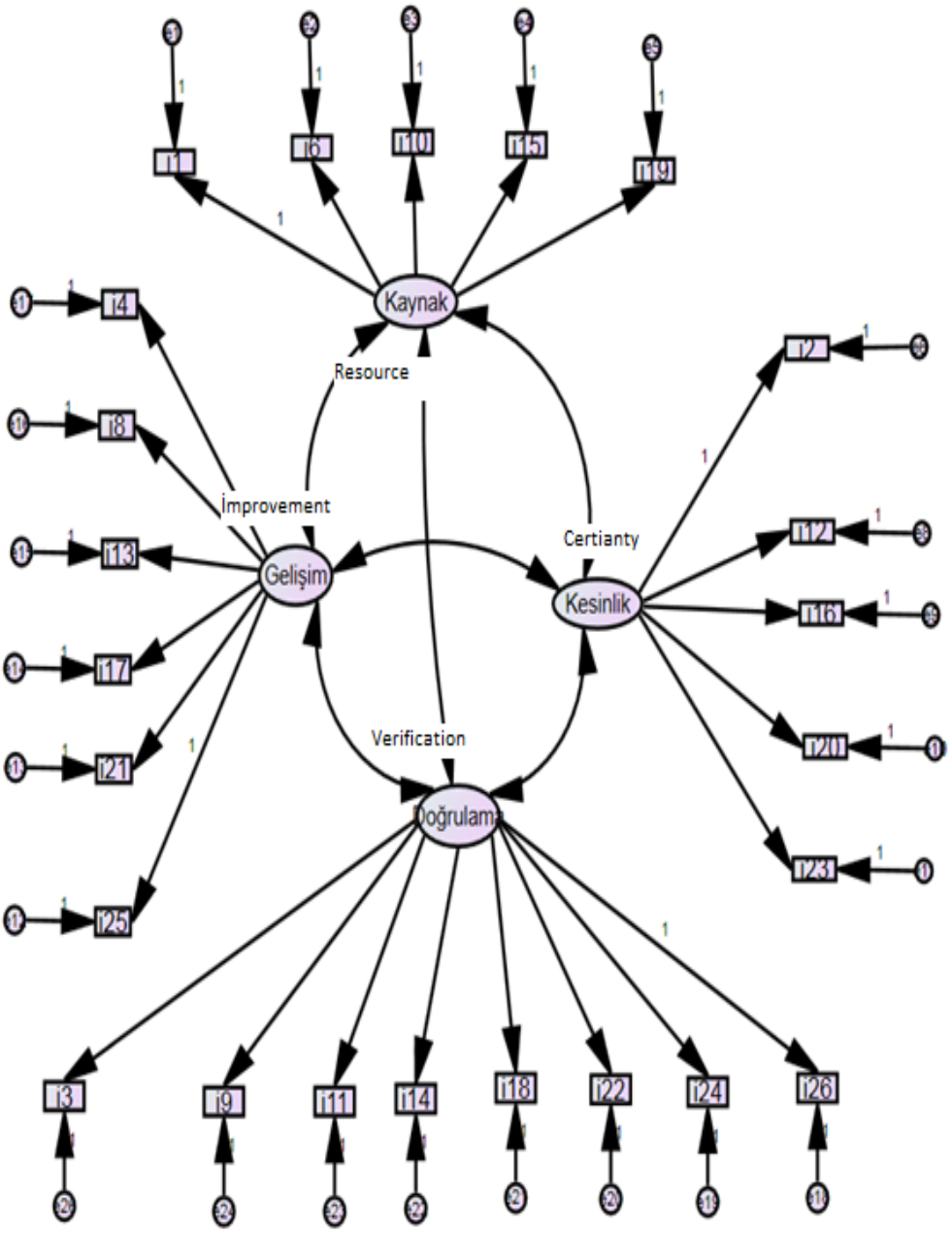

Figure 1. Model suggested for confirmatory factor analysis.

The analysis findings involving standardized results are shown in figure 2.

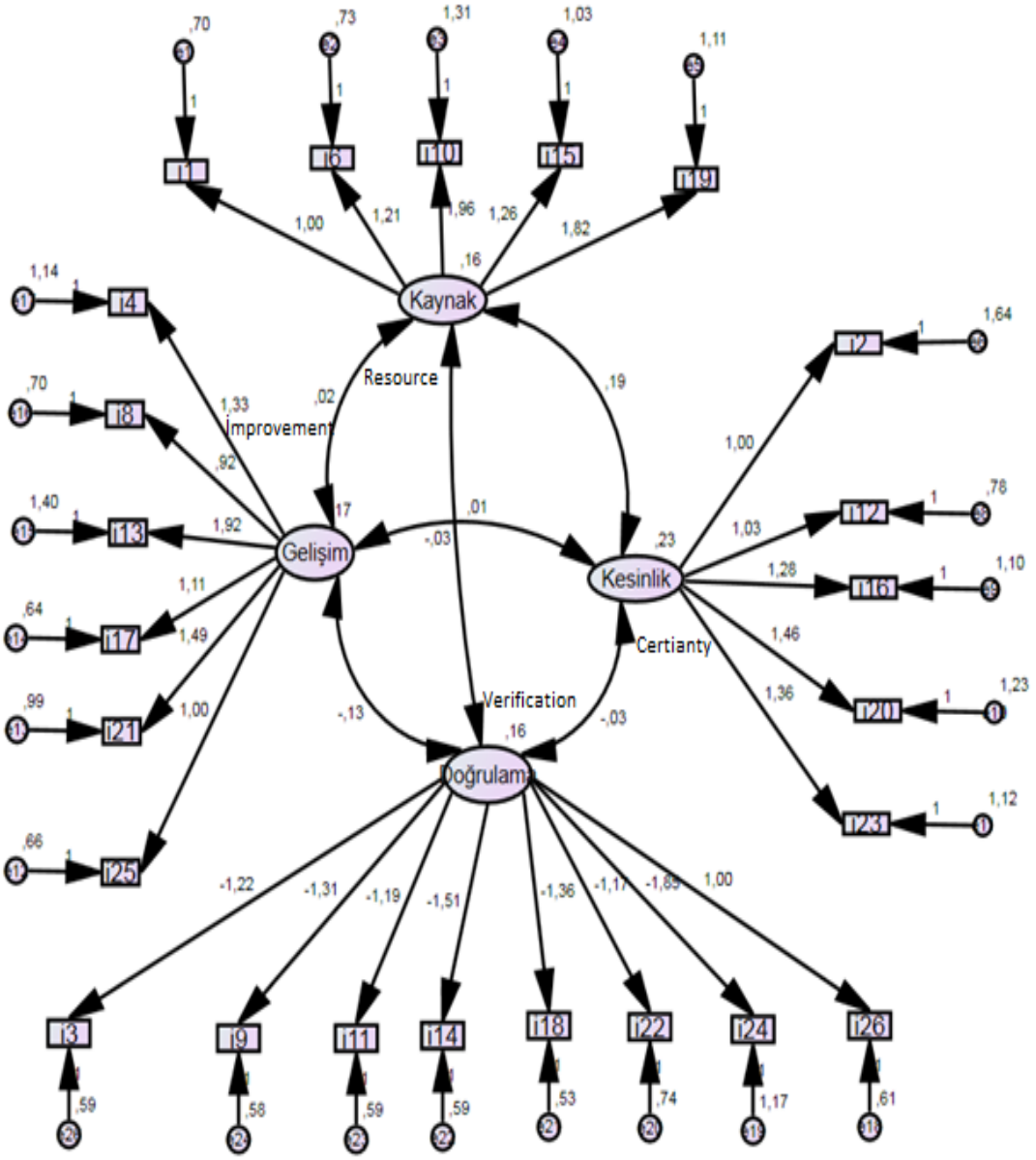

Figure 2. Findings of the tested model for confirmatory factor analysis.

In the study CMIN/DF, CFI, GFI and RMSEA indexes were tested. Values of CFI and GFI fit indexes are 0.90 and 0.85 respectively and they are in acceptable ranges (Hoyle, 2000; Marsh, Balla & McDonald, 1988). The RMSRA as a non-fit index value is 0.05 and this value is acceptable since it should be lower than 0.08 (Raykov & Marcoulides, 2006).Table 7 represents values of CMIN/DF, CFI, GFI and RMSEA indexes.

Table 7. Fit and non-fit index statistics.

Fit and non-fit indexes	Values
CMIN/DF	2.138
GFI	.906
CFI	.848
RMSEA	.O51

Reliability and Descriptive Statistics of Participant's Scientific Epistemological Belief Scores
Cronbach alpha reliability for total scores taken from the scale was calculated. In table 8, Cronbach alpha reliability and descriptive statistics of total score taken from the scale are shown.

Table 8. Reliability for total score gained from the scale and descriptive statistics

Number of Items	26
Cronbach Alpha	0.772
Mean	88.72
Variance	164.60
Standard Deviation	12.83

When table 8 is examined it is observed that Cronbach Alpha value (0.772) is in an acceptable range. Hatcher and Stepanski (1994) state that Cronbach Alpha as low as 0.55 and more is an acceptable value. Preliminary analysis showed that two items should be removed from the scale. Fifth item was removed from the scale due to its non-normal distribution in the sample while seventh item was removed from the scale due to its low factor load. Therefore number of the item in the scale decreased to 24 items. Then Cronbach alpha reliability and descriptive statistics of total score taken from the scale were calculated again. The results are shown in table 9.

Table 9. Reliability for total score gained from the scale and descriptive statistics after removing 5th and 7th items.

Number of Items	24
Cronbach Alpha	0.782
Mean	82.40
Variance	155.02
Standard Deviation	12.45

When table 9 is seen it is observed that Cronbach Alpha value (0.782) is in an acceptable range (Hatcher & Stepanski, 1994). After the total scores were considered for reliability study, reliability for the dimensions was calculated. In table 10 Cronbach Alpha reliability and descriptive statistics for the dimensions are shown.

Table 10. Reliability and descriptive statistics regarding the dimensions.

Verification Dimension	***Number of Items***	8 (i3,i9,i11,i14,i18,i22,i24,i26)
	Cronbach Alpha	0.68
	Mean	28.05
	Variance	33.8
	Standard Deviation	5.81
Improvement Dimension	***Number of Items***	6 (i4, i8, i13, i17,i21, i25)
	Cronbach Alpha	0.71
	Mean	20.70
	Variance	23.01
	Standard Deviation	4.79
Resource Dimension	***Number of Items***	5(i1, i6, i10, i15, i19)
	Cronbach Alpha	0.67
	Mean	17.25
	Variance	16.82
	Standard Deviation	4.10
Certainty Dimension	***Number of Items***	5 (i2, i12, i16, i20, i23)
	Cronbach Alpha	0.61
	Mean	16.40
	Variance	16.19
	Standard Deviation	4.02

Reliability analysis per dimension showed that Cronbach Alpha values for the dimensions are acceptable for using the scores in further analysis (Hatcher & Stepanski, 1994).

FINDINGS

Findings of the study are represented under this title, first scores on scientific epistemological beliefs of the participants will be represented in table 11 and then the correlational findings regarding the dimensions will be represented in table 12.

Table 11. Mean and standard deviations of the participants' scores on scientific epistemological beliefs scale

Dimensions	***Mean***	***Standard Deviation***
Total score	3.43	0.51
Resource Dimension	3.44	0.82
Improvement Dimension	3.45	0.79
Verification Dimension	3.50	0.72
Certainty Dimension	3.27	0.80

Table 11 shows that mean of the total scores and the mean of the scores per dimension are seen to be close to each other. To be able to say that individuals have acceptable constructivist scientific epistemological beliefs, the mean values have to be 4 or more. In table 11 it was seen that mean of the total score of the participant was 3.43. This means that the students do not have sophisticated scientific epistemological beliefs in general. When the dimensions are taken into consideration it can be seen that the means for the dimensions ranges from 3.27 to 3.50. It can be said that the students also do not have sophisticated beliefs about resource, improvement, verification and certainty dimensions. For examining the associations between the scores on the dimensions, Pearson correlations were calculated. Table 12 represents correlation values between the dimensions.

Table 12. Correlation analysis results

Dimensions	***Values***
Resource-Improvement	.09
Resource-Certainty	*.98*
Certainty-Verification	-.14
Improvement-Verification	-*.82*
Resource-Verification	-.17
Certainty-Improvement	.04

According to table 12, it is obvious that there is a strong positive correlation between resource and certainty dimensions. Also there is a strong negative correlation between improvement and verification dimensions. The weakest correlation is between certainty and improvement dimensions. This situation shows that students' epistemological beliefs are partially associated. It is a sign for partially independent beliefs in a personal epistemological beliefs system.

DISCUSSION AND SUGGESTIONS

The results of this study suggested partially independent beliefs of the students and showed existence of unsophisticated scientific epistemological beliefs about resource, improvement, verification and certainty dimensions. These findings are not in line with previous studies on domain-general epistemological beliefs (Schommer-Aikins, Duell & Hutter, 2005; Evcim, Turgut & Şahin, 2011). Actually differences in the results of the studies about scientific epistemological beliefs and domain-general epistemological beliefs might be associated with data collection ways. Since majority of the previous studies used domain-general scales, short answer forms, written essays and interviews (Brownlee, 2001; Schommer & Walker, 1995; Roth & Roychoudhury, 1994). However the studies domain-specific epistemological beliefs have conflicting findings with the results of this study, Boz, Aydemir and Aydemir (2001)'s study showed that 4th, 6th and 8th grade students had sophisticated epistemological beliefs about certainty and resources dimensions. Similarly Sadıç, Çam and Topçu (2012) showed that 4th, 6th and 8th grade student's beliefs about 'resources" dimension were sophisticated. In fact one of the studies is in line with the findings of this study. In this study Yeşilyurt (2013) determined epistemological beliefs of 7th and 8th grade students (n=324) and he found that the students does not have sophisticated epistemological beliefs regarding verification dimension. The difference in the results of this

study and previous studies on scientific epistemological beliefs might be related to involvement of fifth grades in this study and the regions from where the data are collected.

When looked at the aspect of the study, theoretical structure of scientific epistemological beliefs was also supported by the data of this study. Since the correlational findings of this study supported partially independent and multidimensional beliefs system of Schommer (1990). Hence findings of this study represent science-specific epistemological beliefs of the students for teachers and researchers. This study used a current and domain-dependent scale for measuring scientific epistemological beliefs. The scale developed by Conley et al. (2004) contributes to this study due to its current and domain-dependent items. So the findings of this study provided more current data about science-specific epistemological beliefs of middle school students.

When the results on validity and reliability are examined, it can be said that evidence from confirmatory factor analysis supports validity of the data in this study. However scores about verification and resource dimensions have low Cronbach Alpa values (0.685 and 0.684 respectively). It might be a limitation for the study, but Hatcher and Stepanski (1994) suggested that Cronbach Alpha value as low as 0.55 is acceptable. At the same time we found higher reliability value (0.71) for improvement dimension than Conley et al. (2004)'s finding. In conclusion it can be seen that both literature support and evidence for reliability values of the scores in this study was provided, so it can be claimed that the instrument measured reliably epistemological beliefs. Another important point in the study is that high positive correlation (0.97) between resource and certainty dimensions is in line with the finding of Conley et al. (2004). They found this value as 0.90. Hence consistency evidence of this study supports Conley et al. (2004)'s study. However collinearity problem should be taken into consideration in following researches.

In summary the findings of this study gave valuable and current evidence about scientific epistemological beliefs of Turkish middle school students. The findings might be informing for science teachers for designing their courses and science education researchers for extending evidence about domain-dependent epistemological beliefs. Especially designing constructivist teaching requires information about epistemological beliefs of the students. Since epistemological beliefs are associated with course or teaching preferences of the students (Tsai, 1999; Tsai, 2000). In spite of these contributions of this study, it is not based on random sampling and the instruments have limited reliability evidence for future studies.

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M-LEARNING DEVICES AND THEIR IMPACT ON POSTGRADUATE RESEARCHERS SCOPE FOR IMPROVED INTEGRATION IN THE RESEARCH COMMUNITY

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ABSTRACT

M-Learning is a widely topical concept in the 21st century, where people no longer need to worry about having to sit in a static location to explore new knowledge. This study have sought to explore the impact of M-learning devices like iPhone and a range of tablets on postgraduate researchers' ability to engage positively in the research community. In order to do this, efforts have been made to provide a range of definitions, and with some highlights of potential benefits and limitations of M-Learning devices in general.

Literature review on the topic was also explored, and with particular reference to virtual research medium in facilitating continuous support to postgraduate researchers seeking knowledge to engage themselves actively in research using all forms of technology, but specifically M-Learning devices. The distributed structured questionnaire helped immensely in enabling researchers to express their opinions both on the impacts of M-Learning devices on their ability to access resources and the diverse community of postgraduate researchers far and wide. Responses from the interview enabled association between variables to be explored and with recommendations proposed to address the way forward to assist postgraduate researchers increase their prospects of exploring and sharing ideas within the virtual research community.

Key words: M-Learning; E-Learning; Research Community; Technology; Personal Digital Assistant [PDA]; Correlation

INTRODUCTION

M-Learning is a common phenomenon used by researchers in the current Information Age, in which all aspects of people's lives is determined by access to portable devices of some sort. The use of desktop machines were very prevalent in the early eighties to the nineties but not so much flexible in their capacity to allow engagement with users across the world of academia. Different researchers have provided definition[s] to address the situation of M-learning in context:

El-Hussein and Cronje (2010), gave a concise interpretation of M-learning drawing upon Alexander study (2004), reflecting in context, the Higher Education setting "as any form of learning that happens when mediated through a mobile devices, and a form of learning that established the legitimacy of normative learners".

Behera (2013) research on the other hand, defined the concept of M-Learning as the "*acquisition of any knowledge and skills through using mobile technology anytime, anywhere that result in alteration of behaviour*".

In their research, Mahamad, Ibrahim and Taib (2010), concisely explained the concept of M-Learning as a new learning paradigm of the new social structure with mobile and wireless technologies. Commonly stressed point about the definitions cited is in relation to the '*mobility and flexibility*' of M-Learning devices to users. This means that regardless of place or time, users can access information (whether online, audio or textual) on their device to further their knowledge or skills.

The use of M-Learning devices has brought about great benefits to users in the 21st century age of advanced technology which includes; increase mobility for users, environmentally sleek design requiring less need for printing, ease of users time to acquire skills, scope for an enhancement in a wider audience of learners who may take an interest in sharing knowledge and the flexibility for users to decide on their preferred mode of interaction, for example, social interaction or listening to audio contents while on the move[1].

Distinctive feature between e-learning and M-Learning

It is a common mistake for people and particularly the novice to think of M-Learning as simply e-learning. The commonality between them is the fact that users at some point in time needs access to the Internet to access resources. The highlighted points below provide a summary of the main distinctive features between e-learning and M-learning (Mobl21: undated):

E-learning features	**M-learning features**
- lecture in classrooms and Internet labs - Email to email - Private location - Travel time to reach Internet site	- learning anywhere, anytime - Instantaneous messaging - No geographic boundaries - No travel time with wireless internet connectivity

Lately, the use of portable devices such as smart cellular phones like iPhone, Samsung Galaxy and even tablets such as iPad, are all making it possible for learning to be made flexible and on-the-go with the advantage of WIFI facility to reach out easily to the virtual community from any location and at any time.

M-Learning Community for Postgraduate Researchers

M-Learning devices have contributed immensely to flexible means of access to learning opportunities for postgraduate researchers who, in centuries gone were entwined in a situation of isolation during their pursuance for new contributions to a discipline of knowledge.

Traxler (2011) explained the emergence of "M-Learning in the UK, and also in the EU and Northern America as a legacy from its respective community of e-learning". The flexibility attributed to learning devices, and more so portable items like mobile phones meant that learning is no longer restricted to the confines of a restricted location which is dependent on access to the connection of Internet port or network. In developed economies such as the UK, and its EU / Northern American counterparts have seen an escalation in the use of M-Learning devices to help drive / foster postgraduate researchers' interests in integrating with a wide pool of researchers through various medium like social networking sites and more research intensive communities like 'Research-Gate' and facebook community for academic discussion groups.

Research intensive community such as Research-Gate have made it possible for researchers across remote communities around the world to take themselves in proactive steps to engage with colleagues in the research community using flexible devices like mobiles phone while on the go. There is a wide pool of researcher across

[1] El-Hussein and Cronje, 2010 and Behera, 2013. Based on Jackson [2015] study on the Learning Technologies, the use of M-Learning devices can also support learning flexibility.
Behera also went further to outline some of common limitations associated with the use of M-Learning technology / devices; limited storage capacity when compared to a laptop or desktop device, sometimes encounter issues of network connectivity, smaller LCD displays and creating strains on the users' eyes to adjust to contents and most obvious of it all, is its astronomical costs especially for new launch of device in the market and which then make it easier to be classed as outdated.

the world who seemed to be making active use of mobile friendly devices to access the research community so as to enable them to raise pertinent questions involving research tasks.

Hypothesis:
The research has been developed on the main premise that M-Learning devices is making a headway in enhancing flexibility in learning opportunities for postgraduate researchers and through this, they have been able to make use of wide range of mobile devices to penetrate into the online community to further their quest for knowledge through questions posed to participants in the virtual research community.

Therefore, the question for this study is stated thus: ***Does access to internet ready M-Learning devices helps researchers increase their scope to the research community?***

Research Aim and Objectives
This research seeks to explore correlation between M-learning usage and their desired usage in supporting the postgraduate researcher's scope to integrate well, particularly in terms of accessing resources and also, actively engaging with other researchers on research-based topical issues.

- Explore the relevance of M-learning devices to the postgraduate researcher regardless of location.
- Assess level of correlation between internet ready M-learning device usage and their scope in fostering researchers' integration into the community of higher knowledge.

A REVIEW OF LITERATURE ON M-LEARNING
With the advent of the information age, and more so in the late nineties to present day, learning seemed to be taking a different dimension to such an extent that, learning no longer need to take place in the confine of a fixed location, as most users are now resorting to using M-Learning devices like iPhone, iPad and other forms of tablets to explore their quest for knowledge. As illustrated in Herrington and Herrington's [2007] study report, the expansion of mobile technology in education is very much linked to educational theories as outlined below:

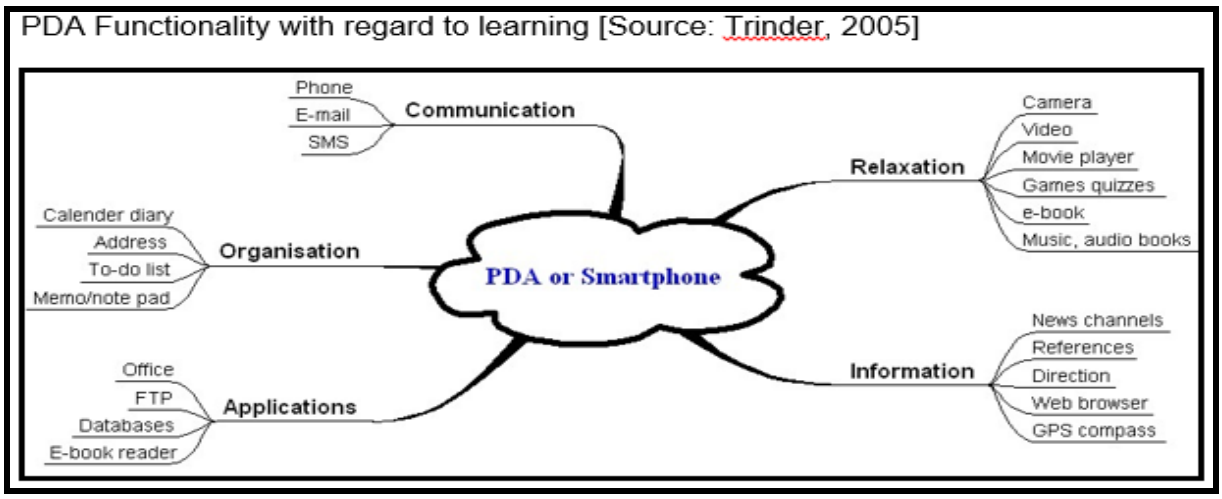
1. Behaviourist theory activities that promote learning as a change in observable actions - with the use of mobile phone and PDA for learning language.
2. Constructivist - activities in which learners actively construct new ideas or concepts based on previous and current knowledge - e.g., environmental detection using GPS.
3. Situated learning activities that promote learning within an authentic context and culture - e.g., role playing using mobile phone.
4. Collaborative learning activities that promote learning through social interaction - e.g., use of PDA by teachers to beam questions.
5. Informal & lifelong learning activities that promote learning outside a dedicated learning environment and formal curriculum - use of mobile phone to deliver interaction.
6. Learning and teaching support activities that assist in the coordination of learners and resources for learning activities - e.g., use of PDA to retrieve courseware or providing feedback to students.

As explained by Herrington and Herrington [2007], M-technology usage in higher education, is still considered to be didactic, rather than taking a 'constructivist approach'[2], and as such, their interpretation is viewed as regressive.

[2] That which allows individual to be more proactive in using their knowledge to develop knowledge through the use of mobile led-devices such as PDA

Higher education throughout the developed nations, particularly in the US and UK are now encouraged to use electronic means of learning [Kissinger, 2013], particularly with the use of e-book as a cost-saving means and the development of M-learning technology which is now easing the students' ability to access learning materials anywhere, and at any point in time. In most cases, these materials can also be downloaded and read offline by users which reduce pressure on those learners, who for some reason cannot afford the cost of 24 hours internet access.

El-Hussein and Cronje (2010) addressed a tripartite interpretation of M-learning devices which includes "*mobility of technology, mobility of learner and mobility of learning*" in the H.E sector. In their study, they made clear reference to Trinder's [2005. p. 7] diagram as shown below, with features that allow users to be able to make active use of mobile devices for easy means of flexible learning.



With reference to the above diagram, the use of M-Learning device[s] such as a PDA or smart phone brings with it extra benefit to the user, for example, easy means of communication [with the use of email, SMS and voice], comfort to the user [with incorporated features like camera, video and even e-book for a user to save downloadable materials], organisation of work schedule, and particularly in relation to postgraduate researchers [user of incorporated features like diary, address book and note pad], incorporated applications [Office compatible features] and information reference [such as web browser for the user to access internet materials at the location of their convenience].

METHODOLOGY OF INQUIRY

General Methodology & the Study Community (Population and Sample)

The study was initiated on the main premise of finding out the associated impact of Internet-ready M-Learning device(s) on postgraduate researchers' scope of reaching out [far and wide] to the research community. In order to do this, the study then developed a survey approach using online platform such as personal email contacts, CANVAS, Research-Gate and Twitter to reach out to the intended participants. Despite the limitation of the adopted method, the use of virtual medium to access participants was considered one of the preferred medium because, it was considered a low cost means of reaching out to the targeted population group (in this case, postgraduate research students).

A total of 35 questionnaires were distributed to 'postgraduate researchers'[3] in the four major continents (Africa, Asia, Europe and America). Greater response emphasis was given to researchers from the African continent as it is still perceived as the region where internet access for higher education is restricted due to poor investment by

[3] Purely those on research-only intensive courses such as MA, M.Sc, PhD and other professional doctorate courses

national governments. The intention was to get up to 30 responses (approximately 86%) from postgraduate researchers across the study community, which incorporate researchers based in the identified population regions. Despite other questions were asked, which involved basic statistical interpretations, the main focus was geared toward exploring correlation between ready Internet M-Learning devices, amount of time spent on the internet and accessibility to the research community.

Study design

The design was set purely to mirror an 'action research'[4] approach, with questions posed specifically to postgraduate researchers about their use of online community to enhance their research capacity. These were then extracted for analysis with the aim of establishing degree of correlation / regression between identified variables. Likert-scaling[5] style questions were also used to address concepts involving the exploration of correlation between variables, and with some straightforward questions requiring '*Yes / No*' response(s), and the region / location of participants whiles engaging in their research studies.

Limitations

The research was limited in its scope of reaching out to more participants far and wide. Responses took longer than expected to be returned, and the analysis was mainly done using limited feature of MS Excel rather than a more sophisticated application like SPSS / Stata.

ANALYSIS OF RESULT AND DISCUSSION

The analysis was conducted using advanced add-in feature like **Correlation** in MS Excel application and backed by simple descriptive statistics like percentages to gauge rate of responses. The emphasis was focused on the '*Pearson's product-moment correlation (r)*' to determine degree of relationships relating to questions 5, 6 and 7 on the questionnaire. The r-statistic may take either positive or negative direction illustrated simply in linear form [-1 to 0 to +1]. The closer the r-coefficient towards ± 1, regardless of the direction, the stronger the coefficient of association, whereas r = 0, indicates no association[6]. A positive correlation would indicate that an increase in the first variable would result in an increase in the second variable, thus resulting in a direct relation between the two variables. On the converse, a negative coefficient of r would still imply a degree of relationship, but indirect with an increase in the first variable resulting in a decrease in the second. One limitation associated with the use of the Pearson's correlation is that it does not show degree of non-linearity between the variables examined, and therefore, may result in some form of false reaching conclusion of cause-and-effect in the existentiality of the degree of relationship[7].

Causation effect (As x increase, y also increase)!!!

Result and Discussion

Based on the order of questions in the questionnaire, a straightforward statistical interpretation was used for '***Q1 to Q4***' as summarised below. Question 1 shows 82% of **Male** responding Yes to their access to Internet ready

[4] Robson (1997) - it incorporate a spiral of planning, acting, observing and reflective approach on the part of the researcher with his / her involvement with the research community. This method to no surprise, have also come under intense criticism by researchers like Adelman (1989), who sees it as inward looking and 'ahistorical', the likelihood of poor quality due to its limited scientific approach. Despite this criticism, the advantage to this research is that, it provide the scope by which M-Learning usage to postgraduate can be explored in the light of enabling them to achieve their desired end goal of achieving a valuable research qualification.

[5] Ibid - Otherwise known as 'the summated rating', was developed in the 1930s by Likert, with its advantage of incorporating differentiated ratings within questions posed or concepts.

[6] Taylor (1990)

[7] Ibid.

M-Learning device as opposed 18% of **Female** usage for their postgraduate research studies. With reference to question 2 which deals with location of participant, the information below provide a summary of the analysis.

Africa: 15%
Asia: 6%
Europe: 33%
N. America: 28%
S. America: 5%
Pacific (Australia / New Zealand): 3%

Surprisingly, a lot more postgraduate researchers from the African continent seemed to be actively engaged in research intensive learning. The 15% outcome can be highly linked to the author's interaction with researchers from the African continent, and his own background as an African.

Analysed response for **Question 3**, in relation to type of postgraduate research course is provided below.

MA: 3%
MSc: 7%
PhD (pt/ft): 45%
PhD (dist): 12%
Prof. Doct.: 33%

Higher percentage [90% for all doctorate responses] of the responses indicate enrolment on a postgraduate doctorate researchers study.

Analysed response for Question 4, indicate the following summarised results:

Yes: 87%
No: 13%

It is quite obvious that more postgraduate researchers are becoming more reliant on M-Learning device[s] of some sort to progress on with their research work, which indicate flexibility in their approach to accessing learning materials and also engaging with the wider research community.

Questions 5 to 7 as shown in the analysed table below, provide a statistical coefficient of degree of relationship between variables.

The result indicate a very strong positive relationship (0.92 approximately) between Internet ready M-Learning device and potential of postgraduate researcher to access the virtual research community for support. There is approximately 0.6 degree of strength in relationship between hours spent and ready Internet M-Learning device. This is a reasonably strong relationship, and such average strength in relationship may likely be explained in terms of quality of time spent rather than the length of time spent by a postgraduate researcher accessing information on an M-Learning device. There is also approximately a 0.6 strong degree of relationship between hours spent and the potential for postgraduate researchers to access information on their M-Learning device.

As explained by Taylor (1990), the limitation of the correlation coefficient outcomes from Q5-Q7 must not be ignored as the result did not show a clear explanation of unexplained non-linearity in the relationships. On a positive note, the outcomes revealed a good base to explore further the usage and potential benefits of Internet ready M-Learning devices to postgraduate researchers regardless of the location / country in which they may choose to pursue their studies.

	Internet Ready [Score: 0 - 100]	*hours spent [hrs daily]*	*Research potential [%]*
Internet Ready [Score: 0 - 100]	1		
hours spent [hrs daily]	0.595108491	1	
Research potential [%]	0.919538296	0.602299026	1

Basic statistical percentage was used to interpret result for **Question 8** with outcome showing 93% [with the remaining 7% stating ***No*** as a response] of potential respondents recommending Internet M-Learning as a good means of helping postgraduate researchers access the research community for resources. This is very important as it serve as a good base to explore further the relevance of mobile devices, not only to the researchers in the

higher education sector, but also as a means of developing research potential for learning in schools and the wider world of work. It actually addresses the real concerns faced by postgraduate researchers with respect to fear about the virtual world of work, particularly those who have stated NO in their response.

CONCLUSION AND RECOMMENDATIONS

In conclusion, this study has provided a starting point of exploring the potential relevance of Internet M-Learning device to the research community. The analysis also reveal that the availability of portable learning device does not necessarily lead to an increase time spent but more so about quality of usage in ensuring substantive research is carried out to help researchers' explore their knowledge quest in the virtual community.

On this note, and particularly with reference to question 8 on the questionnaire, it is quite evident that M-Learning devices of all sorts are very essential to the postgraduate researcher, more so in terms of their flexibility in accessing information in the virtual community. A further investigation will be very useful to explore specific focus on the relevance of M—learning devices in supporting the distance learning researcher to make substantial progress through constructive feedback from research supervisors.

Acknowledgements: I wish to thank everyone for their contribution to this work and particularly so, efforts taken in responding to questions.

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APPENDIX 1: QUESTIONNAIRE

Q1. Please specify your gender.

Male
Female

Q2. Which continent are you currently studying from?

Africa
Asia
South Pacific (Australia / New Zealand)
Europe
North America
South America

Q3. What level of postgraduate research course do you pursue?

MA by research
MSc by research
PhD (full / part time)
PhD (distance learning)
Professional doctorate (Please specify.....)

Q4. Do you have possession of M-Learning (hand-held) device to help you with your research work?

Yes
No

Q5. If Yes, please rate the degree of Internet ready or accessible (with Wifi feature) on a scale of 0 - 100%?

Response:.....

Q6. Please specify on average number of hours spent per day.

Response:.....

Q7. Please rate the degree of its potential usage for your research undertakings to access the virtual research community.

Response: .....

Q8. Would you recommend it as a means of engaging easily with the research community?

Yes
No

APPENDIX 2: RESULT TABLE FOR Q5 - Q7

Internet Ready [Score: 0 - 100]	Hours spent per day [out of 24 hrs]	Research potential [%]
90	15	90
85	18	95
75	19	80
75	14	80
50	13	50
95	19	95
75	14	80
65	14	75
68	15	78
98	16	92
90	20	93
80	15	80
83	16	90
90	16	95
65	15	76
90	16	95
84	17	90
74	15	85
80	15	90

OPINIONS OF PRIMARY SCHOOL STUDENTS ABOUT SCHOOL GUIDANCE AND COUNSELING SERVICES AND THE LEVEL OF UTILIZATION

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ABSTRACT The purpose of this research is to evaluate the school guidance and counseling services with different variables in accordance with primary school children who are between 7-10 ages and to determine the level of utilization. One hundred students who are 2nd, 3rd, and 4th class in Kocaeli, Çayırova participated to study According to the results of the study, 62% of the students stated the school counselor's duty as running seminary, %38 of the students stated as listening and solving the problems. While most of the students state that everybody can benefit from the guidance and counselling service, there are also some students who say that only problematic students can benefit from it. When the applications are analyzed, mostly parents apllied, then the teachers and students are applied respectively. The reasons of the applications; it is seen that while the reason of the parents's application is mostly domestic problems, the reason of the teachers' application is academic failure. When the expectations of the students are taken into consideration, it is seen that all students' utilization of the guidance and counseling services and running more seminary.
Key Words: guidance and psychological counseling primary, school

INTRODUCTION

In our era, according to a large majority of the educators, the most important, effective and common innovation that was brought by the last half century is the entry of the activities that is determined as Guidance and Psyhological Counseling in the schools. Briefly, guidance and counseling is composed of educational, sociological, and psychological services for learning and the learner development as a whole. (Özoğlu, 2007)

Bakırcıoğlu(2003) describes the guidance as a regular process of helping that is carried out by the experts for the recognition the possibilities around, development the potentialities, solving the problems and self realization of an individual.

Guidance and psychological counseling in education means a support for choosing the appropriate course in accordence with the students' own need and interests, achieving academic superiority, taking advantage of maximum benefits and activities of an enterprise resources, gaining the appropriate study habits and pariticipating the class and extracurricular activities in a satisfactory way. (Barki & Mukhopadhyay, 2008)

Altough guidance and psychological counseling services have taken part in Turkey more than 50 years, they have started to be in the public eye since 21th century properly and so effectiveness and efficiency have been greatly increased. Altough the guidance and psychological counseling services are more active in schools in our day, they can provide service in Industry, Justice and Health Institutions.

Guidance and psychological counseling services primarily started to conduct in high schools and then after going into operation the continuos education in 1997, this service is also included in primary schools.

But the guidance and psychological counseling services in primary schools are conducted more in middle school level rather than elemantary school level. The number of school counselors working in primary school increased in the last 2 years with the entry into effect of the 4+4+4 education system in 2012. Because this increase occurs in recent years, parents, even teachers and administrators in the primary schools don't know the school counselor's funcitons, duties and under what circumstances they should contact.

Research and studies about the adequecy of the works in guidance and psychological counseling services show increase with understanding the importance of the guidance and psychological counseling services in schools. Despite there are many studies and researches about the school counselors in middle and high schools because of the exams in 8th grade and 12th grade, the studies and researches about the school counselors in primary schools are negligible. Due to the fact that the education system in Turkey is exam-oriented, many school counselors in primary schools are not considered necessary by the administrators in their schools. So this condition can be reflected indirectly on parents and the students.

Kuzgun(2013) explains the reasons of the importance of the guidance and psycholohical counseling services in primary schools as can be seen below.

- Values, attitudes and habits such as personality traits are gained at an early age, undesirables are altered in the future with great difficulty. Therefore personality education should start at an early age.
- Primary education is an educational level that is seen individual differences between the students of in many ways. In order to be adapted to the individual requirements of teaching, the characteristic of the students should be examined in a systematic way.
- After graduating from primary school, the individuals who have problems with options about academic education, vocational education or working directly should be provided to help for decision.

This study is regarded as significant in regard to evaluate the guidance and psychological counseling services in primary schools with the views the students. As a result of the reserach findings, ; Views and attitudes of the primary school students about the guidance services' duties will be revealed, which areas they benefit from the guidance and counseling services will be determined and this study will shed light on the anyone who work in the primary school level by examining the shortcomings of guidance services in primary schools. At the same time, this study will also shed light on new researches that will done about guidance and psychological counseling services at the primary school level.

The Purpose of Research

The purpose of this research is to evaluate the guidance and psychological counseling services with the views of the primary school children who are between 7- 10 ages in accordence with different variables and to determine the levels of benefits. This analysis of this research will adress these objectives.

-to determine the primary school children's perceptions of the school

- to determine the gender of the students who benefit from the school guidance and counseling.

- to determine distribution of manner of applıcatıon to the guıdance and psychologıcal counselıng servıce

- to figure out the deficiency of the school guidance and counseling services in the eyes of the primary school children.

METHODOLOGY

RESEARCH MODEL

This research configured using qualitative research methods and techniques. Yıldırım ve Şimşek(2006) expresses the qualitative research method as a qualitative process in which qualitative data collection methods such as observation, interview and document analysis are used.

It is purposed that the determining the perceptions of the primary school students towards guidance and psychological counseling services and the level of benefit from this service. In accordence with this purpose, the answers from the students were analyzed with descriptive analysis methods. The themes were developed from the answers of the students and the datas were interpreted.

PARTICIPANTS

Participants consisted of students in second, third and fourth grades from the public schools in 2014-2015. For practicality, purposes convenient sampling method was used. One hundred students from the primary schools that have guidance and psychological counseling service were involved. Because of the inability of expressing themselves and the duration of benefiting from guidance and psychological counseling, the first grade students and the students who have mental retardation did not include in this research.

INSTRUMENT

A semi-structured interview schedule developed in order to get the required data from the participants and the students were interwieved one to one.

DATA COLLECTION AND ANALYSIS

The students in research is interviewed between February and April in 2015. Before the interview, the purpose of the study, the content, the confidentality and the process of the interview are explanied to the students by the researcher. Guidance and psychological counseling service is used for the interview and the answers of the students are recorded in written. Each interviews is enumareted and each participants are encoded as K1,K2 etc. The duration of each interview is about 15-20 minutes. When the students did not want to answer the questions, these students were not included. The same questions in the interview form were asked to all students. If the students struggled for answering a question, the question was asked again with different words and explanations.

To analyze the data collection, descriptive analiysis were conducted. Descriptive analysis is a type of qualitative data analysis including summary and interpretation of the data according to predetermined themes that have been obtained by various data collection techniques. In this research, researchers often quate directly the views of the individuals in order to reflect strikingly. (Özdemir,2010)

After the interviews, the written datas were tabulated in appropriate with the purpose of the resarch and the common categories were determined. Although each category is expressed in percentages, these percentages can not be used to make statistical comparisons as in quantitative research. The purpose of percentages in this research is to sequence and to give an idea in terms of the features of quantitative research.

The datas were organized in tables. Interwieved students were coded by beginning from K1 to K100. The quotations of the students' views were used for interpreting the datas.

RESULTS

The findings obtained in this study, are presented in tables in such a way as to explain the purpose of the research and then, the description is made. Before the findings of the interview results, personal information of the students is given.

NUMERICAL VALUES ABOUT THE STUDENTS IN RESEARCH GROUP

The demographic information and the percentile of the students participating the research is shown in Table 1.

Table 1: The numerical value of the students who interviewed

		2TH CLASS	**3RD CLASS**	**4TH CLASS**	**TOTAL**	**PERCENTAGE**
		n1	**n2**	**n3**	**N**	
GENDER	Boy	13	21	16	**50**	**50**
	Girl	10	15	25	**50**	**50**
	TOTAL	**23**	**36**	**41**	**100**	**100**

As shown in Table 1, 50 % of the participants are girls and 50% of the participants are boys. 23 students from second grade, 36 students from third grade and 41 students from fourth grade took part in the research.

THE PERCEPTIONS OF THE PRIMARY SCHOOL CHILDREN ABOUT THE DUTIES OF THE SCHOOL COUNSELOR.

The students' perceptions about the duties of the school counselor is shown in Table 2.

Table 2: the perception of the students about the school counselor's duties.

CATEGORIES	STUDENTS WHO ARE INCLUDED IN THE CATEGORY	PERCENTAGE
Running Seminary	K5,K6,K7,K8,K9,K10,K13,K14,K15,K17,K19,K21,K22,K26,K27,K29,K31,K32,K33,K34,K35, K41,K43,,K45,K47,K49,K51,K52,K55,K57,K58,K59,K60,K64,K65,K67,K68,K69,K70,K71,K73,K74,K75, K76,K77,K78,K79,K80,K81,K85, K87,K88,K89,K90,K91,K92, K93, K94,K95,K96,K97,K100	62
Listening problems, solving problems and counseling with students.	K3,K4,K9,K16,K17,K18,K19,K24,K25,K28,K32, K36,K38,K43,K46,K48,K49,K51,K52,K57,K60,K63,K64,K68,K69,K70,K74,K75,K78,K80,K88,K90, K95,K96,K97,K98,	36
Guidance and psychological counseling with families	K17,K20,K50,K52,K55,K56,K59,K60,K61,K62,K64,K66,K68,K73,K75,K76,K77,K79,K80,K83,K84, K85,K86,K87,K89,K92,K94,K99,K100	29
Preparing The Study Program	K11,K17,K20,K31,K37,K39,K42, K43,K44,K49,K52,K54,K56,K57,K61,K65,K76,K83,K91,K93	20
Smooting The Students and Making Them Happy.	K6,K8,K24,K30,K36,K38,K43,K47,K63,K69,K74, K81, K84,K85,K86,K90,K92,K95	18
Removing The Tensions Between Students.	K1,K3,K5,K6,K8,K10,K11,K14,K27,K29,K30, K55,K73,K77,K79,K87,K94	17
Preaparing The Panel.	K18,K29, K82,K84,K86,K88,K89,K90,K93,	9
Conducting Test	K48,K50,K51,K60,K64,K70,K87,	7
Supporting The Unsuccesful Students	K11,K35, K71,K76,K91,K93	6
Providing The Adaptation of The First Class Students.	K1, K21	2

All the students were asked that what you think about the school counselor's work.

62% of the students answered this question as running seminary. The second grade students, K94, who participated the research said that;

"our school counselor comes to the class, she gives information about our private space and what we should do if we are so angry to our friedns and shows some pictures and movies from projection."

36% of the students gave answer as listening problems, solving problems and counseling with students. The fourth grade student,K46, answered that;

"She makes me think different about my problems. We try to find different solutions form my problems. "

29% of the students answered as guidance and psychological counseling with families. While the third grade student, K20, expressed that; *"She talks with us, then she calls our father and mother and she explains how they should behave us truely."* , the fourth grade student, K68, said that ; *" She runs also seminary for our family as running us. She advices them about being true and good family."*

20% of the students answered as preparing the study program. The second grade student, K91, mentioned that;

"if children don't understand the lessons or children don't want to study, she prepares a program which consists lessons and times. When children follow this program, they paint the clocks which is on the study program. "

18% of the students mentioned about the role of school counselor as smooting the students and making them happy. The third grade student, K8, said that;

"she brings the children who are angry and fight with their friends to her room, she gives chance them to think about their mistakes and then children become calm."

17 % of the students answered as removing the tensions between students. The second grade student,K79, said that;

"when we have a fight with a friend, , she gives an aggrement to us. We sign this paper and we become friend again."

The other answers about the role of the school counselor are preparing the panel, conducting test, supporting the unsuccesful students and providing the adaptation of the first grade students. The quatations from the students about the school counselor's roles;

"school counselor prepares the panel. There are some topics on this panel such as hygene, friendship and addiction. We read them in our spare time."(K93)

"Our school counselor conducts tests and survey in our class. She evaluates them and shares with us."(K48)

" School counselor sends for the unlettered, study with them. Some of them learn some of them don't. "(K35)

" if a student does not want to come school, the school counselor struggles for adaptating this child. She makes a lot of funny activities in order to provide the adaptation."(K21)

THE OPINIONS OF THE PRIMARY SCHOOL STUDENTS ABOUT WHO MIGHT BENEFIT FROM THE GUIDANCE ANS PSYCHOLOGICAL COUNSELING

Students' opinions on who might benefit from the guidance and psychological counseling are given in Table 3.

Table 3: The opinions of the primary school students about who might benefit from the guidance and psychological counseling.

CATEGORIES	STUDENTS WHO ARE INCLUDED IN THE CATEGORY	PERCENTAGE
Everyone	K1,K6,K10,K14,K18,K21,K23,K24,K25,K29,K32,K33,K36,K37,K40,K43,K46,K48,K50,K51,K52,K55,K60,K62,K64,K66,K68,K70,K74,K75,K77,K79,K80,K85,K87,K89,K92,K95,K96 K97,K98,	**41**
Just the problematic students.(the students who are crying, fighting etc..)	K3,K4,K7,K9,K11,K15,K19,K20,K22, K27,K34,K35,K38,K39,K41,K42,K53, K54,K57,K58,K63,K69,K71,K76, K78,K81,K82,K86, K90,K91,K94,K100.	**32**
The students who are referred by the teachers or the students who send for by the school counselor.	K5,K8,K12,K17,K30,K31,K35,K44,K47,K49,K59,K61,K65,K67,K73,K82,K83,K88,K93,K99.	**20**
No idea.	K2,K13,K28,K45,K84,	**5**

All the students shared their ideas about who benefit from the guidance and psychological counseling service. 41% of the students stated everyone's benefit. The second grade students, K89, said that;

" everone can go to the guidance and psychological but firstly she/he must get permission from his/her teacher."

32% of the students answered as just the problematic students' benefit.. The third grade students,K38, mentioned that;

"the people who have problems can benefit. Why does a person go to the counseling service if there is no any problem? Nonsense."

The participants in this research who answer the students who are referred by the teachers or the students who send for by the school counselor can benefit from the counseling services are 20%. The fourth grade students, K99;

"All students can not go to the guidance and psychological counseling services. If either teacher of school counselor calls the student, he/she can go. Otherwise, it is unnecessary."

DISTRIBUTION OF MANNER OF APPLICATION TO THE GUIDANCE AND PSYCHOLOGICAL COUNSELING SERVICE

The applications' distribution of the students in this research who have been benefited from the guidance and psychological counseling services are given in Table 4.

Table 4: The distribution of the applications to the guidance and psychological counseling services.

MANNER OF APPLICATION	SINIF DÜZEYİ			YÜZDELİK
	2TH CLASS	3TH CLASS	4TH CLASS	
Parent Application	7	9	9	**25**
Student Application	2	5	10	**17**
Teacher Application	5	7	4	**16**
TOTAL	**14**	**21**	**23**	

58% of students in this research have benefited from counseling and guidance services at least once during their lives.

When it is analyzed in accordance with grade level, 5% of the second grade students were refered by teacher, 7% of the second grade students were refered by parent and 2% of the students applied themselves.

7% of the third grade students were refered by teacher, 9% of the students were refered by parent and 5% of the students applied themselves.

4% of the fourth grade students were refered by teacher, 9% of the students were refered by parent and the 10% of the students applied themselves.

As the total application is taken into consideration, %25 of the applications were from parent, 17% of the applications were from students and 16% of the applications were from teachers.

THE GENDER DISTRIBUTION OF THE APPLICATIONS TO THE PSYCHOLOGICAL COUNSELING AND GUIDANCE SERVICE

The gender distribution of the students who benefited from the guidance and psychological counseling service is shown in Table 5.

Table 5: Gender distribution of the applications to the psychological and guidance service.

GRADE GENDER	2TH GRADE	3RD GRADE	4TH GRADE	TOTAL
GIRL	8	12	15	35
BOY	6	9	8	23
TOTAL	14	21	23	58

58 % of the students in this research have benefited from the guidance and psychological service.

When it is analyzed in accordance with grade level, there are 14 students who have benefited from the guidance and psychological services in second grade. 8% of these students are girl and 6% of these students are boy.

There are 21 students who have benefited from the guidance and counseling service in third grade. 12% of these students were girl and 9% of these students were boy.

There are 23 students who have benefited from the guidance and counseling service in fourth grade. 15% of these students were girl. 8% of these students were boy.

THE REASONS OF THE TEACHERS' REFERING THE STUDENTS TO THE GUIDANCE AND PSYCHOLOGICAL COUNSEING SERVICES

It is seen that there are 16 students who were refered by their teachers in this research sample. The reasons of the refering these students are indicated in Table 6.

Table 6: The Reasons Of The Teachers' Refering The Students To The Guıdance And Psychologıcal Counseıng Servıce

REASONS	THE NUMBER OF STUDENTS	PERCENTAGE
Academic Failiure	6	%37
İnsufficent Friendship	4	%25
Family Problems	3	%19
Test Anxiety	2	%13
Low Self-esteem	1	%6

The students who were refered by their teachers were consulted because of the academic failiure, ,insufficient friendship, family problems, test anxiety and low self-esteem in descending order.

Generally, the students who were refered because of the insufficient friendship, low-self esteem and test anxiety are not knowledgeable with the reason of their coming to the service. Otherwise, the students who were refered because of family problems and academic failiure are aware of these problems and some of these students stated that;

"…My teacher sent me to the school counselor in order to do a study programme. We designed a programme together. I sometimes go up to my school counselor."(K38)

"…I didn't want to talk with anybody after my father's death. My teacher wanted me to explain my school counselor. We talked and I started to keep a diary…"(K18)

"…My mother and father got divorced.. When I missed my father and I wanted to go to him, my teacher sent to the school counselor. My school counselor was listening to me and she was talking with my mother.(K84)

THE REASONS OF THE PARENTS' REFERING THE STUDENTS TO THE GUIDANCE AND PSYCHOLOGICAL COUNSEING SERVICES.

It is seen that there are 25 students who were refered by their parents in this research sample. The reasons of refering these students are shown in Tablo 6.

Table 7: The Reasons Of The Parents' Referıng The Students To The Guıdance And Psychologıcal Counseıng Servıces.

REASONS	THE NUMBER OF STUDENTS	PERCENTAGE
Family Problems	7	%28
Academic Failiure, Unwillingness to Study	6	%24
İnsufficent Friendship,	5	%20
Nail biting, thumbsicking etc.	5	%20
Low Selfesteem	2	%8

The students who were refered by their parents were consulted because of the family problems, academic failiure-unwillingness to study, insufficent friendship, nail biting etc, and low self-esteem in descending order.

While most students did not know that they were refered to the guidance and psychological counseling service by their parents, there are those who know this referral.

The fourth grade students K37, One of the students who know this referral, said that;

"I was not able to study in my home. My parent was yelling to me. However; I was doing many things instead of studying. Then my mother talked with the school counselor. My school counselor called me and we did a study program. Now I am trying to stick to this schedule."

STUDENTS' EXPECTATION FROM THE GUIDANCE AND PSYCHOLOGICAL COUNSELING SERVICE

The expectations of the primary school students from the guidance and psycholocigal counseling service are shown in Table 7.

Table 8: Primary School Students' Expectations.

EXPECTATIONS	NUMBER	PERCENTAGE
Benefiting of The All Students From The Service and Most Frequent Counseling.	30	%30
Running More Seminar	28	%28
The absence of any expectation	13	%13
Accesibility everytime.	12	%12
Preparing More Panel	7	%7
Solving of students' problems.	6	%6
Conducting more tests, surveys etc.	4	%4

All the students in this research were asked that what your expectations from the guidance ans psychological counseling service in your school are. 30% of these students answered this question as benefiting of the all students from the service ans most frequent counseling. The fourth grade student, K40, indicated that;

" I want to go to the counseling service everday and everyday I want to talk with the school counselor. Sometimes, she is not counselting with me during two or three weeks."

The rests are to run more seminar, the absence of any expectation, accesibility everytime, preaparing more panel, solving of the students' problems and to conduct more tests, surveys etc. Some quatations of the students are shown below.

" She can come our class and explain more things. My class loves her and she also becomes our teacher."(K35)

"It is enough for me. I don't want anything."(K58,K28)

"I expect to find the school counselor in her room whenever I go. But she is not in her room most of time. She has interview or she is in the class"(K62)

"The guidance and psychological counseling service solves all the problems of the students."(K84)

"I like answering the tests and surveys. I want more." (K70,K18)

RESULTS AND DISCUSSION

In the study, the duties of the school counselor in primary school were evaluated according to the views of primary school students, The majority of the students states that the school counselor's duty is to give seminar. Besides, the other duties are to listen problems, solve problems and counsel with students , guidance and psychological counseling with families, preparing the study program, smooting the students and making them happy., removing the tensions between students., preaparing the panel, conducting test, supporting the unsuccesful students, providing the adaptation of the first class students When it is evaluated the results , school counselors in primary school have individual counseling at most. It is accepted that individual counseling is the most important task for the guidance and psychological counselor.

The question of "who can benefit from the guidance and psychological counseling service" is evaluated througout the eyes of the students. Research findings shows that majority of the students thinks everybody's being able to benefit from the service. %32 of the students states the only problematic students' being able to benefit from service. The reason of this finding can be shown as inadequate number of school counselors for the student population and thus the school counselors' spending mostly their time with the problematic students. 32% of the students show paralellism with the result of Can (2010)'s study. Can(2010) finds that teachers refer generally the problematic students to the guidance and psychological counseling service.

Distribution of the manner of applıcatıon to the guıdance and psychologıcal counselıng service is examined. As a result of findings, it is seen that most application to the guidance and psychological counseling service is from the parents, then students' application and teachers' application in ascending order.

This result shows parallesim with the study of Kaya, Macit ve Siyez (2012) . The reasons of a large number of parents application can be thought as the convencience of consultation with parents and the high concern of the parents about their children in the primary level. When it is examined the reasons of the teachers' refer, it is the academic failiure, ,insufficient friendship, family problems, test anxiety and low self-esteem in descending order. The reasons of the parents' refer are the family problems, academic failiure-unwillingness to study, insufficent friendship, nail biting etc. and low self-esteem in descending order. The study of Macit ve Siyez (2012) is also shown that first grade students are refered by their students to the guidance and psychological counseling service because of the adaptation and learning and behavior problems.

Finally, when it is examined the expectations of the students from the guidance and psychological counseling services, it is seen that the students want mostly to benefit of the all students from the service, most frequent counseling and to run seminar. The reason of these expectations can be the less number of the school counselor again.

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READINESS AND CHALLENGES OF USING INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) IN HIGHER EDUCATION OF BANGLADESH

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ABSTRACT
Integration of ICT in Education especially in higher education is the demand of time at present as ICT is being used in many other sectors all over the world. Regarding this Government of Bangladesh is working for using ICT and implementing the Digital Bangladesh. This study was conducted to explore the use of ICT in Higher Education of Bangladesh both in academic and administrative sector. Data was collected by interviewing the teachers, questioning the staff, Focus Group Discussion (FGD) with the students and by observing the classrooms of universities and colleges. Data revealed that, each and every institution was facing the infrastructural problems in using ICT such as lack of ICT equipment, lack of manpower, lack of training and so on. Students were more interested about ICT integration in Education than the teachers and staff. Recommendations have been made based on the findings emerged from the collected data and analysis that ICT facilities need to provide in classroom for teaching-learning activities and ICT based service system should be developed and practiced in administrative and academic purposes. It was concluded that teachers remain crucial importance for continuing the improvement of quality education. Given this importance, the study then focused on ICT training on multimedia classroom management and professional development of the teachers and staff.
Keywords: Teaching Pedagogy, ICT for Higher Education, ICT development

INTRODUCTION

Education is an important factor for social and economic development, and higher education is a key area to maintain a country's competitiveness in the global economy. The demands of the 21st century pressurize higher education institutions to modernize their systems and practices. Within these developments, information and communications technology (ICT) brings a new set of challenges and pressures. There is a global trend in both educational policy and research to recognize the need to reform education from traditional paradigms of teaching and learning into more innovative forms of pedagogical practice. These areas of practice and change are often described with concepts such as information or knowledge society, emerging pedagogy and 21st-century skills (Ottestad, 2010). The demand for higher education has accelerated worldwide. Governments and universities are looking for innovative ways to increase access to higher education and improve the quality of their programs and courses. Regarding this, governments and education systems around the world take the use of Information and Communications Technologies (ICT) in university very seriously. Bangladesh, like many other countries, is investing heavily in the education system considering as one of the core strategies to alleviate poverty and facilitate development including raise the ICT skills of Bangladeshis and move towards the information society (Rahman, 2010). This is the evidence of giving importance on using ICTs in education and training to improve learning outcomes and to prepare young people for the contemporary information economy. Moreover, with the development of ICT and its use in education, the developed countries of the world change its university teaching learning and administrative activities to make it more effective. To compete with this new situation, we must introduce and use ICT properly in the existing teaching-learning process especially in the field of higher

education in Bangladesh. No doubt, in recent years ICT application appears in pedagogy and administration with such an influential means that it can progress the quality of higher education in Bangladesh.

Statement of the problem

It is supported by a good number of researches that use of ICT requires positively for quality higher education. Before ensuring the use of ICT, it is important to explore the existing facilities and the challenges to use ICT in higher education level. This includes exploring the existing infrastructure of ICT, capacity of teachers & staff on using ICT, availability of ICT facilities in the institutions and future challenges. Therefore, the study entitled *"Readiness of Information and Communications Technology (ICT) integration in Higher Education of Bangladesh"* attempts to explore the situation.

Objectives of the study

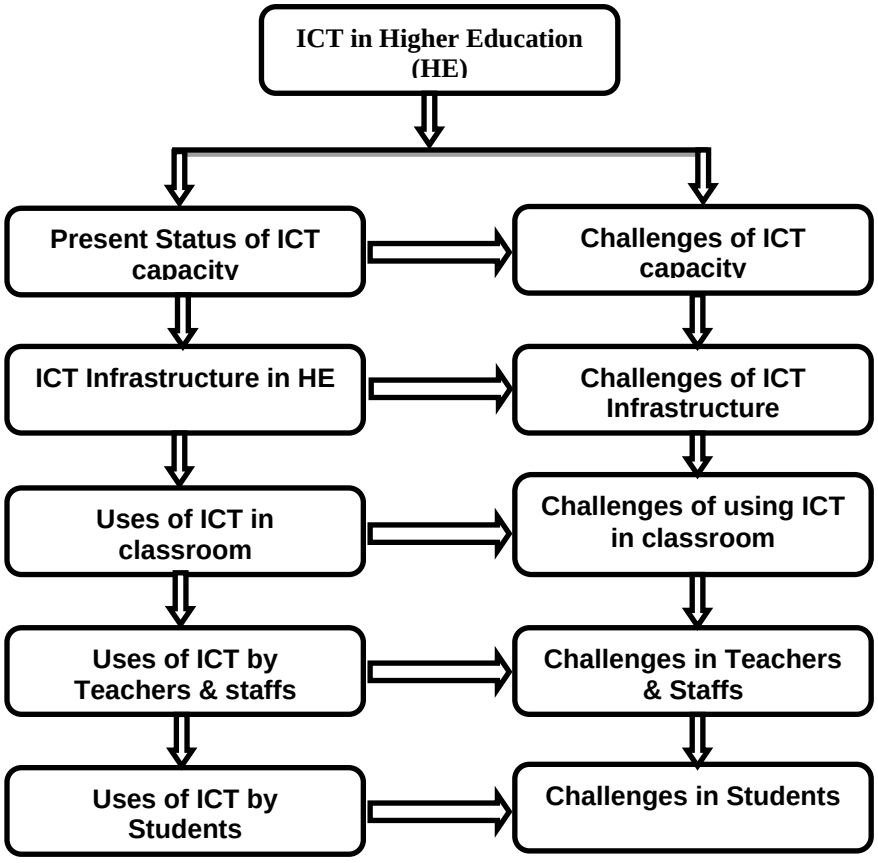
The major objective of this study was to explore the use of ICT in academic and administrative activities in higher education for quality education of Bangladesh. The major focus points were:

- to investigate the current status of availability of ICT in higher education of Bangladesh
- to explore the volume of using ICT in higher education academic and administrative activities
- to ascertain the necessary measures for improving ICT capacity in academic and administrative perspective in higher education level

Conceptual Framework

The study was proceeding based on the conceptual development regarding the main focus of the study. The conceptual framework of the study was in the following Figure 1 which was guided the study properly:

Figure 1: Conceptual development



Methodology of the study

In this qualitative and empirical research, we conducted an intensive field study and, therefore, the information presented based on both primary and secondary sources of data. Primary data was collected through questionnaire, classroom observation, Focus Group Discussion (FGD) and semi-structure interview. Triangulation approach was employed to ensure the validity of data. Moreover, a special *emphasis* was given to

the participatory approaches in all aspects of primary data collection of the study. The researchers personally visited and collected data from field. The primary sources were the institution itself, teachers, students, staffs and classroom teaching learning activities of higher education institution. The prime method of data collection was mainly participatory field investigation. Questionnaire was distributed personally and collected from the informants. The semi-structure interview was conducted and recorded. Finally, the classroom observation was held on participation by the researchers. The different categories of respondents were selected for collecting primary data which were: University Teachers, administrative staffs, Classroom/teaching learning activities and Learners/Students. The secondary data was gathered through analysis of ICT documents, national and international agreements, research reports, seminar reports, articles and government documents. It was integrated methodological approach (combining both the qualitative and quantitative methods) to explore the study concern areas. There are two kinds of higher education providing institutions in Bangladesh e.g. a) Public University b) Government College under National University. The private university is also available in Bangladesh but the expenses/fees of this university are not payable by all citizens. Thus, the public university and the College under National University are considered as the core Higher education providers in Bangladesh. Therefore, this study focused on both Public University and College under National University for generalization of theme through collecting data. Thus, five (5) public universities (Autonomous University run by the different act of Government under coordination of University Grants Commission) and 5 post graduate government colleges (Government colleges run by the Ministry of Education under National University of Government of Bangladesh) were selected purposively as the sampled for this study. Moreover, these higher education institutions were selected with the geographic coverage of Bangladesh from 4 divisions namely Dhaka, Khulna, Rajshahi, and Chittagong. Two public universities and two Government Colleges had taken from Dhaka as there were some more public universities and Government colleges in Dhaka division than other divisions. Two teachers were identified from four designated post e.g. Professor, Associate Professor, Assistant Professor and Lecturer. The stratified sampling strategy was employed for teacher sampling. There were two strata; Strata-1: One of the teachers was selected who had 0 to >5 years teaching experience and Strata-2: One of the teachers who had more than 10 years teaching experience in the Department. Thus, both new in teaching and long experienced teachers were included in the study. One classroom /teaching-learning observation activity from each higher education institution had been selected purposively. Thus, a total of (10x1) =10 classroom teaching-learning activities had been observed for collecting data. Ten students were selected as sample conveniently from each institution. Those ten students were taken on availability and their interest. Those ten students were taken on availability and their interest.

The following Table-1 represented the sample:

Table-1: Sampling at a Glance

Category of Sample	***Higher Education Institution & Respondents***	***Number of respondents***
Teachers	10 x 2	20
Staffs	10 x 1	10
Students	10 x 10	100
Classroom/teaching learning observation	10 x 1	10
Total		140

Current status of ICT in Higher Education

Availability of Computers in Offices

Many reasons have been suggested for the failure of ICT to embed more completely in educational institutions. Pelgrum (2001) reports on an international survey of teachers' perceived obstacles to using ICT and identifies three major factors: lack of resources, lack of knowledge and skills and pedagogical difficulties to integrate technology in instruction. This study found that all of the universities in Bangladesh had computers more or less. For example, most of the universities (80%) had 1-10 computers whereas a few of the universities (15%) had 11-50 computers, and very few universities (5%) had more than 50 computers. But the numbers of computer in the colleges was different than the universities. Only half (50%) of the colleges had the computers though in most of the students were deprived of the facilities of those computers. However, the computers were poorly used for the class lesson teaching-learning. Surprisingly, in a substantial number of institutions, the computers were mainly used for office (100%), Head of the departments (100%) and other teachers for their personal works in colleges. It referred that the competence factor and teachers' confidence in their skills as a major factor that conditions teachers' willingness to integrate technology in their teaching is cited by other research (Williams et al. 1998; Mooij & Smeets 2001). Dawes (2001) identifies the critical importance of the following factors as perceived barriers in teachers' use of ICT: ownership of up-to-date technology; a sense of purpose for ICT use; adequate training; realistic time management; and inclusion in supportive communities of practice. Though, data revealed

that all public universities had computers in their offices though the purpose of use and range of the computers varies.

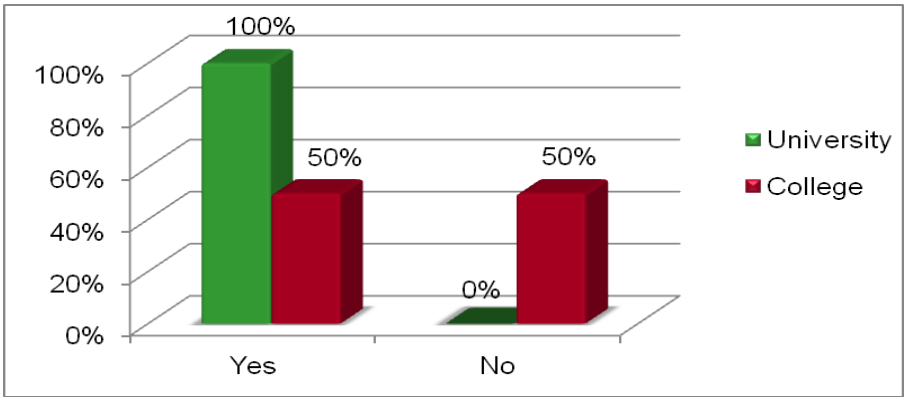


Figure 2: Current Status of Computers in the HE Institutes

Range of Computers in Department

Most of the public universities (70%) had 1-10 computers in the departments and institutes and rest of these departments of universities (20%) had more than 10 whereas only a few of the universities' (10%) institutes/departments had more than 50 computers. Specifically who had more than ten computers they had a computer lab in their departments/institutes. Some of the teachers claimed that they used their personal computer in the office. In the colleges, only a few (10%) had more than ten computers in their departments and obviously these departments had the computer laboratory. Recent research (e.g. Waite 2004) indicates that although teachers show great interest and motivation to learn about the potential of ICT, in practice, use of ICT is relatively low and it is focused on a narrow range of applications. Similarly, this study found lack of ICT infrastructure in higher education in Bangladesh.

Purpose of Computers use and keeping place

All universities had the computers but most often the students were not being benefited from available facilities. Because of, a few universities (30%) had computer laboratory for the students, and only a very few universities (10%) had computers in the classroom for teaching learning activities. This scenario was completely different for the colleges, only a very few colleges (10%) had computer laboratory for students though students reported that they could not get access to the computer laboratory, and they had no computers in the classroom. Most of the computers of all the universities were kept in the room of head of the departments (100%), head of the offices (100%) and teacher's own rooms (80%). Some university teachers reported that, sometimes they used their personal laptop in the teaching-learning activities. Whatsoever, international research suggests that ICT as a tool to promote learning is not generally well embedded in teachers' practice (Cox et al. 1999; Pedretti et al. 1999; Zhao & Cziko 2001) and that 'information technology in the classroom is used in an ineffective way and it has proven difficult to integrate within traditional curriculum settings' (Jules Van Belle & Soetaert 2001, p. 38) In the Scottish context, the evidence suggests a similar picture (Williams et al. 1998). Many teachers recognise a range of benefits for pupils and themselves in using ICT, but more often than not fail to integrate it in their teaching, continuing to 'teach ICT rather than teach with ICT'.

Integration of ICT Materials in the Class Lessons

Although around one-third (30%) of the teachers of universities stated that their universities had computers in the classrooms but during class lesson observation the researchers found only 10% had the computers in the class lesson. A few college teachers (10%) claimed that they had computers in the classroom whereas the researchers could not find any computers in the college class lessons. All university and college had electricity connection (100%), and only 20% of the university had an alternative power supply. All of the institutions (100%) both college and university had whiteboard whereas only 10% university had the computer, 30% university had the multimedia projector, and 10% had the internet connection. On the contrary, those facilities were unavailable in the colleges. Researchers could not find either Over Head Projector or smart board in any institutions. Researchers went to the renowned public universities and Colleges and found an unsatisfactory situation where as many universities and colleges were out of the consideration in rural or semi-urban areas. It has been suggested that using technology well in classrooms can even prepare students to be more effective citizens (John & Sutherland, 2004) in increasingly open and democratic societies. Research in West and Central Africa shows that, ICT for teaching and learning in university environments can contribute to developing a more student-centered approach to pedagogy (ROCARE, 2006). Teachers with pedagogical proficiency who are ready and willing to transmit knowledge and support students to construct knowledge will normally make a difference in

any learning process. In this age of ICT and its integration in the educational system, the role of the teacher, just like in the traditional classroom environment, should not be overlooked or underestimated (Boakye and Banini, 2008).

E-mail ID of the University and College Teachers

Available e-mail ID of the teachers of colleges and universities could refer that they possess a minimum ICT literacy, and it might claim of using technology in their professional and personal life. Data showed that around half (40%) of the college teachers did not have any e-mail ID, and a very few (5%) of the university teachers did not have the e-mail ID. Those who had e-mail ID, more than half of the teachers' of university (55%) and college (60%) had e-mail ID in other domain rather self domain (University 40% and college 0%). The self-domain e-mail ID proved the authorization of the teachers and staff; it is justified, trustable and permitted by the authority. This ID could enlarge the access of academic and professional activities throughout the world. However, the use of e-mail by the teachers reflects positive advancement of using technology in higher education. But the scenario was not satisfactory all over the country. The data reflected that most of the teachers (77%) had the e-mail ID (it varies from college to university) but this scenario was completely different among the staff. Only 10% staff in the universities and colleges had the email address. The volume of the using of ICT in higher education could be understood by this data. Data revealed that the use of ICT in academic purpose was quiet positive, but the administrative portion was not remarkable. More or less the teachers had the access to the internet but the staff could not get the opportunity of this service in the institutions.

Range of using Computer & Internet

Teachers used computer and internet for different purposes in the colleges (Government owned College run by the Ministry of Education under National University) and universities. Most of the teachers used the computer for printing documents and writing with MS word, and they used internet for browsing different web pages though the volume of using computer and internet varied from university to college. University teachers developed multimedia presentation whereas the college teachers did not do that though almost all the university teachers (80%) stated that they use MS-PowerPoint. The university teachers used to use YouTube, MS-Excel more than the college teachers. Surprisingly, more than half of the (60%) university teachers used Face book whereas a few portion of college teachers (20%) used to use Face book. Qualitative data further exposed that most of the university teachers used the computer for their personal purposes rather than the students' learning. However, research on ICT in education reveals that although teachers are gradually starting to integrate ICT into their teaching strategies, significant differences are observed in the way ICT is integrated in the classroom (e.g. Tondeur *et al*. 2008). Some teachers are intrinsically motivated to use ICT in educational practice, while others do not share this affinity. It has been suggested that using technology well in classrooms can even prepare students to be more effective citizens (John & Sutherland, 2004) in increasingly open and democratic societies.

Multimedia Presentation in Class lessons

Figure 3 presented that less than half of the university teachers (40%) perceived that they used the multimedia presentation in the classroom but the students claimed different from the teachers. The students stated that 20% teachers used the multimedia presentation in the teaching-learning whereas the researchers found only 15% classroom. Surprisingly, this scenario was different in the colleges (Government owned College run by the Ministry of Education under National University). Only 10% teachers replied that they used to use the multimedia presentation in the classroom, but the students and researchers could not find any. It might because of the ICT infrastructural limitation of Government Colleges. On the other hand, the skill of digital content development and pedagogical knowledge of the college teachers were not sufficient. In the Scottish context, the evidence suggests a similar picture (Williams et al. 1998). Many teachers recognise a range of benefits for pupils and themselves in using ICT, but more often than not fail to integrate it in their teaching, continuing to 'teach ICT rather than teach with ICT'. In primary schools, teachers tend to use ICT to support classroom practice, while university teachers use it more for professional development and personal use rather than for teaching. The same study showed that teachers who use a computer at home tend to use it more in classrooms and administration.

Challenges of Using Information and Communications Technology (ICT)

Usual constraints

Using ICT in the college and university was facing challenges in different ways. All the institutions faced the problems with lack of infrastructural development. The second challenge was the lack of training of teachers and staffs. Whatsoever half of the institutions did not have the access to ICT and half of the teachers and staffs stated lack of interest as another challenge. Teachers' skill and students' access were two more challenges for integrating ICT in higher education. Use of ICT in higher education was very much important, but there were so many barriers reflected through this data what need to be overcome.

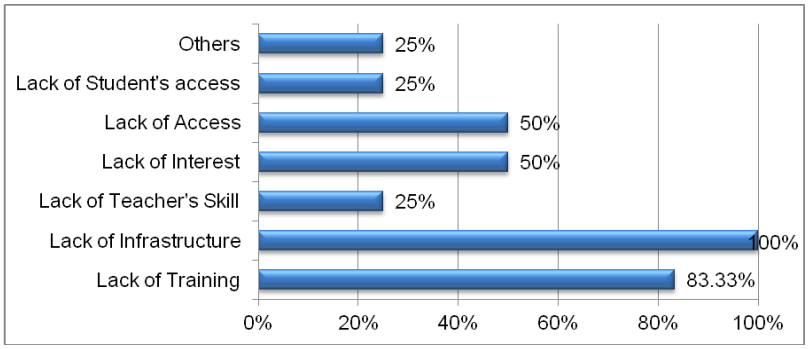


Figure 4: Challenges of Using ICT

ICT Related Teacher Training

University teachers were privileged than the college teachers in most of the cases. But interestingly university teachers were back footed in terms of teacher training than the college teachers. Half of the college teachers (50%) got ICT training whereas only one-fourth of the university teachers (25%) got this kind of training. Most of the aged teachers did not feel comfort with ICT so the situation might be lag behind. Cox et al. (1999) talk about a 'technology acceptance model', explaining the interplay between external factors and perceived usefulness and ease of use as conditioning the use of ICT. Teachers were reported to include mainly external factors (training, time to explore software, new computers, appropriate software) when discussing their progress with using ICT for literacy activities (Waite 2004). In the same study, almost 75% of the teachers considered that when using computers and the Internet, they had to change the ways in which they planned their teaching. This may suggest another factor that may act as a barrier in using ICT in classrooms, as teachers may require extra time to prepare a class.

ICT Training: Teacher and Staff

Data revealed that college teachers got ICT training (50%) that was more than the university teachers (25%) whereas the university staff received ICT training more (20%) in some extent than the college staff (10%). The teachers of the college explained that Government organized the ICT training for the teachers not for the staff; they had to get the training through individual initiatives. That explanation was also applicable for the University. All the staff replied that they had to get the training by individual initiative, and the university teachers did not feel interested in the ICT training for them.

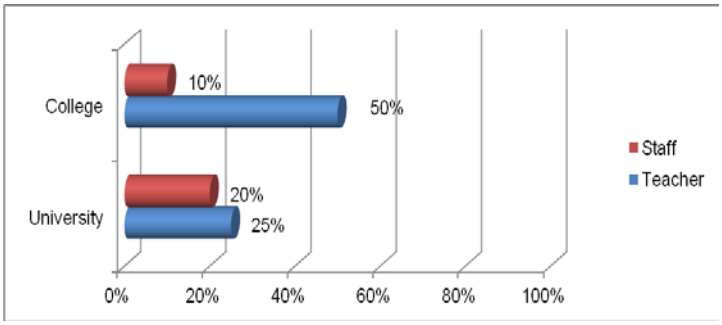


Figure 5: Status of ICT Training: Teachers and Staff

Volume of using ICT in Higher Education

All the teachers replied that they used computer in some extent in their professional lives. But data revealed that all the universities and colleges (100%) used computers always regularly for office works whereas only 50% university teachers used computer in teaching-learning process but college teachers did any. Surprisingly, these teachers used computer in their personal work in more extent (100% university teachers and 50% college teachers).

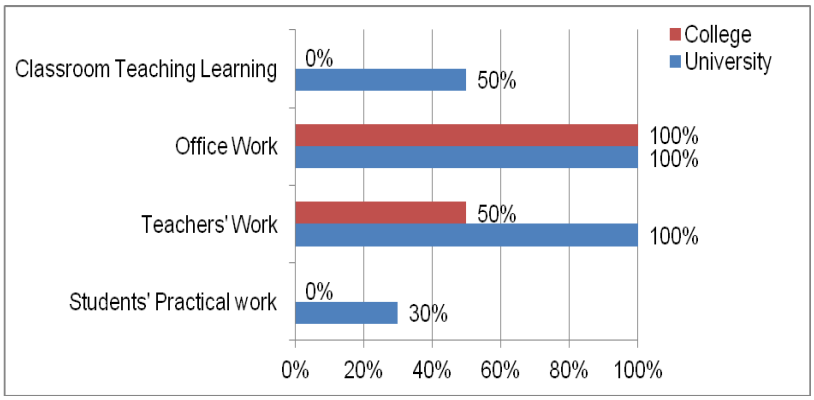


Figure 6: Uses of Computer

The practicality ethic may be strengthened, and teachers thus motivated to use ICT, when there exists a supportive community of users among practitioners who can learn collaboratively by exchanging ideas either in face-to-face discussions or in online communities, through emails, discussions, and online staff boards, etc. (Preston 1999; Leask &Younie 2001). Niederhauser and Stoddart (2001) differentiate between two main types of educational computer use: 'skill based transmission use' and 'open-ended constructivist use'. 'Skill-based computer use' aims at enhancing pupils' basic knowledge and skills by supporting drill and practice exercises and embraces two subtypes of traditional software: 'drill and practice' and 'keyboarding'. 'Open-ended computer use' presents computers as a tool for helping learners to construct their own knowledge.

Major Findings of the study

Present status of the use of ICT in Higher Education

Data revealed that every university and college had computers available for various purposes. Along with this, every university office had computers available whereas only half of the college office had the computers available. Most of the institutions were maintaining a range of 1-10 computers and more than ten computers in a very few of the institutions for their academic purposes. The computers were mainly placed in the computer laboratory where there were more than ten computers. Apart from that, there were some other places where computers were also placed such as a room of the head of the department, Teacher's room, Teachers' personal room, Office room, etc.

The computers were mainly used by the teachers in the universities whereas the computers were mainly used by the office staffs in the colleges. The other uses of computer could be described like by computer teachers, for students practical and classroom teaching-learning process. In the case of teachers' use, computers were used for their personal use only. It was also found in some extent that all the university teachers had the opportunity to use the computer. But in case of college teachers it was found that they only got the chance to use the computer in the laboratory, or they used their computer. Surprisingly, the study revealed that the majority of the teachers did not use the computer for classroom teaching-learning process. But in some cases teachers used computers for classroom teaching. It was found that various ICT facilities were available in the university classroom, but most of these ICT facilities were not found in the college classroom. The available facilities were mainly Whiteboard/Blackboard, Electricity, Computer, Alternative electricity and Internet facility. There were also some facilities available but in very few cases such as Over hade projector, Multimedia and Electric indicator, etc. These facilities mainly used by the teachers but sometimes students could also use those facilities though it was not found during classroom observation by the researchers. It was remarkable that almost all the teachers could use the computer. Among the classes observed, availability of electricity was found in all classes, white board/black board was found most of the classes, Multimedia, and overhead projector was found in few classes. It was noticeable that there was no internet connection in any classrooms that were observed.

The study showed that in most of the higher education institutions had computers and other ICT equipment available but they did not use it properly. Teachers used computers and other ICT related materials for their purposes and office staffs were doing their few official work.

Challenges of using ICT in class lessons

The study revealed the challenges of using ICT in classroom experienced by the teachers, office staffs, and students. Different types of challenges were identified for both the teachers and the students in using ICT in the classroom and the staffs in their administrative works. Some challenges were administrative, and some were from teachers and students.

The study explored that the problems of using ICT in the classroom were different in types. The problems were the lack of training, lack of ICT infrastructure, lack of teacher's skill, lack of teacher's interest and lack of interest of the authority etc. mentioned by teachers, staffs and students. On the other hand, teachers blamed others that they got enough motivation but not enough help from the others in using ICT.

The study also revealed that students' access to ICT equipment was limited to the computer laboratory only and a few universities had provided the Wi-Fi facility for the students. Students mainly faced problems such as barriers from the teachers, lack of enough computer, scorn from teachers, physical punishment from teachers, not having computer teacher for computer room, lack of teachers' interest and authority, lack of infrastructure, problems create by authority, large number of students, lack of teachers' training and skill and irresponsibility of the teachers etc.

Other Important Findings

- Data disclosed that most of the university teachers use computer in any purposes and the college teacher has the limited scope to do so. Most of them buy computers personally.
- All the department and office had computers more or less in all Universities and Colleges and computers were placed in head of the department and offices mainly. Along with this, the version/quality of available computers was very old version and there was no servicing opportunity institutionally. One of the teachers commented, *'We have computers in our office but most of them are half dead' (JUT1).*
- Teachers & Staffs used computer mainly for office work and often in classroom activities. Though all classrooms have white Board and Electricity rather than other ICT equipment e.g. Multimedia projector, Computers, Internet Connection etc.
- College teachers received ICT training more than University teachers. It was rare in case of staffs. One of the aged administrative officer claimed, *'Here more facilities for teachers so we have very limited scope for ICT training.'(RUIO2)*
- All the University and college have online based admission system no other activities. One of the students claimed, *'Now a days every administrative and academic activities (e.g. registration, transcript, certificate, classroom teaching etc.) should be ICT based in HE in lieu of traditional pen and paper based.'* (DUSFF3)
- Data revealed that ICT infrastructure was very weak in the classroom of HE institutions.

Necessary measures for improving ICT capacity of teachers and staffs

The study explored that both the teachers and the staffs suggested some necessary measures for improving ICT capacity. The suggestions include institutional infrastructure development, ICT training for teachers and staffs. The motivation of the teachers and staffs to the uses of ICT in academic and administrative activities was also included in their suggestions.

The suggestions were at least one computer in every classroom, one computer laboratory in each department for the students, internet connectivity and Wi-Fi zone in the campus, online service system for the students, ICT-based administration, awareness of the authority and staffs, having more computers in the computer laboratory, use projector for teaching learning in classroom, arrange teachers' training, creating multimedia classroom, e-learning materials, access to the e-library in the institutions' library, ensuring ICT facility by curriculum, making sure about ICT facility, improving ICT facilities, make opportunity for students to use smart board by authority, use of overhead projector, alternative electricity in classroom, opportunity for teachers and students to use ICT, government's support by providing reward for ICT skill, supplying computer in reasonable price for the teachers, encouraging students about computer studies in classroom, creating post for ICT based teachers, developing GO monitoring system, by developing infrastructure of classroom and laboratory and arranging internet facility etc.

In summary, there seem to be four major issues identified by research for introducing technology in higher education practices in Bangladesh. These are:

- *Beliefs:* personal ideas about the contribution that technology can make to the processes of teaching and learning and classroom management;
- *Experience:* own training and ICT skills, abilities to control ICT use in the classroom and cope with technical failure;
- *Resources:* available technologies in schools and ownership of own computer at home;

- *Community:* membership to a network of colleagues who can provide support, encourage use and constitute a learning community.

Recommendations

The following recommendations have been made based on the findings emerged from the collected data and analysis:

- ICT facilities need to provide in classroom for teaching learning activities including PC, laptop, internet, multimedia projector, sound system, digital content etc.
- ICT based service system should be developed and practiced in administrative and academic purposes in the higher educational institutions.
- ICT training on multimedia classroom management needs to ensure for the teachers.
- Computer based training should be provided to the staffs for efficient administrative activities.
- National central e-library needs to develop under UGC for the HE students and teachers.
- ICT infrastructure might develop strongly in every higher educational institutions including provide sufficient computer for teachers every university and college, internet facilities, provide computers in classroom so that every classroom have at least one computer, multimedia projector and develop alternative power supply for teaching learning activities.
- Government can supply computer in reasonable price for the institutions and for teachers and students.

CONCLUSION

The modern world is changing rapidly with the help of technology that is obvious and expected to all. Along with this, changes in education system happened tremendously from last few decades. Developed countries have accepted technology as tools for their furthermore development in each and every sector, but the developing countries are hesitating whether they will use it for changing the future or they will stay at the comfort zone. It is already proved by the research works that ICT can be used for positive change and for ensuring joyful learning. Integration of ICT in the education makes learning of the students visible and sustainable. ICT helps people to get world class education whenever and wherever they are. Like many other countries Bangladesh understands the emergence of using ICT for development and starts integrating with all aspects of development. Bangladesh government made ICT policy for the better use of it and it's a part of Digital Bangladesh: Vision 2021. Though the primary education sector and secondary education sector are getting the ICT facilities from the government but the higher education sector is still not getting the proper attention of the authority. To survive in this competitive world, universities are trying to cope up with ICT but the colleges are suffering still. In this 21st century, proper attention and care are needed in this level of education. Otherwise, the total education sector will suffer in the long run.

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REFLECTIONS ON REPOSITIONING CYPRUS IN ASIAN CENTURY: LEADERSHIP AND LEARNING

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ABSTRACT
This paper discusses reflections on repositioning Cyprus in Asian Century by underlying the leadership and learning. The paper highlights the development, opportunities and research issues in Cyprus. In addition, it gives insights on the quality in higher Education and e-learning practices. This paper is conceptual study which aims to draw critical reflection on leadership and learning in Cyprus. In this respect, document analysis was used as a method to examine inferences, reflections and conversation. This paper sheds a light of qualitative nature which relies on reflections, inferences and experiences. In this respect, paper gives importance to leadership and learning in Cyprus and its strategic importance in Asian Century.
Keywords: E-learning, higher education, learning, service differentiation

INTRODUCTION

Cyprus is the third largest island in the Eastern Mediterranean Sea. It is a state of the European Union. Cyprus has a strategic role in physical context in the world. It is a bridge to connect Europe, Africa, Asia. Cyprus is a developing country that fosters multicultural societal values from coming its heritage. In this respect, Cyprus has strategic innovation capacity which has intensified need for leadership for continuous learning and development.

Cyprus has potential for development and do research. In this respect, leadership has a great role for development. It is essential to use e-learning practices in the world in order to cross borders within multi cultural context. It can be centre of excellence in crises management which will facilitate secured and innovative learning spectrum on an education island.

METHOD

Qualitative research design was employed in this paper (Denzin, Lincoln, 2003). Documents and literature researches were analyzed to draw reflection on learning and leadership in Cyprus. Development, opportunities, research issues, leadership and learning, quality in higher education and e-learning practices become themes to examine repositioning Cyprus in Asian Century in relation to leadership and learning. Critical way of thinking and experiences supports to enhance reflection on the focus of the paper.

DISCUSSIONS AND CONCLUSION

Development, Opportunities and Research Issues in Cyprus

Cyprus with its strategic importance has very rich historical, cultural, economical resources. Now it is attracting the attention of international companies with its energy resources, tourism and education sectors. As Cyprus now offers

regional and global opportunities in education and also research in energy, tourism, health, it is becoming center of attraction in Asia.

In these respects, leadership plays a great role to create opportunities in Cyprus in research. European Union is providing resources in research and energy resources adding power to the continuing strategic importance in the region.

Although Cyprus has political problems, leadership has enough experience to overcome this political problem. In this respect, the learning leadership will play a great role in the future of Cyprus. In the prevention of crises and problems, education can also play a key role for continuous development in the areas of international marketing of the resources. Education, especially higher education in Cyprus can offer great opportunity in the repositioning of Cyprus in Asian Century. In addition, leadership for continuous learning and development can play a great role to protect the strategic importance of the island with the undesirable power of science, research and knowledge.

Leadership and Learning

Leadership is defined as finding a way to be successful in the society by planning the future. It is a process of social influence in accomplishing tasks.

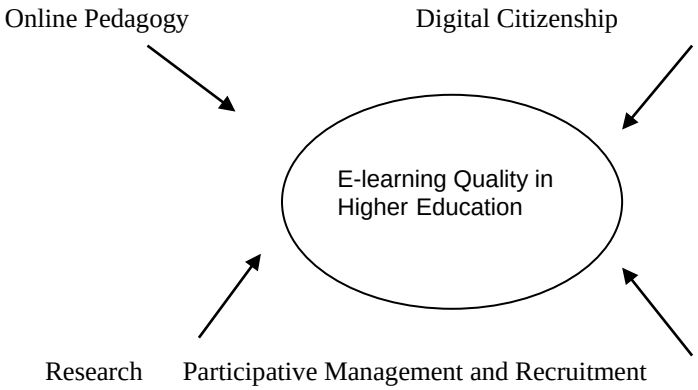
Brown, Posner (2001) discusses the importance of the relation between leadership and learning. Transformational learning concepts provide effective leadership competences. In this respect, the study of Taylor (2000) summarizes transformational learning as a learning environment for self critical reflection, self dialogue, personal exploration and experience.

Leadership is an innovation to foster learning. It facilitates entrepreneurship for the welfare of people. The study of Ashkanasy (2002) enlightens leadership in Asian century by considering lessons from the globe. Global leadership dimensions which are charismatic, team, self-protective, humane, participative, autonomous enriches Asian century leadership as a harmonic picture. It is seen that Asian economy plays a great role that organizational leadership and participative leadership are essential for continuous learning.

Barber (2009) presents a model for educating people. In the model, educated person should have critical thinking, knowledge and skills. In this respect, information technology provides opportunity in education to foster these skills. Cyprus an island of education has a competitive advantage, in the education sectors enhancing leadership skills. In addition, participative leadership is crucial for supporting continuous learning within a team spirit.

Quality in Higher Education and E-learning Practices: Cross borders

Differentiation in services in higher education, e-learning practices become elements of innovation and quality (Gazi A., Aksal A. 2011). The study of Gazi, A., Aksal. A. (2013) underlines e-learning strategy in higher education. In this study, the following model enlightens e-learning in higher education for the quality and service differentiation.



It can be seen that the use of technology for learning and teaching, online pedagogy, participative management within organization, improving employability and skills; research based activities, diffusing digital citizenship play great role for quality in higher education. In this respect, information technology can be used as a constructive solution for crossing borders, country recognition, quality and development. E-learning practices provide opportunities to cross borders in Cyprus and spread education in equality. Participative leadership facilitates opportunity for engaging the team for continuous development.

Social and systemic organization models can be adapted to higher education systems to continue learning and development (Leskiw, Singh, 2007). In this respect, development mechanism for the opportunities in Cyprus can be enhanced by leadership. Cyprus with its strategic location hosts students from more than 90 countries. It has potential to act as a global platform using independent research driven approach. This will enable Cyprus to diffuse knowledge and development. Technological innovations will contribute to reposition Cyprus in the neighboring countries in Asian region. Especially higher education, international marketing at Asia-pacific region will facilitate international integration and collaboration via networking to reshape Asia Pacific region (Chao, Samiee, Yip, 2003).

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STUDENTS' ATTITUDES TOWARD STATISTICS: A COMPARISON BETWEEN UNIVERSITIES

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ABSTRACT
This research work aims to compare students' Attitudes toward Statistics (ATS) between undergraduates of various universities. The scale proposed by Wise (1985) was utilized to measure the ATS. Two dimensions integrate the scale: Attitudes toward Field (ATF) and Attitudes toward Course (ATC). The survey was conducted among 672 students enrolled in mathematics courses at three Mexican universities: Universidad Cristóbal Colón (UCC), Universidad Politécnica de Aguascalientes (UPA), and Unidad Académica Multidisciplinaria Zona Media of the Universidad Autónoma de San Luis Potosí (UASLP). The obtained data were processed by analysis of variance (ANOVA). The results show that students' ATC are equal for the three universities; however, evidence shows that students from UPA have the most positive ATF among them.

INTRODUCTION

The fundamental purpose of this research work is to compare students' Attitudes toward Statistics (ATS) among undergraduates of the three participating Mexican universities: Universidad Cristóbal Colón (UCC), Universidad Politécnica de Aguascalientes (UPA), and Unidad Académica Multidisciplinaria Zona Media of the Universidad Autónoma de San Luis Potosí (UASLP). The first one is a private university while the others are public ones.

The scale of ATS proposed by Wise (1985) was deployed as measuring instrument. The scale consists of 29 items and integrates two sub-scales: the Attitudes toward Field (ATF) sub-scale with 20 items and the Attitudes toward Course (ATC) sub-scale with nine items. Accordingly, the students' ATS is compared based on these sub-scales, and the main variable is also twofold: *students' attitudes toward the statistical field and the course of statistics.*

REVIEW OF LITERATURE

Recently, García-Santillán, Venegas-Martínez and Escalera-Chávez (2013) noted that the statistics courses are included in almost all college programs (degree and post-degree). It is a consequence of the significant role given to statistics in the scientific and technical training of several professions. As a result, thousands of undergraduate students, even those not mathematically oriented, continue taking statistics courses worldwide (Blanco, 2008). However, the absence of an achievement in this field by students of social science, behavioral science or education, among others, is a recurring topic that teachers and researchers have highlighted in a diverse cultural context for more than 30 years. Furthermore, in this kind of students frequently is observed: emotional reactions, negative attitudes and beliefs toward statistics, reduced interest in the area, and a limited quantitative training (see Blanco, 2004).

Student's attitude has a significant influence in teaching and learning process, and scholar performance (such as variable input and processing); this justified the need to study it. Furthermore, there is a relevant argument exposed by Auzmendi (1991), Gal and Ginsburg (1994) and Gal, Ginsburg and Schau (1997) about students' attitude toward statistics. They refer to an essential component of the background of students with which they can perform academic and professional activities after their university training (cited in Blanco 2008).

In other research (Mondéjar, Vargas and Bayot, 2008) developed another test founded on the methodological principles of ATS of Wise (1985) and the attitude scale toward statistics (EAE) of Auzmendi (1992). Their aim was to develop a test on the students' ATS and analyze the influence in the way they study. Mondéjar *et al.* (2008) described the psychometric properties of this new scale to measure attitude toward statistics; they obtained an effective tool to measure or quantify students' affective factors. The results may show the level of nervousness-anxiety and in what way other factors, such as gender and the university course selected, affect the study process.

All this could change the student's attitude. Phillips (1980) refers that students' attitude can suppose an obstacle or constituted an advantage for their learning. Other studies (Roberts and Saxe 1982; Beins 1985; Wise 1985; Katz and Tomezik 1988; Vanhoof, Castro, Onghena and Verschaffel 2006; Evans 2007) showed the relationship between ATS and academic outcomes or the professional use of this tool. In other studies, in Spain, Auzmendi (1992), Sánchez-López (1996) and Gil (1999) have confirmed the existence of a positive correlation between students' attitudes and their performance.

Other authors have attempted to measure the work underlying this issue. The ATS scale of Wise (1985), and the scale of Auzmendi (1992) approach such a measure by gathering the most pertinent characteristics of students regarding their attitude toward statistics, their difficulty with the mathematical component and their prejudice before the subject. From these studies, other works have derived such as Elmore and Lewis (1991) and Schau, Stevens, Dauphinee and Del Vecchio (1995). The ATS scale is composed of 29 items forming two scales, one that measures the affective relationship with learning and cognitive, and the second one that measures the perception of the student with the use of statistics. Mondéjar, Vargas and Bayot (2008) refer that the initial validation was based on a small sample, and subsequent studies (Mondéjar and Vargas, 2010; Woehlke, 1991) verified this structure. Regarding it, the work of Gil (1999) chooses to use a structure with five factors, one emotional factor, and four factors related to the cognitive component.

García-Santillán, Venegas, Escalera and Córdova (2013) found that one of the first operative definitions and measures of ATS is the test of Roberts and Bildderbach (1980) named *Statistics Attitudes Survey (SAS)*. It is considered the first measure of a construct called *Attitude toward Statistics*, which was made for the purpose of providing a focused test in the statistical field, in order to measure this subject from the traditional and professional work of the students.

Blanco (2008) cited by García-Santillán, Escalera and Venegas (2013) carried out a critical review about students' ATS and describes some tests utilized to measure precisely the attitudes toward statistic in several kinds of students. That study refers to the research of Glencross and Cherian (1992) who cited the most significant research in the Anglo-Saxon context such as: *SAS* (Roberts and Bilderback, 1980; Robert and Saxe, 1982) which adds prior knowledge to the attitudinal components toward statistics, *ATS* (Wise, 1985), *Statistics Attitude Scale* (McCall, Madjini and Belli, 1991), *Statistics Attitude Inventory* (Zeidner, 1991), *Students' Attitudes toward Statistics* (Sutarso, 1992). Likewise, *Attitude toward Statistics* (Miller, Behrens, Green and Newman, 1993) which adds the dimensions value of statistics, aims of orientation and perceived ability, *Survey of Attitudes toward Statistics (SATS)* (Schau, Stevens, Dauphinee and Del Vecchio, 1995), and also the *Quantitative Attitudes Questionnaire* (Chang, 1996).

In another study, Estrada (2002) evaluated the attitudes of teachers and identified their relationship with personal variables like gender, previous training, specialty and the level of statistical knowledge. These results suggest that teachers have a positive attitude toward statistics. The attitude of men and women toward statistics is the same; there is no significant difference between them, and even there is no difference between students of different specialties. In contrast, various levels of statistics' previous knowledge are associated with distinct attitudes, so those who have never studied the subject have a more favorable average attitude toward it.

In other studies, Darías (2002) evaluated the ATS scale of Wise with a sample of 188 people (male and female) of the first courses in Psychology at the Universidad de la Laguna. The results obtained by principal component factor analysis and varimax rotation, show four factors that determine the attitude toward statistics, these being:

security, importance, usefulness, and wish to know. The safety factor is the one that provides more information, which allows to understand that anxiety is what determines ATS.

In the same way, Carmona (2002) evaluated ATS in psychology students, and his results show that there is no relationship between attitudes and performance; however, the study found that there are predictors, like students' math capacity, generating a better ATS. However, variables like age, gender, previous training, number of subjects taken, and grades earned in high school do not contribute to the attitude toward statistics. Moreover, Carmona (2004) conducted a systematic review of the research that provides empirical evidence about the reliability and validity of the test for measuring attitudes and anxiety toward statistics.

Muñoz (2002) evaluated students of Pedagogy, Psychology, Psychopedagogy and Social Work through a multiple regression analysis. Their findings show that attitudes are a better predictor of performance in the course, and self-efficacy, the perception of mathematical competence and the value that is given to statistics on the work, all this, could be the most significant predictors of the attitudes. These factors contribute to the total score of the scale with 65%.

Estrada, Batanero and Fortuny (2004) evaluated professors and demonstrated that ATS of future teachers, in general, is favorable. Their results show that the most contributing factor is the cognitive ability, i.e., professors believe that knowledge and skills are the most relevant variables to learn statistics, even when it is not an easy course. However, also note that when teachers are not clear about the usefulness of the statistics, the course is more challenging.

Regarding the variables that influence attitudes, the results of their studies show that the number of years of education has a statistically significant impact on the attitude, as it increases the knowledge of the subject. The ATS is more favorable because they see its usefulness in their development area, although it is always considered as difficult. However, with an emphasis on gender, there is a slight difference between men and women; women get more negative ATS than men. They also obtained significant differences depending on the specialty, because ATS vary as some specialties demand more analytical skills than others.

Vanhoof, Castro, Onghena and Verschaffel (2006) studied the relationship between attitudes toward statistics and tested results in the short and long term of university students who took statistics courses over five years in educational sciences. The attitude was evaluated with the ATS scale of Wise (1985) which includes two sub-scales: attitude toward the current course and attitude toward the field of study. The questionnaires were applied at the beginning and the end of college. Results show that during the first years (short term), students' attitudes were more favorable to the course, more than toward study area. However, in the long term when the students begin to write their thesis (fifth year) ATS are more favorable. According to the authors, it is because their early years the students may ignore the applications of the statistics' course. They also verified that students, who see the implementation of this subject in their field of study, appreciate its importance and make a better thesis work. Furthermore, they indicate that there is not a statistically significant relationship between attitudes and performance in the course.

In another study, Pierce (2006) applies the pre-test and post-test to 36 students from Ball University in three introductory courses: algebra, calculus, and statistics. In the pre-test, students in all courses were sure that they could learn, even if the course was tough; however, they perceived that interest and affection were not necessary for a better attitude toward the subject. Student's attitude in all courses was confident about their cognitive competence in mathematics and statistics. In the post-test, the differences shown in students were very small; however, 60% of the students gave more value to the statistics in the post-test.

Blanco (2008) provides a comprehensive and updated overview of the empirical research on the Spanish undergraduate students' ATS. For their part Baloğlu, Koçak & Zelhart (2007) investigated the relation between attitudes (toward the actual course and toward the field of study) and anxiety toward statistics (the value of the statistics, anxiety toward the course of statistics and examinations, the belief they have about computers, the fear to seek help, and fear of teachers) of 95 seniors and 55 undergraduate students in social sciences. Canonical-correlation analysis techniques were used to process the data. The results show that both had a negative attitude toward statistics, i.e. anxiety of seniors and undergraduate students toward statistics' courses and field of application.

Mondéjar, Vargas and Bayot (2008) applied a new test to measure students' ATS with four dimensions: Interest, anxiety, perceived usefulness for the professional career, and usefulness of statistics for their professional future. Their results showed how study habits affect students' ATS. When students adopt a more detailed way to study,

they tend to consider the course more interesting. Moreover, they perceive usefulness for their professional future and have less anxiety about the subject. However, the ATS are not positive when the student takes a more superficial approach for studying because he has a lower level of interest and a slight increase in anxiety and perceives less usefulness in the course.

Shield and Shield (2008) applied a pre and post-test to 287 students from Augsburg College, in order to measure ATS in four dimensions: difficulty, affection, cognitive competence, and value. In the pre-test, they found that students show cognitive competence to learn statistics. Moreover, they do not believe that the subject is easy, and they value the subject regarding their usefulness in the personal and professional fields. However, they were impartial about whether they liked or not the statistics course. After students had completed a traditional course, they appreciated more the statistics as a tool, and they had a better attitude toward it.

When comparing the results of Schield and Schield (2008) study, with the results obtained by Pierce (2006), it is evident that there is very little difference between them because students of both institutions consider that even being it a complicated course they have the ability to learn.

In another study, Vanhoof (2010) found that the ATS is relatively stable, even over a longer period. These results are consistent with the Mc Leod (1992) description of attitude that indicates that attitudes are resistant to change, especially after high school, as Leong (2006) has demonstrated. Indeed, the results on the relative stability, which is presented, do not oppose the possibility that individual behavior changes over time. Furthermore, results show the sense of the relationship between attitudes toward statistics and performance on statistics.

In summary, the questionnaires most utilized to measure ATS are: SAS of Roberts and Bilderback (1980), the scale of ATS of Wise (1985) and the SATS Survey Attitudes Toward Statistics of Schau *et al.* (1995).

Regarding questionnaires which measure anxiety toward statistics, the most used are the STARS of Cruise, Cash and Bolton (1985), followed by the version of MARS of Suinn and Edwards (1982) and Suinn, Taylor and Edwards (1988) and developed by Plake and Parker (1982). The most important results about the psychometric properties of these questionnaires are:

a) The majority of the scales that comprise the analyzed questionnaires have shown high internal consistency and reliability.
b) Reliability evidence based on internal structure, domain structure of ATS has been conceived theoretically in a variety of ways: from a one-dimensional structure in the SAS of Roberts and Bilderback (1980) up to a composed of five dimensions in EAE of Auzmendi (1991). The same applies to the domain of anxiety toward statistics, with proposals, which range from the single dimension of SAS by Pretorius and Norman (1992), up to the six dimensions of STARS by Cruise *et al*, (1985).
c) In all cases, factor analysis techniques were used to study whether students' responses to the questionnaires were consistent with these different structures.
d) Regarding the evidence of content validity is noteworthy that, in several of the analyzed questionnaires, there was no evidence obtained. Only four questionnaires (STARS, ATS, QAQ, and SATS) were evaluated by expert judges. These assessments about item-dimension consistency were performed in the early stages of the development of the questionnaires and served primarily as a method for selection of items.
e) When the questionnaire scores have been used to predict the performance of students in the subjects of statistics, it has been found that both variables are weakly related. However, in those studies that have used more than one of the revised questionnaires has been found high convergence among them. With regard to the variables that allow predicting student´s attitudes or anxiety, both previous training in mathematics and statistics as the self-conception of capacities related to these subjects, have shown consistent relationships with scores on the questionnaires for attitudes or anxiety. Instead, when students' gender, their ages, or other personal characteristics are utilized to try to predict their attitudes, there is a comparative loss in precision.

This argument matches with that of Gal, Ginsburg, and Schau (1997) who asserted that one of the main research problems in this field is the lack of theoretical models to guide the works. The lack of academic background is reflected, for example, at one of the most important aspects of the development and validation of a measuring instrument, namely the determination of its internal structure. However, with every obtained result in different empirical studies which have been reported in the last two decades, it is possible to think that it has tried to reach theoretical models to explain the phenomenon of anxiety and attitude toward mathematics and statistics.
With the previous theoretical and empirical arguments, the research question, objective, and hypothesis are defined as follow.

Central question
Are there significant differences regarding ATS in undergraduates from UCC, UAP, and UASLP?

Objective
The primary purpose of this work is to compare students' ATS in order to determine whether there are differences regarding ATS in undergraduates from UCC, UAP, and UASLP. The ATS scale of Wise is the measuring instrument for this purpose.

Hypothesis
Under the assumption of Wise concerning ATS, the hypothesis are defined as follow:

H_1: There is a difference among students in the UCC, UAP, and UASLP, regarding their ATF.

H_2: There is a difference among students in the UCC, UAP, and UASLP, regarding their ATC.

RESEARCH METHODOLOGY
This study is non-experimental and cross-sectional. The sample was selected by the criterion of non-probability sampling, and it was formed by 672 students enrolled in mathematics courses at UCC, UAP, and UASLP, all of them in Mexico. The selection criteria were twofold: first, include students who have completed one field of statistics for the degree program they were studying, and second they were available at the University to answer the survey.

The instrument used was a survey of ATS of Wise (1985). The scales were applied in person to students in a variety of degree courses in several University careers (see tables 1, 2 and 3).

All groups of students took mathematics courses, specifically statistics courses, between second and third scholar year, combining ordinary classroom session and other practices in a computer laboratory.

Table 1. Population at UCC

Bachelor	Students
Management	49
Accounting	41
Economics	20
Marketing	35
International Markets and Business	83
Tourism Management	66
Total	294

Source: own

Table 2. Population at UASLP

Bachelor	Students
Management	73
Marketing	74
Accounting	67
Total	214

Souce: own

Table 3. Population at UPA

Undergraduate-Major	Students
Business and Administration	44
Industrial Engineering	30
Strategic Information Systems Engineering	30
Mechatronics Engineering	30
Mechanical Engineering	30
Total	164

Source: own

Appendix 1 shows the questionnaire utilized for ATS scale. This scale, proposed by Wise (1985), includes 29 items and has two sub-scales: The ATF sub-scale consists of the following 20 items, with reverse-keyed items indicated by an "(R)": 1, 3, 5, 6(R), 9, 10(R), 11, 13, 14(R), 16(R), 17, 19, 20(R), 21, 22, 23, 24, 26, 28(R), 29 and The ATC sub-scale consists of the following 9 items: 2(R), 4(R), 7(R), 8, 12(R), 15(R), 18(R), 25(R), 27(R). To score the ATS, only sum the appropriate item scores for the sub-scales and the total scale.

In order to prove the hypothesis and answer the research question, an *F* distribution statistical procedure was performed. The *F* distribution is the probability distribution associated with the *f* statistic. The *f* statistic, also known as *f* value is a random variable that has an F distribution.

The steps required for computing an *f* statistic:

- Select a random sample of size n_1 from a normal population, having a standard deviation equal to σ_1.
- Select an independent random sample of size n_2 from a normal population, having a standard deviation equal to σ_2.
- The *f* statistic is the ratio of s_1^2/σ_1^2 and s_2^2/σ_2^2.

The following equivalent equations are commonly used to compute an *f* statistic:

$$f = \left[S_1^2 / \sigma_1^2 \right] / \left[S_2^2 / \sigma_2^2 \right]$$
$$f = \left[S_1^2 * \sigma_1^2 \right] / \left[S_2^2 * \sigma_2^2 \right]$$
$$f = \left[X_1^2 / v_1 \right] / \left[X_2^2 / v_2 \right]$$
$$f = \left[X_1^2 * v_2 \right] / \left[X_2^2 * v_1 \right]$$

Where σ_1 is the standard deviation of population 1, s_1 is the standard deviation of the sample drawn from population 1, σ_2 is the standard deviation of population 2, S_2 is the standard deviation of the sample drawn from population 2, X^2_1 is the chi-square statistic for the sample drawn from population 1, v_1 is the degrees of freedom for X^2_1, X^2_2 is the chi-square statistic for the sample drawn from population 2, and v_2 is the degrees of freedom for X^2_2. Note that degrees of freedom $v_1 = n_1 - 1$, and degrees of freedom $v_2 = n_2 - 1$.

The distribution of all possible values of the *f* statistic is called an *F distribution*, with $v_1 = n_1 - 1$ and $v_2 = n_2 - 1$ degrees of freedom.

The curve of the F distribution depends on the degrees of freedom, v_1 and v_2. When describing an F distribution, the number of degrees of freedom associated with the standard deviation in the numerator of the *f* statistic is always stated first. The F distribution has the following properties:

- The mean of the distribution is equal to:

$$v_2 / \left(v_2 - 2 \right) for v_2 > 2.$$

- The variance is equal to:

$$\left[2 * v_2^2 * \left(v_1 + v_1 - 2 \right) \right] / \left[v_1 * \left(v_2 - 2 \right)^2 * \left(v_2 - 4 \right) \right] for v_2 > 4.$$

Intuitively, the variance of two populations σ_1^2 and σ_2^2 could be compared utilizing the ratio of the sample variances S_1^2 / S_2^2. If the result of S_1^2 / S_2^2 is close to 1, there is a little evidence to show that σ_1^2 and σ_2^2 are not equal. Moreover, a very large or very small value for S_1^2 / S_2^2 provides proof of a difference in the population's

variances.

The resulting ratio of two random variables independent chi-square -each one divided into their corresponding degrees of freedom- is called the random variable *F*, and is given by:

$$F = \frac{U/v_1}{V/v_2}$$

Where: *U* and *V* are random variables independent chi-square with degrees of freedom v_1 and v_2 respectively. Then the distribution of the random variable is given by:

$$f(x) = \frac{\Gamma\left[\frac{(v_1+v_2)}{2}\right]\left(\frac{v_1}{v_2}\right)^{\frac{v_1}{2}} x^{\left(\frac{v_1}{2}\right)-1}}{\Gamma\left(\frac{v_1}{2}\right)\Gamma\left(\frac{v_2}{2}\right)\left(1+\frac{v_1 x}{v_2}\right)^{\frac{(v_1+v_2)}{2}}}$$

$$0 < x < \infty$$

The *F* distribution with v_1 degrees of freedom in the numerator and v_2 degrees of freedom in the denominator. The mean and variance of the distribution *F* are given by:

$$\mu = v_2/v_2 - 2$$
$$to\_v_2 > 2$$

$$\sigma^2 = \frac{2v_2^2(v_1+v_2-2)}{v_1(v_2-2)^2(v_2-4)}$$

$$to\_v_2 > 4$$

The random variable *F* is not negative, and the distribution has a bias to the right. The distribution *F* has a similar appearance to the chi-square distribution, however, it founded centered with respect to 1, and the two parameters v_1 and v_2 given an additional flexibility regarding the distribution *F*. If S_1^2/S_2^2 are independent variances of size n_1 and n_2 taken from normal populations with variance σ_1^2 and σ_2^2, then:

$$F = \frac{S_1^2/\sigma_1^2}{S_2^2/\sigma_2^2} = \frac{S_1^2\sigma_2^2}{S_2^2\sigma_1^2} = \left(\frac{S_1}{S_2}\right)^2\left(\frac{\sigma_2}{\sigma_1}\right)^2$$

DATA ANALYSIS

First, it was carried out a reliability analysis of the data that was obtained as the result of applying the questionnaires personally among the student population, specifically being it the scale of Wise (1985). Therefore, a reliability test was performed using the Cronbach's alpha coefficient (α). This reliability coefficient can have values between 0 and 1, which verifies whether the information gathered is inadequate or defective and could lead to false conclusions otherwise be reliable and stable measurements that may be made. Cronbach's alpha (α) is a squared correlation coefficient, which measures the consistency of the items averaging all correlations among all questions (García-Santillán *et al.* 2013).

The closer it gets to 1, the better the reliability, considering that starting from 0.80 is a very acceptable value. Thus, the Cronbach's alpha can be set as a function of the number of items and the average of correlations among the items.

$$\partial = \frac{N * \bar{r}}{1 + (N-1) * \bar{r}}$$

Where: N = Number of items (or latent variables), $\bar{r}$ = average of correlations among the items.

The information collected from a population (672) of undergraduate students was processed. Results are shown in Table 4.

Table 4. Population's results

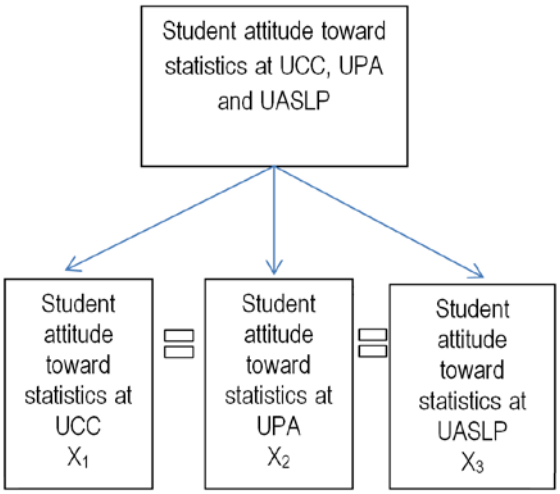
Cronbach's Alpha overall = 0.846				N of Items = 29	
ATF sub-scale				ATC sub-scale	
1	0.842	17	0.848	2	0.842
3	0.843	19	0.842	4	0.840
5	0.844	20	0.833	7	0.834
6	0.836	21	0.840	8	0.840
9	0.842	22	0.841	12	0.834
10	0.836	23	0.840	15	0.848
11	0.847	24	0.841	18	0.839
13	0.840	26	0.842	25	0.837
14	0.872	28	0.835	27	0.836
16	0.835	29	0.842		

Source: own

The result obtained from the total items is (0.846) and individual, grouped into two dimensions ATF and ATC, is more than 0.8. Both are very acceptable according to Hair, Anderson, Tatham and Black (1999) reference ($\alpha > 0.8$). Therefore, the instrument (the scale) have the characteristics of consistency and reliability that is required for the study, so the validity of the test is confirmed.

The hypothesis was redefined as hypothesis/causal and presented as a conceptual model depicted in Figure 1.

Figure 1. Conceptual Model



Source: own

The analysis of variance for one factor (ANOVA) was used to compare groups. The value of the *F* statistic reflects means similarities. In order to corroborate or refute the difference between groups, the critical value associated with the *F* statistic is compared, therefore, if the critical level associated is less than 0.05, then the hypothesis of equality of means should be rejected and may be concluded that compared population means are not all equal. The results are shown in Table 5.

Table 5. ANOVA test results

		Sum of square	df	Quadratic mean	F	Sig
Attitude toward field	Among groups	1245.051	2	622.525	9.524	0.000
	Into the groups	43729.198	669	65.365		
	Total	44974.249	671			
Attitude toward course	Among groups	7309.519	2	3654.759	122.990	0.000
	Into the groups	19879.944	669	29.716		
	Total	27189.463	671			

Source: own

The quotient between the two squares mean, Inter and Intra group of ATS, gave the value of *F* for each group. The obtained values were: ATF (F = 9.524, p = 0.00), ATC (F = 122.990, p = 0.00). To test the significance, the decision rule is the following: "if the value of "*p*" is greater than (α) means the null hypothesis (*Ho*) is accepted, and if also the values "p" obtained are less than 0.05, there is enough evidence to reject the null hypothesis, and it may be concluded that there are significant differences between students from different universities toward statistics.

The *F* statistic is used to verify the overall significance; hence the decision rule is: if the calculated *F* value is greater than the critical table value, the null hypothesis is rejected. Therefore, the conclusion is that population, composed of the students from the UPA, UCC, and UASLP, has significant differences with respect to ATS.

The Levene statistic perfectly illustrates the situation about the existence of differences between the variances of ATS. This fact is corroborated statistically, through the observation of significance. In this case, as the importance of the ATF is greater than 0.05, it was possible to affirm that the variance of variable's ATF is the same in the defined groups, whereas the significance of the ATC is less than 0.05, which indicates that the defined population at the three universities are not equal (Table 6).

Table 6. Test for the homogeneity of variances

	Levene statistic	df_1	df_2	Sig.
Attitude toward field	2.509	2	669	0.082
Attitude toward courses	13.153	2	669	0.000

Source: own

Tables 7, 8, 9 and 10 show values obtained from the *Post-hoc* methods that allow identifying precisely where differences are located.

Table 7. *Post-hoc* test of Attitude Toward Statistics (Field)

Dependent variable "field"	(I) UNI	(J) UNI	Means differences (I-J)	Standard error	Sig.
HSD Tukey	UCC	UASLP	-3.01456*	0.72648	0.000
		UPA	-2.25191*	0.78797	0.012
	UASLP	UCC	3.01456*	0.72648	0.000
		UPA	0.76265	0.83905	0.635
	UPA	UCC	2.25191*	0.78797	0.012
		UASLP	-0.76265	0.83905	0.635
Games-Howell	UCC	UASLP	-3.01456*	0.71960	0.000
		UPA	-2.25191*	0.79903	0.014
	UASLP	UCC	3.01456*	0.71960	0.000
		UPA	0.76265	0.84495	0.639
	UPA	UCC	2.25191*	0.79903	0.014
		UASLP	-0.76265	0.84495	0.639

Source: own

It is important to remember that, when there are low levels of significance (less than 0.05) the hypothesis which assumes that all groups have equal means is rejected; it makes necessary to identify which groups have these differences. To do this, the approximations to address this situation are used, these are: Not planned contrasts or *Post-hoc* contrasts. Furthermore, there are multiple conservative techniques since its purpose is to reduce the possibility of Type-I errors at the expense of increasing the likelihood of type II errors. Therefore, two *Post-hoc* methods were chosen; these being: Honestly Significant Difference of Tukey (HSD Tukey) and the Games-Howell method. The idea is to have a technique of multiple comparisons, and also, ranges too.

Results in Table 7 show ATS relative to the field when testing Tukey and Games-Howell are applied. The table shows that the number of significant differences (shown with an asterisk) detected by both methods, is the same (4). It is not possible to assume that the population variances are equal because the Levene test has a significance of 0.00 then, the proposed solution of Games-Howell method is followed, and it is observed that the group of UPA has a greater significance than 0.5 (. 639) indicating that there is no significant difference between the UPA and UASLP, then it follows that the UCC students have a different ATS regarding students UPA and UASLP.

In this sense, Table 8 shows the classification of the groups based on the degree of resemblance between the means. The table shows two subsets; the first includes the UCC and the second to UASLP and UPA. UCC's results (68.3639) indicate that the students' ATS are different from the students' attitudes at UASLP (71.3785) and the UPA (70.6159).

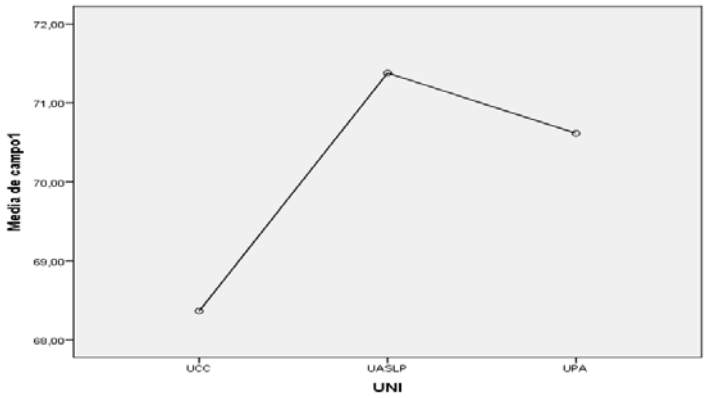
Concerning subset two, values of Table 8 show that there is a difference among UCC students regarding students from UASLP and UPA toward the statistical field; however, there is not a difference between students from UASLP and UPA. It is because differences between UASLP (71.3785) and UPA (70.6159) are not meaningful because the value of significance (0.596) is greater than 0.05.

Table 8. Homogeneous subset in relation to the field

	UNI	N	Subset for alpha = 0.05	
			1	2
HSD Tukey	UCC	294	68.3639	
	UPA	164		70.6159
	UASLP	214		71.3785
	Sig.		1.000	0.596

Source: own

Graphical representation of the homogeneous subset relative to the field is shown in graph 1.



Graph 1. Relationship between the mean of the ATF and Universities

Regarding the ATC, HSD of Tukey and Games_Howell methods applied to three groups of UCC, UPA and UASLP, show that the number of detected significant differences is the same with the two methods used. HSD of the Tukey method assumes that the population variances are equal, but it is not possible to assume that the variances are equal because the Levene test has a significance of 0.00, then, results obtained by the Games-Howell method are observed. Results (Table 9) show that the three groups are significant since their values are less than 0.05, i.e. there is a difference in the student attitude toward statistics about the course.

Table 9. *Post-hoc* test of ATC

Dependent variable "Course"	(I) UNI	(J) UNI	Means differences (I-J)	Standard error	Sig.
HSD Tukey	UCC	UASLP	-3.38372*	0.48983	0.000
		UPA	-8.31898*	0.53129	0.000
	UASLP	UCC	3.38372*	0.48983	0.000
		UPA	-4.93526*	0.56573	0.000
	UPA	UCC	8.31898*	0.53129	0.000
		UASLP	4.93526*	0.56573	0.000
Games-Howell	UCC	UASLP	-3.38372*	0.46563	0.000
		UPA	-8.31898*	0.55681	0.000
	UASLP	UCC	3.38372*	0.46563	0.000
		UPA	-4.93526*	0.52880	0.000
	UPA	UCC	8.31898*	0.55681	0.000
		UASLP	4.93526*	0.52880	0.000

Source: own

Table 10 shows the classification of the groups based on the degree, so similar, which exists between the means. Thus, in subset 1 are included UCC students, in the subset 2 UASLP students and finally in the subset 3 UPA students.

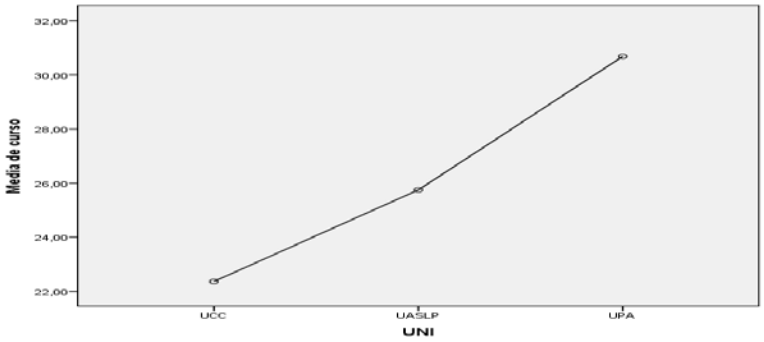
Table 10. Homogeneous subset in relation to the Course

	University	N	Subset for alpha = 0.05 1	2	3
HSD Tukey	UCC	294	22.3639		
	UASLP	214		25.7477	
	UPA	164			30.6829
	Sig.		1.000	1.000	1.000

Source: own

In each group, there is just one subset, indicating that every group is different, i.e. the ATC is different. UCC students have a more positive ATC (22.3639) than UASLP students (25.7477), and these even better than UPA students (30.6829).

Graphical representation of the homogeneous subset relative to the course is shown in graph 2.



Graph 2. Relationship between the mean of the ATC and Universities

DISCUSSION AND CONCLUSION

According to the results and the evidence obtained, it is clear that there is a significant difference in ATS among students of the three universities: UCC, UPA, andUASLP.

The evidence shows that there are differences in students' ATC of statistics in the three universities. However, regarding the students' ATF, evidence shows that UPA and UASLP students do not have significant differences; however, there is a discrepancy when confronted with UCC students.

Results are similar to those reported by Pierce (2006), who showed that ATS is not distinct among students from different institutions. However, the vast majority perceives the statistics' course as challenging, and, therefore, their attitude is not favorable for learning. In contrast, the outcomes obtained in this study do not match to those exposed by Vanhoof, Castro, Onghena and Verschaffel (2006) who mentioned that when students see the application of this subject in the professional field, it improves their perception about statistics and the importance given to this matter.

In the case of the universities under study, the differences in students' ATS arise from the UPA focusing on practical applications of subjects, whereas the UCC and UASLP are rather centered on giving the students more theoretical support.

FURTHER RESEARCH

It is recommended, as a further research work, to replicate this study on different educational institutions around the world, with the purpose of identifying possible differences in the field.

ACKNOWLEDGEMENTS

Authors are very grateful to the anonymous blind-reviewer for all suggestions, to the *Universidad Cristóbal Colón, Universidad Autónoma de San Luis Potosí* and *Universidad Politécnica de Aguascalientes* for all their help and support. Furthermore, in a very particular way, to all students who participated in the survey.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

1. Attitudes toward statistics

(Wise 1985) original test

Directions: For each of the following statements mark the rating category that most indicates how you currently feel about the statement. Please respond to all of the items.

Degree:_____ Male_____ Female____

ITEM	Strongly disagree	Disagree	neutral	agree	Strongly agree	Final code
1.-I feel that statistics will be useful to me in my profession.						
2. - The thought of being enrolled in a statistics course makes me nervous.						
3.- A good researcher must have training in statistics.						
4.- Statistics seems very mysterious to me.						
5.- Most people would benefit from taking a statistics course.						
6.- I have difficulty seeing how statistics relates to my field of study.						
7.- I being enrolled in a statistics course as a very unpleasant experience.						
8.- I would like to continue my statistical training in an advanced course.						

9.- Statistics will be useful to me in comparing the relative merits of different objects, methods, programs, etc.						
10.- Statistics is not really very useful because it tells us what we already know anyway.						
11.- Statistical training is relevant to my performance in my field of study.						
12.- I wish that I could have avoided taking my statistics course.						
13.- Statistics is a worthwhile part of my professional training.						
14.- Statistics is too math oriented to be of much use to me in the future.						
15.- I get upset at the thought of enrolling in another statistics course.						
16.- Statistical analysis is best left to the "experts" and should not be part of a						
17.- Statistics is an inseparable aspect of scientific research.						
18.- I feel intimidated when I have to deal with mathematical formulas.						
19.- I am excited at the prospect of actually using statistics in my job.						
20.- Studying statistics is a waste of time.						
21.- My statistical training will help me better understand the research being done in my field of study.						
22.- One becomes a more effective “consumer" of research findings if one has some training in statistics.						
23.- Training in statistics makes for a more well-rounded professional experience.						
24.- Statistical thinking can play a useful role in everyday life.						
25.- Dealing with numbers makes me uneasy.						
26.- I feel that statistics should be required early in one’s professional training.						
27.- Statistics is too complicated for me to use effectively.						
28.- Statistical training is not really useful for most professionals.						
29.- Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write.						

THE COMPARATIVE STUDY OF MORALS AND DEMOCRACY AND THEIR EFFECT ON THE BEHAVIORAL REFLECTIONS OF KHAWAJA NASIR AL-DIN TUSI AND JOHN DEWEY

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ABSTRACT
This study was aimed at comparatively analyzing morals and democracy from John Dewey and Khawaja Nasir al-Din Tusi's view point. It also sought the effect of the two philosophers' view point about morals and democracy and behavioral reflections. The purpose of this study was also to become familiar with the effect of morals and democracy on behavioral reflections of John Dewey (as the west representative of the behavioral reflection). It also tries to familiarize the readers with Khawaja Nasir al-Din Tusi's view point as the Iranian and Islamic representative of the behavioral reflections. The similarities and differences existed among the mentioned philosophers were identified. This was a descriptive and analytical research study. The study investigated the philosophers' opinions with regards to human beings, morals and democracy and their effect on the education and training. The results of the study showed that there are differences between John Dewey and Khawaja Nasir al-Din Tusi's view point about human beings, morals and democracy. The differences were effective on their behavioral reflections, too.
Keywords: John Dewey, Khawaja Nasir al-Din Tusi, training, human being, morals, democracy.

INTRODUCTION

If we are to prepare a useful plan for the purpose of training today's generation, it is a must to make use of the theories, viewpoints and suggestions of the previous philosophers. It is easy to find blessings and modern methods of training among their words. The necessity of comparing the behavioral viewpoints of these philosophers is not hidden to anyone, but investigating the educational viewpoints of all of these philosophers is not an easy task and needs constant effort and time. In this study, the researcher has decided to analyze and has selected John Dewey as the western and Khawaja as the Iranian-Islamic representative. John Dewey is one of the greatest and leaders of the American Pragmatism who developed education and training in that school and especially around the globe. Based on his biography, all of his life was spent on studying, education, training and writing. Dewey has about 1000 books and articles (Gothic, 2009). His books were a really useful resource book not only for the American learners but also the learners around the globe (Connell, 1989).

It first was under the influence of idealism and later developed the psychological aspects of pragmatism (Joas, 2015). It is possible to refer to Hegel, Darwin, Comte, Rousseaw, Pstalvzy, Froebel, James, Mead, and Pierce. (Dewey, 1970; Baqeri and Attaran, 1997).

Khawaja Nasir is one of the greatest men of Islamic behavioral and training. Khawaja has had many compilations during his fruitful life; generally over one hundred books, articles and annotations (Rahnama, 2009). His famous compilation about morals and training is Naseri morals. Khawaja at the time of Moguls was near to be in power. Khawaja's intellectual resources in writing subjects of training is Quran and Traditions as well as Greek and Muslim philosophers and thinkers such as Plato, Aristotle, Galen, Samstyvs, Frfutyus, Nyqvlavsh, Brvsn, kennedy, Miskawayh Razi, Ibn al Haytham, Farabi, Ibn Sina, Ghazali, Abdullah Ibn Muqaffa and Abu Zeid Balkhi(Tusi, 1999; Modaresi, 1947; Hamidi, 2011).

The significant issue of the study is to compare John Dewey and Khawaja Nasir's points of view about morals and democracy, and also is to realize the effect of this view on these two philosophers' behavioral reflections separately. Considering Khawaja and Dewey's written materials, inferences about training from their view points are drawn. The researcher aims at comparing similarities and differences between these two philosophers' viewpoints.

Human Being from John Dewey's View Point

Before considering the issues of morals and democracy and their effect on training, it is needed to know the two philosophers' opinion about human being, i.e. the subject of morals, democracy and training and see if there is any difference.

In Dewey's idea, human being is part of the world and an entity that reaches self- awareness and the world is what human experiences, and as realities are always changing and modifying, human being is also changing. (Ferasat, 2012). Dewey sees human as inherently facing problems and that he should solve them. He considered humans' thinking as the way of solving those problems. He believed that human cannot go further than his experience and that going to the other world is useless and foolish. Human being is the result of the society and no identity is supposed for one alone, except that he is part of a group (Ferasat, 2012). As well as being a social entity, based on Dewey's idea" human being is a living entity always in contact with the world. He is not separated from the nature and is always with it. This living creature is always affected by his natural and social environment." (Ebrahim Zade, 2007). Based on what is said above, human being is in Dewey's opinion a living-social entity that should make him ready for experiencing and changing and can find out about the world depending on his experiences. He can solve the problems that always appear. Also, human being is flexible and can go forward in the world based on changes and even can have mutual interactions.

Human Being from Khawja's viewpoint

For Khawja, human being is innately an entity that is in the middle level "human is innately in the middle level and is among other entities' levels and his way is toward respect, to the superior level or to the nature and to the paradise" (Toosi, 2012). He can reach a superior level or an inferior one. Human's training must be based on science and knowledge so that he can both reach happiness and can go from middle level to the upper level.

Human soul is a widespread essence; it is due to the soul's dignity that rationalities are understood, and wisdom in this sensitive body that most people call it human being by senses, and that essence is neither a physique nor physically, and it is not felt by any senses, and it is here needed to mention a few things to finish the sayings: first, proving the existence of the soul, and then proving its essence, after that proving its greatness, then expressing that it is not physique and physical, next it is understood by its essence, then is not felt with any senses.

Human beings' perfection and happiness is of two kinds: "one is scientific and another is related to action. Science without action is useless and action without science is not possible at all, so the base is science and action the whole."(Toosi, 2012). So, both kinds of perfection in Khawaja's idea are necessary as well as supplementary, and achieving them is needed for human's perfection. So, human being in Khawaja's idea is an entity which his eminent aim is spiritual and not physical "that essence is not neither a physique nor physical, and is not felt with any of the senses". But at the same time, it does not refuse the existence of human and puts a value on it, and also consider both soul and physique in training.

Morals form John Dewey's View Point

Of the reasons to consider the issues of morals and democracy in this study is that in Dewey's thinking: "there is a close relationship between democracy, morals, education and training, on the other hand, these cannot be separate (Ghasemi and Ayatollahi, 2010). He emphasized that morals seen from the view of social are in contrast with the ones seen of psychology. His observations about the essence of personal behavior morals in his discussion of psychology have been shown and his tendency in morals social origin in his discussion about social issues has been shown (Spencer, 2006). Dewey says: "if we do not limit morals in meaning, we can say all of our relations with others are the subject of the science of morals, usually we call an action as a moral action when widespread relations are contained in that action, and we call its mind reflection a virtue. Probity, honor, chastity, and the like are examples of virtues. These are not valuable by themselves, and their value depends on the role they play in the society (Dewey, 1966).

The following cases can be in relationship with Dewey's view point about morals, education and training:

1. In Dewey's view, the time we agree on whenever the issue of better or worse occurs, the subject of morals is faced, we have to confess this fact that morality is a continuous quality and not a fixed perfection (Dewey, 1955).
2. A student learns some points via his school books and he repeats them. He of course earns a cognition but it has very little and unimportant effect on his conduct. Knowledge should be joined with reality actions at schools (Dewey, 1916).
3. Putnam says Dewey believed that solving a problem is always "temporary" and is "possible to make an error"(Putnam, 2005). This characteristic in Dewey's works is seen repeatedly and he obviously believes in morals knowledge in making errors.
4. Natural growth, discipline, refining the characteristic, and providing service to the society are of the subjects of morals. These are the qualities of one who is a good member of the society (Dewey, 1916).
5. In Dewey's idea, probity, chasteness, grudge, braveness, banality, strenuous, and irresponsibility are all adaptations of personal powers to the environmental ones. They are creating a mutual action among the elements due to the creating the person and the elements made by the outer world (Mouris, 1970).
6. In Dewey's opinion, morals issue about motivation and instinct, either in a child or an adult, is changing an old habit so that these habits can in modern situations do the society a service.
7. Those actions are called "moral actions" which contain widespread relations, and we call mind reflection as "virtue". Probity, dignity, modesty, and so on is some examples. These virtues are not valuable by themselves and their value depends on their role they play in the society (Dewey, 1966).
8. For Dewey, believing in ideal is maybe the biggest mistake in philosophy. This big mistake is based on that whatever is correct in a situation, will be correct in all other situations without any stipulations. Whenever moral principles

instead of useful tools change into fixed rules, these rules will limit people more than before and prevent them from gaining experience.
9. Fixed moral wishes are not acceptable, but a move towards completion. the move that no end to that is imaginable (Dewey, 1958).
10. Education and training in a democratic society not only should adapt strange behaviors of people with society's rules, but also change their way of thinking and wishing into moral ideals so that their behavior modify spontaneously based on moral principles (Dewey, 1916).
Therefore, moral is not a fixed and absolute wish, and can always be changing "… in a situation like this, even the highest moral principles should be revised" (Dewey, 1958). Schools should train students' morals based on the society's principles so that students become suitable and useful for offering services to the society. He also admit that the value of moral virtues depend on the role they play in the real social life.
In a sentence it can be said that morals in Dewey's point of view is subordinate to the social values, relative and possible to make errors "morals principles are also possible to doubt" (Dewey, 1955).

Morals from Khawaja's view point
Kholgh (spirit) is a quality that considers the soul as ordering one easy action without needing to think and check. In his theoretical philosophy, it has been revealed that sensual qualities is called Hal (the nature of the individual), and the behaviour. The causes of its existence are two things: one is nature and the other habit. But the nature is the person's real inner kind of talent, same as one who is a subtle cause of his stimulation, or like when a person hears a little song or a rather bad news, will face fear and worries (Toosi, 2012). In another sentence Khawaja divides people, considering the worth of good and evil, into these groups: "First, those who do a lot of good deeds and the second group, who are evil and do not do good, the third are those who are neither good nor evil, and the forth group who are always evil and many evil acts are seen from them" (Toosi, 1981).

So, the subject of the science of morals is human's soul, because it can provide good and appropriate acts or bad and incorrect depending on its wish, and if it is so, it first should be realized that what the soul is and what its absolute perfection is, and what its powers are, so that when to use it for one thing the perfection and happiness ideal for that be provided (Toosi, 2012).

According to Khawaja's views about morals, human beings are not inherently good or evil. Human's wishes are subject to their future achievements. However, Khawaja believes that some people are innately good or evil. He also sometimes points to the children's tendency to do bad deeds "a child that tends to evil acts, is more eager due to a lack in nature", but consider the majority as subordinate to their achievements. There are two significant elements which determine the origin of moral actions: rational soul and freedom. Rational soul distinguishes good deed from evil and explains them, and provides the freedom to choose between the two. Action mind or moral science's base is the two elements mentioned. Action mind or moral science is explained with rational soul and realized by freedom. It seems that Khawaja sees some of the children and evil people at first oriented towards evil, but also believes in their being trained and improved.

Democracy, education and training from Dewey's point of view
When we consider education and training as a social element and one factor of providing for the society; we have to accept that education and training like other human societies contain a variety of diversities. So, general principles of behavior cannot be used in all societies (Dewey, 1916).

Dewey in his life became known as a democracy philosopher. Pragmatism as a philosophy counterpart of democracy is available everywhere, because democracy is the religion of a pragmatist (Maksi, 2007).

Understanding Dewey's philosophy without understanding his intention about democracy will be incomplete. On the one hand, in his thinking, there is a close relationship between democracy, morals, education and training and it can be said that these three cannot be separate (Ghasemi and Ayatollahi, 2010).

In Dewey's viewpoint democracy is not limited in political environment. Everywhere there is a public, democracy can also be there. Family, school, factory are the places which have the capacity to be democratic. Dewey not only recognizes this possibility, but also knows it as the significant condition in order to realize democracy meaning prospering human talents.

Based on Dewey's belief, to free from today's corruption, precious outcomes can be drawn from training young generation, and he knows education and training as the most important tool for social and economic reformation. However, in Dewey's idea, training youth is not the only way of reformation but is the most economical and regular one (Dewey, 1955).

When education and training is known as a social element, we have to accept that education and training also contain a variety of diversities. One of these diversities that in Dewey's view is necessary for the society and consequently for

teaching and training is democracy. Dewey as a democracy philosopher in Pragmatism school was not only peculiar and limited to the political environment in Pragmatism school during his life.

A society that wants to interfere with people in the social affairs needs to consider the leading role of training and education and thought enhancement of the people and equip them with awareness and knowledge. As Dewey believe if it is not such, then "the great gains of majority pains would be captured by the minor jobbers and democracy would be vanished" (Dewey, 1916). And it indicates that democracy existence highly depends on awareness and training and educations of the society.

According to Schreier "democracy is conditioned on education and training and education is the model of democracy in its best way"(Schreier, 2015). Dewey believes that a democratic society is bound to education and training. And such a society aims to interfering people in social affairs and it cannot overlook the importance of education and training; therefore it takes all individuals in to account. He enumerated some advantages for a democratic education and training system in a society in his discussions as following:

1- Eliminating social classes, class consciousness, and social discriminations
2- Cooperation in governmental affairs
3- More freedom of individuals
4- Sharing experiences
5- Eliminating gaps among races by free experiences exchanging
6- Considering talents and abilities of children
7- More organized movements and revolutions or counter revolution (if social or political revelations are not accompanied with appropriate training, there would be other revolutions or counter revolution movements (Kardan, 2009). Dewey believes that a revolution would be successful if internal changes are accompanied with moral and intellectual changes and these conditions will be met only by education and training assistances (Shato, 2010).
8- Social and economic reforming and getting rid of corruption: as Dewey believes" to get rid of corruption we can learn from education young generation and education and training is the most important tool for social and economic reforming" (Dewey, 1956).
9- Time and Cost Economy: according to Dewey" education and training for young people is not the only form of reforming but it is the least expensive and the most organized ways".

We should bear in mind that in the discussions of democracy and education and training and other educational discussions sex was not taken into account. As if he did not see any differences between males and females to discriminate them. And at the end, it should be noted that Dewey was so engaged in democracy and education and training so that one of his compiled books was on this subject and as most educational scholars believe this book is the most important book of John Dewey.

Democracy in Khajeh`s Term

According to Khajeh the society demands an individual who is confirmed by God and in every era such a person has existed in each society. So in Khajeh`s term choosing that person is not by majority of opinions nor by cooperation or consensus but in some cases it refers to public interest:

In different conditions a person is needed dominant by a power of inspiration of God so that people follow the instructions of him. This person is called the owner of honour. And honour is the conditions and situations around him. And Muhaddithes called him shari`e (legistrator; the bearer of the religion) and the conditions for him are all about the religious law and Plato stated the same concept in an Arabic sentence in his fifth essay of the republic and Arstatalis stated in an Arabic sentence. That is, those are the ones that God considers most.

In conditions of religious edicts a person is needed who is dominant by the power of inspiration of God and other people`s perfection is bound to them and. In the past they were called what, is the most powerful and unquestionable king and Imam, and the action is the mission of an imam and Plato is called him the director of the whole world and Aristotle called his a civil person that is a person who created civilization (Tusi, 2012) it should be noted that by king it is not meant that he owns lands and properties but he desired to have.Generally in every time and century such a person is not needed but every time or period demands a director to lead and help people in time of difficulty to keep the honours of people and leads people.

The civil wisdom was about roles that was for the people`s interest and if people cooperate and distribute, things could be done so that good get the real perfection.

Tadbir-e-manzel was about a wisdom in which the people`s interest is taken into account and it is about the living and getting to perfection in way a to find common point. And this is true for every one whether they are king or regular people scientist or illiterate all need these contraptions and everyone needs to follow these rules and the benefit would get to public and the benefits are both in here and in hereafter world.

The best woman is the wise, religious, noble, knowledgeable, shy, kind ,hot talk too much and obey her husband and give birth and a good housekeeper (Tusi, 2012).

It has been mentioned in traditions that woman must be prohibited to learn about Yusuf chapter in Quran. Hearing and learning of stories of this kind may deviate them and they should be prohibited from wine regulations. And woman do not have any superior characteristic more important than these two. And girls should listen to things appropriate for them and they should be up brought so that be good at housekeeping, dignity, nobility, shyness and all other feature appropriate to them they should not learn to write and read too and when they were matured enough get married.

In Khajeh`s term the society needs a person who is attached to God inspirations and called him a lawyer and honored. Such a person is confirmed by God. And he believes that in every era such a resourceful person is needed. That person takes decisive decisions for public interests, "and if any member of the whole defects the public interest it will interfere to cure and treat"(Tusi, 2012). Regular people should follow the experts and as Khajeh believes both the society and the individuals will gain benefaction and blessing, moreover it has worldly and hereafter benefits.

Sex differentiation is clearly stated in Khajeh`s training. Generally speaking, whatever Khajeh means by education and training is for males. And even he prohibited females from" reading and writing". And he invited ladies to chastity, honesty, taciturnity, obeying husband and so on. Even he has inhabited girls to learn some chapters of Quran "women must be forbidden from learning Yusuf chapter since learning it may cause deviation for them". Consequently, almost half of the society, the women is deprived of jobs and occupations.

SUMMARY:

Life and intellectual resources:

Table 1. life and intellectual resources of Dewey and Tusi

Educational variable	Dewey	Tusi
Life and intellectual resources	Birth place: America (Barrington) Pragmatism school 20th and 19th century (1859-1952) Having almost 2000 books and papers about psychology, philosophy, ethics, and training the intellectual resources Hegel idealism earlier and later pragmatism like Darwin, Froebel, pyros, Mead, James	Birth place: Iran (Tus) Islam school The 13th century (1200-1274) having 100 books and annotations about mathematics, astronomy, philosophy, ethics, and training, Quran and hadith and scholars like Plato, Aristotle, Farabi, Avicenna, Meskayayh, and Ghazali

Many things can be inferred from Table 1: differences in birth places (Iran and America), influential scholars for both philosophers, and almost seven centuries of differences in life time (the 20th century for Dewey and 13th century for Khajeh) the community of them, influential schools for both philosophers (Islam and pragmatism school of thought) backgrounds and studied books, wars and their effects on both philosophers` life( first and second world wars in Dewey`s era and the Mongol invasion to Iran in Khaje`s era), and different positions of them are of factors of differences in their thoughts and contemplations. But with all these differences, there are some common points for these two philosophers. The intellectual resources of ancient Greece were applied by both of them. Other common point for them is teaching and their subject of compiling which were about philosophy, ethics, and training. According to the mentioned points, differences in their life styles, people around them and intellectual resources are more than their common grounds and similarities.

Mankind:

Table 2. mankind in Dewey and Tusi perspective

Educational variable	Dewey	Tusi
Mankind	A biological and social creature. He should prepare himself for changes. He can recognize the world as far as his experiences	A physical and spiritual creature. The mankind`s nature is in between. The perfection for mankind is closeness to God.

As it is indicated in Table2, based on Dewey`s perspective, mankind is a biological and sociable creature and prepares himself for gaining experiences and changing and understands his world according to his experiences. And tries to deal the difficulties he is facing with. Human beings are flexible and ready to change therefore they can get along with the world and society`s changes and have mutual influences as well. On the other hand, Khajeh believes that mankind is a creature who is in the middle level based on the nature and is able to ascend or descend to higher or lower levels. He believes that mankind`s upbringings must be on the base of science and knowledge so that they earn happiness and bliss and ascend to higher levels. And the perfection of mankind is in the highest level and it is the very closeness to God. As it is stated Dewey`s and Khajeh`s perspectives on mankind are different and generally mankind is a biological and social creature and a physical spiritual creature by Dewey and Khajeh attitude respectively. And this different point of views could be the base of different upbringings or educations of them.

Ethics and Education and Training:

Table 3. Ethics and Education and Training in Dewey and Tusi Perspective

Educational variable	Dewey	Tusi
Ethics and Education and Training	It is not good or bad by nature. It is not stable and definite. Society determines the ethics values. Ethics is fallible Ethics should be thought according to society ideals at schools	Children tend to evil. To basic factors in ethical actions roots are authority and logical soul. Logical soul differentiates between good and evil. Authority provides choice.

As it is stated in Table 3, ethics is variable and fallible in Dewey`s perspective and it is not good nor bad from the origin. Since the ethics values of every society are determined by the society then it is essential that the ethics in accordance with society ideals be thought in the schools. On the other hand, Khajeh believes that ethics is subordinate to most of human acquisitions but believes that the child`s willing is toward evil at first. Then chooses the speech and identify ethics values.

Democracy and Education and Training:

Table 4. Democracy and Education and Training in Dewey and Tusi Perspective

Educational variable	Dewey	Tusi
Democracy and Education and Training	Democracy is not limited to politics and school is one of the places capable of becoming democratic. Democracy is the requisite of the society and training and education, Democracy means active contribution and not majority of opinions. Improving the cognition of a democratic society is through training and education. And a democratic society is dependent on training and education. Revelations and counter revolutions must be accompanied with education. In a democratic society training for time and cost economy, preventing social and political corruption, and class conflicts is necessary Training and education is the same for males and females and sex is not a reason for superiority.	In every period of time the society needs a person who is confirmed by God this person is called the owner of honor. Regular people should follow the experts. And this brings blessing and abundance. The formal education is just for males and females are deprived of and they should think about housekeeping and children upbringing.

Based on Table 4, from Dewey`s perspective democracy is the requisite of the society and training and education and schools are the places capable of being democratic. Democracy contributes to training and education and improves the cognitions of the society and it is necessary to economize time and costs, to prevent social and political corruption and class conflicts. Training and education is the same for males and females and sex is not a reason for superiority and males and females can contribute in training and educations equally. But in Khajeh`s perspective In every period of time the society needs a person who is confirmed by God and this brings blessing and abundance and formal educations is limited to males.

CONCLUSION

Mankind is a biological and sociable creature in Dewey`s perspective and is ready for changes and reining new experiences, he influences the environment and get influences from it. Therefore, human training must be experimental and be toward mutual effect of peoples on the environment. He believes that problem solving is an appropriate method for training children in which the training is active and the result will be gained. On the other hand Khajeh believes that although mankind are evil by nature, he generally believes that human beings are in the middle level and by appropriate or inappropriate education could ascend or descend in higher or lower levels. Of course getting to the highest level and ascending is the very closeness to God, as he believes, and his main emphasis is on logical method.

Ethics is variable and fallible based of Dewey`s perspective and it is not good or bad originally. Since the ethics values of every society are determined by the society then it is essential that the ethics be in accordance with society ideals. On the other hand, Khajeh believes that ethics is subordinate to most of human acquisitions but believes that the child`s willing is toward evil at first. Then they choose the speech and identify ethics values. From Dewey`s perspective, democracy is the requisite of the society and following that the requisite of training and education and the school is one of the important places capable of being democratic. As an important factor in training and education, democracy improves the society`s cognition, trains time and cost economy, prevents social and political corruption and class conflict. In Dewey`s training and education in a democratic society males or females are not superior or inferior and both sexes can have equal contributions in formal training and education. But in khajeh`s perspective the society, in every era, demands a person confirmed by God and this brings worldly and hereafter blessing and abundance. Formal education is just for male and females are prevented to read and write and they are even prohibited to hear some Chapters of Quran like Yusuf since he believes that it had bad effects on them. Based on mentioned argumentation it could be concluded that Dewey and Nasi-al-Din-al-Tusi differences about mankind, ethics, and democracy are more than their similarities. These differences were effective on their training and education`s perspectives and have made them to have different attitudes toward their methods and objectives. It should be mentioned that these differences are highly bound to their differences in place, time, the society, relatives and people around, schools of thought, and intellectual resources that are the reasons of their different attitudes.

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THE MODERN SAMPLE OF INTEGRATIVE TEACHING IN CHEMISTRY LESSONS

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ABSTRACT

The following article deals with the useful, new, creative forms of integrative teaching of Chemistry in secondary schools and Lyceums creating connections between Chemistry and other school subjects. The samples from work experience are given in this article.

Key Words: dissociation; ions; electroconductivity; cellule; solution

I. INTRODUCTION

International education practice shows that to create links of integration between different subjects is the most important factor in the lesson which develops the quality of teaching. İf these relationships are strong, students can comprehend the chemical process and conception comprehensively. Refering to "Bluestein J. Cherry C. 2003. Skills for Successful Teaching.USA: Brighter Child Press on page 84-91" the knowledge and skills about nature is formed completly in the stududents' brains due to integrative teaching . Therefore I always try integrative teaching in the chemistry lesson, especially I pay attention to knowledge of biology, physics and math that have connection with chemistry conceptions. In my practice I've become convinced that integrative teaching helps the student to get universal education. I would like to present the sample of integrative teaching lesson plan about my practice.

II. Problem statement

The topic of electrolytic dissociation of integrative teaching in chemistry lesson.

Purpose of the study

1)Students must be able to compare electrolytes and nonelectrolytes systematicly
2)Students must be able to explain the essence of the electrolytic dissociation
3)Students must be able to create connection between dissociation and hydratisations
4)Students must be able to create connection between the facts connected with the conceptions of different subjects (chemistry, biology, physics and math) when they research electrolytic dissociation .

III. METHODS

To create situation with problem, brain storming, discussion, cluster, experimental methods related chemical experiment.

IV. Resources

Instrument for controlling electroconductivity of solution, dry NaCl, NH_4NO_3, H_2SO_4, $CuSO_4$, sugar, glucose, distilled water, alive frog, blood plasma, the presentation Power Point

V. Activities done in the process of the research

Teacher must pay attention the students' skills at the beginning of the lesson in order to stimulate the interest of the students. I had given a task to the students connected with the subject of electrolytic dissociation before teaching this topic. At the same time the students repeated the topics of the structure of atom, solutions,

chemical bond, crystals, electroconductivity of materials and chemical composition of cellule.Refering to Rustamov F.A. 2010. Pedagogy. Baku: Science and Education Press on page 128 these tasks to create foundation or to pave the way for the students to comprehend new subject of lesson.

Electroconductivity of different pure substances and solutions is checked by students with a special instrument. Then strong H_2SO_4 and NH_4NO_3 is dissolved in water and at the same time the facts of becoming warmer and colder in the prosess of solvation, dry $CuSO_4$ also is dissolved in water and is observed the change of colour - these reactions cause great interest in class and stimulate the interest of students. Then students subject the frog to weak electric current and then observe the reflex of frog. The electroconductivity of blood plasma is checked by sudents at last. After that I show an animation to the students about electrolytic dissociation.

I note all students' ideas and hypothesis on the blackboard witch are connected with the essence of these reactions. After the motivation of students I ask the pupils questions for research:

What is the essence of the electrolytic dissociation?

I divide all the pupils into three groups and give them different tasks after putting the question for research. Refering to "Hassard J.2012.The Art of Teaching Science.London:Oxford University Press on page 104-107" when the groups solve these tasks they need to apply necessary knowledge and skills not only infomation on chemistry, but also on biology, physics and math together.When I define the amount of appropriate methods refering to "Bain K.2004. What the Best College Teachers Do. Cambridge, MA: Harvard University Press on page 92-98" and "Mehrabov A. 2006. Pedagogical technology, Baku: Mutercim Press on page 156-164." Pupils research in four directions as following table

Table 1. Directions of research.

Topic	Subject			
	Chemistry	Biology	Physics	Math
Electrolytic dissociation	Chemical properties of electrolytes	Ions of cytoplasme of cellule	Coulomb's forces in sollution of electrolytes	mathematical analysis of research
Amount of appropriate methods	4	2	3	3

Each group's task is as following:

I group:

1. Why the solution of NaCl has electroconductivity, but sugar solution doesn't?
2. What sort of chemical bonds are possible for electrolytes?
3. Describe the chemical equation of electrolytic dissociation for NaCl .

II group:

1. Explain the following notion:

a) cation b) anion c) cathode d) anode

2. What is the role of relative permittivity (ε) of water between Na^+ and Cl^- in solution? Give explanation of Coulomb's Law in this situation.

3.There are three solutions in following flasks:

a) in the first flask: 4 moles of K_2SO_4 b) in the second flask:12 moles of NaCl c) in the third flask: 9 moles of $Al(NO_3)_3$

Complete electrolytic dissociation of salt take place in each flask. Prove that in the direction of a→b→c amount of ions of salt to form arithmetic progression

III group:

1. Explain existence of ions in cytoplasme of cellule of biological creatures.
2.What is the reason of becoming warmer when strong H_2SO_4 is solved in water, but why we observe becoming colder when NH_4NO_3 is solved in water?
3.Why colour change is observed when dry $CuSO_4$ is solved in water?

For research is given limited definite time to the groups. I facilitate to the students as a scientific guide during this time.The pupils analyse directions of research: chemical properties of electrolytes, Ions of cytoplasme of cellule, Coulomb's forces in sollution of electrolytes and mathematical analysis of research. Consequently, students discover essence of the things about chemistry themselves.

VI. FINDINGS

When research is over the groups start to exchange their conclusions. Each group prepare the presentation on the computer. Leader of each group presents to all the students about own group's research on the activeboard. In the process of the integrative teaching I defined new pedagogical advances which ensure more effective integration between different subjects' skills in pupils' brains.

Refering to "Susan J.2010. A conceptual, İntegrated Approach to Teaching Science. USA: Library of Congress Publication Press on page 92-96" the integrative teaching methods show that the pupils gain very useful superiority in the lesson in comparison with other methods.

Table 2. Comparison of the results of integrative teaching and other teaching methods

№	İntegrative teaching	The other teaching
1	Increases pupils' abilities to analyze and easily understand cause-result relations between the different physic-chemical and biological processes, using the knowledge gained in different subjects.	The cause-result relations are very poor and the pupils mainly pay attention to the facts and try to remember the results of the stages. Refering to "Ahmadov H.H.2008. Pedagogy. Baku: Education Press on page 142" they cannot create relationships between the separate chemical processes.
2	My researches show that sufficiency is very high and I can save a lot of time (about 90 %) in teaching the topic)	Refering to "Norbert J.Melanie M.Thomas J.2005.Chemists, Guide to Effective Teaching. USA: Prentice Hall on page 88-90" sufficiency is low and quality of perceiving the topic is much lower than in integrative teaching.
3	The pupils tend to solve the problems by themselves and about 80% of the problems are solved independently, thus their inclination for creativity is extended.	In comparison with the integrative teaching students solve only about 30% of the problems.

VII. DISCUSSION

The pupils start to discuss the information they gained from their research. In this time I am very attentive, I pay special attention to the integration between different subjects (chemistry, biology, physics and math). For example, I ask the pupils then following questions in order to create integration.İn this time I refering

to Susan J.2010. A conceptual, İntegrated Approach to Teaching Science. USA: Library of Congress – Press, McFadden.1997. Science Plus Technology and society-- level red, USA::Holt Press, Eilks İ. Hofstein A.2013.Teaching Chemistry.Rotterdam: Sense Publisher Press, Kumar S. 2004. Methods of Teaching Chemistry, New Delhi: Discovery House Press,Bluestein J. Cherry C. 2003. Skills for Successful Teaching.USA: Brighter Child Press,Bain K.2004. What the Best College Teachers Do. Cambridge, MA: Harvard University Press, Aliyev A.2008 .Chemistry Curiculum Conseption.Baku: Education Press,Conover W.2010.Innovative Methods of Teacing and Learning Chemistry.USA-ACS publications, Frazee.B. 2000 .Integrated Teaching Methods. Delmar Publishers-Press, Barke.H.D.2012.Essentials of Chemical Education.Berlin:Heidelberg Press and Jones M. Jones. G. Acaster D. 1997.Chemistry. London: Cambridge university Press.

1.What sort of chemical bonds are possible for electrolytes and nonelectrolytes ?
2.What similarities and differences are there between electrolytes and other conductors?
3.What is the reason of electroconductivity of cytoplasme of cellule?
4.Why Coulomb's forces weaken between the ions when electrolyte is solved in water?
5. What ions is exist in the cytoplasme of cellule?
6.What is the reason of electrolytic dissociation of salt in water?
7.What is the relative permittivity?
8. What is the role of relative permittivity (ε) of water between Cu^{2+} and SO_4^{2-} in solution?
9. Why the solution of $CuSO_4$ has electroconductivity, but glucose solution doesn't?
10.Why becoming warmer when strong H_2SO_4 is solved in water?
11.What sort of chemical bonds are there between ions and molecule of water in sollution?
12. Explain the connection between dissociation and hydratisations
13.What differences are there between cation and anion or cathode and anode?
14. Give explanation of Coulomb's Law comparative form between ions in dry salt and solution of salt in water.
15. Why becoming colder when NH_4NO_3 is solved in water?
16 .What do you know mathematical analysis of amount of ions after electrolytic dissociation ?
17. What differences are there between chemical properties of electrolytes and nonelectrolytes ?
18. Explain existence of ions in cytoplasme of cellule of frog.
19.Are there ions in cytoplasme of cellule of human?
20. Describe the chemical equation of electrolytic dissociation for H_2SO_4
21. What differences electroconductivity of NaCl , CH_3COOH and sugar solution ?
22. Give explanation is surrounded the ions by the water molecule in hydratisations process.
23. Why the salt has electroconductivity, when dry NaCl is melt?
24. Form the principal theses of electrolytic dissociation.
25.What significance of electrolytic dissociation for realizing other chemical process?
26 Why colour change is observed when dry $CuSO_4$ is solved in water?
27.What is the reason existence of ions in cytoplasme of cellule of biological creatures.
28.What sort of chemical bonds are possible for nonelectrolytes?
29. Why the solution of HNO_3 has electroconductivity, but sugar solution doesn't?
30. Attention following details, realizing and compare them:
    a) Chemical properties of electrolytes, the dissociation of matter in water and the hydratisations of ions in water
    b) Ions of cytoplasme of cellule and the cause of existence of ions in cytoplasme of cellule
    c) Coulomb's forces in sollution of electrolytes, the cause of Coulomb's forces weaken between the ions when electrolyte is solved in water and the cause of electroconductivity of solution.
    d) Mathematical analysis of research and mathematical analysis of result which is gained in research.
31.Why colour change is observed when dry $CuSO_4$ is solved in water?
32. What sort of chemical bonds are possible for electrolytes?
33. Describe the chemical equation of electrolytic dissociation for $Ca(OH)_2$
34. What is the role of relative permittivity (ε) of water between K^+ and Cl^- in solution? Give explanation of Coulomb's Law in this situation.

35. There are three solutions in following flasks:
a) in the first flask: 2 moles of Na_2SO_4 b) in the second flask: 6 moles of KCl c) in the third flask: 4,5 moles of $Fe(NO_3)_3$ Complete electrolytic dissociation of salt take place in each flask. Prove that in the direction of a→b→c amount of ions of salt to form arithmetic progression

VIII. CONCLUSION

After discussion the generalization is conducted by the pupils, if my help is required I assist my students. I try to create connection with actual life and practice by the use of integrative teaching method. Pupils construct following integrative scheme as a result and they refering to "McFadden.1997. Science Plus Technology and society-- level red, USA::Holt Press on page 108-140" and "Norman.H. Cunningham J. 1999 .Chemistry Activities. California: Northridge Press on page 56-64" too.

Table 3. The results of the different directions of research

Topic	Subject			
	Chemistry	Biology	Physics	Math
Electrolytic dissociation	Chemical properties of electrolytes	Ions of cytoplasme of cellule	Coulomb's forces in sollution of electrolytes	mathematical analysis of research
Details of process that the pupils have perceive	The dissociation of matter in water The hydratisations of ions in water	The cause of existence of ions in cytoplasme of cellule	The cause of Coulomb's forces weaken between the ions when electrolyte is solved in water The cause of electroconductivity of solution	mathematical analysis of result which is gained in research

Refering to "Jones M. Jones. G. Acaster D. 1997.Chemistry. London: Cambridge university Press on page 151-158" pupils can solve the sample tasks when they apply their skills into practice in creative form. Refering to "Taber K.2012. Teaching secondary chemistry,London: Hodder Education on page 74-78", "Kumar S. 2004. Methods of Teaching Chemistry, New Delhi: Discovery House Press on page 88-94", "Kumar S. 2004. Methods of Teaching Chemistry, New Delhi: Discovery House Press on page 72-79" and "İlyasov M.2013.Teacher's Pedagogical Skills . Baku: Science and Education Press". I make evaluation of the students' activities with the following criteria at the end of the lesson.

Table 4. The criteria of evaluation of the students' skills in integrative teaching.

Criteria	I group	II group	III group
Can explain essence of electrolytic dissociation			
Can solve the task			
Can present the result of the research			
Can conduct the experiment freely			
Is disciplined and can work in cooperation			

I use selfevaluation and reflexion for the students at the end of the lesson too, refering to Aliyev A.2008 .Chemistry Curiculum Conseption.Baku: Education Press, Conover W.2010.Innovative Methods of Teacing and Learning Chemistry.USA-ACS publications, Frazee.B. 2000 .Integrated Teaching Methods. Delmar Publishers-Press and Barke.H.D.2012.Essentials of Chemical Education.Berlin:Heidelberg Press

Increases pupils' abilities to analyze and easily understand cause-result relations between the different physic-chemical and biological processes, using the knowledge gained in different subjects. My researches show that sufficiency is very high and I can save a lot of time (about 90 %) in teaching the topic).The pupils tend to solve the problems by themselves and about 80% of the problems are solved independently, thus their inclination for creativity is extended. In the integrative teaching process pupils are master of skills, what necessary for their life:

1) Students can compare electrolytes and nonelectrolytes systematicly
2) Students can explain the essence of the electrolytic dissociation
3) Students can create connection between dissociation and hydratisations
4) Students can create connection between the facts connected with the conceptions of different subjects (chemistry, biology, physics and math) when they research electrolytic dissociation.
5) The selfevaluation skills are progress in pupil's brain.
6) Teacher can create connection with actual life and practice by the use of integrative teaching method very easily.
7) Students can solve the task very easily.
8) Students can explain essence of chemical process deeply.
9) Students can present the result of the research perfectly.
10) Student can conduct the experiment freely.
11) Students are disciplined and can work in cooperation.Consequently, the integrative teaching helps the students as perfectly to perceive the laws of nature.

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THE REASONS OF ACADEMIC PROCRASTINATION TENDENCIES OF EDUCATION FACULTY STUDENTS

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ABSTRACT

The purpose of this study is to examine the reasons of academic procrastination tendencies of education faculty students, according to students based factors or not. Study group consist of Amasya University students who are studying in different departments of the Faculty of Education. In this study, qualitative research method was used. As a data collection form, semi-structured interview form which was prepared by the researchers was used. N-Vivo 10 package was used for the analysis of data which obtained at the end of study. According results, the reasons of academic procrastination tendencies of education faculty students-internal factors are not finding the academic task in interesting, fear of failure, perfectionism, failure in planned study habits, the desire not to exhaust himself/herself, preferring exhilarating activities. The reasons of academic procrastination tendencies of education faculty students-external factors are causes resulting from the social environment. the necessity of studying kpss, causes resulting from physical conditions, causes resulting from faculty practices. The results were discussed in the light of the related literature.

Key Words: academic procrastination, pre-service teachers

*This study was presented as oral presentations in International Conference on New Horizons in Education (25-27 June 2014) in Paris/France.

1.INTRODUCTION

Procrastination is defined as putting off works which must be completed to a later time (Lay, 1988) or delaying affairs and in relation to this the tendency of avoiding making a task and decision (Milgram and Tenne, 2000). Procrastination is discussed in two parts as 'situational procrastination' and 'chronic procrastination'. *Chronic procrastination* is a behaviour which leads the individual to experience the feelings of helplessness and inadequacy in the process of coping with the environment can lead to behaviour. *Situational procrastination* is a behaviour which occurs during certain periods of life and is less common than dispositional procrastination. Situational procrastination' divided into two parts as general procrastination and academic procrastination. General procrastination includes postponements relating to everyday problems such as non-payment of the bills and taxes frequently encountered in daily life, being late for appointments and leaving a paper which needs to be ready by Monday for Tuesday and the next days and neglecting to take a gift and phone to someone from the family (Kağan, 2009). Academic procrastination is defined by Solomon and Rothblum (1984) as delaying basic academic tasks such as preparation for the exam, preparation of a term paper, administrative tasks related to school, contribution to task for specific reasons. In general, Akbay and Gizir (2010) defined academic procrastination as delaying the academic tasks for some reasons.

Since the university students have more duties and responsibilities such as preparation of homework, studying the lessons, preparing for exams, it is seen that they display widely academic procrastination behaviour. When related literature was examined, many studies about university students' academic procrastination were found. The first stage of these works consists of the studies in which levels of academic procrastination behaviour were investigated. Ellis and Knaus (1977) indicate that approximately 70% of university students postpone starting or completing their academic work. In the other studies in which the level of procrastination was investigated, it is reported that 90 % of students at least once (Hill and al. 1978), 50% often, 35% occasionally postpone their academic works (Solomon and Rothblum, 1984). It is estimated that this ratio is approximately 50% among Turkish university students (Balkıs and Duru, 2009).

As well as the studies which aim to determine students' academic procrastination tendencies, the studies in which the relationships between the various variables and academic procrastination behaviour were investigated were often found. In the studies carried out on university students; it is seen that there is a significant and positive relationship between academic procrastination behaviour and the anxiety (Aitken, 1982); Academic achievement and perfectionism is an important predictor of academic procrastination (Çakıcı, 2003); There is a negative

significant relationship between procrastination tendency rational and decision-making and thinking style, and there is a positive significant relationship between dependent, avoidant and instantaneous decision-making styles (Balkıs, 2006); Academic procrastination behaviour has negative attitude towards studying and learning, positive relationship with ineffective time management and concentration difficulties and negative relationship with motivation and academic achievement (Balkıs and al., 2007); The sub-dimensions including motivation, time management and self-test predict significantly academic procrastination behaviour and there is a negative relationship between academic procrastination behaviour and academic achievement (Balkıs and al., 2007); there are significant negative relationships between emotional intelligence abilities and academic procrastination (Deniz and al., 2007); there are strong negative relationship between academic procrastination behaviour and responsibility (Özer ve Altun, 2011).

According to studies carried out in order to determine the causes of the academic procrastination behaviour, it is concluded that 31% of students have the fear of failure, 14% have the fear of disapproval by society and 9% have the idea that the work is not attractive (Ferrari and al., 1998). On the other hand, while in the English form of academic procrastination scale (Solomon and Rothblum, 1984) causes of procrastination are treated in two different dimensions including fear of failure and avoidance of work, in Turkish adaptation study, causes of procrastination are defined in four dimensions including fear of failure, laziness, taking risks and object to control (Uzun Özer, 2005).

Despite the fact that previous studies conducted about academic procrastination behaviour (Aydoğan, 2008; Balkıs, 2006; Balkıs and al 2007; Balkıs and Duru; 2009; Çakıcı, 2003; Deniz, Traş ve Aydoğan, 2009; Kandemir, 2010; Uzun Özer, 2005, 2009) are found in Turkey, the limitation of the number of studies carried out to determine causes of displaying the academic procrastination behaviour increases the importance of this study (Ferrari et al, 1992; Özer, and Altun, 2011). In this regard, investigation in terms of proposing solutions to overcome the problem and examination of the causes of procrastination which are one of the serious obstacles to the academic achievement were seen as necessary.

In this scope, the purpose of the study, examining students' perceptions of the education faculty regarding the causes of the academic procrastination behaviour, is to research into the causes of the academic procrastination tendency in terms of characteristics which result from student or don't result from student. For this purpose, an answer was sought for the following problem situations.

1) What are the causes of preservice teachers' academic procrastination tendencies?
2) How do the causes of academic procrastination tendencies show the distribution in terms of characteristics which result from student or don't result from student?

2.METHOD

2.1. Type of the study

In this study, to investigate in-depth the views on the causes of the academic procrastination behaviour, a phenomenological research design of the qualitative research designs were used.

2.2 The study group

The study group consists of six pre-service teachers who are studying in the departments of Psychological Counselling & Guidance (2), Elementary Education (1), Turkish Education (1), and Elementary Mathematics Education (2) of Amasya University Education Faculty. The study group of selection was made from among the students considered as displaying this behaviour .

2.3. Data Collection Tool

As a means of data collection, interviews were conducted with participants lasted about 20 minutes. In the interviews the data were recorded using digital voice recorders with permission of participants. In this study the purpose of having an interview as a data collection tool is to collect the data about how the people who had the similar experiences perceive the causes of the academic procrastination behaviours.

3. FINDINGS

3.1. Findings Obtained on Causes of Faculty of Education Student's Academic Procrastination Behaviour

In this chapter, Faculty of education student's views on causes of academic procrastination behaviour are provided. Participants' views were referred as FES1, FES2, FES3, FES4, FES5, and FES6 with the abbreviation Faculty of

Education Student (FES) using direct quotations. Collected findings on the causes of faculty of education student's academic procrastination behaviour are given in Table 1. In Table 1 the factors that cause academic procrastination behaviour summarized under two main titles: factors resulting from students or not resulting from students. Findings obtained from student interviews were defined in subtitles by researchers. When examined on student interviews, causes academic procrastination resulting from students (internal factors) are inability to manage time failure in planned study habits, perfectionism, preferring exhilarating activities, the desire not to exhaust himself/herself, distractibility, fear of failure thinking that academic tasks are unnecessary, the lack of model instructors who perform their academic tasks, thinking that academic tasks are boring, not finding the academic task interesting, lack of factors that motivate academic tasks, lack of good health, lack of good financial situation.

Table 1. Views on Causes of Academic Procrastination Behaviour

A) Causes Resulting From Students (Internal Factors)
1. Inability to Manage Time
2. Failure in planned study habits
3. Perfectionism
4. Preferring exhilarating activities
5. The desire not to exhaust himself/herself
6. Distractibility
7. Fear of Failure
8. Thinking that academic tasks are unnecessary
9. The lack of model instructors who perform their academic tasks
10.Thinking that academic tasks are boring
11.Not finding the academic task interesting
12. Lack of factors that motivate academic tasks
13. Lack of good health
14. Lack of good financial situation
B) Causes Not Resulting From Students (External Factors)
1. Causes resulting from the social environment
1.1. Bad habits within Social Circle
1.2. Friends who don't motivate to study
1.3. Environmental pressure
2. The necessity of studying KPSS
3. Causes resulting from physical conditions
3.1. Bad weather conditions
3.2. Deficiencies in the physical conditions of the shelter
4. Causes resulting from faculty practices
4.1. Redundancy in academic tasks
4.2. Lack of contribution of the study to the evaluation
5. Causes resulting from instructors
5.1. Teacher's approach
5.2. Behaviours examined are based on memorization
5.3. Failure of pursuit of the project papers
5.4. Inequity of Evaluation system
5.5. Causes resulting from the style of teaching methods
5.1. Non-fulfilment of tasks in group project works
5.2. Traditionalism of teaching methods and techniques

According to Table 1, causes academic procrastination resulting from students (external factors) are causes resulting from the social environment. the necessity of studying KPSS, causes resulting from physical conditions, causes resulting from faculty practices. Two the most frequently repeated factors from the sub-titles of factors resulting from students and not resulting from students were provided and the stunning student responses regarding these factors were transferred.

3.1.1.Views Resulting From Students on Causes of Academic Procrastination Behaviour (Internal Factors)

Thinking that academic tasks are unnecessary

"There are some lessons tests of which I consider as drudgery to solve. For example, guidance course test. I never solve it because this is a lesson which I can do due to my department. Therefore, I'm constantly delaying studying lessons and subjects that I know... " FES2

"I find the assignments or tasks that the teachers give are very unnecessary. Focusing on information that we won't use in the future, academically, get me down and decrease my desire to study... " FES5

"The main reason to postpone my studies is that I think the projects and homework given to us are quite boring... " FES6

Preferring exhilarating activities
"I think I postpone the activities such as studying, the preparation for the exam mostly due to factors which result from me. For example, I love fun and strolling around so my wish to have fun outweigh sometimes studying.…" FES6

3.1.2. Factors Not Resulting From Students Related To Causes of Academic Procrastination Behaviour (External Factors)

Teacher's approach
"I think teacher's approach to us affect whether we perform our task. Because when the instructors communicate better with us and they tell sincerely us what we have learned is really useful, I realize that I'm more systematically studying my class. But I see the instructors that don't care about us; I do not want to perform my tasks... FES4
"If I think I'm unheeded I'm doing only what is necessary for my lessons not much more… " FES4

Non-fulfilment of tasks in group project works
"Since we are in the last class, in general we deliver a group project for our exams and homework. There are the situations such as negligence, putting the work on someone's shoulders in the nature of friendship. There are lot of persons who are all talk and no action. This is the failure cause of the works. In the group if a work goes bad, this situation reflect all the work and the people. Thus the work is getting limp and it corrupts its nature..." FES6
"If we are going to do a group project and if some friends display procrastination behaviour, I get angry and I don't care the project... " FES3

4. DISCUSSION AND CONCLUSION

In the research, it is aimed to examine causes of Faculty of Education Student's academic procrastination behaviour in terms of characteristics resulting from student and not resulting from students. Findings obtained from student interviews were defined in subtitles by researchers. When examined on student interviews, causes academic procrastination resulting from students (internal factors) are inability to manage time failure in planned study habits, perfectionism, preferring exhilarating activities, the desire not to exhaust himself/herself, distractibility, fear of failure thinking that academic tasks are unnecessary, the lack of model instructors who perform their academic tasks, thinking that academic tasks are boring, not finding the academic task interesting, lack of factors that motivate academic tasks, lack of good health, lack of good financial situation.

When related literature examined, the factors thought to cause the academic procrastination can be collected under main titles including teacher's manner of approaching, the idea of redundancy, sense of discomfort related to the task, difficulty concentrating, personal characteristics (responsibility, perfectionism, etc.), anxiety / fear of the future, inability to manage time, and fear of failure (Ferrari,1992; McCown, Petzel, and Rupert, 1987; Solomon ve Rothblum, 1984). What makes this study different from the other is that the factors thought to cause academic procrastination behaviour discussed under two titles as the factors resulting from students or not resulting from students. Therefore, the findings are interpreted under these titles.

When results are examined carefully it seems that factors that cause academic procrastination behaviour and don't result from students are more than factors that result from students. In this study has been found that causes academic procrastination resulting from students (external factors) are causes resulting from the social environment. the necessity of studying KPSS, causes resulting from physical conditions, causes resulting from faculty practices. While the most frequently mentioned factors resulting from students involve thought that academic task are necessary, perfectionism, preferring exhilarating activities, the most frequently mentioned factors not resulting from students involve teacher's manner of approaching, non-fulfilment of tasks in group project works, causes resulting from the style of teaching methods.

On the other hand, in order to reduce students' academic procrastination tendencies, it is suggested that factors that cause procrastination are eliminated and the experimental intervention programs that serve this purpose are developed and implemented. Additionally, that the students should be informed about the studying and time management and be supported in this regard can change their habits and these positive habits can be made more

permanent for stages of higher education. Thus, it can be provided that students have fewer problems of procrastination in higher educational stage.

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THE EVALUATION OF TEACHER CANDIDATES' USING THE SKILLS OF CRITICAL THINKING STRATEGIES

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ABSTRACT

The main purpose of this study is the evaluation of teacher candidates' using the skills of their critical thinking strategies. The population of the study consists of the teacher candidates who are in the first class of the departments in the academic year 2014-2015 at the Faculty of Education in Siirt Universtiy. The sample of the study also comprises of 318 students who were determined by sampling randomly and who study in the Primary School Teacher Training programme, Science Teacher Training programme, Elementary School Math Teacher Training programme, Social Studies Teacher Training programme of The Department of Secondary School Teacher Training; in the Turkish Teacher Training Programme of the Department of Turkish Education. In the study as the data collection tool, **"The Critical Thinking Strategies Survey"** which is developed by Koç (2015) and of which realiability and validity studies have been done under the light of the results of pre-application and expert thought has been used. In the analysing of the data, frequency, percentage, arithmetic average and chi-square have been used. As a result, teacher candidates' using the skills of critical thinking strategies are evaluated according to the different variables (gender, department) and it is obvious that in general there isn't significant difference among the thoughts of the teacher candidates, but in particular it has emerged that significant difference for some items has been found. Based on these results, it was found in a set of suggestions on critical thinking strategies.
Key Words: Thinking, critical thinking, critical thinking strategies

INTRODUCTION

The most important difference that seperates human beings from other creatures is that of the skill of 'thinking'. Thinking " the sate of thinking, the independent and its own state of mind as free from sensations, impressions and designs" is the ability of making comparisions, determining the differences and establishing links between them (TDK, 1998). With this skill, human beigns evaluate their good and bed sides. In other words, they approach to the events critically (Seferoğlu ve Akbıyık, 2006, s.194). The individuals who think critically think creatively, reasonably, and analyze, synthesize and evaluate the knowledge that he gets from different resources (Beyer, 1985; Grant, 1998; Moore, 2001). Moreover, individuals like this have got the skills that they stay away from the prejiduces, they use verbal and oral languages effectively, they are aware of inconsistent judgements, they ask effective questions, they compare their thoughts with others' and they show the differences between them. In gaining these skills, first family then educational institutions have got big missions and responsibilities. Nowadays especially under the roof of the educational institutions, at schools, the skill of critical thinking is being tried to be given to individuals. But in the studies and surveys, it has been seen that individuals don't reveal the skill of critical thinking enough, they consider the critical thinking concept as the action of judging and they are not active in putting forward their own thoughts. Whereas, in the 2004-2005 academic year, in the teaching programmes that were applied throughout Turkey, critical thinking was among the basic skills and there were activities for obtaining these skills in these lessons. In these activities, some individuals use affective strategies by looking at the events impartially, trusting the skill of thinking and improving their mental determination; they use cognitive strategies-macro skills by reading the events critically, listening, getting in touch with disciplines, applying socratic discussion and evaluation the events according to a criteria, analysing; they also use cognitive strategies-micro skills by discovering the differences between the events, paying attention to important similarities and differences using their critical thinking repertory (Yıldırım ve Şensoy, 2011, pp.526). These strategies that individuals use are the critical thinking strategies. The individuals who use the critical thinking strategies effectively, along their formal and informal education, can use the high level skills effectively such as problem solving, creative and reflective thinking and as a result, with life long learning process, they can produce qualified products in every field of the life. In raising these new generations that will succeed successful inventions and studies, teachers that are the only and important building stones of education institutions as formal have got big responsibilities. It is important that teachers, in order to fulfill this duty best, must improve and train themselves by considering modern approaches, models before and after their professional life. Hence, that the need of determining their thoughts related with the evaluation of teacher

candidates' using the skills of critical thinking strategies forms the problem of this study. In accordance with this problem, the answers of the questions below are looked for:

1. How is the distribution of the views of the teacher candidates related with critical thinking strategies?
2. According to their genders, do the views of the teacher candidates related with using the skill of critical thinking strategies show significant differences?
3. According to their departments, do the views of the teacher candidates related with using the skill of critical thinking strategies show significant differences?

METHOD

Research method

The research is based on the relational screening method. The relational screenings are "research models that aim at determining the degree and existence of the change between two or more variances." (Karasar, 1998:81).

Population and Sample

The population of the study consists of the teacher candidates from the first class of the departments of Education Faculty at Siirt University in the 2014-2015 academic year. The sample of the study also comprises of 318 students who are chosen by sampling randomly and who study in the Primary School Teacher Training programme, Science Teacher Training programme, Elementary School Mathematics Teacher Training programme, Social Studies Teacher Training programme of The Department of Secondary School Teacher Training; in the Turkish Teacher Training Programme of the Department of Turkish Education. (Table 1)

Tablo 1. The distribution of first-class teacher candidates surveyed

No	Departments	N	f
1	Primary school teacher	165	51,9
2	Social studies teacher	37	11,6
3	Science teacher	20	6,3
4	Türkish teacher	52	16,4
5	Math teacher	44	13,8
TOTAL		318	100

As seen in Table 1, the sample of the study is formed from 165 teacher candidates from the department of primary school teacher training (51,9%), 37 teacher candidates from the department of Social studies teacher training (11,6%), 20 teacher candidates from the department of Science teacher training (6,3%), 52 teacher candidates from the department of Turkish teacher training (16,4%), 44 teacher candidates from the department of Math teacher training (13,8%)

Data collection devices

In the study, as the tool of the data collection, **"The Critical Thinking Strategies Survey"** that was developed by Koç (2015) and whose validity and reliability studies was made in the light of expert view and the results of pre-perfom has been used. In the survey, there are 3 choices that rate as " no (1), partially (2), yes (3). In order to make detailed analysis and comments on the basis of items and because the items/articles of the survey are handled independently from each other, an analysis related with the reliability of the scores (like the coefficient of Cronbach Alfa internal consistency) is not done.

Data analysis

The data collected in this study are evaluated with SPSS 17.0 packaged programme. In analyzing the data, the number of the teachers who expressed their opinions regarding each item and their percentage is given as a table. According to their genders and departments, that whether there is significant difference between the teacher candidates' views related with contribution to the evaluation of using the skills of critical thinking is tested with chi square test. In the study, the level of significance is taken as $p \leq 0.05$).

FINDINGS

1. The distribution of teacher candidates' views related with critical thinking strategies

The distribution of teacher candidates' views related with critical thinking strategies is given in Table 2.

Tablo.2 The distribution of teacher candidates' views related with critical thinking strategies:

	ITEMS/ARTICLES	Yes		Partially		No	
		N	%	N	%	N	%
1	I try to add new knowledge to the knowledge that I got.	193	60,7	36	11,3	89	28
2	I criticise the aspects of any subject that I find unreasonable.	288	90,6	20	6,3	10	3,1
3	Instead of taking the exactly same knowledge, I reinterpret that knowledge with my own words.	235	73,9	61	19,2	22	6,9
4	I consider others' ideas while I am expressing my opinion.	214	67,3	60	18,8	44	13,9
5	I consider the strong and weak aspects of any subject.	282	88,7	31	9,7	5	1,6
6	I discuss about a subjet by establishing emphaty with the man I talk to.	273	85,8	35	11	10	3,1
7	I establish a relation between the subjects/ideas.	293	92,1	20	6,3	5	1,6
8	I approach to the new subject/knowledge without prejiduce.	144	45,3	85	26,7	89	28
9	I try to find the same and different aspects of the knowledge that I obtain in different ways.	214	67,3	71	22,3	33	10,4
10	I use the word 'I don't know' when I am not sure of the subject.	257	80,8	33	10,4	28	8,8
11	I accept the contradictions and inconsistencies in my own thoughts and actions.	230	72,3	39	12,3	49	15,4
12	I find solutions to reach my goals when I come across difficulties.	280	88,1	25	7,9	13	4,1
13	I transfer the knowledge I learn to the daily life by approaching critically.	243	76,4	57	17,9	18	5,7
14	I use alternative knowledge resources about any subject.	262	82,4	34	10,7	22	6,9
15	I consider certain criterias while appreciating any (subject/knowledge/event etc.)	265	83,3	38	11,9	15	4,7
16	I use every kind of ways, methods to find a solution for the problem I encountered.	229	72	57	17,9	32	10,1
17	I ask questions to myself while learning a subject.	266	83,6	34	10,7	18	5,7
18	I reconsider the information about any subject that others evaluate according to their own evidences.	246	77,4	46	14,5	26	8,2
19	I can exactly distinguish the points on any subject where opposite views conflict.	237	74,5	69	21,7	12	3,8
20	I create my own way of thinking while deciding on any subject for myself.	276	86,8	30	9,4	12	3,8
21	I think of any subject in an audible manner.	137	43,1	88	27,7	93	29,2
22	I try to combine the problems on condition not to lose anything from its accuracy.	246	77,4	42	13,2	30	9,4
23	I listen what other people think about any subject and I try to learn from them.	272	85,5	32	10,1	14	4,4
24	I research why the ones who decide on anything that is 'good or bad' say so.	214	67,3	78	24,5	26	8,2
25	I revise again the ways, methods that individuals use to reach the same result about any subject.	283	89	21	6,6	14	4,4

As shown in Table 2, in the distribution of the teacher candidates' views related with using the skill of their critical thinking strategies, 90,6% of the teacher candidates said 'yes' to the 2nd article that is "I criticise the aspects of any subject that I find unreasonable." , 88,7% of the teacher candidates said "yes" to the 5th article that is "I consider the strong and weak aspects of any subject.", 92,1% of the teacher candidates said "yes" to the 7th article that is "I establish a relation between the items/ideas.", 88,1% of the teacher candidates said "yes" to the 12th article that is "I find solutions to reach my goals when I come across difficulties.", 89% of the teacher

candidates said "yes" to the 25th article that is " I revise again the ways, methods that individuals use to reach the same result about any subject.";19,2% of the teacher candidates said "partly" to the 3rd article that is "Instead of taking the exactly same knowledge, I reinterpret that knowledge with my own words.", 18,8% of the teacher candidates said "partly" to the 4th article that is "I consider others' ideas while I am expressing my opinion." 26,7% of the teacher candidates said "partly" to the 8th article that is "I approach to the new subject/knowledge without prejiduce.", 22,3% of the teacher candidates said "partly" to the 9th article that is "I try to find the same and different aspects of the knowledge that I obtain in different ways.", 24,5% of the teacher candidates said "partly" to the 24th article that is "I research why the ones who decide on anything that is 'good or bad' say so."; 28% of the teacher candidates said "no" to the 1st article that is "I try to add new knowled to the knowledge that I got.", 29,2% of the teacher candidates said "no" to the article 21st that is "I think of any subject in an audible manner." This finding, while the teacher candidates are learning any subject, can be interepreted as they *share* the view that they don't consider the unreasonable points related with the subject, they can distinguish the strong and weak points of the subject, they establish relations in order to provide the integrity of information between the subjects they learn, they show higher performance against the problems they encounter and try to find different solutions, they participate in the view of revising the knowledge they obtained by trying different ways and methods and by using these ways and methods; and they show partly participation in the view that they learn by approaching to the events without any prejudices and consider others' thoughts, they can classify the knowledge they learned, they can question others' thoughts;, they *don't share* the view that they learn the knowledge that they get mentally by showing open participation and they are open to new knowledge

2. According to their genders, the findings related with whether the view of the ability for using the teacher candidates' critical thinking strategies becomes different or not

According to their genders, in the 15th and 23rt articles that are related with the skill for using the teacher candidates' critical thinking strategies, significant differentiation has been monitored. The articles at which there is differentiation are given in Table 3.

Table 3. According to their genders, the chi-square test results of the teacher candidates' view related with the skill for using their critical thinking strategies

Items/Articles				The Views of Teacher Candidates						
				Yes	Partially	No	Total	χ^2	sd	p
15	I consider certain criterias while appreciating any (subject/knowledge/event etc.)	**Genders**	Female	**N** 168	20	4	192	9,088	2	0,04
				% 63,4	52,6	26,7	100			
			Male	**N** 97	18	11	126			
				% 36,6	47,4	73,3	100			
			Total	**N** 265	38	15	318			
				% 83,3	11,9	4,7	100			
23	I listen what other people think about any subject and I try to learn from them.	**Genders**	Female	**N** 176	10	6	192	15,275	2	0,03
				% 91,7	5,2	3,1	100			
			Male	**N** 96	22	8	126			
				% 76,2	17,5	6,3	100			
			Total	**N** 272	32	14	318			
				% 85,5	10,1	4,4	100			

As seen in Table 3, in the articles 15 and 23, according to their genders, there is difference between the views related with the skill for using their critical thinking strategies ($X^2_{(15)}$=9,088; $X^2_{(23)}$= 15,275; p ≤0.05). Accordingly, it has been seen that for "*I consider certain criterias while appreciating anything (subject/knowledge/event etc.)"* which is mentioned in the article 15, 63% of the female teacher candidates said "yes", 52,6% of them said "partly", 26,7% of them said "no"; 36,6% of the male teacher candidates said "yes", 47,4% of them said "partly" and 73,3% of them said "no"; for "*I listen what other people think about any subject and I try to learn from them.*" which is mentioned in the article 23, 91,7% of the female teacher candidates said "yes", 5,2% of them said "partly" and 3,1% of them said "no"; 76,2% of the male teacher candidates said "yes", 17,5% of them said "partly" and 6,3% of them said "no". This finding can be interpreted as that male teacher candidates, while learning certain studies, events, *don't share* the view that they consider some criterias according to female candidates; as that female teacher candidates give place to the view that they listen to others' thoughts *more carefully* than male teacher candidates.

2. According to their departments, the findings related with whether the view of the skill for using the teacher candidates' critical thinking strategies becomes different or not

According to their departments, in the articles 10 and 21, that are related with the ability for using the teacher candidates' critical thinking strategies, significant differentiation has been monitored. The articles at which there is significant differentiation are given in Table 4.

Tablo 4. According to their departments, the chi-square test results of the teacher candidates' view related with the ability for using their critical thinking strategies

Items/Articles			The Views of Teacher Candidates						
				Yes	Partially	No	Total	χ^2	sd	p
10	I use the word 'I don't know' when I am not sure of the subject.	Departments	Science teacher	N	17	0	3	20	17,514	8	0,02
				%	85	0	15	100			
			Türkish teacher	N	47	3	2	52			
				%	90,4	5,8	3,8	100			
			Primary school teacher	N	132	16	17	165			
				%	80	9,7	10,3	100			
			Math teacher	N	31	11	2	44			
				%	70,5	25	4,5	100			
			Social studies teacher	N	30	3	4	37			
				%	81,1	8,1	10,8	100			
			Total	N	257	33	28	318			
				%	80,8	10,4	8,8	100			
21	I think of any subject in an audible manner	Departments	Science teacher	N	15	2	3	20	27,524	8	0,00
				%	75	10	15	100			
			Türkish teacher	N	19	13	20	52			
				%	36,5	25	38,5	100			
			Primary school teacher	N	68	56	41	165			
				%	41,2	33,9	24,8	100			
			Math teacher	N	12	11	21	44			
				%	27,3	25	47,7	100			
			Social studies teacher	N	23	6	8	37			
				%	62,2	16,2	21,6	100			
			Total	N	137	88	93	318			
				%	43,1	27,7	29,2	100			

As seen in Table 4, in the articles 10 and 21, according to their departments, there is difference between the views related with the ability for using their critical thinking strategies ($X^2_{(10)}$=17,514; $X^2_{(21)}$= 27,524; p ≤0.05). Accordingly, it has been seen that for "*I use the word 'I don't know*' when I am not sure of the subject" which is mentioned in the article 10, 90.4,% of the Türkish teacher candidates said "yes", 25 of Math teacher candidates said "partly", 15% of Science teacher candidates said "no"; for "*I think of any subject in an audible manner*." which is mentioned in the article 21, 75% of the Science teacher candidates said "yes", 33,9% of the Primary school teachers said "partly" and 47.7% of Math teacher candidates said "no". This finding can be interpreted that Türkish teacher candidates, according to Science, Math, Primary school, Social studies teacher candidates, answered any subject after being sure of it, and they didn't answer the subject that they don't know and they are not sure, Science teacher canadidates, according to Turkish, Primary school, Math, Social studies teacher candidates, give *more* place to the view that they show explicit participation instead of implicit participation.

CONCLUSION AND SUGGESTIONS

1. In general, with regard to the distribution of the views related with the ability of using teacher candidates' critical thinking strategies, while teacher candidates learning any subject, they don't consider the unreasonable points, they can distinguish the strong and weak points of the subject, they establish relations in order to provide the integrity of information between the subjects they learn, they show higher performance against the problems they encounter and try to find different solutions, they participate in the

view of revising the knowledge they obtained by trying different ways and methods by using these ways and methods, and they *don't share* the view that they learn by approaching to the events without any prejudices and consider others' thoughts, they can classify the knowledge they learned, they partly show participation in the view of questioning others' thoughts, they learn the knowledge that they get mentally by showing open participation and they *don't agree* the view that they are open to new knowledge. It can be expressed that the individuals that use the critical thinking strategies, find effective solutions to the problems they encounter (Şensoy, 2011), during these solutions, the individual always use the ability of questioning and establish relationship between the knowledge he gets (Demirkaya, 2008). In other words, the individuals who use the critical thinking strategies use their mental processes as a chain and they tie the each ring of the chain to the other ring and weave a strong connection between these rings. So these individuals can use the knowledge that they obtain in the life long learning process with the help of critical thinking strategies in order to achieve the ultimate goal. In other words, the individual that use the ability of critical thinking and strategies related with it is exploring the events deeply, consider different thoughts and discover the world he lives in (Cüceoğlu, 1995).

2. According to their genders, among the views related with the ability of using the critical thinking strategies in general a significant differentation doesn't exist, but in an article, female teacher candidates *didn't show participation* in the view related with the critical thinking strategies, in another article, it is seen that male teacher candidates give *more* place to the ability of using the critical thinking strategies.
3. According to their departments, among the views related with the ability of using the critical thinking strategies in general there is not a significant differentation, but it is seen that in an article, Turkish teacher candidates, in another article Sciene teacher candidates give *more* place to the ability of using the critical thinking strategies.

Suggestions

- The sample group of this study is the teacher candidates that are in their first year at the Faculty of Education. It can be suggested that the next studies can be applied to the teacher candidates that are at different classes.
- That the individuals, while using the skill of critical thinking, show resistance to learn what kind of knowledge and how this knowledge will effect the individual's academic life can be questioned using qualitative research.
- The contribution of listening skill to the critical thinking skill can be searched.
- Qualitative / quantitative studies can be done about which high level skills improve in the individuals who take part in courses directly

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