

The Online Journal of New Horizons in Education

Volume 5 Issue 4
October 2015

Prof. Dr. Aytekin İşman
Editor-in-Chief

Prof. Dr. Fatoş SİLMAN
Assoc. Prof. Dr. Ahmet ESKİCUMALI
Assist. Prof. Dr. Hüseyin YARATAN
Editors

Assoc. Prof. Dr. Fahriye ALTINAY AKSAL
Assoc. Prof. Dr. Zehra ALTINAY GAZİ
Assist. Prof. Dr. İrfan ŞİMŞEK
Associate Editors

Hüseyin ESKİ
Technical Editor



Copyright © 2011 - THE ONLINE JOURNAL OF NEW HORIZONS IN EDUCATION

All rights reserved. No part of TOJNED's articles may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without permission in writing from the publisher.

Contact Address:

Prof. Dr. Aytekin İŞMAN
TOJNED, Editor in Chief
Sakarya-Turkey

Published in TURKEY

Message from the Editor-in-Chief

Hello from TOJNED

TOJNED welcomes you. TOJNED looks for academic articles on the issues of education science and may address assessment, attitudes, beliefs, curriculum, equity, research, translating research into practice, learning theory, alternative conceptions, socio-cultural issues, special populations, and integration of subjects. The articles should discuss the perspectives of students, teachers, school administrators and communities. TOJNED contributes to the development of both theory and practice in the field of education science. TOJNED accepts academically robust papers, topical articles and case studies that contribute to the area of research in education science.

The aim of TOJNED is to help students, teachers, school administrators and communities better understand the new developments about teacher education. Submitted articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJNED. TOJNED provides perspectives on topics relevant to the study, implementation and management of learning with technology.

I am always honored to be the editor in chief of TOJNED. Many persons gave their valuable contributions for this issue.

TOJNED, TASET, Governor State University, Vienna University of Technology & Sakarya University will organize the INTE-2016 (www.int-e.net) between July 13-15, 2016 in Vienna, Austria.

Call for Papers

TOJNED invites article contributions. Submitted articles should be about all aspects of teacher education. These research papers may address assessment, attitudes, beliefs, curriculum, and equity, research, translating research into practice, learning theory, alternative conceptions, socio-cultural issues, special populations, and integration of subjects. The articles should also discuss the perspectives of students, teachers, school administrators and communities.

The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJNED.

For any suggestions and comments on the international online journal TOJNED, please do not hesitate to fill out the [comments & suggestion form](#).

October 01, 2015

Editor-in-Chief

Prof. Dr. Aytekin İŞMAN

Sakarya University

Editor-in-Chief

Prof. Dr. Aytekin İŞMAN - Sakarya University, Turkey

Editors

Prof. Dr. Fatoş SİLMAN - Near East University, TRNC

Assoc. Prof. Dr. Ahmet ESKİCUMALI - Sakarya University, Turkey

Assist. Prof. Dr. Hüseyin YARATAN - Eastern Mediterranean University, TRNC

Associate Editors

Assoc. Prof. Dr. Fahriye ALTINAY AKSAL - Near East University, TRNC

Assoc. Prof. Dr. Zehra ALTINAY GAZİ - Near East University, TRNC

Assist. Prof. Dr. İrfan ŞİMŞEK - Istanbul University, Turkey

Technical Editor

Hüseyin ESKİ - Sakarya University, Turkey

Editorial Board

Aaron DAVENPORT, Grand View College, United States	Marina Stock MCISAAC, Arizona State University, United States
Abdülkadir MASKAN, Dicle University, Turkey	Martin STEIN, Westfälische Wilhelms University, Germany
Adem UZUN, Uludag University, Turkey	Mehmet Ali DIKERDEM, Middlesex University, U.K.
Ahmet AKIN, Sakarya University, Turkey	Mehmet Ali KISAKUREK, Ankara University, Turkey
Ahmet ESKİCUMALI, Sakarya University, Turkey	Mehmet CAGLAR, Near East University, TRNC
Ahmet MAHIROGLU, Gazi University, Turkey	Mehmet Durdu KARSLI, Doğu Akdeniz University, TRNC
Ahmet PEHLİVAN - International Cyprus University, TRNC	Mehmet ÖZDEMİR, Sakarya University, Turkey
Ali Sidki AGAZADE, Eastern Mediterranean University, TRNC	Metin YAMAN, Gazi University, Turkey
Andreja Istenic STARCIC, University of Primorska, Slovenija	Miguel j. ESCALA, Ins. Tech. de Santa Domingo, Dominican Republic
Antoinette MUNTJEWERFF, University of Amsterdam, Netherlands	Min JOU, National Taiwan Normal Uni., Taiwan
Antonis LIONARAKIS, Hellenic Open University, Greece	Monte CASSIM, Ritsumeikan Asi Pacific University, Japan
Arif ALTUN, Hacettepe University, Turkey	Mufit KOMLEKSİZ, Ege University, Turkey
Arvind SINGHAL, University of Texas, United States	Murat BARKAN, Yasar University, Turkey
Aytekin ISMAN, Sakarya University, Turkey	Murat ISKENDER, Sakarya University, Turkey
Bayram ÇETİN, Mustafa Kemal University, Turkey	Mustafa BAYRAKCI, Sakarya University, Turkey
Brent G. WILSON, University of Colorado at Denver, United States	Mustafa GAZI, Eastern Mediterranean University, TRNC
Buket AKKOYUNLU, Hacettepe University, Turkey	Mustafa KALKAN, Dokuz Eylul University, Turkey
Cem BİROL, Eastern Mediterranean University, TRNC	Mustafa SAGLAM, Anadolu University, Turkey
Cevat CELEP, Kocaeli University, Turkey	Nabi Bux JUMANI, Allama Iqbal Open University, Pakistan
Charlotte GUNAWARDENA, University of New Mexico, United States	Nerguz BULUT SERIN, International Cyprus University, TRNC
Colleen SEXTON, Governor State University, United States	Neşe GÜLER, Sakarya University, Turkey
Coskun BAYRAK, Anadolu University, Turkey	Nilay BUMEN, Ege University, Turkey
Cüneyt BİRKÖK, Sakarya University, Turkey	Nilgun TOSUN, Trakya University, Turkey
Dale HAVILL, Dhofar University, Oman	Nursen SUCSUZ, Trakya University, Turkey
	Oguz SERIN, International Cyprus University, TRNC
	Omer Faruk TUTKUN, Sakarya University, Turkey

- Danguole RUTKAUSKIENE, Kauno Tech. University,
Lithuania
- Don FLOURNOY, Ohio University, United States
- Elnaz ZAHED, University of Waterloo, UAE
- Enver Tahir RIZA, Dokuz Eylul University, Turkey
- Erdal ZORBA, Gazi University, Turkey
- Eric Zhi-Feng LIU, National Cenral University,
Taiwan
- Fahriye ALTINAY AKSAL, Eastern Mediterranean
University, TRNC
- Fatos SILMAN, Near East University, TRNC
- Ferhan ODABASI, Anadolu University, Turkey
- Filiz POLAT, The University of Hong Kong, China
- Francine Shuchat SHAW, New York University,
United States
- Gianni Viardo VERCELLI, University of Genova, Italy
- Gilbert Mbotho MASITSA, Universirty of The Free
State - South Africa
- Giovanni ADORNI, University of Genova, Italy
- Gregory ALEXANDER, Universirty of The Free State
- South Africa
- Gulriz IMER, Mersin University, Turkey
- Gurhan CAN, Anadolu University, Turkey
- Halil Ibrahim YALIN, Gazi University, Turkey
- Hasan Basri GÜNDÜZ, Yıldız TechnicalUniversity,
Turkey
- Heli RUOKAMO, University of Lapland, Finland
- Hj. Mohd Arif Hj. ISMAIL, National University of
Malaysia, Malaysia
- Huichen Zhao, School of Education, Henan
University, China
- Huseyin BASAR, Hacettepe University, Turkey
- Huseyin YARATAN, Eastern Mediterranean
University, TRNC
- Hüseyin ÇALIŞKAN, Sakarya University, Turkey
- Iman OSTA, Lebanese American Universiy, Lebanon
- Jagannath DANGE, Kuvempu University, India
- James C. HOLSTE, Texas A&M University at Qatar,
Qatar
- Jerry WILLIS, Manhattanville College, United States
- Kakha SHENGELIA, Caucasus University, Georgia
- Manoj Kumar SAXENA, M M College of Education,
India
- Mariam MANJGALADZE, Institute of Linguistics,
Georgia States
- Osman TİTREK, Sakarya University, Turkey
- Ozcan DEMIREL, Hacettepe University, Turkey
- Ozcan Erkan AKGUN, Sakarya University, Turkey
- Pamela EWELL, Central .College of IOWA, United
Partow IZADI, University of Lapland, Finland
- Paul KGOBE, Centre of Edu. Pol. Dev., South Africa
- Paul Serban AGACHI, Babes-Bolyai University,
Romania
- Paula FITZGIBBON, University of Victoria, Canada
- Petek ASKAR, Hacettepe University, Turkey
- Psaltis IACOVOS, European University Cyprus,
Cyprus
- Ramazan ABACI, Sakarya University, Turkey
- Rauf YILDIZ, Canakkale 18 Mart University, Turkey
- Rıfat EFE, Dicle University, Turkey
- Saedah SIRAJ, University of Malaya, Malaysia
- Satilmis TEKINDAL, Turkey
- Seçil KAYA, Anadolu University, Turkey
- Sefik YASAR, Anadolu University, Turkey
- Selahattin GÖNEN, Dicle University, Turkey
- Selahattin GELBAL, Hacettepe University, Turkey
- Serap OZBAS, Near East University, TRNC
- Seref TAN, Uludag University, Turkey
- Songul ALTINISIK, Abant İzzet Baysal University,
Turkey
- Stefan AUFENANGER, University of Mainz,
Germany
- Suleyman DOGAN, Ege University, Turkey
- Ş. Şule ERCETIN, Hacettepe University, Turkey
- Tam Shu SIM, University of Malaya, Malaysia
- Teressa FRANKLIN, Ohio University, United States
- Ulku KOYMEN, Girne American University, TRNC
- Vahdettin SEVINC, Sakarya University, Turkey
- Vincent Ru-Chu SHIH, National Pingtung Univ. of
Sci. & Tech., Taiwan
- Vu Thi Thanh HOA, Oxfam Great Britain, Vietnam
- Yavuz AKPINAR, Bogazici University, Turkey
- Yuksel GUCLU, Sakarya University, Turkey
- Yuksel KAVAK, Hacettepe University, Turkey
- Zehra ALTINAY GAZI, Near East University, TRNC

Table Of Contents

DETERMINING THE FACTORS CAUSING THE PRISONERS IN PRISON FOR CRIME AND PSYCHO-SOCIAL SERVICES(T.R.N.C SAMPLE)	1
<i>PhD Candidate Demet KARAKARTAL, Prof. Dr. Münevver Yalçinkaya</i>	
EFFECT OF POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS ON SCHOOL WIDE DISCIPLINE IN A TITLE I INTERMEDIATE SCHOOL	18
<i>Joshua P. Spencer, Ed.D.</i>	
ENVIRONMENTAL LITERACY IN 9 th GRADE STUDENTS FROM MADEIRA ISLAND (PORTUGAL)	28
<i>Hélder Spínola</i>	
INTERNATIONALIZATION: AS AN IMPORTANT FACTOR ON UNIVERSITY-INDUSTRY COLLABORATION	37
<i>Gökçe MEREY, Reha Metin ALKAN</i>	
INTRODUCTORY STUDY ON STUDENT'S MENTAL MODELS IN UNDERSTANDING THE CONCEPT OF ATOMIC STRUCTURE (Case Study on High School Students in Lampung Indonesia)	51
<i>Sunyono, Dwi Yulianti</i>	
INVESTIGATING THE USE OF COLLABORATIVE TOOL IN AN ADULT LEARNING ENVIRONMENT	64
<i>Siti Hajar Halili, Rafiza Abdul Razak, Zamzami Zainuddin</i>	
IS WILLIAMS SYNDROME THE 'CONVERSE' OF AUTISM SPECTRUM DISORDER?	61
<i>Nor Siti Rokiah binti Abdul Razak</i>	
POSITION OF A PUPIL AND A STUDENT IN THE PROCESS OF VALUE ORIENTATION FORMATION	70
<i>Ján Danek, Eva Frýdková</i>	
RELATIONSHIP BETWEEN NEGATIVE COGNITIVE STYLE AND DEPRESSION AMONG UNIVERSITY STUDENTS	74
<i>Shagufta Perveen, (Phd scholar)</i>	

DETERMINING THE FACTORS CAUSING THE PRISONERS IN PRISON FOR CRIME AND PSYCHO-SOCIAL SERVICES (T.R.N.C SAMPLE)

PhD Candidate Demet KARAKARTAL

Cyprus International University, Faculty of Education
Psychological Counselling and Guidance Department, Nicosia TRNC
demkrt11@hotmail.com

Prof. Dr. Münevver Yalçinkaya

Cyprus International University, Faculty of Education
Psychological Counselling and Guidance Department, Nicosia TRNC
myalçinkaya@ciu.edu.tr

Abstract: The general aim of this study is to identify the factors causing prisoners to crime and determine the psycho-social support services in prisons, to fulfil the knowledge gap about topic and to contribute to the field area within the frame of theory and application. By using quantitative data gathering technique, in this study the data was obtained by open ended, semi-structured questions, and a personal information forms which are developed by the researcher.

The study group of the research includes; a social services expert and 50 sentenced prisoner in Nicosia Central Prison in 2014-2015 who are determined by convenience method. According to data; it was observed that the socio-demographic conditions of prisoners and their previous experiences before the prison are the effective factors to turn into crime. It has been observed that; the social service needs for the prisoners when they firstly sentenced to the prison, or during their stay there, during pre-evacuation and post-evacuation period can be changed.

Key words: Crime, factors affecting crime behaviour, prison, prisoners, psycho-social support services

INTRODUCTION

It is obvious that there is a serious increase in the number of crime and variety of the crimes recently in Turkish Republic of Northern Cyprus (T.R.N.C). In terms of increase in the variety, while most of them are classic crimes as theft, robbery and violence crimes, some of them are narcotic and cybercrime which are defined as new crimes. (Kıbrıs gazetesi, 2013).

Crime behaviour has been described in different disciplines but generally it is defined as the behaviour which infringes the law and causes problems in normatively accepted social system (İçli, 2004: 4). It has been stated that; the crime behaviour defined as the behaviour causing the problems in normatively accepted social order or system has many reasons. There are theories stating many reasons of crime behaviour such as; biological theories explaining the factors with genetics, hormones, head trauma (Dugdale, 1985; Leon-Carrion and Ramos 2003), social learning theories explaining the factors with modelling the crime and learning (Bandura, 1978), sociological theories (Baron, 2008; Smangs, 2010) and psychological theories (Adler, 1976; İçli, 2004). So that, these theories has brought different perspectives about crime reasons. However; it has not been possible to explain crime behaviour just within these theories which bring different perspectives about crime reasons. That is why, body literature claims that the crime behaviour which cannot be explained by one factor occurs with the combination of multi factors and interaction of those factors generally (Biles, 1979; Brit, 1997).

The researchers who claim the same idea say that; unemployment, economic problems, family problems, friendships, education, living conditions, environmental factors, having crime history in his/her life, psychological problems, having sexual abuse past in their lives are among the reasons of crime behaviour. (Biles, 1979; Smangs,2010). Those factors stress the importance of psycho-social services applications in prisons for the criminals or people who tend to crime not to have problems related to social life after evacuation and regeneration while staying away from behaviours related to crime. (Biles, 1979; Smangs, 2010). With regards to this; the characterization of what kind of psycho-social services can be given and the characterization of the factors of crime

after they talk about life experiences in pre and after prison are very important. This study aims trying to evaluate what kind of psycho-social services provided in prison and to characterize which factors they mention about their crime behaviour. By concerning Nicosia Central Prison sample this study aims to understand the factors for crime behaviour of prisoners. With regards to this aim the following questions are tried to be answered:

1.2.1. What are the reasons of criminals in prison to crime?

1.2.2. What are the psycho-social services provided for the prisoners in prison?

METHOD

Research Model

In the study; among quantitative research patterns, sample situation analysis pattern which is convenience to the nature of the study was used. Sample situation models are scanning regulations which aim to reach a judgement of a unit (human, family, school, hospital, etc...) of the world by determining its depth, width, itself and its relations with its surrounding (Karasar, 2005 :86).

Research Group

In this study where convenience method technique is used, a social service expert and 50 prisoners in Nicosia Central Prison in 2014-2015 form the study group. Convenient sampling method is the convenient method as a result of an accident or which can be found. Convenient sampling method is a very common sampling technique especially in the studies about helping humans. It is preferred due to it is economic and practical (Monette, Sulhvan ve Dejong, 1990).

Data Gathering Tools

Within basing on theoretical frame, as data gathering tool an interview form was used which was semi-structured by the researcher of the prisoners.

The interview is an interaction process which is carried out verbally according to different aims and mostly it is used as a tool for quantitative researches (Karasar, 1984: 176). While creating the semi-structured interview form which is used as data gathering tool the factors were considered such as to understand questions easily, to answer easily, to ask in an order from general to the specific. So, the prisoners are provided with more economic thinking process. In addition to this; in order to characterize the prisoners' view about the reasons of crime and also their view about psycho-social support services provided to them; an expert's view was asked by determining variable items. As a result of expert's analysis, the questions on the interview form were reordered, some questions were excluded and some questions were added. As a result of pre-application done with 5 prisoners, it was found out that; the language in the interview form should be simplified and there was no need for other changes. As a result of editing statements last version of the interview was completed.

For the social service expert, another semi-structured interview form was prepared as data gathering tool in the research. Composed of six questions, this interview form was prepared within the aim of evaluating the implementations in the prison regarding psycho-social support services. Due to the questions on form bring about intensive arguments; the application duration has reached to 30-40 minutes.

INTERVIEW QUESTIONS

Questions Related to Prisoners' Demographic Characteristics

- 1- Age?
- 2- Gender?
- 3- Place of Birth?
- 4- Education?
- 5- Marital Status?
- 6- Occupation?
- 7- Any brothers or sisters? Which child in order are you?
- 8- Education of your parents?
- 9- Are your parents together? Or separated?
- 10- What kind of crime is it that you sentenced for?
- 11- What is your total sentence duration? How long have you been in prison?
- 12- How many times have you been to prison? How old were you when you did crime?

- 13- Did you have a job before entering the prison?
- 14- Did you have any addiction to any substance before you entered to the prison?

Questions Related to the Reasons of Prisoners and Psycho-social Support Services provided to the Prisoners

- 15- In your opinion what is the reason why you are here?
- 16- Is there anyone in your family or around you that tend to crime?
- 17- Do you know what does a social service expert do in the prison? If yes, what are they?
- 18- What kind of works does a social service expert in the prison do about your problems' solutions and meeting your needs? (If so, do you think if s/he is sufficient enough for your problems and needs?) (If there is no help, what kind of support or help are you expecting?)
- 19- Did you check with the prison psychologist for the solution of your problems? (If yes, what did s/he change in you? Did it help?) (If not, why? What do you do in order to cope with these problems?)
- 20- Do you attend to vocational or skills course in the prison? (If yes, how much benefit could you get? If not, why?)
- 21- What kind of social activities are there in the prison? If yes, what kind of benefit did you have from these activities?

(Interview Form prepared for Social Service Expert)

- 1- What are the psycho-social service needs of prisoners when they go into prison? What do you do regarding to those service needs?
- 2- During imprisonment what do you do regarding to psycho-social support service needs?
- 3- During the prisoners' stay period, what do you do in order to encourage the prisoners to support their respectful and corrective behaviours?
- 4- What kind of training/s are given to the prisoners during their stay in the prison?
- 5-What do you do in order to reintroduce the prisoners to the society?
- 6-Do you follow the prisoners after evacuation? If so how?

Data Analysis

During the interview with prisoners and social service expert; the information they gave was recorded with their permission via sound recorder. The recordings were transferred to the computer as audio file and listened by the researcher. And then, the complete of the interviews with the participants were written as Word file in the computer media. Codings were done by transferred data, by compiling them, constructing the main parts of the study findings and by conceiving the themes (categories) content analysis was done. The main aim in content analysis is to reach to the relations and concepts for describing gathered data (Yıldırım&Şimşek, 2013). With regards to this, in the content analysis of data gathered from the interview; direct quotes were used in order to reflect the participants' opinions conspicuously by considering the questions in the interview form.

Validity and Reliability

Validity and reliability which are accepted the most important criterion of scientific research; are two most important criteria used commonly in researches. External validity is related to the transferability of the obtained results to the similar groups or media. While accessing the research results internal validity is related to sufficiency in trying to conceive the reality of process to be carried out (Yıldırım ve Şimşek, 2006:255). External validity in the research was tried to be carried out via using detailed description of data provided by the researchers. However; internal validity was tried to be provided by extending the duration of interviews, by participants' confirmation and expert's examination. In the study; the internal reliability was provided with validity and external reliability was provided via confirmation examination of two experts. For the themes and categories determined by the researchers, the necessary editions related to the topic as "agreement" and "disagreement". For the reliability calculation of the research, Miles and Huberman's (1994) reliability formula was used which proposes as; $Reliability = \frac{Agreement}{(agreement + disagreement)} \times 100$. According to the calculations; the consent between coders for the pre-interview is %80 and for last interviews is %94. With the coming up of reliability calculation over %70, this study was accepted as reliable (Miles and Huberman, 1994). In the transformation of findings during their presentation; coding for the prisoners were done such as K1, K2, K3, etc....

Findings and Remark

Remark and Findings Related to Demographic Characteristics of the Prisoners

Age

Looking at the age distribution of study group, it is seen that; the most congestion is 20-25 (15) and 30-35 (14) age group and 40-45 (3) age group follows it. The interviewed prisoners are between 17 (1) and 50 (1). The general age average of prisoners in the study is 29.4 (young people). By looking at the literature; it is stated that, substantial proportion of all crimes are done by young people. In this study carried out in TRNC Prison it is stated that the proportion of people who are at the age of 26-35 is % 42,8 (Karakaş, 2012: 106). The general age average of the prisoners in the study is composed of young people. As it seems; it can be stated that the data obtained with this research overlap with the research findings above.

Gender

50 of the 50 prisoners who participate to the research are male. Gender is the most prominent determinant that affects crime committing averages. When analysing the researches held; in every kind of crime it can be seen that males commit crime more than females. For instance; in a research held in TRNC, %93,1 of the prisoners are male while females are only 55,8 (Karakaş, 2012: 109). There are total 216 prisoners in Nicosia Central Prison. 11 of those prisoners are female. The remaining 205 prisoners are males. Generally evaluating; male population shows intensity. The data obtained from the research can be said that they are parallel to the information above.

Place of Birth

When looking at the distribution according to the prisoner's place of birth 27 of prisoners were born in TRNC and 23 of them were born in Turkey.

Education

The majority of study group is high school graduate (18) and then secondary school (14) and primary graduates (14). University (3) and post graduates (1) are also in the study group. According to this study's findings, the number of post graduate learner is very low among the prisoners. The most of them are high school, secondary school and primary school graduates.

When researches were analyzed, major proportion of the prisoners are in primary education level and most of them had to give up their education lives. For instance; according to the statistics of TUIK in 2010, while the % 29,5 primary school, % 28,7 primary education, % 22,1 high school or same level vocational school, % 9,5 secondary or same level vocational school and % 4,9 higher education graduates; % 4,9 of them are literates (TÜİK, 2010: 24).

With this study; it is stated that most of the prisoners were educated in high school, primary and secondary school. It can be stated that, the information above supports the findings obtained with each other.

Marital Status

32 of the prisoners participating in the study are single, 11 married, 4 divorced, 2 widows and 1 prisoner is married for the third time. As can be seen, the single prisoners commit more crime than the married ones and then married people, divorced and widows consequently. The studies in the field of criminology show that; the married people commit crime less than single people (Kızmaz, 2010: 579). In terms of criminality proportion, the widows and single come after the married people (Demirbaş; 2012: 218). As can be seen also in this research, the single prisoners commit crimes more than married prisoners and then widowed and divorced prisoners follow this proportion consequently. It can be said that; data obtained from the research is in similar direction with the findings above.

Jobs and the Working Conditions of Prisoners before Sentencing to the Prison

According to research data; before being sentenced to the prison the prisoners (interviewed prisoners)' proportion of working is high when considering their work life situations. Total 40 of the prisoners worked before the prison, 5 of them didn't have any job and that is why they didn't work, 5 of them did not work due to they were students. By looking at the study group's jobs that they had, the whole prisoners have mentioned total 24 different jobs. Firstly, working in construction sector (6), self-employed (4), cook (3) driver (2), business sector (2), barman (2), mechanic (2), marketing (2), waiter (2), tourism sector (1), welder (1), official (1), farmer (1), shipman (1), cabinet maker (1), plumber (1), taxi driver (1), electrician (1), accountant (1), locksmith (1), house painter (1), operator (1), taxi driver (1) and municipal police officer (1). There are 5 unemployed and 5 students also in the research group.

As it is observed, most of the interviewed prisoners profess which does not need a specific education level. For example; in a project which was prepared to show crime profile of Turkey, 2778 prisoners of 27 open and closed prisons were interviewed and they profess as labour, farming, craft, craftsman ship which did not need a specific education level in order to work (İçli, 2007: 16, 29). The interviewed prisoners in this study can be said that, they profess where they did not need a specific education level in order to work. The obtained data can be stated that they support the information above.

Condition of Prisoners' Brother or Sister Number and How Manyth Child is She or He in the Family

Looking at the distribution according to the prisoners' brother/sister number and how manyth is s/he in the family ; 3 prisoners is only one child, 4 prisoners are second child and s/he has one brother/sister, 7 prisoners are the first child who has one sister/brother, 5 prisoners are the first child of 3 brothers/sisters, 4 prisoners are the second child of 3 brothers or sisters, 3 prisoners are the third child of 3 brothers or sisters, 3 prisoners are the first child of 4 brothers/sisters, 2 prisoners are the second child of 4 brothers/sisters, 2 prisoners are the third child of 4 brothers/sisters, 2 prisoners are the fourth child of 4 brothers/sisters, 1 prisoner is the first child of 5 brothers/sisters, 4 prisoners are the second child of 5 brothers/sisters, 1 prisoner is the third child of 5 brothers/sisters, 2 prisoners are the fourth child of 5 brothers/sisters, 1 prisoner is the first child of 6 brothers/sisters, 1 prisoner is the sixth child of 6 brothers/sisters, 1 prisoner is the fifth child of 7 brothers/sisters, 1 prisoner is the seventh child of 7 brothers/sisters, 1 prisoner is the second child of 9 brothers/sisters and 1 prisoner is the first child of 21 sisters/brothers.

When analysing the number of prisoners' brothers or sisters according to this research's data; most of them come from a big family. Most of the prisoners have more than 2 brothers/sisters. In addition to this; 15 prisoners come from a family with 4 or more children. The average of number of the prisoners' sister/brother is 2,26. Within this data; most of the interviewed prisoners have a large family.

Ankara Security Directorate's Custody of Children Department of Security General Directorate Research and Planning Council (A.P.K.) has done a research in Elazığ Juvenile Detention Centre about "Child, Crime and Criminality with Police' Eye" in 1995.. And according to the results of this research, in two-child family the proportion for committing crime is very low and the criminal children are mostly from the 4 or more child family (Yavuzer, 2001: s.158). According to data obtained in this research; most of the interviewed prisoners have large family. Research findings can also be described as supportive to this information.

The Distribution of Education Level of Prisoners' Parents

Looking at the distribution of the distribution of education level of the interviewed prisoners' parents; 20 prisoners' parents are primary school graduate, 3 prisoners' mothers are primary graduates, 1 prisoner's father is primary graduate , 5 prisoners' parents are high-school graduates, 5 prisoners' mothers are only high school graduates, 9 prisoners' fathers are high-school graduates, 5 prisoners' only fathers are secondary graduates, 4 prisoners' only mothers are secondary graduates, 7 prisoners' parents are secondary graduates, 3 prisoners' fathers are university graduates, 1 prisoner's mother is university graduate, 5 prisoners' mothers have no educational level and 2 prisoners' mothers' level of education is unknown.

According to data obtained from this study; the prisoners come from low-level educated families. The level of education of prisoners' fathers is relatively higher than their mothers' education level. However; the education level of parents is low.

In the study of Haluk Yavuzer, 76,6 % of criminal children's mothers and %40,7 of their fathers are illiterate. According to Yavuzer; the education level of criminal subjects' parents is below the country's standards (Yavuzer, 2001: s. 150). The findings of the research are supportive to this information.

Parents of Prisoners Living Together or Not

The distribution according to parents of prisoners living together or not is; 33 prisoners' parents live together, 3 prisoners' parents live separately, 3 prisoners' parents are dead, 5 prisoners' one of the parents is alive and 1 prisoners mother or father is in prison. According to data obtained from this study, the number of prisoners grown up in a non-separated family is relatively less than the prisoners grown up in separated families. Moreover; there are some prisoners who have parental-deprivation.

In a study; "fragmented/separated family" was described as when mother or father is not in the family due to destruction of family integrity because of reasons such as, death, divorce, separation or abandonment, etc... (Uluğtekin,1991: s.37-38).

Fragmentation of family did not mean that having step mother or father only because of divorce. Even they continue their marriage the families which fragmented emotionally are also in this group (Taner, 1985: s.31). Since the experience of fragmented family stops the child's socialization, it paves causes mistaken and incomplete socialization. According to the literature; the results of mistaken and incomplete socialization is crime behaviour (Uluğtekin,1991: s.38).

Data obtained from this research which was held with limited number of prisoners, are found to be not supportive to other research findings.

Crime Types of Prisoners

Crime types of prisoners are respectively; drug (13), sex crimes (11), murder (8), traffic (3), fraud (2), injury (1) and other crimes 12 (robbery, sabotage, battery, house breaking, shop lifting, sneaking illegal products into prison, shooting, border violation, armed robbery, being driver for bank robbery, counterfeiting, housebreaking).

The most crime type is drug in the interviewed prisoners. The least crime is injury and robbery consecutively. In addition to this; when classifying the prisoners' crimes, "other" category type is much more than other categories. This is because being not able to evaluate some crimes of prisoners under any category. Thanks to this information; it can said that the crimes of prisoners are affected by economic and social conditions that they are in and these crimes are shaped by those conditions. During the interview the prisoners talked frequently about their negative life conditions before the prison.

In a study for examining the factors which affect the crime types, due to economic reasons crime related to property is more (Aytaç, Aytaç ve Bayram, 2007: 6). As well as this; the fraud crimes are thought not to be interrelated with the economic conditions of the people (İçli, 2007: 75). Thanks to this information, it can be mentioned that the crimes of prisoners are affected from economic problems and social conditions of them and those conditions shape the crimes. The findings of this research have similar sides of other research findings.

The Distribution According to Prisoners' Detention Period

Another topic analyzed in the study is; the period of staying of prisoners in the prison. As known before; according to penal system there are differences between the detention sentenced and staying duration in the prison. This difference occurs because the prisoners stay in the prison as 2/3 of sentenced detention according to penal system. By looking at the sentence detention durations of 50 prisoners who participated in the research, 30 people 1-5 years, 4 people 5-10 years, 2 people 10-15 years, 1 person 15-20 years, 5 people 20-25 years, 1 person 35-40 years, 4 people 1-5 months and 3 people 5-10 months. There are no prisoners in 25-30 and 30-35 years sentenced to detention. The minimum detention duration of the participant prisoners is 1 month and maximum is 40 years.

Among the participant prisoners, the minimum duration of remaining for evacuation is 1 month whereas maximum duration remaining is life imprisonment. A prisoner in prison for 15 years, for 9 years and a prisoner who still hopes to be evacuated have different psychological situations and expectations. Moreover, it can be said that the length of their stay in prison causes more problems in the prison for them and it also increases the need for social service. İl (1990: 152) says the importance of life plans after evacuation when the remaining time is 3 years. The more the remaining stay duration decreases, the more occurrence of meeting the needs and solutions of problems.

Distribution According to the Age When the Prisoners Committed Crime and Whether They Had Committed Crime Before

As in every study, the age in Criminological Study is an important variant to be analyzed. An important variant about criminalness is “person’s first crime age”. The distribution according to prisoners’ age is maximum is 20-28 (25) then 28-36 (12) , 12-20 (9) and 44-52 (4) age group. According to the findings in this study; the density of age group is 20-28 (25). 29 of the interviewed prisoners who are still there have committed to crime for the first time. 21 of them had committed crime before and 1 of them had unlimited crime and 20 of them had committed crime at least 2 times.

In a study by Uludağ University and Bursa Security Directorate; %72 of participant criminals had been taken into custody, % 66 of them had the same reason of being taken into custody, %41 of them had imprisonment before (Aytaç, Aytaç ve Bayram, 2007: 4). Findings obtained from this research do not match the previous studies done before about this area.

The Addiction Situation of Prisoners Before Imprisonment

Looking at the addiction situation of prisoners before imprisonment, 20 of the prisoners are addicted, 30 of them had no addiction. As well as this; the addicted some prisoners started using drugs by friend effect and obtained the first drug from his/her friend.

Addiction causes many problems for countries in many terms. Among these are health, economic, judiciary, etc... Drug addiction occurs generally from surrounding factors especially friendships and most addicts started using drugs by friend effect and they obtained it from their friends which is stressed (Altuner and his colleagues, 2009). The findings of study carried out by limited number of prisoners do not match with other research findings.

Findings and Discussion Related to the Prisoners’ Reasons of Committing Crime

What kind of factors push the 50 participant prisoner to commit crime, is emphasized. Since there is not a conceptual structure to guide the obtained data, the data obtained were analyzed inductively. As a result of prisoners’ expressions; the factors such as family, economic and friendship are the reasons of crime behaviour. Those mentioned factors, frequency and percent frequency distributions are shown on Table 1.

Table 1: Distribution of Category, Sub Themes, Frequency(*f*), Percent Frequency (*%f*) Related to Prisoners’ Crime Reasons

<i>Question</i>	<i>Categories</i>	<i>Sub Themes</i>	<i>f</i>	<i>%f</i>
What are the Reasons that Push the Prisoners Commit Crime?	FAMILY	Fragmented family	23	46,0%
		Family Deprivation		
		Family Violence		
		Inter parental Conflict		
		Bad Inter parental Relations		
		Love and Care Deprivation		
		1.Degree relative death or lost		
	FRIENDS	Negative Friends	20	6,0%
		Negative Friendships		
		Financial Problems		
		Unemployment		
	ECONOMIC REASONS	Defamation	3	8,0%
Unfair Judgement				
Illiteracy				
OTHER REASONS	Social Political Inadequacy	4		

As a result of data analysis, for the question of “What are the Reasons that Push the Prisoners Commit Crime?”, “family Reasons” is the first main theme of the prisoners’ answers. (*f* =23, *%f* =46,0) There are seven sub themes such as; Fragmented family, Family Deprivation, Inter parental Violence, Inter parental Conflict, Bad Family

Relations in the Family, Love and Care Deprivation and 1.Degree relative death or lost. Some views stressed by participant according to sub themes are as follows:

K8 states the effect of family deprivation on crime behaviour as: *'My family did not protect me. Because of this I chose this place in order not to go through bad situation. If my family had protected me, everything would have been more different.'*

K17 states the effect of fragmented family's effect on crime behaviour as: *'I was born in a family with 5 children. I grew up in a fragmented family. I tried to be careful not to mistake. I came from Turkey and for 30 years I tried to stay away from mistake. However; if there is a problem in family integrity structure, you can fall into a mistake when you are empty.'*

It has been observed that; not to complete family responsibilities, no family controls and not having audit are effective on crime behaviour. K19 states this situation as follows: *'Because of my parents' divorce I came here. They got divorced when I was very small. I always lived with revenge feeling. And I wanted to go to the peak and a kind of fight them. I still have this feeling because when I was very little my mother left me to the mosque yard and my brother to a hairdressers and left to Turkey. Later on; mosque imam and my grandmother brought me up until this age. Then my mother came back. She provoked me against my brother and my father. I tried to stab my father and my brother. There are actually many reasons'*

K26 states the effect of losing 1. Degree relative in family on crime behaviour as: *'continuously I lived without my family. I lived alone in South Cyprus since I was very small. My father's murder case affected me very badly.'*

K44 states the pressure by her family on her and its effect on crime behaviour as: *'My family used to do pressure on me in terms of school because I used to escape from schools. I was studying at the Greek Side. As you know Bonsai is very common in Greek Side. With the effect of friends I found myself in this world like indeliberate as my psychological situation was not well. Then I was caught'*

Family factor is very important in crime behaviour. Assimilation of negative attitudes is a risk factor for a child's crime behaviour. Especially if there is crime behaviour in the family the risk of a member's committing crime increases (VanDe Ract ve diğ, 2009; Warr, 1993).

Also; if the family stops supporting the member or disinherit them; it is easier to tend to crime. Criminology science emphasizes the importance of family in a child's or adult's criminalness. It is stated that; the families are strong models for teaching members the behaviours of violence, antisocial and belligerence. Again also; the absence of one or both parents causes risk for the person's crime behaviour (Hansom and others., 1984; Wright and Wright, 1994).

Second main theme is 'Friends'. ($f=20$, $\%f=40,0$) under this second main theme there 3 themes composed by mistakes in youth, negative friendships and friends. While the prisoners in the study state their crime behaviours' reasons, they stressed mistakes in youth and negative friendships. Especially they described the reasons of crime behaviours with friends.

Regarding to this; the prisoners who show the friends as effective on crime, state as:

K1 sentenced due to drug states how effective friends directed her to commit crime as:

'My some friends ripped off because of their drug cases. They put their fingers on and police came and arrested me. I started this Bonsai due to my friends. My friends had the same crime before and police told them that they would help them in the court and that is why my friends told my name as well.'

K5 sentenced due to drug crime, also says the same statements as: *'My friends used drugs and I had a proper job before I was in this business. Because of curiosity and wannabe I started to use'*

K21: *'during military service I had a group of friends. They used drug. I also started. When I first had it, I didn't understand what happened. I fainted. Later on whenever I was upset I always sought for drug. I could not have enough money. Then I started to sell. I was caught. I was imprisoned for 4 years and then I was evacuated.'*

In Öntaş's and Akşit's study on children's tending to crime; the importance of friendships in criminalness was emphasized. Under the 'economic reasons' ($f=3$, $\%f=6,0$) category the financial problems and unemployment are the pushing factor of prisoners for crime. According to these sub themes; prisoners stated the effect of economic problems they had which pushed them to crime as:

K18 sentenced due to being driver for bank robbery and he states the effect of economical problems he had on his crime behaviour as:

'I was a taxi driver at nights. I tried to study at school during the days. I tried to keep the balance. But this was so hard so I came even here. My family works in normal places. Naturally the universities here are very expensive and I had to pay on my own. And that was really hard for me. That's why I made mistakes and I took

wrong road. And I am here.’

K6 states how unemployment because of being ex-con and drug trader pushed him or her for crime as: ‘Our financial condition was really bad. Actually to the some point I had to do this. I don’t have any other job to survive. In 2010 I was sentenced for 6 months due to drug. They decided for imprisonment instead of fine even there was fine at that time. After the evacuation, I worked in 2-3 places. They learned that I was ex-con and fired me. I could not survive in a work and then again I had to take this road.’

K47 sentenced due to drug trade states how the economic reasons push him or her to crime as: ‘For a better life ambition’

The studies show there is a meaningful relation among unemployment, economic problems and crime behaviour (Baron, 2008; Britt, 1997; Farrington and others., 1986). As in the other studies; this study’s findings are parallel with the literature generally. Except the factors mentioned in this study under the category of ‘Other reasons’ $f=4$, $\%f=8,0$; calumny, unfair judgement, illiteracy and social politics inadequacy are determined as sub-themes. These sub-themes; are found to be the reasons of crime behaviours by some prisoners. According to these sub categories; prisoners say that:

K2: ‘I thought the captain in my workplace made plot to me. I argued with him one week ago before this event. After one week this event happened, because all the proofs were saying it happened at 3 o’clock. I was passing by at 5 o’clock near event place. The only proof was the only scenery that I just walked. After two hours. My only blame is passing by that road. I doubt about the captain. The event happened on the 3rd of November, two days later they called me from wok and they said we will take you to the central command headquarters to the military quarter. We will take your testimony. I said what happened? What is the matter? I went to workplace. They showed me a photo. They asked is that you in the photo? Yes it is me I said. They showed me event place and asked if I passed by from here. The photo is my photo while I was walking on the road. I said it is me but the place is uncertain. They said Ziya Gökalp Avenue. You went toa market on that street to buy cigarette. You took your gun and got the money. I said no. We have camera scenes and we will show you them. I said ok how me. But in the scenes it was 400 metres far from the market that I go everyday to work on that avenue. No other scene.’

K15: ‘they tried to rape my father’s wife and started to gossip about my wife. I could not stand it anymore. We went to the police and made a complaint by telling the story. The police looked at the computer and this man has 3 cases of raping and he is outside how come? I said ask this question to yourself. It means our government protects the ones who are strong in terms of politics. If it wasn’t like this man wouldn’t dare to do these things. I wasn’t going to do something at that night. I tried to calm myself down. Then they sent me news of ‘If he is a real man let him approach us’. I got my gun and went there because these men are dangerous. When my family wondered about me, my father and my brother came to find me. They of course guessed where would I be. Since I walked there and they came by car, they went there earlier so that I could not be able to do something. Just I went there, they stabbed my grandfather. They stabbed my brother. I had to do something and I shot them I couldn’t say come and shoot me.’

K28: ‘the promises that government didn’t make them real and they isolated me’

K37: ‘completely the illiteracy youth gave me. We killed my darling’s husband together. Before 25th of January it was my darling’s husband’s birthday. That is why they went out and she gave too much alcohol to him. She left the door open and I went in by hiding at the back of sofa. Her husband went to bedroom since he was drunk. I benefitted from this situation and I hit his head with game wood material and tried to strangle him with a wire. Then while we were bringing him to Alev Kayası we realized that he was alive. This time I got tyre jack from the back and hit his head. Then strangled him with charger’s cable. And later by pouring the flammable material on him we tried to burn him. We tried to make the murder look like an accident but we were caught’.

The Situation Whether There are People Tending to Commit Crime in their Family or Close Surrounding or Not

12 prisoners’ family of total interviewed 50 prisoners or surroundings have people who tend to crime. Other 38 prisoners whereas do not have. The ones who say yes there is someone, these people are parents, brothers/sisters or cousins. Their statements are as follows:

K13: ‘In my family my brother is the one who tend to crime’

K15: *'My brother/sister is in prison due to attempted murder. s/he wasn't guilty and he was sentenced to 15 years. S/he was only 17. My grandfather and brother were stabbed. However for those guilts there was no case in the court. What is the reason? Backing them.'*

K26: *'My father is in prison due to murder. I haven't seen him since I was 14. My older brother died because of murder because he was dealing with drug.'*

K32: *'Nearly all of my family'*

K33: *'My cousins'*

K34: *'My uncles are in prison in Turkey...'*

K35: *'My older brother is in prison'*

In the findings from this research, of 12 prisoners 1st and 2nd degree relatives tend to crime. If a member is criminal this leads the imitation of criminal behaviour easier. If father or brother/sister is criminal, this paves the way for criminal to be common. In many studies held with children and youngsters, there are imprisoned people in their families (Öntaş, 2004; Çifçi, 2008).

Çifçi (2008: 119) claims that; especially in puberty of children, the children grown up with crime stories where the crime behaviour is legitimate can be under the effect of those groups.

When imprisoned youngsters' family structure is analyzed; most of their family relations are negative, the family members have severe conflict and the youngsters come from fragmented families (Çifçi, 2008: 116).

In the findings obtained from this study the prisoners told that they have family members or people around them who tended to crime. And they were generally; parents, brother/sister and cousins. The findings obtained from the research are supportive for the findings of Öntaş, 2004 and Çifçi 2008' research.

Findings and Discussion Related to Psycho-Social Support Services Provided to Prisoners

In this section; a question of 'Do you know what SSE's do?' was asked to the prisoners and it was observed that most of them were having difficulty in answering this question. Most of the interviewed prisoners within the research define SSE working in prison as psychologist. Even at the first step the Social Service Expert concept is foreign to them, during the interview, it was explained that the SSE did not do the same job as psychologist and s/he had different job title from the psychologist. After this explanation; it has been found out that, 45 prisoners did not have any knowledge about an SSE was working at the prison and 5 prisoners said the reverse as they had the knowledge.

For the question of 'Do you know what SSE's do at a prison?' 5 prisoners' answers are as following;

K28: *'To rehab a person and try to reintroduce someone to society'*

K37: *'Coming to the prisoners below 23 and trying to lower their detention duration'*

K39: *'There is no SSE in the prison, but as far as I know, s/he comes when you have familiar problem or child problem of sorts'*

K45: *'As far as I know, s/he comes for conditional release. Protects the information about the person's curriculum vitae.'*

K46: *'To support the people under 18 financially and morally'*

As a result of the interviews with prisoners, generally they do not know what does a Social Service Expert do in a prison. Also; most of the prisoners are unaware of SSE in prison. As well as this, some prisoners said that even when they wanted to see SSE they could not though they wrote petitions and also they did not get any feedback for their petitions. Social worker informs the researcher about the necessary help was done and they go when there is a request. However; when generally analyzing the answers of prisoners, the information of SSE can be doubtful.

In İl (1990: 139)'s study during their enforcement female prisoners share their problems with enforcement officials, manager and then SS workers consequently and the reason of this is the rareness of SSE. And also, they have the difficulty in official process for meeting with him/her. The official process to be followed for meeting with SSE in prison prevents them to request for SSE service. The findings of this research alike the findings of other research.

The question of '**What kind of work does SSE in prison do in order to meet your needs and solutions for your problems?(If s/he does do you think those works are sufficient for the solutions of your problems or meeting your needs?) (If there is no help, what kind of help would you expect?)**' was asked to the prisoners. 48 prisoners, who participated in research stated that SSE haven't done any working to solve the problems and to fulfil the needs, also it is come out that 18 prisoners do not expect any help about solving the problems and fulfilling the needs. Other remaining 31 prisoners specified the expectations from SSE as two main themes which are 'economic expectations' and 'psychological expectations'. These specified main themes are shown in Table 2 as frequency and percentage frequencies.

Table 2: Category, Subthemes, Frequency (*f*) and Percentage Frequency (*%f*) Distributions that are emerged according to the prisoners' expectations from SHU

Question	Categories	Subthemes	F	%f
What would you expect from SSE about solving your problems and fulfilling your needs?	Economic Expectations	Job Expectation	9	18,0%
	Psychological Expectations	Psychological Support Expectation	22	44,0%

As you can see in Table 2, expectations from social service specialist are shown as two main categories that are 'economic expectations' (*f*=9, *%f*=44,0) and 'psychological expectations' (*f*=22, *%f*=44). Under the main category title of 'Economic'; 'job expectation' is specified as subtheme. The remarks of participants according to the subtheme are stated below as:

K1, sentenced for the narcotic crime is stated his expectations as: *'I would expect not to lose my job by being thought that I was young and could do such mistakes; thus my family system wouldn't be destroy. I also ruined my family because of this reason. Beside I put them to shame; I have no job now. I'm living on their financial possibilities. Beside of my mistakes, I harm my family too much. Both financial and emotional. I have been in prison for 4 months. My father has pharmacy warehouse and he is sick. I have been telling this many times to help me. My father was taken to the hospital three times when I am in prison and no help was done, in addition I lost my job.'*

K6, prisoned for the narcotics traffic and is waiting a work relief from SSE expressed that: *'I would expect him to care about and to help me what else can I do when I go out. Firstly, I was punished for 6 months. Then, because of being criminal, I automatically become unemployed. If he had cared about and helped me, I wouldn't be like that at that moment. Neither I wouldn't be unemployed nor being out of pocket and I wouldn't be forced to go towards the drug again.'*

Psychological support expectation is seen as a subtheme under another main theme category 'Psychological expectations'. The remarks of participants according to the specified subtheme are stated below as:

K4, who is on trial for the rape crime stated that: *'I demanded special service specialist to come, but he didn't come. I am at outside after 2 years and I don't know what else are waiting for me at my outside life compared to the prison, I am afraid. I am waiting to be protected and guided. I want to be given one more chance to the penitent.'*

K28's, prisoned for the crime of fraud and consistently pushed into crime; expectations are like that: *'I would expect him to search the reasons why I have been pushed into crime and care about my familial problems.'*

K46, prisoned for the narcotic crime, expressed his expectations as: *'Social service specialist came only once. They prepared a social study report. I would expect him to help me with this social study report during the judicial process and relieve me psychologically.'*

Beside of these, 2 prisoners who participated in research stated that SSE's helps about fulfilling the needs and solving the problems are enough and expressed this as:

K32: *I had had a treatment around 1 year before I came to the prison and they put me on a salary as well. It is enough.*

K45: *They fulfilled my needs. They gave me pocket money when it is required. They brought me clothes. They brought me to the doctor. Yes, these helps are enough.*

As a result of meetings with prisoners, it is understood that most of them have lack of information for which problems and in which situations they should apply to the social service specialist who works in prison thus, because of their lack of information; they did not answer the questions about their expectations healthily. Moreover, prisoners' one of the biggest anxiety after being evacuated is getting a job that will provide them to

move on. After being evacuated, some factors such as being tagged by the public and treated prejudicedly by the employers are make it harder to get a job. According to these findings, after being evacuated, prisoners are worried about getting a job and earning money and it can be said that mostly, they need help about this subject. It is stated that they went to prison according to the urgent needs during execution process of prisoners, they prepared social study report about prisoners and also during the prison process and after; they eliminated the problems to a large extend that has occurred about the prisoners. In addition, according to the prisoners' answers, it is expressed clearly that the service of SSE is inadequate and the applications of social service staff are restricted by filling the files which contains general information of prisoners.

It is asked to prisoners if they applied to prison psychologist for their problems (If they applied, what did it change? Did it come in useful?) (If they didn't apply, why? And what do they do to cope with these problems?) and 18 of prisoners who participated in meeting, stated that they had applied to the prison psychologist for the solutions of their problems however it did not change anything and it was not helpful for them. 6 prisoners who participated in meeting, said that they did not apply to prison psychologist because they have no problem. 7 prisoners who participated in meeting, said that they applied to prison psychologist for solving their problems. Some statements of the prisoners who had some changes about themselves are like that:

K1: *'I was cracking up. At first, when I came here, I went into depression; I was crying everyday for 2 months because of the fine I received. He was always with me and told me that there was nothing to do. He behaved realistically. He said it will go on. But I knew that it couldn't be like that anymore, because here is T.R.N.C.'*

K2: *'Talking did good. It was helpful. We talked and this relieved me a bit. I demanded medicine but he said to me there was no need for medicine.'*

K6: *'It relieved me psychologically. I treated my family badly. My thoughts changed thataway. It didn't provide me any benefit except this.'* The 18 other interviewed prisoners indicated that they do not contact the psychologist in the prison to solve their problems and when you look at the method they use to cope with their problems, it was observed that they tried to deal "by themselves" and with "social support of friends". Coping mechanisms prisoners use to solve the problems and their frequency and percentage frequency distributions are as shown in Table 3;

Table 3 Coping Mechanisms Prisoners Use to Solve the Problems and Their Frequency(f) and Percentage Frequency(%f) Distributions

Question	Categories	F	%f
What do you do to solve your problems?	By Themselves	15	%f=30,0
	Social Support of Friends	3	%f=6,0

As shown in Table 3, 18 prisoners tried to cope with their own problems by themselves and with social support of their friends. Statements of some prisoners who use their own methods to deal with their problems are as follows: K5 who is convicted because of narcotic crime has expressed that he had been coping with his problems by himself: *"I try to handle my problems by myself. For example; they give out pills here, and they make us addicted to drugs. I did not take them. Except these, I get up and go to bed early. I go to work and that's all."*

K10 who is convicted because of sexual assault offenses has expressed that he had been coping with his problems by himself: *"I tried to handle my problems by thinking and finding my own faults."*

K12 who is convicted because of murder tried to cope with his problems with social support of his friends and expressed that, *"I usually try to be patient or talk with other inmates to cope with my problems."*

K29 who is convicted because of narcotic crime has expressed that he had been coping with his problems by himself: *"I try to cope by reading self-improvement books."*

According to research findings; it can be said that prisoners have inadequate psychological support services in prison, workers and prisoners are trying to resolve their problems by themselves and they are deprived of professional support. The prisoners were asked **if they join the vocational and art courses (If yes, how much benefit do they provide? If no, why don't you participate?)** and their participation ranges were included. According to the survey, 17 prisoners stated that they participated in these vocational and art courses and that they provided much benefit. Other 7 prisoners stated that they participated in these courses but they did not provide much benefit. Other surveyed 16 prisoners stated that they do not want to participate these courses because they do not believe that they are beneficial. And other 2 prisoners said that they could not participate in these courses

because they haven't heard about them. K19, one of the surveyed prisoners stated that he attended the courses but he was expelled and;

K19: I was participating but I got expelled. Because I was carrying drugs and mobile phone. Other surveyed 7 prisoners stated that they wanted to join the courses but couldn't because of the reasons like "unanswered request" and "being under custody". Their remarks are as follows;

K15: I wanted to join engineering course but they didn't allow me because of the term of my imprisonment which is 20 years. There are people whose terms are 30-40 years and they work outside. I was restrained by the others who had contacts.

K23: I have sent a request to join. Waiting for the answer.

K25: I couldn't join because of my offenses.

K26: I cannot join because I am embargoed. I tried to carry drugs and that is why I am under custody.

Vocational and art courses can be a very important opportunity for prisoners to move on after discharge. One of the prisoners who have stated that he has participated all vocational courses and indicated the importance of the courses; *"I didn't know anything about welding but now I have learned it. I have learned carpentry and I have got driving course certificate."* The welding, carpentry, driving and etc. Courses in prison are helping the prisoners to move on and get by after discharge. However some prisoners, (K15, K26..) have stated that the same people are chosen for the courses over and over again. So it can be concluded that good conduct is considered while choosing prisoners for the courses.

The prisoners were asked **"What kind of social activities are there in the prison? How did they provide benefit?"** and their ideas about the activities were included. According to the survey, 3 prisoners stated that there aren't any social activities in the prison. Other prisoner stated that he doesn't know what kind of activities are there. K23, one of the surveyed prisoners stated that he wants to attend these activities but he can't and explained the reason;

K23: There is cinema and library. I didn't go, I've only heard of it. They do not come to us and ask if we want to go anyway. Guardians choose people.

Other 13 surveyed prisoners stated that there are only cinema and theatre. They also said that they do not provide much benefit;

K3: They staged plays two times but it was not beneficial.

K6: We only have a cinema and nothing else. Actually I do not find it beneficial because they do not show the movies we want or new ones. They make us watch 2-3-5 year old movies. We do not watch any up-to-date movies. Surveyed 24 prisoners mentioned about the activities like cinema, sports, library, football, volleyball and etc. And it was observed that they provided much benefit. Other surveyed 6 prisoners stated that the only activity is the cinema but they do not attend it.

Surveyed prisoner K1, talked about the social activities in prison and their benefits: *"There is only a cinema and nothing else. We watch different movies once a week. We get to watch something on the big screen. At least we spend 3 hours for something fun, which is the only benefit."*

K5: "There is a cinema, a library and a fitness centre. I find them highly beneficial. For example, on Thursdays I go to cinema and I go to fitness center for sports time. I go to library and read."

K29 who used to be a drug addict and stopped using after joining social activities in the prison stated that;

"There is a cinema and a fitness center. I go to fitness center and it provided much benefit. I used to take pills for psychiatric disease and now I don't have to use them thanks to sports."

24 of the surveyed prisoners stated that the activities help them to get rid of negative thoughts. However other 26 prisoner stated that these activities are scarcely provided. Based on these findings, the safety measures can be effective in carrying out these activities and for these activities prisoners are selected according to a specific criteria. In line with the answers of the prisoners, it can be concluded that participation in social events of all prisoners could not be achieved.

RESULTS

Surveyed prisoners are generally consist of 20-25, 30-35 years old young adults.

More than 50% of the prisoners are men.

27 of the surveyed prisoners were born in TRNC and other 23 were born in TR. Majority of the prisoners are high school, secondary and primary school graduates and there is not many higher education graduates.

In relation to this, it can be concluded that among convicts, high school, middle school and elementary school graduates are constitute the largest segment.

According to the study, unmarried prisoners committed more crimes than married ones and divorced and widowed prisoners follow the married prisoners respectively. It is seen that the majority of prisoners do not require a certain level education to profess their profession. It is observed that the majority of the convicts came from a large family.

Convicts, come from families with low education level. Less than half of the inmates came from broken homes. It was observed that the most common crime is narcotic crimes and the least common is the injury and theft.

Also when the crimes of the prisoners are categorized, it was remarkable that “other” categories of crimes are redundant. When the term of imprisonment is considered the least is one month and the most is 40 years. The prisoner who has the minimum remaining time to evacuate will be released a month later while some were punished with lifetime imprisonment. In terms of relapsing, it can be seen that less than half of them had committed crime before.

Given the situation if the prisoners had worked before entering the prison, it can be said that there is a high rate of participation in working life. More than half of the prisoners are seen as being not addicted to any drugs before entering prison.

According to the results of the prisoners’ remarks, factors like family, economic and environmental issues are the reasons of criminal behaviours. It can be said that less than half of the prisoners have family members of friends who has had a tentation. It was observed that the prisoners do not know the prison worker SHU and that most of them do not know his job. It was also observed that prisoners have vocational and psychologically supportive expectations from SHU.

It can be indicated that the prisoners are left alone to handle their problems. It was observed that prisoners’ participation to prison programs are not as expected. It was observed that the vocational courses are not enough for prisoners to find a job after discharge. It was seen that the prisoners have hope to find a job after discharge and also the ones who were convicted before are disappointed of being unemployed. The Professional help provided to the prisoners during the imprisonment and after discharge are observed to be minimum.

Recommendations

Recommendations to Researchers

- 1- In this study, the answers were sought to the questions; what are the underlying causes of prison inmates who committed crime, what are the psycho-social support services for prisoners. To make generalizations about these issues, this study can be performed with deeper questions, a wider period of time and a larger study group.
- 2- In this study, the reasons that push the young adult and adult criminal prisoners in prisons to commit crime and the Psycho-Social Support Services which provided are focused. The next research can be prepared for children and adolescents showing criminal behaviour.
- 3- Those who are convicted of drug addiction is seen to have been in prison before. In connection with this Alcohol Dependence Treatment Program is applicable.
- 4- In this research, the reasons that push prisoners to commit crime and the psycho- social support services provided are focused. Programs and studies which include rehabilitation for prisoners can be added.
- 5- According to the contemporary counselling concept, while considering the preventive feature of psychological counselling and guidance, psycho education services can be planned and added to primary schools, secondary schools programs and also can be provided to families in order to prevent crimes and criminal behaviour.

Recommendations to Social Service Experts

1. The social service expert stated that he prepared social examination report only for the prisoners under 25 years old when they first convicted and presented the report on the court as an evidence. According to the remarks of the social service worker, when convicts are first imprisoned their fear and panic are disregarded. In relation to this, prison adjustment programs can be developed to ease their fear and panic.

2. The Social worker stated that teachers used to be brought to the prison for student prisoners. In relation to this and considering education as an important way of rehabilitation, education can be provided to imprisoned students again.
3. The social worker stated that he only interviewed with the prisoners under 25 years old upon their request. With this information it can be concluded that all prisoners can be interviewed with the help of a certain schedule.
4. One of the approaches on reducing the crime rate is to focus on rehabilitation in prisons. Researches who indicate the importance of rehabilitation programs claim that the prisons are not only for captivate. (Simon, 1998) In relation to this, the social service worker can provide rehabilitation for the prisoners during their sentence.
5. Some prisoners stated that since it is hard for them to find a job after discharge, they had to commit crime and get back to prison. Improvements on the vocation of the ex-convicts can be done with considering their problems on finding a job to prevent going back to prison.
6. The social service worker stated that the vocational courses are not beneficial enough to help prisoners to find a job after discharge. These courses can be improved to be more helpful.
7. The social worker stated that specific studies are held with the prisoners during discharge only upon request. In relation to this, these studies can be done with each prisoner during discharge to help them prepare for the social life.

Recommendations to Psychological Counsellor

1. Psychologists can work with the biblio therapy method which includes using novels and stories on the sessions with prisoners as individuals and groups to help them cope with their behavioural and sentimental issues.
2. Self respect increasing studies can be held to help prisoners adjust and be prepared for social problems after discharge.
3. Social events and education programs for prison workers and families can be held in order to prevent crimes.
4. It was observed that the applicable studies are short term and limited with academic studies. Considering the continuity principle of counselling, long term and extensive studies about criminal behaviour can be held.
5. Upon the needs of prisoners, anger management, communication programs and other informing programs on drugs and alcohol can be provided.
6. An educational process can be followed according to the properties of prisoners. With the help of this process, prisoners would be ready for the discharge process and after discharge and stay away from committing crime.

References

- Adler, A. (1976). Individual psychology and crime. *Journal of Individual Psychology*: 32(2), 131-144.
- Altuner, D., Güner, C., Akyay, İ., Akgül, A., (2009). Madde kullanımı ve suç ilişkisi. *Tıp Araştırmaları Dergisi*, Cilt 7, Sayı 2.
- Aytaç, M., Aytaç, S., Bayram, N. (Mayıs 2007). Suç türlerini etkileyen faktörlerin istatistiksel analizi. 8. *Türkiye Ekonometri ve İstatistik Kongresi* (24-25 Mayıs 2007) İnönü Üniversitesi Malatya.
- Bandura, A. (1978). Social learning theory of aggressions. *Journal of Communication*, 28(3),12-29.

- Baron, S. W. (2008). Street youth, unemployment, and crime: is it that simple? Using general strain theory to untangle the relationship. *Canadian Journal of Criminology and Crime Justice*, 50(4), 399-434.
- Biles, D. (1979). Unemployment and crime-some research and policy considerations. *Australian Journal of Forensic Sciences*, 11(4), 167-173.
- Cankurtaran, Ö., Ö., Akşit, B.T. (2006). Çocukların gözüyle suça yönelme nedenleri ve sonrası: Çocuk tutuk evinde yapılan bir çalışma. *Hukuk ve Adalet Eleştirel Hukuk Dergisi*, 2(8), 134-151.
- Çifçi, G. E. (2008). *Kapkaç suçundan hüküm giyenlerin sosyo-demografik özellikleri, sosyal dışlanma süreçleri, suç ve diğer sapma davranışlar açısından incelenmesi*. Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, Sosyal Hizmet Anabilim Dalı (Yayınlanmamış Doktora Tezi). Ankara.
- Demirbaş, T. (2012). *Kriminoloji* (4. bs.). Ankara: Seçkin Yayınları.
- Dinler, V. ve İçli, T. (2009). *Suç ve yoksulluk etkiselliği*: Isparta Cezaevi Örneği, Uluslararası Davraz Kongresi, (Ed.Uysal Arman ve diğerleri), 2469-2486.
- Dönmezer, S., Erman, S. (1994). *Nazari ve Tatbiki Ceza Hukuku*. İstanbul: Beta Basım ve Yayım Dağıtım A.Ş.
- Dugdale, R. L. (1985). *The jukes: a study in crime pauperism, disease and heredity*. (3 rd ed). New York: G.P. Putham's Sons.
- Duyan, V. (2001). Sosyal desteğin tanımı, kaynakları, işlevsel boyutları, yararları. *Sağlık ve Toplum Dergisi*, 18,11.
- Gay, L.R & Airasion, p. (2003). *Educationai Research; Competendes for Analysis and Applieation*. (7th ed.). Upper Saddle River, NJ: Merill/Prentice Hall.
- Hanson, C. L., Henggeler, S. W., Haeefe, W. F. Rodick, J. D. (1984). Demographic, individual, and family relationship correlates of serious and repeated crime among adolescents and their siblings. *Journal of Consulting and Clinical Psychology*, 52(4), 528-538.
- Işıkhan, V. (2007). Kanser ve sosyal destek. *Toplum ve Sosyal Hizmet Dergisi*, 18(1), 15-29.
- İçli, T. (2004). *Kriminoloji*, Martı Yayınevi, Ankara.
- İçli, T. (2007). *Kriminoloji*. Ankara: Seçkin Yayıncılık.
- İl, S. (1990). *Türkiye'deki kadın suçluların genel özellikleri ve infaz sürecindeki sorunları üzerine bir araştırma*. (Yayınlanmamış Doktora Tezi). Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.
- Karakaş D., F. (2012). *Kuzey Kıbrıs (KKTC) merkezi cezaevi üzerinde yapılan alan çalışmasında elde edilen verilerin suçla mücadele bağlamında analizi*.
- Karasar N. (2005) *Bilimsel Araştırma Yöntemi* (15. baskı) Ankara Nobel yay. Dağ.
- Kuzey Kıbrıs Türk Cumhuriyeti'nde artan suç oranları korkutucu boyuta ulaştı. *Kıbrıs Gazetesi*, (7 Mart, 2013).
- Kızmaz, Z. (2010). Cezaevine girme sıklıklarına göre suçlular: Karşılaştırılmalı bir analiz. *e-Journal of New World Sciences Academy*, 5 (4).
- Miles, Matthew. B. ve Huberman, A. Micheal. (1994). *An expanded sourcebook Qualitative data analysis*. Thousand Oaks, California: Sage Publications.
- Taner, M. (1985), *Suçlu Çocukların Eğitim Yoluyla Korunmaları*. Adalet Bakanlığı Yayını, Ankara.
- Türkiye İstatistik Kurumu. (2010). *Ceza infaz kurumu istatistikleri*.
[http://www.tuik.gov.tr\(10.01.2015\)](http://www.tuik.gov.tr(10.01.2015)).
- Uluğtekin, S. (1991). *Hükümlü Çocuk ve Yeniden Toplumsallaşma*. Ankara: Bizim Büro.

Van De Ract, M., Murray, J., Nieuwbeerta, P. (2011).The long-term effect of paternal imprisonment on criminal trajectories of children. *Journal of Research in Crime and Delinquency*. 49(1), 81-108.

Yavuzer, H. (2001). *Çocuk ve Suç*. İstanbul: Remzi Kitabevi.

Yıldırım, A. & Şimşek, H. (2006). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (6.baskı). Ankara: Seçkin Yayıncılık.

Effect of Positive Behavioral Interventions and Supports on School Wide Discipline in a Title I Intermediate School

Joshua P. Spencer, Ed.D.

Associate Faculty, Ashford University, Teacher, Marion Intermediate School
915 Willcox Ave. Ext., Marion, SC 29571

jospencer@marion.k12.sc.us & jspencer73@sc.rr.com

Abstract: The implementation of positive behavioral interventions and supports (PBIS) has become a priority to school districts and departments of education due to the Individuals with Disabilities Education Improvement Act of 2004, which requires the development and implementation of behavior intervention plans. At a Title I school in South Carolina, a PBIS was implemented after students were increasingly being removed from the classroom due to disruptive behavior. This quantitative program evaluation examined the effect of PBIS on office referrals. The theoretical framework associated with PBIS involves transformational theory, which includes actions that empower, inspire, and encourage others to show their potential. The research question explored the effect of PBIS on reducing the number of students sent to the office with a referral by teachers, and the quasi-experimental design was pretest-posttest with no control group. A paired *t* test was used to examine differences in the number of students sent to the office before and after PBIS implementation, and the sample size studied was 412 students. After PBIS implementation, there were significant decreases in the number of office referrals for each offense category. This study also provides teachers with information to help students exhibit desirable behaviors and decrease disruptive ones.

INTRODUCTION

Due to increasing demands on educators to provide safe learning environments for students, schools and school districts have placed greater emphasis on school-wide prevention programs. These prevention programs are meant to provide a positive learning environment and reduce behavior problems. Bradshaw, Koth, Thornton, and Leaf (2009) stated that school-based prevention models, such as positive behavioral interventions and supports (PBIS), have a goal to establish a positive school environment so students know what behaviors are expected of them and to create systems to help increase the positive behavior of students with higher needs, who are students who have received five or more office referrals during the school year.

PBIS is a proactive approach to school-wide behavior; it sets expectations and procedures at the beginning of a school year so students know what types of behaviors are expected of them, unlike a reactive approach where the behavior is addressed only after it has occurred (Sugai, 2008). The PBIS model is a three-tiered approach and uses strategies that are preventive and positive. It includes systematically training students as to what positive behaviors are expected and then positively reinforcing those behaviors.

Looking at a school's population, the PBIS model expects 80% to 90% of those students to be very responsive to basic behavior interventions such as verbal warnings or a conference with the teacher (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008). Of that population, 5% to 10% will need some type of secondary support, to include interventions, increased structure, and consistent feedback on a regular basis (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008). In addition, 1% to 5% of the population, who do not respond to school-wide expectations or interventions, will need very intensive interventions and structure in order to be successful in the classroom environment (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008).

For the PBIS model to be successful, the school must be able to collect and track student behavior. A data collection system that tracks and monitors student behavior can include the location at which the behavior occurred as well as the time of day. A school team can then come up with a specific plan to target the behaviors exhibited by the students (McIntosh, Frank, & Spaulding, 2010). The school's ability to measure the social behavior of students, and how that may affect student achievement, is an essential part of the PBIS model.

The school in this study, Main Street Intermediate School (a pseudonym), proposed this research to confirm the effect that PBIS is having on reducing office referrals at the school. Currently, the data have not been examined nor analyzed in three years it has been implemented, so a study was appropriate to investigate whether behavior issues in the classroom are being handled so students are not being sent to the office as in the past school years before PBIS was implemented.

Definition of the Problem

An issue in many schools is the number of office referrals. At Main Street Intermediate, a Title I school in South Carolina, the problem was the number of students who were removed from the classroom and sent to the office with a referral. When a student is removed from the classroom, he or she may miss hours or days of instructional time, which has become a concern of the school. Prior to PBIS being implemented, the school had approximately 600 referrals per year. In cases where students were sent home or placed in in-school suspension,

they missed several days of instructional time. In the past, schools such as Main Street Intermediate used corrective actions to address student behaviors. These actions included loss of recess, parent conferences, time-out, and loss of privileges; when these corrective actions failed, students then received an office referral. Other reasons for the high number of students being sent to the office with a referral could have included the classroom management procedures of teachers in the school as well as the need to reexamine the school district's code of conduct, which may be outdated (Hershfeldt et al., 2009; Jeloudar & Yunus, 2011).

PBIS offers a school plan for creating a positive school environment as well as providing students having limited social skills the ability to gain understanding on how to behave in school. Main Street Intermediate implemented PBIS at the beginning of the 2010-2011 school year in order to reduce the number of students sent to the office with a referral as well as to increase the amount of instructional time for students. PBIS is an initiative that is encouraged by the state department of education (South Carolina Department of Education, 2012). Due to this encouragement, PBIS was implemented to prevent disruptive behavior problems and promote a positive school climate through the application of practices and systems consistent with the three-tiered public health prevention framework (Bradshaw & Pas, 2011).

Main Street Intermediate School has a population of 612 students in Grades 3 through 5, with 508 students, approximately 83%, receiving free or reduced lunches. The county in which Main Street Intermediate is located has the highest unemployment rate in the state at 17.3% (South Carolina Department of Employment and Workforce, 2012). Students who are eligible to receive free or reduced lunch and whose families have high unemployment are more likely to be the recipients of office referrals than are their peers (Noltemeyer & Mclouglin, 2010). Main Street Intermediate is 83% African American. Research has shown that African American students are two to three times more likely to receive an office referral than Caucasian students are (Noltemeyer & Mclouglin, 2010; Skiba et al., 2011). Cultural misinterpretations by teachers can result in African American students, for example, being disproportionately referred to the office because their behavior is seen as disruptive. Other possibilities include socioeconomic status or students aligning with the dominant behavior of the school population, which may be defiance (Hershfeldt et al., 2009).

The school district expressed concern to Main Street Intermediate about the number of office referrals and wanted students to stay in the classroom in order to receive instruction while spending less time being referred to the office. The school district wanted to increase year-end student test scores. Students being removed from the classroom, which caused loss of instructional time, could have a negative impact on student year-end test scores.

Rationale

Evidence of the Problem at the Local Level

The purpose of this study was to evaluate the PBIS program implemented at Main Street Intermediate School, a Title I School, which has a high percentage of low-income families, to determine the effect the program had on reducing the number of students sent to the office with referrals compared to a year when PBIS was not implemented. As of 2009, approximately 7,500 schools have implemented PBIS to address students' academic and behavioral problems (Bradshaw et al., 2009). Because of this number, there is an increased need to evaluate these programs adequately to determine if their effectiveness and relevance has increased (Miramontes, Marchant, Heath, & Fischer, 2011). PBIS aims to improve a school's procedures and systems to prevent disruptive behavior and enhance the school's climate.

PBIS is data driven; in this study, I compared a year in which PBIS was not implemented to a year in which PBIS was implemented to see if the program has been successful in decreasing the number of office referrals school-wide. These data served as motivation for a critical review of the school's PBIS policies and procedures in place to see if these policies and procedures kept students from losing instructional time in the classroom. Without looking at the data to determine the success of the program, Main Street Intermediate School risked losing more instructional time for students, thereby affecting student achievement. Loss of instructional time can contribute to lower student achievement in the classroom environment and on year-end test scores.

This study used a quantitative approach in a program evaluation. A program evaluation examines programs to determine their worth and to make recommendations for program refinement and successes (Spaulding, 2008). PBIS was evaluated at Main Street Intermediate to determine its effectiveness in reducing the number of office referrals. I was an internal auditor who knew the setting, the language used in the PBIS program, and how to access the data from the school's data tracking system. The findings of this study were presented to the school in an evaluation report.

The setting for this program evaluation was a Title I Intermediate School comprising Grades 3, 4, and 5 located in a rural part of South Carolina. The school serves approximately 612 students. The sample comprised third and fourth grade students who attended school for the 2010-2011 school years and fourth and fifth graders who attended school for the 2011-2012 school years. The size of the sample was 412 students.

The data collected were the number of office referrals for the specific grade levels in a school year when PBIS was not implemented, school year 2010-2011, and also from the specific grade levels the following school

year when PBIS was implemented, school year 2011-2012. This summative data was collected from the school's data tracking system called PowerSchool, a web-based public information program that tracks not only office referrals, but student absences, tardiness, grades, and other relevant student information needed by the school for each student.

For the purposes of this study, only the number of office referrals from the sample size was collected. The office referrals were broken down into categories: disrespect, refusal to obey, disturbing class, physical contact, fighting, profanity, disruptive behavior, and other. The categories were maintained and compared throughout each year to look for an increase, a decrease, or no change at all. A statistical test, specifically a paired *t* test, was used to determine if the implementation of PBIS reduced the number of office referrals from the sample size studied.

Evidence of the Problem From the Professional Literature

The implementation of PBIS has become a priority to school districts and departments of education due to the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA), which requires the development and implementation of a behavior intervention plan based on PBIS (Killu, Weber, & Derby, 2006). Research has shown that school climate can affect children academically, as well as socially, and their school attendance. Legislation, such as No Child Left Behind (NCLB, 2001), has forced schools to adopt intervention strategies that result in better outcomes for students (Anderson-Ketchmark & Alvarez, 2010; Dee & Jacob, 2011; Paciotti, 2010). Schools can no longer wait until students begin to fail or are failing before interventions can be in place.

One of the biggest challenges teachers and other school personnel face is implementing effective behavior strategies that keep children in the classroom and out of the principal's office. Interventions and consequences, such as loss of recess or detention, address behavior for a short period of time but provide no incentive for students to make long lasting changes in their behaviors (Cuccaro & Geitner, 2007). Schools realize they need an entirely new approach, such as PBIS, in order to effectively deal with disruptive behaviors (Becker & Domitrovich, 2011).

Children with behavior problems who are aggressive in school are at risk for behaviors such as delinquency and academic failure. These students can also develop mental health problems later on in life, such as anxiety disorders, depression, and other antisocial behaviors (Reinke, Splett, Robeson, & Offutt, 2009). In schools across the nation, disruptive behaviors are the most common reason for students receiving an office referral. These types of behaviors are the main reason for loss of instructional time in the classroom (Reinke et al., 2009). Preventing these types of behaviors can have a great impact on a student's education.

Yeung, Mooney, Barker, and Dobia (2009) discussed how school environment that is undesirable could lead to low student motivation and engagement as well as making learning less effective. Disruptive behaviors impede the school environment as well as learning outcomes. Schools want environments that have a focus on academic work, thereby positively affecting student achievement.

The use of school-based interventions can help identify students early in their academic careers who are at risk of struggling with their behavior as well as their academics. Waiting for a long period time before intervening on a student's behavior can have a prolonged effect on a student's achievement in the classroom and social interactions with other students (Hawken, Vincent, & Schumann, 2008).

Fairbanks, Sugai, Gardino, and Lathorp (2007) stated that schools are becoming more accountable for their efforts to improve academics as well as student behavior, despite the lack of support in the form of resources. With legislation for schools to come up with strategies to provide students with support behaviorally as well as academically, schools are implementing intervention plans that will meet the needs of their students.

Research-based intervention models, such as PBIS, have been recommended as effective ways in decreasing behavior problems at schools. These models have demonstrated that schools can improve their behavioral support by identifying and instructing students on behavior expectations, providing positive reinforcement, and using data to track problem areas and whether the school-wide plan is reducing office referrals (Crone, Hawken, & Bergstrom, 2007).

Hawken, MacLeod, and Rawlings (2007) stated that implementing a behavior support program is recommended for schools to respond to disruptive social behaviors in the school setting. These support systems can range from the very least intensive to the very most intensive. More evidence points to interventions as effective ways to help students function at a higher level not only behaviorally but also academically in a school setting. With the reauthorization of IDEIA (2004), school districts were allowed to use intervention models to identify students needing additional support, implement these research-based models, provide ongoing support throughout their academic year, continue to monitor their progress, and examine data to make evidence-based decisions (McIntosh, Campbell, Carter, & Dickey, 2009).

Like academic difficulties, behavior difficulties remain a concern for teachers as well as those who support public education. The severity of behavior problems continues to grow, as well as these types of behaviors contributing to poor school climate. Developing methods that will intervene in these problems as well as managing behavior will help decrease the waste of instructional time and increase the chances of student educational success

(Stewart, Benner, Martella, & Marchand-Martella, 2007). Without effective behavior implementation problems in place, schools can expect to observe their students exhibiting behavior problems.

Significance of the Problem

School climate, which consists of the interactions between students and teachers, can have a positive or negative affect on academic achievement and performance. Student learning can often be impacted negatively when a teacher has to stop instruction to address student behavior (Koth, Bradshaw, & Leaf, 2008). When learning stops, not only is the student who is being addressed affected, but also other students in the classroom.

Pressure has increased on teachers and their students to perform due to high stakes teaching and legislation such as No Child Left Behind (2001). With an increasing number of behavioral challenges, teachers are being mandated to deal with classroom issues without the help of additional school resources. Teachers who struggle with behavior problems can become emotionally exhausted, which can cause the quality of their teaching and the relationships with their students to suffer (Pas, Bradshaw, Hershfeldt, & Leaf, 2010). As a result, teachers may be more likely to try to punish students as opposed to addressing the behaviors directly.

According to Rosas and West (2009), teachers historically have stated that student behavior has been one of their top concerns. Teachers want to maintain order in the classroom environment while providing high quality instruction. Disruptive behaviors from students can cause tremendous stress on teachers, can interfere with learning, and are a major reason why teachers leave the profession. Maintaining positive classroom environment is a challenge for novice and experienced teachers. Schools are expected to maintain safe learning environments because of the accountability placed on teachers for student academic achievement.

Many teachers find it difficult to maintain discipline in their classroom. Research has shown that teachers who use effective techniques to prevent classroom disruptions can find their students being more successful academically and socially. Techniques such as setting clear expectations, rewarding positive student behavior, and dealing directly with students who misbehave have shown to reduce classroom disruptions (Sadrudin, 2012). Students who are punished can be less motivated to complete work in the classroom.

Englehart (2012) stated teachers often develop ways to deal with student behavior based on past experiences. This can limit their belief system and make them feel they are better at managing student behavior than they actually are as a teacher. Professional development opportunities and intervention systems can help provide teachers with a systematic approach to addressing student behavior, making them better classroom managers and, thereby, making them better teachers. It can be as simple as clearly communicating expectations and enforcing boundaries in order to elicit the desired behaviors from students.

Teachers at the beginning of their careers appear to be the ones who struggle the most with student behavior. They can become inundated with behavior issues that can lead to them leaving the profession very early because they had often lacked the training necessary to deal with disruptive behaviors. Higher institutions of learning have started putting more emphasis on providing training in this area during coursework, but there appears to be gap between theory and practice. These teachers often develop this skill during student teaching and field experiences (Putman, 2009) and will often use their experiences in the field as opposed to what they learned in the classroom.

Brophy (2010) stated that in order for students to learn at optimal levels the classroom environment must be maintained. Teachers must model behaviors, set expectations and procedures, and exert pressure on students who do not comply. A classroom environment that is not managed is one where learning suffers and has teachers who are not teaching to the best of their ability. If students are to be successful in the classroom with their behavior, they must be given the tools necessary to define what is expected of them.

Academic achievement and student behavior are linked. Students who do not exhibit sociably accepted behaviors in the classroom may spend more time in the office and less time receiving instruction. This can have devastating consequences on their academic careers, especially for students who are repeatedly sent to the office, and can cause students to fall behind in their studies, which will affect their grades as well as their year-end test scores and, eventually, the chances of these students graduating high school (Kennedy & Swain-Bradway, 2012).

Guiding/Research Question

The guiding research was as follows: What is the effect that PBIS had on the number of students sent to the office with a referral at Main Street Intermediate, a Title I School? The testable hypothesis was to determine if PBIS had made a significant difference in the number of office referrals in Main Street Intermediate School. The null hypothesis was PBIS had no significant effect on the number of office referrals in Main Street Intermediate School.

There is evidence to suggest, in the literature, that PBIS has been effective in reducing disruptive behaviors in students by promoting a positive school climate (Bradshaw et al., 2008). It provides schools consistent strategies to manage student behavior. This school-wide program can help the organizational health of

the school using a three-tiered system of supports. A program evaluation was a valuable resource to Main Street Intermediate making decisions about PBIS moving forward.

Although the literature has shown PBIS to be effective and in widespread use in schools across the nation, PBIS needs to be evaluated to determine if it is meeting the needs of school as well as the students. For example, looking at the office referrals can determine if the procedures and expectations that are in-place are reducing the number of students being sent to the office. This information can allow school-based PBIS teams to develop, implement, and monitor intervention activities. It can also identify problematic behaviors, the settings in which these behaviors are occurring, and assess pre- and post-behavior interventions (Clonan et al., 2007).

Research Design and Approach

This project study was a quantitative program evaluation and the quasi-experimental design was pretest-posttest with no control group, and examined the difference PBIS had on the number of office referrals at Main Street Intermediate. Creswell (2012) stated how quantitative research is a method for testing objective theories by examining the relationship between variables. These variables can then be analyzed using statistical procedures. Quantitative researchers typically use an experiment or survey to collect data for the purpose of generalizing findings at the end of the study. Quantitative approaches include descriptive survey research, experimental research, quasi-experimental research, casual comparative or ex-post facto research, and correlational research. The approach in this project study was quasi-experimental research, which has a goal of testing a hypothesis to determine if a cause-effect relationship exists. The overall purpose is to determine whether a particular approach to doing something has improved on the traditional approach that has been used as standard practice (Lodico et al., 2010).

Setting and Sample

Random sampling is typically used in quasi-experimental research, where participants are assigned randomly to one or more groups. Convenience sampling involves participants who were not selected at random and are already formed. A researcher would use this type of sampling because participants are available to be studied (Creswell, 2012). I used convenience sampling because the students were grouped by grade, and the office referrals were grouped by category. I focused on the third and fourth grade students from the 2010-2011 school year when PBIS was not implemented and the fourth and fifth grade students from the 2011-2012 school year, which were generally the same students, when PBIS was implemented. The number of referrals for the 2010-2011 school year served as the baseline data and was compared to the number of referrals for the 2011-2012 school year.

Instrumentation and Materials

Data for this study were obtained from the Power School student information system, which contains all school discipline data. It is a web-based public information program that tracks student schedules, absences, grades, and other relevant student information needed by the school. I used this database to identify the sample and to calculate all disciplinary data associated with the sample. Specifically, I examined the data accumulated on the third and fourth grade students who were enrolled during the 2010-2011 school year and the fourth and fifth grade students enrolled during the 2011-2012 school year within the identified setting. I used the disciplinary data to determine the number of office referrals accumulated by the sample studied. The disciplinary data were separated and maintained by offense category, and then I compared to the preimplementation data to the postimplementation data.

Data Collection and Analysis

The role of the researcher was that of an internal auditor who knew the language of the program and the school setting and knew how to access the data from the school's data tracking system. The independent variable was the PBIS program. The dependent variable was the number of office referrals for the third and fourth graders in a school year when PBIS was not implemented (school year 2010-2011) and also the following school year, when they became fourth and fifth graders and when PBIS was implemented (school year 2011-2012). The summative data collected was the number of office referrals for the third and fourth graders in a school year when PBIS was not implemented (school year 2010-2011) and also the following school year, when they became fourth and fifth graders and when PBIS was implemented (school year 2011-2012). This summative data was collected from Power School, the school's data tracking system.

For the purposes of this study, interval data were analyzed. The interval data collected were only the number of office referrals for the third and fourth graders from the 2010-2011 school year and the fourth and fifth graders from the 2011-2012 school year. The office referrals were broken down into categories: disrespect, refusal to obey, disturbing class, physical contact, fighting, profanity, disruptive behavior, and other. The categories were maintained and compared throughout each year to look for an increase, decrease, or no change at all. A statistical

test, specifically a paired *t* test, was used to determine if the implementation of PBIS reduced the number of students sent to the office with a referral by teachers from the sample size studied. A *t* test is a statistical test that is used to test the difference between two variables, one independent and one dependent variable. A significant *t* value will show that a true difference exists between the two variables (Lodico et al., 2010).

In Table 1, because the absolute value of the *t*-stat is greater than *t*-critical two-tail, or because the probability that the null hypothesis is true is smaller than the alpha, I rejected the null hypothesis that there is no statistical difference between the two data sets. P value is significantly smaller than 0.05. Based on this information, there is a significant difference between the office referrals of the third and fourth graders from 2010-2011 school year and the fourth and fifth graders from the 2011-2012 school year.

Table 1
T Test Paired Two Sample for Means for Office Referrals

3 rd and 4 th graders	2010-2011 school year 4 th and 5 th graders	2011-2012 school year
Mean	74.125	33.5
Variance	1760.125	330.8571429
Observations	8	8
Pearson correlation	0.789149054	
Hypothesized mean Difference	0	
DF	7	
T STAT	3.859098606	
P(T<=T) One-Tail	0.003109373	
T Critical One-Tail	1.894578605	
P(T<=T) Two-Tail	0.006218747	
T Critical Two-Tail	2.364624252	

Table 2 contains the office referral categories and the total number of offenses in each for the third and fourth graders for the 2010-2011 school year and the fourth and fifth graders for the 2011-2012 school year.

Table 2: *Number of Office Referrals for Each Offense*

	2010-2011 school year 3 rd and 4 th graders	2011-2012 school year 4 th and 5 th graders
Disrespect	112	40
Refusal to Obey	131	50
Disturbing Class	74	57
Physical Contact	102	32
Fighting	87	46
Profanity	19	12
Disruptive Behavior	19	6
Other	49	25
Total Referrals	593	268

In order for the PBIS model to be successful, the school must be able to collect and track student behavior. A data collection system that tracks and monitors student behavior can include the location at which the behavior occurred as well as the time of day. A school team can then come up with a specific plan to target the behaviors exhibited by the students (McIntosh et al., 2010). The school’s ability to measure the social behavior of students and how it may affect student achievement is an essential part of the PBIS model (Bradshaw & Pas, 2011; Lannie, Coddling, McDougal, & Meier, 2010; McIntosh et al., 2010). The use of this data tracking system on office referrals can be used as an ongoing evaluation tool to measure student behavior that can be helpful in monitoring and developing interventions (Pas, Bradshaw, & Mitchell, 2011). The data are used to determine whether a student

is responding to universal supports or if the student may require more targeted support (Ennis & Swoszowski, 2011). Teachers can use office referral data to make decisions at the classroom level, and the school district can use this same data to make decisions at their level (Upreti, Liaupsin, & Koonce, 2010). This data will be helpful in making any changes in the implementation of PBIS.

Assumptions, Limitations, Scope, and Delimitations

The following assumptions were made regarding this doctoral study: (a) All data reported by the teachers and entered into the school's data tracking system, PowerSchool, were coded properly in reference to incident type; and (b) the school-wide PBIS plan was implemented with fidelity in the classrooms and grade levels used in this study.

A limitation of this study was the fact that data were collected from only one school in two different school years. The data gathered may only be applicable to this school and school district or other schools with the same size student population and demographics. Teacher differences, and how teachers implement PBIS in their classrooms, were also limitations to this project study. Teachers used positive reinforcements in their classrooms, but how much and how often varied from teacher to teacher.

The scope of this study was to complete a program evaluation of PBIS and the effect it had on the number of office referrals in this one school. The project study was delimited to office referral data taken from the same sample of students in two different school years. Therefore, generalizing the results beyond the local setting to larger populations and other schools who have implemented PBIS was limited. However, it may be possible to generalize the findings in other schools with similar student population, demographics, and similar office referral data.

Protection of Participants' Rights

Parental consent and student assent to conduct this study was not necessary because the data collection process was part of the normal procedures at Main Street Intermediate School. Student discipline data are routinely collected and analyzed by the PBIS committee. To protect the anonymity of the participants, it was possible for me to collect these data without obtaining any student names or other identifiable information. The school-wide discipline plan was implemented consistently across the school by all teachers in all grade levels.

This study was a program evaluation of positive behavioral interventions and supports (PBIS) to determine the effectiveness in reducing office referrals. This study was based on the research indicating the effectiveness of school-wide PBIS in reducing student office referrals, as well as suspensions and behavior problems, and in improving school climate (Bradshaw, Koth, Bevans, et al., 2008; Bradshaw, Koth, Thornton, et al., 2009; Bradshaw, Mitchell, & Leaf, 2010). In addition to evidence of the effectiveness of school-wide PBIS demonstrated in randomized controlled trials, statewide evaluations have also demonstrated favorable outcomes associated with PBIS (Barrett, Bradshaw, & Lewis-Palmer, 2008; Muscott, Mann, & LeBrun, 2008).

The theoretical framework associated with PBIS involves transformational theory. Transformational theory includes actions that empower, inspire, and encourage others to show their potential by acting as positive role models and leading by example through demonstration and inspiring others. Students can learn to think for themselves, have school leaders pay attention to their needs and celebrate their personal accomplishments (Wilson et al., 2012). Through individualized consideration, transformational theory involves acting with care, compassion, and empathy.

This program evaluation was used to determine a program's effectiveness to make recommendations in order to refine the program and evaluate its success (Spaulding, 2008). PBIS is a systematic program that creates a school-wide plan to manage student behavior in a positive way (Bradshaw et al., 2008). Research-based intervention models, such as PBIS, have been recommended as effective ways in decreasing behavior problems at schools. These models have demonstrated that schools can improve their behavioral support by identifying and instructing students on behavior expectations, providing positive reinforcement, and using data to track problem areas and to evaluate whether the school-wide plan is reducing office referrals (Crone et al., 2007).

The purpose of this study was to complete a program evaluation on PBIS and the effect it had on reducing the number of referrals at Main Street Intermediate. The results of this study can be used as a guide to help this school proactively and positively approach student behavior, as well as provide teachers with information in helping students exhibit desirable behaviors and decrease disruptive ones. The goal of this study was to submit the findings to serve as a basis for determining if and what types of changes needed to be made in regards to PBIS. Teachers who can effectively manage classroom behavior may find themselves more effective in their profession.

Implications, Applications, and Directions for Future Research

Future research could be applied to schools with similar population size and demographics that are implementing PBIS and could be replicated in other schools in the district. Another direction for research could be to continue to follow a school's number of referrals years after PBIS has been implemented to see if the number

of referrals stays the same, increases, or decreases. As with any program, teachers and school staff can become complacent and expect the same results.

In order for schools to be successful, classrooms need to have students who are, for the most part, compliant and teachers who are prepared to deal with disruptive behaviors when the need arises. Every day, teachers are faced with new challenges and are required to come up with ways to deal with these challenges. Any research that can contribute to a teacher's knowledge for addressing student behavior will be beneficial in the end and should be considered with academic rigor. Due to legislative efforts, schools can no longer afford to allow classroom management to affect academic achievement.

Conclusion

When students exhibit disruptive behaviors, these students need to be identified and appropriate behaviors communicated to them. A school-wide behavior management plan with clear expectations and procedures can help affect disruptive students. It can also provide them tools to change their actions positively. Teacher praise can increase the number of students behaving appropriately in the classroom, thereby affecting how effectively teachers teach, and how successfully students learn. More time will ultimately be needed to determine the effectiveness of PBIS in the future. Although significant improvements were noticed in the number of students being sent to the office with a referral at Main Street Intermediate, changes and adjustments will be needed as school years come and go. Classroom management issues will always continue in schools, but if student behavior can be dealt with in a positive manner, and the data analysis continues, better days are ahead for all involved at Main Street Intermediate School.

References

- Anderson-Ketchmark, C., & Alvarez, M. (2010). The school social work skill set and positive behavior support: A good match. *Children & Schools, 32*(1), 61-63.
- Barrett, S., Bradshaw, C., & Lewis-Palmer, T. (2008). Maryland state-wide PBIS initiative. *Journal of Positive Behavior Interventions, 10*, 1005-114.
- Becker, K., & Domitrovich, C. (2011). The conceptualization, integration, and support of evidence-based interventions in the schools. *School Psychology Review, 40*(4), 582-589.
- Bradshaw, C., Koth, C., Bevans, K., Ialongo, N., & Leaf, P. (2008). The impact of school-wide positive behavioral interventions and supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly, 23*(4), 462-473.
- Bradshaw, C., Koth, C., Thornton, L., & Leaf, P. (2009). Altering school climate through school-wide positive behavioral interventions and supports: Findings from a group-randomized effectiveness trial. *Prevention Science, 10*(2), 100-115.
- Bradshaw, C., Mitchell, M., & Leaf, P. (2010). Examining the effects of school-wide positive behavioral interventions and supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions, 12*, 133-148.
- Bradshaw, C., & Pas, E. (2011). A statewide scale up of positive behavioral interventions and supports: A description of the development of systems of support and analysis of adoption and implementation. *School Psychology Review, 40*(4), 530-548.
- Bradshaw, C., Reinke, W., Brown, L., Bevans, K., & Leaf, P. (2008). Implementation of school-wide positive behavioral interventions and supports in elementary schools: Observations from a randomized trial. *Education & Treatment of Children, 31*(1), 1-25.
- Brophy, J. (2010). Classroom management as socializing students into clearly articulated roles. *Journal of Classroom Interaction, 45*(1), 41-45.
- Clonan, S., McDougal, J., Clark, K., & Davison, S. (2007). Use of office discipline referrals in school-wide decision making: A practical example. *Psychology in The Schools, 44*(1), 19-27.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Pearson Education.
- Crone, D., Hawken, L., & Bergstrom, M., (2007). A demonstration of training, implementing and using functional behavioral assessment in 10 elementary and middle school settings. *Journal of Positive Behavior Interventions, 9*(1), 15-29.
- Cuccaro, C., & Geitner, G. (2007). Lunch and recess: The "eye of the storm" using targeted interventions for students with behavioral problems. *Teaching Exceptional Children Plus, 3*(4), 1.
- Dee, T., & Jacob, B. (2011). The impact of No Child Left Behind on student achievement. *Journal of Policy Analysis And Management, 3*(3), 418-446.
- Engelhart, J. (2012). Five half-truths about classroom management. *Clearing House, 85*(2), 70-73.

- Ennis, R., & Swoszowski, N. (2011). The top 10 things to consider when implementing secondary-tier PBIS interventions. *Beyond Behavior, 20*(1), 42-44.
- Fairbanks, S., Sugai, G., Gardino, D., & Lathrop, M. (2007). Response to intervention: Examining classroom behavior support in second grade. *Exceptional Children, 73*(3), 288-310.
- Hawken, L., MacLeod, K., & Rawlings, L. (2007). Effects of the behavior education program (BEP) on problem behavior with elementary school students. *Journal of Positive Behavior Interventions, 9*, 94-101.
- Hawken, L., Vincent C., & Schumann, J. (2008). Response to intervention for social behavior: Challenges and opportunities. *Journal of Emotional and Behavioral Disorders, 16*(4), 213-225.
- Hershfeldt, P., Sechrest, R., Pell, K., Rosenberg, M., Bradshaw, C., & Leaf, P. (2009). Double-Check: A framework of cultural responsiveness applied to classroom behavior. *Teaching Exceptional Children Plus, 6*(2), 2-18.
- Jeloudar, S., & Yunus, A. (2011). Exploring the relationship between teachers' social intelligence and classroom discipline strategies. *International Journal of Psychological Studies, 3*(2), 149-155.
- Kennedy, M., & Swain-Bradway, J. (2012). Rationale and recommended practices for using homegrown video to support school-wide positive behavioral interventions and supports. *Beyond Behavior, 21*(2), 20-28.
- Killu, K., Weber, K., & Derby, K. (2006). Behavior intervention planning and implementation of positive behavioral support plans: An examination of states' adherence to standards for practice. *Journal of Positive Behavior Interventions, 8*(4), 195-200.
- Koth, C., Bradshaw, C., & Leaf, P. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology, 100*(1), 96-104.
- Lannie, A., Coddling, R., McDougal, J., & Meier, S. (2010). The use of change-sensitive measures to assess school-based therapeutic interventions: Linking theory to practice at the tertiary level. *School Psychology Forum, 4*(2), 1-14.
- Lodico, M., Spaulding, D., & Voegtle, K. (2010). *Methods in educational research: From theory to practice*. San Francisco, CA: Jossey-Bass.
- McIntosh, K., Campbell, A., Carter, D., & Dickey, C. (2009). Differential effects of a tier 2 behavioral intervention based on function of problem behavior. *Journal of Positive Behavior Interventions, 11*(2), 82-93.
- McIntosh, K., Frank, J., & Spaulding, S. (2010). Establishing research-based trajectories of office discipline referrals for individual students. *School Psychology Review, 39*(3), 380-394.
- Miramontes, N., Marchant, M., Heath, M., & Fischer, L. (2011). Social validity of a positive behavior interventions and support model. *Education and Treatment Of Children, 34*(4), 445-468.
- Muscott, H., Mann, E., & LeBrun, M. (2008). Positive behavioral intervention and supports in New Hampshire. *Journal of Positive Behavior Interventions, 10*, 190-205.
- Noltemeyer, A., & Mcloughlin, C. S. (2010). Patterns of exclusionary discipline by school typology, ethnicity, and their interaction. *Penn GSE Perspectives On Urban Education, 7*(1), 27-40.
- Paciotti, K. (2010). Caring behavior management: The spirit makes the difference. *Delta Kappa Gamma Bulletin, 76*(4), 12-17.
- Pas, E., Bradshaw, C., Hershfeldt, P., & Leaf, P. (2010). A multilevel exploration of the influence of teacher efficacy and burnout on response to student problem behavior and school-based service use. *School Psychology Quarterly, 25*(1), 13-27.
- Pas, E., Bradshaw, C., & Mitchell, M. (2011). Examining the validity of office discipline referrals as an indicator of student behavior problems. *Psychology in the Schools, 48*(6), 541-555.
- Putman, S. (2009). Grappling with classroom management: The orientations of pre-service teachers and impact of student teaching. *Teacher Educator, 44*(4), 232-247.
- Reinke, W., Splett, J., Robeson, E., & Offutt, C. (2009). Combining school and family interventions for the prevention and early intervention of disruptive behavior problems in children: A public health perspective. *Psychology in the Schools, 46*(1), 33-43.
- Rosas, C., & West, M. (2009). Teachers beliefs about classroom management: Pre-service and in-service teachers' beliefs about classroom management. *International Journal of Applied Educational Studies, 5*(1), 54-61.
- Sadrudin, M. (2012). Discipline - Improving classroom management through action research: A professional development plan. *Journal of Managerial Sciences, 6*(1), 23-42.
- Skiba, R., Horner, R., Chung, C., Rausch, M., May, S., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review, 40*(1), 85-107.
- South Carolina Department of Education (2012). Retrieved from <http://ed.sc.gov/agency/programs-services/173/PositiveBehaviorInterventionsandSupports.cfm>.

- South Carolina Department of Employment and Workforce (2012). Retrieved from http://dew.sc.gov/documents/lmi-monthly-trends/August_2012.pdf.
- Spaulding, D. (2008). *Program evaluation in practice: Core concepts and examples for discussion and analysis*. San Francisco: Jossey-Bass Publications.
- Stewart, R., Benner, G., Martella, R., & Marchand-Martella, N. (2007). Three-tier models of reading and behavior: A research review. *Journal of Positive Behavior Interventions* 9, 239-253.
- Sugai, G. (2008). *Update on PBIS*. Paper presented at the U.S. Department of Education, Office of Special Education Programs (OSEP) Director's Meeting, Washington DC.
- Upreti, G., Liaupsin, C., & Koonce, D. (2010). Stakeholder utility: Perspectives on school-wide data for measurement, feedback, and evaluation. *Education & Treatment of Children*, 33(4), 497-511.
- Wilson, A., Liu, Y., Keith, S., Wilson, A., Kermer, L., Zumbo, B., & Beauchamp, M. (2012). Transformational teaching and child psychological needs satisfaction, motivation, and engagement in elementary school physical education. *Sport, Exercise, And Performance Psychology*, 1(4), 215-230.
- Yeung, A., Mooney, M., Barker, K., & Dobia, B. (2009). Does school-wide positive behaviour system improve learning in primary schools? Some preliminary findings. *New Horizons in Education*, 57(1), 17-32.

ENVIRONMENTAL LITERACY IN 9th GRADE STUDENTS FROM MADEIRA ISLAND (PORTUGAL)

Hélder Spínola*

*Research and Development Centre in Education, University of Madeira,
Campus Universitário da Penteada, 9000-390 Funchal, Portugal
hspinola@uma.pt

Abstract: Has a contribution to evaluate present levels of environmental literacy in Madeira Island (Portugal), we developed a survey involving 491 9th grade students and found a good level of knowledge (71.8%), a strong tendency to agree with the New Ecological Paradigm (58.2%) and an encouraging level of environmentally responsible behaviors (47.9%) in a 'very often' and 'always' basis. Results from present study should be considered to improve environmental education programs in place, especially in Portugal and Madeira Island, but new surveys were needed to evaluate other age groups as also the relationship between different components of environmental literacy.

INTRODUCTION

Environmentally literate citizenry, being an important prerequisite to maintain and improve the quality of the environment, becomes the environmental education main purpose (Disinger & Roth, 1992). Since environmental literacy is a complex concept and also, in practice, difficult to be achieved, along past decades different authors considered a wide spectrum of components to be included in it, making its definition a dynamic undertaking. Nowadays, it is commonly accepted that environmental literacy must include knowledge and understanding of environmental concepts, problems, and issues, a set of cognitive and affective dispositions, and a set of cognitive skills and abilities, together with the appropriate behavioral strategies to apply such knowledge and understanding in order to make sound and effective decisions in a range of environmental contexts (Hollweg et. al., 2011).

As a simple definition, environmental literacy could be seen as a domain of four interrelated components: knowledge, dispositions, competencies, and environmentally responsible behavior (Hungerford & Volk, 1990; Cook & Berrenberg, 1981; Stern, 2000; Hollweg et. al., 2011). Nevertheless this simplification, each of the above four components hold a complex structure that needs to be taken in consideration in environmental education practices, namely the fact that, among others: knowledge should include physical, ecological, social, cultural and political systems; that dispositions involves sensitivity, attitudes, personal responsibility and motivation; that competencies implies identify, analyze, investigate, evaluate and resolve environmental issues; and that environmentally responsible behavior includes practices in eco-management, persuasion, consumer/economic action, political action and legal action (Hollweg et. al., 2011).

Evaluating environmental literacy in a population is the best strategy to assess the efficiency of the environmental education efforts, as also to address the needs for better strategies. However, environmental literacy has a complex structure that makes difficult include all their components in any single assessment, being of fundamental importance to identify the essential elements to be addressed in the survey. In order to overcome this problem, several authors identified knowledge, attitude and environmentally responsible behavior as the major components of the environmental literacy to be included in the surveys (Hallfreðsdóttir, 2011; Krnel & Naglič, 2009; Igbokwe, 2012; McBeth & Volk, 2010; Kuhlemeier, et. al., 1999; Pe'er et. al., 2007).

Several studies around the world have been showing that environmental education programs have some success increasing knowledge, awareness and attitude toward the environment but less in pro-environmental behavior (Krnel & Naglič, 2009; Hallfreðsdóttir, 2011; Pauw & Van Petegem, 2011 and 2013; Ozsoy et. al., 2012). In Portugal, several decades passed since environmental education was included in school curricula and along which several projects were developed to improve society's environmental literacy. Although this long way, a lack of evaluation makes difficult our understanding about the effects of this huge effort and, worst, abandons environmental education into navigation in the darkness (Spínola, 2014). Thus, in order to understand if environmental education in Portugal is reaching its goals, it is of prime importance to characterize and evaluate environmental literacy among students. The aim of present study is to give that contribution through the characterization of the environmental literacy among 9th grade students from Madeira Island (Portugal).

METHOD

Our survey design is based in others already applied to assess environmental literacy among students but adjusted to the local specificities (Krnel & Naglič, 2009; Hallfreðsdóttir, 2011; Pauw & Van Petegem, 2011 and 2013; Ozsoy et. al., 2012). The questionnaire was anonymous with close-ended questions consisting of three main sections, each one measuring and assessing: knowledge (10 questions), attitude (15 questions) and environmentally responsible behavior (15 questions) (questionnaire available upon request). First section goes through the 3 themes mostly involved in environmental education activities on Portuguese schools: water (3 questions), energy (3 questions), and wastes (4 questions); each one going along 3 main aspects: cause of problems, regional context and behavior options. In each question, the respondents were asked to select the correct answer. To measure pro-environmental attitude the questionnaire used the New Ecologic Paradigm (NEP) Scale, an instrument widely used and validated in the measure of pro-environmental orientation (Dunlap et. al., 2000; Ogunbode, 2013; Trobe & Acott, 2000; Watne et. al., 2012; Shoukry et. al., 2012; Ogunjinmi et al., 2012; Kostova et. al., 2011). The environmentally responsible behaviors were assessed through statements spanning across the 3 main themes already selected for knowledge section: water (4 statements), energy (6 statements) and wastes (5 statements). Each statement addresses specific everyday behaviors and students were asked to select their frequency in a Likert-type scale ranging from 1 (never) to 5 (always). A special care was taken to overcome potential social desirability bias that could overcome in self-reported assessments (Bryman, 2004, p.134; Nederhof, 1985). In order to obtain an internal validity indicator, two redundant questions [“a) I put paper, glass bottles and plastic bags in different containers” and j) “I put all kind of wastes in the same container”] were added. The questionnaire was pre-tested and the final version was applied to all sample students between April and May 2013, after informed consent from each school board.

The sample included 491 9th grade students from 5 elementary schools in Madeira Island (Portugal). Data collected in the survey was analyzed with SPSS (version 20) statistical software. Accordingly to the student’s responses, the data were converted to numeral scores ranging from 1 to 5, for the items in the attitude and behavioral domains, and, for knowledge, scored “1” or “0” if answers were correct or incorrect, respectively. Firstly, reliability (the Cronbach’s Alpha score was 0.705 for the entire measuring instrument) and validity (confirmed by factor analysis and internal validity indicator questions that show a significant positive correlation [$r=0.641$ $p=0.000$]) were evaluated followed by a set of descriptive statistics: mean, mode, median, standard deviation, and standard error of the mean. Q-Q plot graphical measure and Kolmogorov-Smirnov test were used to test the normality of distribution before any factor analysis of numerical variables was carried out.

For the overall and each one of the three data domains (knowledge, attitude and behavior), item by item and total average student’s scores were calculated. For knowledge, the frequency of correct answers for total and each theme (water, energy and wastes) was calculated. With the data collected from the questionnaire’s attitude section, we calculated the total attitude score and the level of concordance with the New Ecological Paradigm (NEP) and with the Dominant Social Paradigm (DSP). Also, the level of concordance with each of the five groups items that compose NEP scale were also calculated: limits to growth, anti-anthropocentrism, fragility of nature’s balance, rejection of exemptionalism, and possibility of an eco-crisis. The prevalence of each specific environmental responsible behavior was calculated but also for overall and for water, energy and wastes themes. Significance was addressed through independent sample t-test when comparing means and one sample z-test of proportions (2-tailed) when comparing prevalence’s, with a confidence level of 95%.

RESULTS

The 491 9th grade students involved in this survey had a mean age of 15 years, and males (51.3%) are slightly most prevalent than females (48.7%). Missing values account for 3.1% on total sample. General results are available upon request.

Knowledge.

Correct answers in knowledge section reach a score of 71.8%, similar between male (71.2%) and female (72.5%) ($p=0.08$), despite its significance at 1-tailed ($p=0.04$) (Table 1). In fact, in 5 specific knowledge’s that showed statistically significant differences between male and female, 4 were better for female (data not shown).

The levels of knowledge in Energy (72.3%) and Wastes (72.5%) are similar ($p=0.83$) but significantly highest than in Water (65.5%) ($p=0.000$). In Water ($p=0.3$) and Energy ($p=0.95$) the level of knowledge is similar between male and female but significantly higher in this last one for Wastes ($p=0.01$) (Table 1).

Student’s majority knows that the worst threat to water resources is its excessive consumption, waste and pollution (64.4%) and that, at home, personal hygiene (83.4%) is the activity where we spend highest volumes. However, more than half (51.2%) believe that water is an abundant resource in Madeira Island when, in fact, it is only

sufficient for the needs, as 47.1% of the students correctly pointed out.

Despite Madeira is dependent on fossil fuels for more than 90% of its energetic needs, almost 53% of 9th grade students believe that renewable energy is, instead, the main source. Also, more than half student (55.2%) doesn't know that, in their context, air pollution is mostly caused by transports. However, a large majority (86%) is perfectly aware of correct practices to save energy. In fact, more than 80% knows that switching off on the TV button (84.9%), using fluorescent lamps (87.7%), travelling by bus (82.2%) and buying regional products (89.2%) are options that represent lower energy consumption.

On wastes, almost half of the students (49%) realize that its production increased along past decades in Madeira Island, yet, the other half believes that it remained stable (33.6%) or oscillating (7.7%), and even decreasing (9.7%). High levels of agreement were obtained with the fact that 'we must put the trash in the appropriate containers' (98.8%), that 'when we walk in nature, we must bring back the garbage with us' (89.3%), that 'disposable products contribute to increase waste production' (72%), and that, but not so high, 'returnable packaging will reduce the production of waste' (62.3%) (data not shown).

Considering the knowledge in how to segregate wastes for recycling, information of much relevance for environmentally responsible behaviors, the average percentage of correct answers was high (72.2%). However, it is concerning that 91% of students doesn't know the correct container to put a broken windows glass, as also a tea cup (71%), thinking, wrongly, that they should be collected in the green container, together with glass bottles for recycling. In the other extreme is the segregation of a journal (97%), a notebook (94.6%) or a glass bottle (98.3%), since almost all students know the exact container for recycling.

Symbology in wastes shows also very discrepant results. The symbols 'put garbage in the bin' (98.3%) and 'flatten the empty packaging' (98.7%) were identified by almost all students, but the 'green dot' ('included in the valuable and recycling system for packaging') (17.9%) and 'recyclable material' (17.4%) were acknowledged correctly by a minority. In fact, green dot is misunderstood as meaning 'recyclable material' (81%) and 'recyclable material' symbol as 'included in the valuation and recycling system for packaging' (81.1%).

Table 1. Percentage of correct answers for total, water, energy and wastes environmental knowledge in 9th grade students, by total and by gender. *Significant at 1-tailed with $p \leq 0.05$.

Themes	Total	Male	Female	Significance
Water	65.6%	66.9%	64.3%	p=0.3
Energy	72.3%	72.4%	72.3%	p=0.95
Wastes	72.5%	71.4%	73.6%	p=0.01
Total	71.8%	71.2%	72.5%	p=0.08*

Attitude.

In a five points scale for attitude towards the environment: 1 and 2 (Dominant Social Paradigm- DSP), 3 (Unsure), and 4 and 5 (New Ecological Paradigm- NEP); the overall sample score 3.64 points, which means that, in average, the 9th grade students from Madeira Island places themselves between Undefined and pro New Ecological Paradigm attitude.

Overall pro-NEP (60.2%) reveals to be in a significantly higher prevalence among 9th grade students than pro-DSP (16.5%) ($p=0.000$) or Unsure (23.4%) ($p=0.000$) attitudes (Table 3). Male students showed a significantly higher concordance with the Dominant Social Paradigm than female ($p=0.017$) (Table 2).

Response prevalence's for each NEP scale statement in total 9th grade students showed a clear overall tendency to agree with 'limits to growth', 'anti-anthropocentrism', 'fragility of nature's balance', 'rejection of exemptionalism' and 'possibility of an eco-crisis', despite it is also high the indecision, specially on 'rejection of exemptionalism' and 'limits to growth', this last one with the statement "the earth has plenty of natural resources if we just learn how to develop them" showing a clear pro Dominant Social Paradigm attitude (Table 3). Concordance with each one of the five NEP scale facets of an ecological worldview was significantly higher for female students, at 1-tailed, only in 'anti-anthropocentrism' ($p=0.06$) (data not shown). In overall sample, there is a lack of concordance with the existence of 'limits to growth' (44.8%) but high levels of 'anti-anthropocentrism' (72.3%) and agreement with the 'fragility of nature's balance' (69.1%). Only half of total students (50.9%) agree

with the ‘rejection of exemptionalism’ but better with the ‘possibility of an eco-crisis’ (61.4%) (Table 3).

The highest value of concordance found among all the NEP scale statements was for ‘plants and animals have as much right as humans to exist’ (89.8%) and, on the other hand, the highest value of discordance was for ‘humans were meant to rule over the rest of nature’ (65.4%), both results rejecting anthropocentrism (Table 3). For the unsure condition, the highest value was for ‘the so-called ecological crisis facing humankind has been greatly exaggerated’ (38.2%) followed by ‘human ingenuity will ensure that we do not make the Earth unlivable’ (36.5%) and ‘we are approaching the limit of the number of people the Earth can support’ (35.5%). The lowest level of indecision was for ‘plants and animals have as much right as humans to exist’ (6.9%), a statement that also get the lowest level of discordance (3.4%) together with ‘despite our special abilities, humans are still subject to the laws of nature’ (5%) and ‘humans are severely abusing the environment (5.6%) (Table 3).

Table 2. Average percentages of pro New Ecological Paradigm (Pro-NEP), pro Dominant Social Paradigm (Pro-DSP) and Unsure attitudes in 9th grade students by total and gender. Statistical significant differences in bold.

		Attitudes		
		Pro-NEP	Pro-DSP	Unsure
Total		60.2%	16.5%	23.4%
Gender	Female	59%	17.4%	23.6%
	Male	57.5%	19.6%	23%
	Significance	p=0.2	p=0.017	p=0.55

Table 3. Response prevalence’s for each NEP scale statement in total 9th grade students. The two highest prevalence’s for each statement in bold. Pro-NEP: Pro New Ecological Paradigm attitude (MA + SA); Pro-DSP: Pro Dominant Social Paradigm attitude (SD + MD); SD- Strongly disagree; MD- Mildly disagree; U- Unsure; MA- Mildly agree; SA- Strongly agree.

NEP scale statements	Percentage (%) of responses				
	SD	MD	U	MA	SA
Limits to growth					
(Pro-NEP= 44.8%; Pro-DSP= 26.4%; Unsure= 28.8%):					
Q1• We are approaching the limit of the number of people the Earth can support.	8.4	19.4	35.5	26.7	10
Q6• The earth has plenty of natural resources if we just learn how to develop them.	10.6	15.6	18.3	36.3	19.2
Q11• The Earth is like a spaceship with very limited room and resources.	8	15.5	29.6	33.5	13.4
Anti-anthropocentrism					
(Pro-NEP= 72.3%; Pro-DSP= 11.3%; Unsure= 16.4%):					
Q2• Humans have the right to modify the natural environment to suit their needs.	25.3	36.6	19.7	15.7	2.7

Q7• Plants and animals have as much right as humans to exist.	1.5	1.9	6.9	23	66.8
Q12• Humans were meant to rule over the rest of nature	32.6	32.8	21.7	8.8	4
Fragility of nature’s balance					
(Pro-NEP= 69.1%; Pro-DSP= 11.3%; Unsure= 19.7%):					
Q3• When humans interfere with nature, it often produces disastrous consequences.	1	6.1	14.3	46.5	32.1
Q8• The balance of nature is strong enough to cope with the impacts of modern industrial nations.	20.3	42.2	24.8	10	2.7
Q13• The balance of nature is very delicate and easily upset.	1.9	11.9	18.6	42.3	25.3
Rejection of exemptionalism					
(Pro-NEP= 51%; Pro-DSP=19%; Unsure= 30%):					
Q4• Human ingenuity will ensure that we do not make the earth unlivable.	7.3	27.7	36.5	22	6.5
Q9• Despite our special abilities, humans are still subject to the laws of nature.	0.8	4.2	19.7	45.5	29.8
Q14• Humans will eventually learn enough about how nature works to be able to control it.	12.3	30.9	32.2	19.4	5.2
Possibility of an eco-crisis					
(Pro-NEP= 61.4%; Pro-DSP= 14%; Unsure= 24.8%):					
Q5• Humans are severely abusing the environment.	2.3	3.3	13.8	40.8	39.7
Q10• The so-called “ecological crisis” facing humankind has been greatly exaggerated.	8.4	25.7	38.2	21.1	6.7
Q15• If things continue on their present course, we will soon experience a major ecological catastrophe?	2.7	6.5	20.8	37.3	32.7

Behavior.

Missing values in behavior section account for 2.1%. In a five points scale for environmentally responsible behavior practices (1-Never, 2- Rarely, 3-Sometimes, 4- Very Often, 5- Always), the overall sample score is 3.37 points, which means that, in average, the 9th grade students from Madeira Island places themselves as practicing environmentally responsible behaviors between ‘sometimes’ and ‘very often’ (data not shown). Environmentally responsible behaviors among overall 9th grade students from Madeira Island reached 25.6% in an ‘always’ basis and 22.3% in ‘very often’. In the other side, only 11.2% refer to ‘never’ practice the behaviors evaluated and only 14.6% ‘rarely’ (Table 4). In the overall sample, female students had shown statistically highest prevalence’s of environmentally responsible behaviors than male, which also occurs for each set of behaviors in water and energy savings, as also in waste management, especially in an ‘always’ basis (Table 4).

Considering environmentally responsible behaviors in each one of the three areas evaluated (water saving, energy saving and wastes management) it was water saving that score the highest prevalence, being an ‘always’ practice on 40.1% of all answers (Table 4). If we take together ‘always’ and ‘very often’ answers, the prevalence of environmentally responsible behaviors is statistically higher in water saving (59.9%) than energy saving (48.4%) (p=0) and in this latter than in waste management (44%) (p=0.0009). Saving water when brushing the teeth reach

68.5% in a very often and always basis but on the shower it is much lower with only 38.9%. Most students prefer to have a shower (74% always and very often) and more than half (58.1% always and very often) avoid unload the toilet unnecessarily. Few students take care to save energy when they open the refrigerator (34.1%) or switch off TV (23.3%) but the majority never or rarely leave lights on unnecessarily (69.6%) and always or very often go to school by bus or on foot (54.7%), despite only 41.1% never or rarely ask for a ride in their parent’s car. The number of students that clearly reject products from abroad, which, as we know, spend more energy due to transportation, doesn't go far beyond a third (36.8%), many prefer them sometimes (43.4%) and one fifth always or very often (19.7%). Sorting wastes for recycling is a behavior followed always and very often by only 40.7% of students, the same number that reduces wastes production by drinking tap water instead of bottled. Despite only 17.7% of students assume that they keep throwing trash on the floor, at least sometimes, almost half (49.4%) witnessed their colleagues practicing that kind of behavior (data not shown).

Table 4. Environmentally responsible behaviors prevalence’s for total, water savings, energy savings and wastes management in 9th grade students by total and by gender. Statistical significant differences in bold. *Significant at 1-tailed with $p \leq 0.05$.

Students	Environmentally responsible behaviors prevalence - Water Savings				
	Never	Rarely	Sometimes	Very Often	Always
Female	10.3%	9.1%	18.7%	18.5%	43.4%
Male	12.4%	11.3%	18.8%	21%	36.6%
Significance	p=0.147	p=0.112	p=0.95	p=0.168	p=0.0024
Sub-total	11.4%	10.1%	18.6%	19.8%	40.1%

Students	Environmentally responsible behaviors prevalence – Energy Savings				
	Never	Rarely	Sometimes	Very Often	Always
Female	11.5%	14.7%	24.3%	23.3%	26.3%
Male	11.7%	13.7%	27.3%	25.3%	22.1%
Significance	p=0.86	p=0.41	p=0.047	p=0.177	p=0.0045
Sub-total	13.3%	15.8%	27.5%	22.8%	20.6%

Students groups	Environmentally responsible behaviors prevalence – Wastes				
	Never	Rarely	Sometimes	Very Often	Always
Female	7.8%	17.2%	29.8%	23.2%	22.1%
Male	9.3%	16.5%	31.7%	24.2%	18.3%
Significance	p=0.19	p=0.646	p=0.313	p=0.562	p=0.02
Sub-total	8.5%	16.8%	30.8%	23.9%	20.1%

Students	Environmentally responsible behaviors prevalence – Total				
	Never	Rarely	Sometimes	Very Often	Always
Female	10.7%	14.8%	25.3%	21.4%	27.8%
Male	11.7%	14.6%	27.1%	23.2	23.5%
Significance	p=0.18	p=0.81	p=0.082*	p=0.067*	p=0.0
Total	11.2%	14.6%	26.2%	22.3%	25.6%

DISCUSSION

Improve environmental literacy should always be the main goal of environmental education effort. In the past decades, around the world, a great diversity of environmental education programs has been developed and some studies are showing the progress made, especially in knowledge, awareness and attitude but less in environmentally responsible behaviors (Krnel & Naglič, 2009; Hallfreðsdóttir, 2011; Pauw & Van Petegem, 2011 and 2013; Ozsoy et. al., 2012). However, despite the huge effort in environmental education, there is a general lack of evaluation

and many programs miss to address their effectiveness (Carleton-Hug & Hug, 2010). Present study characterizes knowledge, attitude and environmentally responsible behaviors, the main components of environmental literacy, among 9th grade students from Madeira Island (Portugal). Total 9th grade students shows a good level of knowledge (71.8%), a strong tendency to agree with the New Ecological Paradigm (58.2%) and an encouraging level of environmentally responsible behaviors (47.9% for 'very often' plus 'always'). This environmental literacy structure among 9th grade students from Madeira Island is clearly unbalanced showing that the environmental education programs have been more effective transmitting knowledge than promoting environmentally responsible behaviors, a tendency also found in previous studies (Mcbeth & Volk, 2010; Lewis, 2008; Negev et. al., 2008; Carmi et. al., 2015).

However, despite these good levels of knowledge, there are some aspects that need to be improved. For example, the fact that the majority of students think that broken windows and tea cups should be collected together with glass bottles in green containers could bring serious complications for the recycling process and, as so, it's a wrong idea that needs to be fight back urgently trough appropriate environmental education. Also, some symbology for waste package are not correctly understood (green dot and recyclable material) and needs specific campaigns to overcome those fails.

Also, considering that gender represents different societal influences to which students are subject, the significant variations found between males and females shows that environmental literacy knowledge, attitude and behavior are subject to the influences of the community context in which each student is inserted. Previous studies add also revealed these influences (Sakar & Ara, 2007; Stevenson et. al., 2013; Negev et. al., 2008) showing that environmental education needs to overcome the barriers imposed by school walls and intermingle their action with the surrounding environment and society. In fact, some authors consider that environmental education is failing because it misses a link between the individual actions taught inside the classroom and the reality found in the society (Blumstein & Saylan, 2007).

The overall tendency for a pro-NEP attitude on the 9th grade students from Madeira Island reveals an exception, the level of concordance with the existence of 'limits to growth' (44.8%), the only component lower than 50%. This exception represents a future challenge for environmental education in this insular community since understanding the limits of the Planet is fundamental to engage in sustainability. However, as we can see in the results section, this low levels of concordance with the 'limits to growth' was mostly influenced by the statement 'the Earth has plenty of natural resources if we just learn how to develop them', which could has been misunderstood by students due to the need for a better translation for Portuguese language.

Our results show also a set of low prevalent environmentally responsible behaviors that needs to be specifically addressed through appropriate environmental education programs, namely the preference for local products or the elimination of the sand by energy consumption.

CONCLUSIONS

Present study shows that 9th grade students from Madeira Island have good levels of environmental literacy but need to improve in several aspects of knowledge and attitude, and much more in environmentally responsible behaviors. Environmental education programs and strategies in Madeira Island need to be suited for this purpose and, especially, be more oriented to promote environmentally responsible behaviors. Since the context where students and schools are inserted seems to exert important influences, and following the best practices in environmental education, the work of education establishments needs to be part of a network involving the local community. Also, new evaluations and studies need to be done not only to include different age group but also to better understand the effects of the social and environmental contexts in the development of the environmental literacy. This enlightenment will be helpful to design environmental education programs and strategies suited and effective for the Portuguese context.

ACKNOWLEDGMENTS

We thank the boards of the five elementary schools from Madeira Island that have authorized and cooperated with the present study, as also all the 9th grade teachers that applied the questionnaire in their classrooms.

REFERENCES

- Blumstein, D.T. & Saylan, C. (2007). The failure of environmental education (and how we can fix it). *PLoS Biol* 5(5): e120. doi:10.1371/journal.pbio.0050120.
- Bryman, A. (2004). *Social Research Methods*. 2nd edition. Oxford: Oxford University Press.
- Carleton-Hug A. & Hug J.W. (2010). Challenge and opportunities for evaluating environmental education programs. *Evaluation and Program Planning*, 33: 159-164.
- Carmi, N., Arnon, S. & Orion, N. (2015). Transforming Environmental Knowledge Into Behavior: The Mediating Role of Environmental Emotions. *The Journal of Environmental Education*, 46 (3): 183-201.
- Cook, S. & Berrenberg, J. L. (1981). Approaches to encouraging conservation behavior: a review and conceptual framework. *Journal of Social Issues*, 37 (2): 73-107.
- Disinger, J.F. & Roth, C.E. (1992). Environmental Education research news. *The Environmentalist*, 12: 165-168.
- Dunlap, R.E., Van Liere, K.D., Mertig, A.G. & Jones, R.E. (2000). Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of Social Issues*, 56 (3): 425-442.
- Hallfreðsdóttir, S. (2011). *Eco Schools – Are They Really Better? Comparison of Environmental Knowledge, Attitude and Actions between Students in Environmentally Certified Schools and Traditional Schools in Iceland* A thesis submitted in partial fulfillment of the requirements of Lund University International Master's Programme in Environmental Studies and Sustainability Science (LUMES). Lund University Centre for Sustainability Studies, LUND, Sweden.
- Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido, P. (2011). *Developing a framework for assessing environmental literacy*. Washington, DC: North American Association for Environmental Education.
- Hungerford, H.R. & Volk, T. (1990). Changing learner behavior through environmental education. *The Journal of Environmental Education*, 21 (3): 8-22.
- Igbokwe, A. B. (2012). Environmental Literacy Assessment: Exploring the Potential for the Assessment of Environmental Education/Programs in Ontario Schools. *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE)*, 3 (1): 640-656.
- Kostova, Z., Vladimirova, E., Radoynovska, B. (2011). The environmental concern of nine-grade students from a secondary professional school. *Bulgarian Journal of Science and Education Policy (B JSEP)*, 5 (1): 178-218.
- Krnjel D. & Naglič, S. (2009). Environmental literacy comparison between eco-schools and ordinary schools in Slovenia. *Science Education International*, 20(1/2): 5-24.
- Kuhlemeier, H., Bergh, H. & Lagerweij, N. (1999). Environmental Knowledge, Attitudes, and Behavior in Dutch Secondary Education. *The Journal of Environmental Education*. 30 (2): 4-14.
- Lewis, R.M. (2008). *Measuring Environmental Literacy in Fargo, North Dakota, and Moorhead, Minnesota*. North Dakota State University of Agriculture and Applied Science. Retrieved 23-09-2014 in: http://www.google.pt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0CGIQFjAI&url=http%3A%2F%2Fwww.gscience.org%2Fuploads%255Cresources%255C604%255Csurvey-environmental-literacy_ruth-lewis_ms-2008.pdf&ei=b5ghVKGwDsFFPLPTglAD&usq=AFQjCNEQK5H3HEAGsHleo_1GFK0XBEhEcg.
- McBeth, W. & Volk, T.L. (2010). The national environmental literacy project: A baseline study of middle grade students in United States. *The Journal of Environmental Education*, 41(1): 55-67.
- Nederhof, A.J. (1985). Methods of coping with social desirability bias: a review. *European Journal of Social Psychology*, 15: 263-280.
- Negev, M., Sagy, G., Garb, Y., Salzberg, A. & Alon Tal, A. (2008). Evaluating the Environmental Literacy of Israeli Elementary and High School Students. *The Journal of Environmental Education*, 39 (2): 3-20.
- Ogunbode, C.A. (2013). The NEP scale: measuring ecological attitudes/worldviews in an African context. *Environment, Development and Sustainability*, 15 (6): 1477-1494.
- Ogunjinmi, A.A., Onadoko, S.A. & Adewumi, A.A. (2012). An Empirical Study of the Effects of Personal Factors on Environmental Attitudes of Local Communities around Nigeria's Protected Areas. *The Journal of Transdisciplinary Environmental Studies*, 11 (1): 40-53.
- Ozsoy, S., Ertepinar, H. and Saglam, N. (2012). Can eco-schools improve elementary school students' environmental literacy levels? *Asia-Pacific Forum on Science Learning and Teaching*, 13 (2), Article 3: 1-25.
- Pauw, J.B. and Van Petegem, P. (2011). The Effect of Flemish Eco-Schools on Student Environmental Knowledge, Attitudes, and Affect. *International Journal of Science Education*, 33 (11): 1513-1538.
- Pauw, J.B. and Van Petegem, P. (2013). The effect of eco-schools on children's environmental values and behavior. *Journal of Biological Education*, 47 (2): 96-103.
- Pe'er, S., Goldman, D. & Yavetz, B. (2007). Environmental Literacy in Teacher Training: Attitudes, Knowledge, and Environmental Behavior of Beginning Students. *The Journal of Environmental Education*, 39(1): 45-59.
- Sakar, M.A. & Ara, Q.A.J. (2007). Environmental Literacy among the Secondary Level Students: Comparison between urban areas of Natore District. *Teacher's World*, 30-31: 123-130. Retrieved 23-09-2014 in http://www.academia.edu/293773/Environmental_literacy_among_the_secondary_level_students_Comparison_

between_urban_and_rural_areas_of_Natore_district

Shoukry, S.H., Saad, S.G., Eltemsahi, A.M., & Abolfotouh, M.A. (2012). Awareness, Attitude, and Concerns of Workers and Stakeholders of an Environmental Organization Toward the Environment. *SAGE Open*, October-December 2012: 1–10.

Spinola, H. (2014). Forty years of environmental education in the Portuguese Democracy. *The Online Journal of New Horizons in Education*, 4 (3): 47-55.

Stern, P. (2000). Toward a coherent theory of environmentally significant behavior. *The Journal of Social Issues*, 56 (3): 407.

Stevenson, K.T., Peterson, M.N., Bondell, H.D., Mertig, A.G. & Moore, S.E. (2013). Environmental, Institutional, and Demographic Predictors of Environmental Literacy among Middle School Children. *PLoS ONE* 8(3): e59519. doi:10.1371/journal.pone.0059519.

Trobe, H.L. & Acott, T.G. (2000). A Modified NEP/DSP Environmental Attitudes Scale. *The Journal of Environmental Education*, 32 (1): 12-20.

Watne, T., Brennan, L., Binney, W. & Parker, L. (2012). 'The use of the NEP scale as a measure of environmental attitudes', in John Cadogan, Maxwell Winchester (ed.) *Proceedings Australian and New Zealand Marketing Academy Conference -ANZMAC 2012*, Adelaide, Australia, 3-5 December 2012, pp. 1-6.

INTERNATIONALIZATION: AS AN IMPORTANT FACTOR ON UNIVERSITY-INDUSTRY COLLABORATION

Gökçe MEREY, Reha Metin ALKAN

Hitit University, North Campus, 19030 Çorum, TURKEY
alkan@hitit.edu.tr

Abstract: Financial, social, political and cultural developments changed agricultural society into an industrial society. With the advent of new technologies, the world has turned into an information society. Due to the improvements in technology and mass media, social changes and international interactions have gained speed. Therefore, globalization has become inevitable and has given way to transition from information society to communication society by creating a world beyond borders. In this study, the effects of globalization and internationalization are examined from educational, cultural, financial and industrial aspects.

Keywords: Mevlana Exchange Program, Internationalization, Global Education, Intercultural Ties, International Student.

INTRODUCTION

The relations among nations become constantly necessary and important, the basic focus of internationalization is still the nation. However, globalization is the annulment of national boundaries for financial reasons primarily by free trade and free capital mobility (Özer, 2012). Therefore, the difference lies in their focus. While globalization highlights an economic process, cross-border sharing, common market and dependence, internationalization enhances world view, multicultural approaches and attitudes.

Education affects societies in terms of political, social, economical and cultural aspects by providing service to individuals throughout their lives. Therefore, organizing the educational services according to the modern developments in line with the needs of individuals and societies are among the priorities of all the countries in the world. The most important issue of the modern age is human capital for it maintains economical growth and social development and currently, the most powerful countries in the world are those which invest in human capital. Human capital can be expressed as the stock of competencies, knowledge, social and personality attributes, including creativity, cognitive abilities, embodied in the ability to perform labor so as to produce economic value. It is of utmost importance to invest in human being for increasing their abilities and qualifications during the process of becoming an industrial and information society. When we look at the developed countries in the world, the common features of them are having high-grade universities which are active in international cooperations and research-development technologies. Since investment in education is rewarding both for individual and society, contribution of education in financial growth and the increase of national income are inevitable. Training individuals who can keep up with the technology and contemporary life is only possible through a quality educational system which is rational and universal.

Being aware of these positive effects of internationalization, higher education institutions aim at increasing the opportunities through which students can benefit outside their home countries through bilateral, multilateral agreements, joint projects, dual diploma projects, student and faculty exchange programs, internships or service learning in a foreign country, foreign language education, cultural studies and international or comparative education programs. In line with these goals, higher education institutions not only motivate their students and staff to participate in international programs but also develops their promotional activities by enhancing their organizational images and visiting foreign countries to establish new contacts.

Institutions of higher education are reevaluating their goals as they try to best meet the students' expectations in terms of providing international programmes and upgrade their academic skills in today's diverse world. In this respect, Erasmus Exchange Programme has been the core of interaction between the countries since its launch in 1987. The Programme aims to provide opportunities for students and university staff to broaden their horizon and international perspective, and to exchange ideas and experiences with their counterparts in other countries. In line with this goal and with the aim of making Turkey a center of attraction in higher education area, increasing the academic capacity of Turkish higher education institutions, contributing to the internationalization process of

higher education, sharing the historical and cultural heritage of Turkey in a global scale, Mevlana Exchange Programme (MEP) was established in 2013 by Higher Education Council of Turkey (YÖK, 2012).

Research on how and to what extent the stakeholders of tertiary education actually benefit from educational travel experiences remain inadequate and excludes information about the new programs such as MEP which aims the exchange of students and academic staff between Turkish and foreign higher education institutions. In this study, we aimed to give information about exchange programs, especially MEP, in terms of their contribution to scientific and industrial needs of today's world.

OUTCOMES OF EXCHANGE PROGRAMS

Internationalization is found to signify predominantly a search for student markets abroad in order to position the university's knowledge at the service of others, especially in less advantaged parts of the world (Stromquist, 2007). It is to prepare students for the global world of work as well as to bring about a shared future marked by justice, security, equality, human rights, and economic sustainability. Ideally to meet this challenge, universities need to incorporate an international/intercultural dimension into their teaching, research, and service functions (De Wit, 2000). In education, the expanded economic and social interactions dominates the landscape of many nations and leads them to be a decision maker of the policies at all levels of education (Gough, 2000). Technological innovations influence the dynamics of social relations while the resources of power and differential knowledge about the institutions are implicated in the construction, manipulation, and maintenance of the social world, at both the national and international level (Welton, 2001).

Multinational corporations are the core of new cluster/technology hubs attracting smaller companies which specialize in that area to supply them or favor the development of new research centers focused on very specific areas. These clusters are key drivers in economies, providing work opportunities and technological knowledge, and are highly integrated within the local society, to the point of a true mutual dependency (Thune, 2007). One of the most helpful steps of increasing the multinational functions of education is using exchange programs as a tool to get acquainted with the needs and characteristics of a country.

The benefits of a establishing a multinationality in education and corporations can be given as follows:

Different ideas: Multinational approach brings different ideas from different aspects. In order to avoid never-ending cycles, fresh and different ideas from all over the world are necessary.

Defining local needs: The needs of different countries become more visible by the contribution of their citizens to international projects. For example very well-known automobile companies generate the same brand with different features which may play a crucial role according to the needs and conditions of the countries. Locals of foreign countries are the ones who know their own conditions the best, thus their contribution is invaluable for a company at international market.

Promotion of the country: A student who graduated from the university with nice memories becomes a volunteer ambassador who promotes not only the university but also the country and if there is any opportunity of that person to have an industrial collaboration, the host country will be the first one to remember.

Forming competitive knowledge society: Highly qualified students prefer the universities which provide them the best theoretical and practical education. In order to recruit the best students, universities need to increase their quality and in turn, each time better students (potential future employees of the host country) will be added to the system. Thus, it will enable the universities to create an institutional continuous improvement model by creating innovative people who can interpret the whole world and turn into a dynamic structure.

Working harder: Surviving in a different country may seem more difficult than surviving in home country but this factor may turn out as an advantage to the foreigner by making him/her working harder in order to make the visit meaningful. Usually people prefer to go abroad because they cannot find a suitable ground to carry out their projects in their home countries and may have better chances abroad.

Improvement in culture and art: Internationalization enables to mix various cultural backgrounds easily. Typically this involves in daily life according to people's preferences. For instance, Chinese locations (China

Town) are founded in USA as a result of increasing the number of Chinese origin students and academicians. Cuisines, daily life habits, artistic aspects, festival rituals mingle together in one pot.

Further project opportunities: Students usually go back to home countries after their education abroad and the study abroad experiences brings extra advantage to the home country because of the possibility of bringing different aspects at work. Building joint projects, especially at international level, is one of the benefits and if it gets realized, the first institutions coming to mind for project partnerships is usually the education institutions they studied before.

All the factors above affect the scientific and industrial future of a country. In order to see the correlation between internationalization and industrial growth, international student number and Competitive Industrial Performance Index (CIP), a composite index to measure the ability of countries to produce and export manufactured goods competitively using several individual indicators to proxy various dimensions of industrial performance, can be compared. As it is seen from Table 1, CIP is generally higher in the countries with more international students (UNIDO, 2013).

Table 1. Relations between Competitive Industrial Performance Index and Number of International Students

Country	Number of Int. Students	Competitive Industrial Performance Index (2012)
USA	740.482	0,44
United Kingdom	427.686	0,28
France	262.597	0,30
Australia	249.588	0,14
Germany	206.986	0,55
Russian Federation	173.627	0,12
Japan	150.617	0,49
Canada	120.960	0,23
China	110.079	0,35
Italy	77.732	0,30
Saudi Arabia	62.105	0,11
South Korea	59.472	0,41
Austria	58.056	0,26
Malaysia	56.203	0,18
Spain	55.759	0,21
Ukraine	49.686	0,07
Egypt	49.011	0,04
Turkey	44.025	0,14

A significant goal of global training is to provide students and staff in higher education with various opportunities and let them broaden their minds by bridging cultural distance. The industry-oriented focus on higher education stimulates the higher education centers to develop strategies to make themselves more attractive and accessible to industry, by promoting collaboration and mobility. In this regard, exchange programs are offered as an easily accessible tool to provide student and academic staff mobility. MEP is a new movement of exchange programs which differs from others by including all higher education institutions in the world regardless of their region. Granted and executed by Turkish Higher Education Council, MEP provides opportunity to cooperate in mutual activities between the two parties since 2013. The students registered in formal education programs and all academic staff who works in a national or foreign higher education institution may benefit from MEP, on condition that the higher education institutions signed a bilateral Mevlana Exchange Protocol aiming to contribute the

internationalization of higher education. This program also aspires to turn Turkey into an attractive destination in education around the world (YÖK, 2012).

Often governments, on both a national and international scale, are involved in developing new policies to promote research and development, and help existing units to face the increasing foreign competition by promoting internationalization and partnerships with other counterparts. Some companies often sign research contracts with universities not only to focus on a single topic, but to include a wide range of research areas, taking advantage of scientific interactions and at the same time setting the basis for further development of new ideas. Moreover, many universities have already developed their own organizations to maximize benefits from industrial partnerships, often involving non-profit organizations to manage the existing relationships and develop a network of public and private contacts, that will be useful to launch new international joint projects, provide new ideas, ensuring the companies' technological future.

CONCLUSIONS

The general consciousness about the significance of increasing the international competitiveness of higher education has obviously been growing. Internationalization has been the central driving force for higher education institutions to collaborate interactively all over the world. As a consequence of internationalization, the popularity of exchange programs in foreign universities has grown considerably in recent years, also in the universities of Turkey have made profound efforts to attract students from different countries. With these international programmes, students have the opportunities to learn about other cultures, upgrade their international perspectives and skills. All of these features are very useful tools to improve the global knowledge at scientific and industrial levels. Nations should call attention to the benefits of internationalization and make necessary arrangements to increase the level of internationalization at good quality.

ACKNOWLEDGEMENT

This paper is an extended and reviewed version of the study that was presented at the ITEC 2015, St. Petersburg, Russia, September 2-4, 2015.

REFERENCES

- De Wit, H. (2000). Changing rationales for the internationalization of higher education, in L. C. Barrows (Ed.), *International Higher Education*, pp. 9-22. Bucharest: European Centre for Higher Education, United Nations Educational, Scientific and Cultural Organization.
- Gough, N. (2000). Globalization and curriculum inquiry: locating, representing, and performing a transnational imaginary, in Stromquist, N. and Monkman, K. (ed.), *Globalization and Education: Integration and Contestation Across Cultures*. Boulder: Rowman & Littlefield.
- Özer, M. (2012). International Students in Turkey, *Journal of Higher Education and Science*, 2, 10-13.
- Stromquist, N.P. (2007). Internationalization as a response to globalization: Radical shifts in university environments, *Higher Education*, 53, pp. 81–105.
- Thune, T. (2007). University–industry collaboration: the network embeddedness approach, *Science and Public Policy*, 34, pp. 158–168.
- UNIDO (2013). The industrial competitiveness of nations, looking back, forging ahead, *Competitive Industrial Performance Report 2012/2013*, Vienna.
- Welton, G. (2001). The Materialist Basis of a Socially Constructed World? Globalisation as a Political Project. *Center for International Studies*, University of Southern California, Los Angeles, 2001.
- YÖK (2012). Mevlana Exchange Program: <http://www.yok.gov.tr/web/mevlana>

INTRODUCTORY STUDY ON STUDENT'S MENTAL MODELS IN UNDERSTANDING THE CONCEPT OF ATOMIC STRUCTURE (Case Study on High School Students in Lampung Indonesia)

Sunyono

Department of Mathematic and Science Education, University of Lampung.
Sumantri Brojonegoro Street, No. 1, Bandar Lampung, Lampung Province, Indonesia
Email: sunyono_ms@yahoo.com.

Dwi Yulianti,

Department of Mathematic and Science Education, University of Lampung.
Sumantri Brojonegoro Street, No. 1, Bandar Lampung, Lampung Province, Indonesia

Abstract: Several researches indicated that mental models can affect the students' ability to perform reasoning on external representations encountered. Students' mental models are generally used to thinking in problem solving. Objective of this research is to look at the characteristics of initial mental models of students in understand the concept of atomic structure. Research subjects taken from students of high schools in Lampung Indonesia that have been selected as the sample. The number of samples involved as many as 119 people consisting of students of class XI. Diagnostic tests in the form of an essay used to see the emergence of a mental model of atomic structure that is tested in Class XI. The results of the research show that for all groups of students' early knowledge, initial mental models of the students in understanding the concept of atomic structure is dominated by verbal mental model of the category "very bad" and "bad," or the characteristics of "unformed" and "intermediate 1" mental models. This finding implies that students' mental models can be used as a reference in determining the instruction strategies that can help students in problems solving related to the phenomenon sub-microscopic, macroscopic, and symbolic.

Key Words: Introductory Study, Mental Model, Atomic Structure, understanding

INTRODUCTION

Various research on mental models have shown that learning with a variety of representations is very important to enhance the students' understanding of chemistry concepts, especially the use of visualization representations to explain the phenomenon of sub-micro (Herga, et al., 2014; Gkitzia, et al., 2011; Guzel & Adadan, 2013; Jaber & Boujaoude, 2012). Other studies consistently shows that students have difficulties in understanding and interpreting the representation (especially submicroscopic) in making the translation between the three types of representation and in building their representational abilities (Johnstone, 1993; Treagust, et al., 2003; Chittleborough, and Treagust, 2007). Chemistry instruction to build a deeper conceptual knowledge should be done by involving all three levels of the phenomenon. In reality the instruction of chemistry that has been taking place tends to prioritize only on the macroscopic and symbolic representations in a verbal manner (Chittleborough and Treagust, 2007; Liliyasi, 2007; Sunyono, et al., 2011). Generally, submicroscopic representations are only represented verbally and models of molecules are less appreciated, whereas molecular models can facilitate instruction of chemistry on all three levels of the phenomena (macro, submicroscopic, and symbolic) which are shown through various representations.

The research that has been conducted by Tasker and Dalton (2006) showed that the use of concrete models, image representation, animation and simulation has proven beneficial for the students' process of understanding of chemical concepts, particularly the concept of molecular or submicroscopic level. According to Tasker and Dalton (2006) that "Chemistry involves interpreting observable changes in matter (e.g. color changes, smells, bubbles) at the concrete macroscopic or laboratory level and in terms of imperceptible changes in structure and processes at the imaginary submicroscopic or molecular level." These changes at the molecular level are then described in the symbolic level that is abstract in

two ways, namely qualitatively: using a special notation, language, diagram, and symbolism, and quantitatively using mathematics (equations and graphs).

The statement from Tasker & Dalton (2006) is related to the transformation of the external representation into an internal representation (hereinafter expressed as a mental model). Cognitive psychology expert Johnson-Laird (in Solaz-Portoles and Lopez, 2007) formulated a mental model definition in an attempt to explain the processes of a person's reasoning in syllogizing and forming an internal representation in the form of a mental model in a working memory (WM) of the world and combine the information that has been stored in long term memory (LTM) with information on the characteristics of the task, and then extracted by perceptual processes in memory. Senge (2004) defines mental models as follows: "Mental models are deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting. Very often, we are not consciously aware of our mental models or the effects they have on our behavior."

Some research on mental models have found that many students have a very simple mental model of chemical phenomena, for example atomic and molecular models which are depicted as discrete and concrete structures, but do not have the skills to build more complex mental models (Chittleborough and Treagust, 2007; Coll, 2008; Guzel & Adadan, 2013). Guzel & Adadan (2013) utilized multiple representations in instruction to develop understanding of chemistry for teacher candidate students about the structure of matter. As a result, even though the student has been able to develop the representational abilities, but the image structure created is still very simple. Coll (2008) reported in a study of "*mental models of chemical bonding*" that high school, undergraduate, and graduate students prefer the simple and realistic mental model more. Chittleborough and Treagust (2007) in their study reported that students' mental models can be formed through interpretation, understanding, and an explanation of the submicroscopic representation phenomenon, but most students prefer to use their mental models in a representation phenomenon that is simple. One way to do it is to use visualization suitable for a particular instruction topic. A study conducted by Sunyono, et. al. (2011) reported that students' mental models still tend to be at the macroscopic and symbolic level, their submicroscopic level is still not well established. This is due to students having difficulty in making the interpretation of the submicroscopic phenomenon.

Referring to the research results of Sunyono, et. al. (2009), the instruction of atomic structure topic should be done by involving submicroscopic representation, because it is characteristically abstract and atomic theory or the nature of matter is a key concept in science and technology (Gkitzia, et al., 2011). Park, et. al. (2009) stated that the theory of the atom is the main concept in science instruction and its concepts are abstract, so the way to teach and learn about the atomic theory must be well considered, especially in choosing a strategy of utilizing visualization. Wang (2007) in his dissertation reported that instruction about the structure of atoms, especially the position of an electron in an atom, requires a visualization model that is designed in such a way so as to assist students in making the interpretation of the phenomenon of electrons in atoms and that students' mental models can be developed well. Hilton & Nichols (2011) reported that understanding the phenomena of more complex and abstract topics such as the structure of an atom, cannot be achieved by the students without involving the submicroscopic and symbolic representations. Similarly, research conducted by Guzel & Adadan (2013) reported that instruction designed by developing an understanding of the various representations (macro, submicroscopic, and symbolic phenomena) can produce a more representational in-depth understanding of the structure of the matter and can be maintained up to 17 months.

Researchers study a person's mental model by grouping it into several characteristics, for example: Norman (in Barsalou, 1992) divides the characteristics of mental models into 2 parts, the structural mental model and conceptual mental model. In research of the education field, researchers generally studied the mental model by focusing on the conceptual model. Associated with the study of mental models in education, Wang (2007) and Jaber & Boujaoude (2012) classify the characteristics of mental models (conceptual) into three categories based on students' scores to questions in a mental model test, namely: "high" mental model (students' correct answers reach $\geq 70\%$), "moderate" mental model (if

50%> of students' correct answers are <70%), and "low" mental model (students correctly answer \leq 50%). However, Park, et. al. (2009) classify the characteristics of mental models into five parts, namely (1) the initial mental model that is not shaped or unclear, which is the mental model that is there since birth and emerges as a result of information from the environment that is incorrect, or the concept/description and image structure that is made, is entirely scientifically unacceptable, or students do not have any concept whatsoever; (2) intermediate 1 mental model is a mental model that is beginning to be formed and is characterized by concepts/explanations given being scientifically closer to the truth and the image structure created is unacceptable or otherwise; (3) intermediate 2 mental model is the students' mental model characterized by the concept/explanation of the students being partially correct and the image structure being made is scientifically closer to the truth; (4) intermediate 3 mental model of is a mental model that can be categorized as a consensus mental model, namely characterized by the concept/explanation owned by students being scientifically acceptable and image structure being made is closer to the truth or otherwise the explanation/concept owned cannot be received well scientifically, but the image structure being created is right; and (5) target mental model is a mental model that is characterized by the concept/description and image structure created by the student being scientifically correct. This study was conducted to answer the question: "how are the characteristics of an initial mental model of students in understanding the concept of the structure of atoms?"

METHODOLOGY

Research Design and Research Sample

The research design is done through observation with the investigation, interviews, and a questionnaire completed by the teacher, as well as initial concept mastery test questions and initial mental model test filled by students. The research design conducted is a field observation aimed to obtain data on the instruction model used by chemistry teachers and mental model of high school students in Lampung Province - Indonesia. Regions surveyed for this data collection is in three regencies / cities that are randomly chosen from the 14 regencies/cities in the province of Lampung. Afterwards, four high schools were randomly sampled. These four schools were selected from different regions, including: (1) a high school in the provincial capital (students with employee and entrepreneur environment), ie a high school of Utama 2 (SMA Utama 2) Bandar Lampung, (2) high schools near the capital (students in a farming environment), ie State high School 2 of Natar (SMAN 2 Natar) and State high school 1 of Negerikaton (SMAN 1 Negerikaton); and (3) a high school far from the capital (students with an industrial/agroindustry entrepreneur), ie State high school 1 of Terusan Nunyai (SMAN 1 Terusan Nunyai). The sampling of the schools was to get student respondents with different backgrounds. Furthermore, one class of XI grade students was taken randomly from every high school to test mastery of chemistry concepts of X grade and characteristics of mental model. Thus, there were a total of 119 students involved as respondents in the study.

Instruments and Data Analysis

The initial mental model of students as measured in this study is a conceptual mental model that emerged in response to the questions in a diagnostic test on the topic of atomic structure (especially the atomic model of Rutherford, Bohr, and wave mechanics). The instrument used to determine the appearance of the students' initial mental model is a form of a mental model diagnostic test or what is called an atomic structure model test (TMS). The test instrument was adapted from a model developed by Wang (2007) and Park & Light (2009), in the form of a written essay test that comes with submicroscopic image. There were 4 diagnostic test items in this study. Interviews were then done with 3 (three) selected students representing each group (school). Interviews with students were conducted to find out more about the responses of the students and the difficulties that arise in solving the problems.

Data obtained from the results of diagnostic tests and interviews were then analyzed through transcription and categorization, so initial mental models of students could be identified and common general difficulties that occur when dealing with the external representation of the submicroscopic level, especially in solving the problem of the atom model concept. A scoring system was implemented to categorize the emergence of mental models through the students' answers on diagnostic test questions. Scoring technique is performed by using a rubric, namely by assessing the students' answers on the test

with description using labeling to determine the level of achievement of resolving the problem. The level of achievement in problem solving are then categorized as a mental model of "bad" (where a score = 1), "poor" (score = 2), "medium" or "moderate" (score = 3), "good" (score = 4), and "excellent" (score = 5). Based on the results of the scoring and categorization, students' mental models appearing are then characterized into 5 mental model characters (Park, et al., 2009), namely, the unclear, intermediate 1, intermediate 2, intermediate 3, and the target model.

RESULTS

Questions on the diagnostic tests to see the emergence of student initial mental models in understanding the topic of the structure of atoms are in the form of three questions, namely about the students' understanding of the notion of atoms and molecules in a chemical change process, followed by a question about the model of the atom nucleus (Rutherford), the Bohr model of the atom, and model of wave mechanics. The questions raised include the interpretation of the submicroscopic phenomenon through verbal explanations, visual images, and symbols. The research results showed that students from different backgrounds have similar mental model abilities, namely being in the category of "poor" and "bad." The results of the analysis of the emergence of initial mental model of students in response to the number 1 atomic structure model (TMS-01) diagnostic test question is shown in Figure 1 below.

Number 1 test problem (TMS_01) is a test that asks about physics and chemical changes to see the students' level of understanding toward the definition of atoms, elements, and molecules (see Appendix). Based on the students' answers to the TMS 01 question, it can be said that students from four schools (with differing backgrounds) provide responses that are not different, resulting in the same initial mental model, namely "poor" and "bad". The study provides information that class XI students, who have studied the structure of atoms, are still not able to read the submicroscopic diagram well enough to distinguish the structure of atoms and molecules, and also in recognizing the changes of molecules when turning into atoms, the change of compounds into elements, and changes in a substance that does not change the structure of the substance itself. It shows that the university students' initial mental models in understanding the physics and chemical changes are still dominated by the macroscopic level.

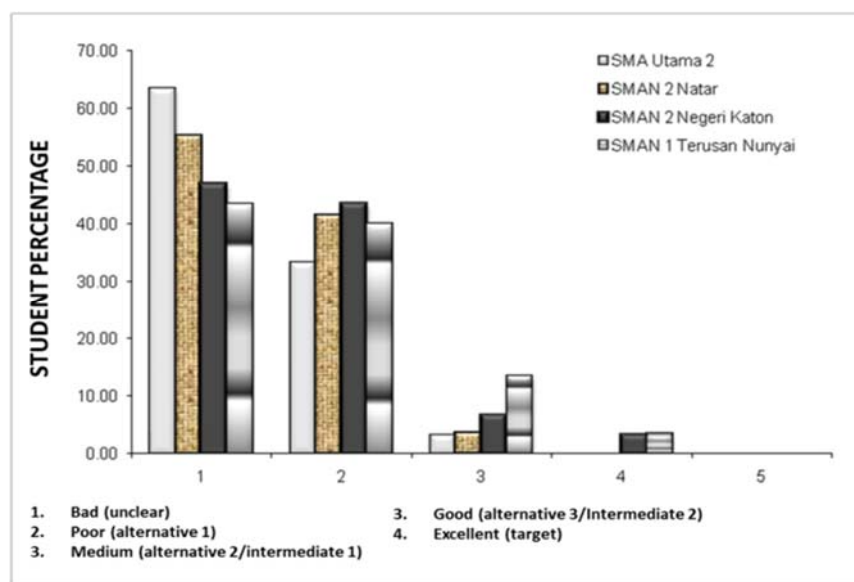


Figure 1. Percentage of Students with Initial Mental Model on Specific Characteristics for Question TMS-01

Based on Figure 1, the majority of university students (> 80%) assume that the phase 3 is the process of physics changes and only 3.57% who replied that the third stage is the process of chemical change. This means that students do not have sufficient understanding of the notion of atoms and molecules. This finding is in line with the statement of Park (2006) that the student's mental model of the chemical phenomena depends on the ability to distinguish between the submicroscopic structure of molecules and

atoms. Therefore it is necessary to attempt to develop a university student initial mental model so that the hybrid mental model (Vosniadou, 1992) can be formed to reconcile the conflict between the conceptual definitions of experts, with the visual picture at the molecular level.

The question on test number 2 (TMS-02) shows that students are still experiencing difficulty in making the transformation from a verbal representation to a visual representation regarding the Bohr model of the atom (see Appendix). The difficulty is caused by the lack of imagination being used well by the university students because they did not practice in the instruction that took place. The question on TMS-02 is the question of student understanding on the atomic structure model according to the core model. The results of the analysis of students' answers to the TMS_02 test question showed that the majority of students are still not able to understand the atom core model, be they students from schools in cities or students from schools in areas far from cities (Figure 2).

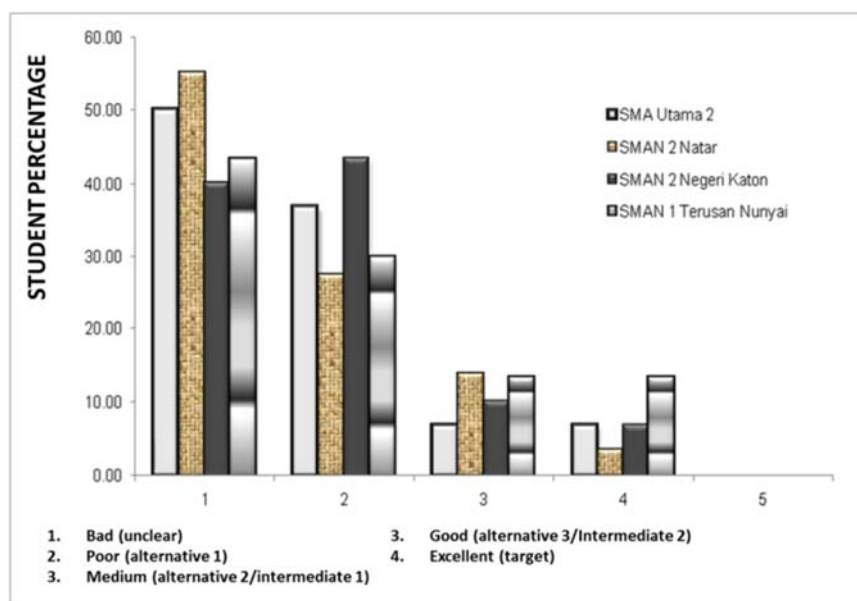


Figure 2. Percentage of Students with Initial Mental Model on Specific Characteristics for Question TMS-02.

Figure 2 shows a similar result with TMS-01. This result suggests that students with their knowledge of chemistry taught in class X were still not able to perform the transformation from the macroscopic (experimental phenomena of Thomson, Goldstein, Chadwick, and Rutherford) to the submicroscopic and symbolic phenomena. The transformation phenomenon is done through the imagination of the arrangement of particles in atoms then arranging a submicroscopic picture of the parts of the atom, then writing the symbolic arrangement of electrons, protons, and neutrons in an atom based on the visual image. Visual images that the students made were still very simple and most (41.67%) seem unable to distinguish between the Rutherford atomic model and the Bohr atomic model. Difficulties of the students may be caused because the students have not been involved with the submicroscopic phenomena in instruction. These results seem consistent with the statement by some researchers that the understanding of chemical concepts does not only involve rote verbal memorization alone, but also requires an understanding of the phenomena of submicroscopic representation of the structure of molecules or atoms (Ben-Zvi, et al., 1987; Coll and Treagust, 2003; Davidowitz, et al., 2010). Other studies, such as Coll (2008) stated that the ability of participant learners to operate or use their mental models in order to explain the events that involve the use of submicroscopic representations is very limited, so there is a need for training in interpreting submicroscopic visual images through instruction that involves 3 levels of chemistry phenomena. Furthermore Devetak, et al. (2009) found that students who have not trained with the external representation will have difficulty in interpreting the submicroscopic structure of a molecule or atom.

TMS-03 question is a question related to visual statement in which university students are asked to make the transformation from verbal to visual and symbolic representation or otherwise regarding the determination of electron orbit according to Bohr then create a visual image through an energy level diagram (see Appendix).

The result of the analysis of university student answers to the TMS-03 question is illustrated as Figure 3 below.

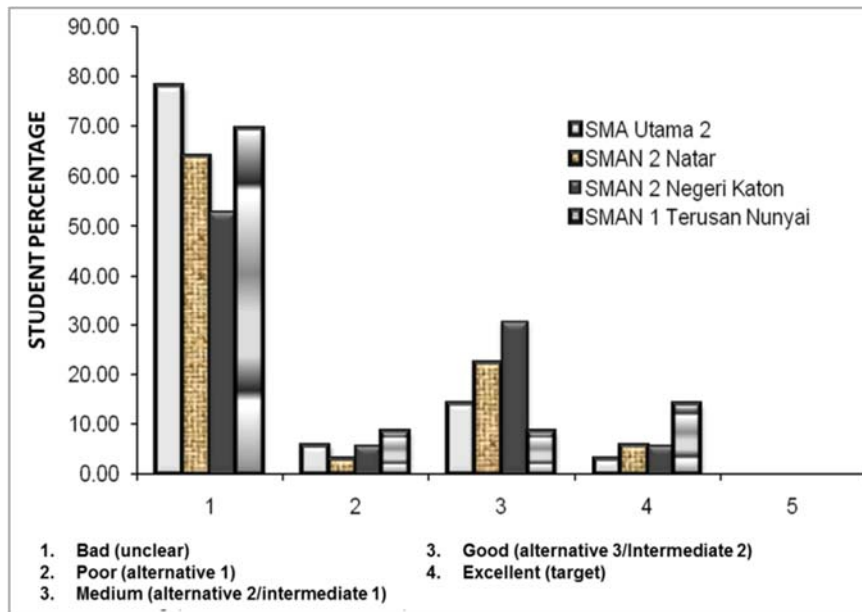


Figure 3. Percentage of Students with Initial Mental Model on Specific Characteristics for Question TMS-03.

Analysis of the students' answers to the TMS-03 question showed similar results with the results of the analysis of TMS-1. For all schools that were the subject of research, where the majority of students (> 66.00%) had an initial mental model in understanding the Bohr orbit model were in the category "poor" and "bad," or with the characteristic of a mental model "that are is not formed/unclear" and "intermediate 1". This result indicates that class XI students who have studied the topic of the structure of atoms in class X are still experiencing difficulty in making the transformation of the verbal phenomenon to the visual phenomena of the Bohr model of the atom. Interviews showed that the difficulties faced by such students is more due to students not getting experience in making an interpretation of the electron orbit according to Bohr.

The results of the analysis of students' answers to the TMS-03 question shows that some of the students (25.00% and 20.83%) are actually able to interpret and make the transformation to a given phenomenon, but there are misconceptions in describing the flour and sodium atomic model. Students' answers were interfered with the model of wave mechanics, namely by making the electron configuration use s and p orbitals, whereas what was being asked was the Bohr model that is not familiar with the orbital term. Due to that error in interpretation, the students' answers on the TMS-03 question produced an initial mental model in the category of "poor" and "bad." The interviews indicated that the ability to make such an interpretation, in distinguishing the Bohr model and the model of wave mechanics, were not provided as training in the instruction when they sat at high school. This is in line with the results of Wang & Barrow (2013) that instruction which does not involve the integration between submicroscopic and symbolic representations cause students to experience difficulties in describing and explaining the Bohr atom model in detail (and in a precise manner). According to students, the atomic model of wave mechanics was not studied in detail when they learned it in high school. Students are not given the experience in interpreting the Bohr electron orbit and the energy that accompanies the movement of

such electrons, as well as how is the wave mechanics model in explaining the position and behavior of electrons in the atom.

The results of the analysis above, it seems, are in line with the findings of Park & Light (2009) that the student's difficulties in understanding concepts are characteristically abstract, can be caused by day-to-day experience that do not support problems solving involving submicroscopic representation phenomena. Furthermore, according to Park, et. al. (2009), the theory of the atom is a central concept in science, so how to teach and how to learn about the theory of the atom through models of atoms need to be considered well in choosing a strategy that can improve the ability of students' mental models from the "intermediate 1" mental model with the "poor" category to the "intermediate 3" mental model and with a "target" in the "good" and "excellent" category. Wang & Barrow (2013) reported that students with moderate mental model (medium) and very low scores have difficulty in visualizing the phenomenon of electrons in atoms and their energy transition. Wang (2007) in his dissertation reported that students with high, medium and low mental models scores have the same difficulty in terms of visualization of electrons in atoms. Similarly, Hilton & Nichols (2011) reported that the understanding of more complex and abstract phenomena cannot be achieved without the use of a variety of representations, especially the integration between submicroscopic and symbolic level representations. Using a variety of visualization tools for teaching and learning science and chemistry is very necessary because pupils better understand chemical phenomena and they can formulate appropriate mental models (Herga, et al., 2014). Results of research conducted by Herga (2014) showed that the use of visual representation is more effective in improving knowledge acquisition rather than a class without using dynamic visualization elements. Based on these findings and support from previous research shows that instruction which does not provide experience and training to students in conducting interpretation, conceptual explanation, and transformation between the three levels of chemical phenomena will produce a low chemical problem solving, making it difficult to build a mental model in the category of "good" and "excellent".

SUMMARY OF MAJOR FINDINGS AND IMPLICATIONS

Based on the research results, we can conclude that (1) the initial mental models of students in understanding the concept of the structure of atoms is still dominated by verbal mental model with the category of "bad" and "poor" or with the characteristics of a mental model that is "unclear" and "intermediate 1" mental model. (2) the students' difficulties in interpreting the chemical phenomena in developing mental models, are among others:

- a. identifying external representations (verbal and visual) about the position of electrons, protons, and neutrons in an atom according to each model of the atom (particle models, core models, and wave mechanics).
- b. transforming the submicroscopic representation (visual) to verbal and symbolic or vice versa.
- c. are not trained in the imagination of the submicroscopic representation phenomenon.

The results of this study have implications for the improvement of instruction practices, especially in setting instruction strategies in high school chemistry. One of the strategies that can be used to build a mental model is instruction by involving the three types of chemical representation (macro, submicroscopic, and symbolic phenomena). The goal is that students are able to provide explanations and gain a deep conceptual knowledge, so that students can more easily solve chemical problems associated with abstract concepts. The study of initial mental models is indispensable as a basis in determining the instruction strategy. Given that the mental model is an internal representation used by a person to think and thus affect the cognitive development of students (Chittleborough, and Treagust, 2007; Tasker & Dalton, 2006; Senge, 2004; Ben-Zvi, et al., 1987). Theories of mental models states that students' mental models are an internal representation that is constructed from experience, interpretation, and explanation of the concept which the university student received previously, then applied to the university students' understanding of the external representation of submicroscopic phenomena (such as Canas, 2001, Treagust, et al., 2003; Park, et al., 2009; Wang & Barrow, 2013; and Laird, 2013). Another statement was proposed by Norman (in Barsalou, 1992) that "people form mental models through

experience, training and instruction," that a person forms a mental model through experience, training, and instruction.

The results of this study also indicate that the implementation of instruction in some schools in the province of Lampung - Indonesia are still incapable of facilitating students in using the ability of imagination to develop thinking skills and improve students' creativity. The difference in results between students from different schools, due to differences in learning strategies implemented by teachers in their respective schools. This is consistent with the findings of Min, Y.K. (2014) that the success of a student depends on many factors such as group chemistry, each member's psychological states, their disciplinary backgrounds, and their pedagogical foundation.

RECOMMENDATIONS

1. Initial mental model according to the results of this research is a preliminary picture of the student's ability to think about the concept of the structure of atoms. Information about the initial mental models can be used as the basis in determining the instruction strategies in high school chemistry to construct a meaningful understanding of the concept. Building a meaningful understanding of the concept requires development of a mental model packaging of instruction to produce systematic reasoning skills.
2. The instruction model that can develop students' mental models toward a mental model that is "good" and "excellent" is an instruction model that is prepared involving the three levels of chemical phenomena (macro, submicroscopic, and symbolic) through cooperative and imaginative strategies.

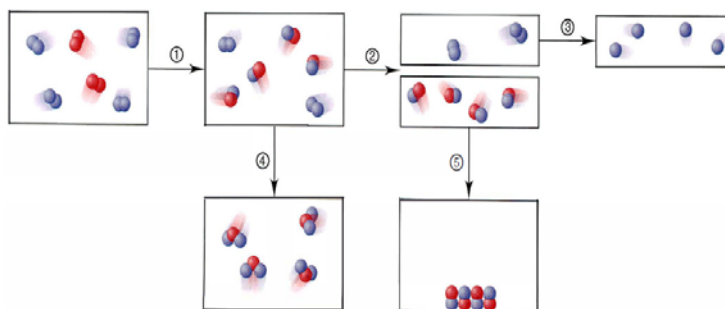
BIBLIOGRAPHY

- Barsalou, L.W. (1992). "Cognitive Psychology: An Overview for Cognitive Scientist," LEA (Lawrence Erlbaum Associates), Inc. Publisher. Hillsdale., New Jersey. 410 page.
- Ben-Zvi, R., Eylon B. and Silberstein, J. (1987). "Students' Visualisation of A Chemical Reaction," *Educ. Chem.*, 24, 117-120.
- Chittleborough, G.D. and Treagust D. F. (2007). "The Modeling Ability Of Non-Major Chemistry Students And Their Understanding Of The Sub-Microscopic Level," *Chem. Educ. Res. Pract.*, 8, 274-292.
- Coll, R.K. (2008). "Chemistry Learners' Preferred Mental Models for Chemical Bonding," *Journal of Turkish Science Education*, 5, (1), p. 22 – 47.
- Coll, R.K. and Treagust, D.F. (2003). "Investigation of Secondary School, Undergraduate and Graduate Learners' Mental Models of Ionic Bonding," *Journal of Research in Science Teaching*, 40, p. 464 – 486.
- Davidowitz, B., Chittleborough, G.D., and Eileen, M. (2010). "Student-Generated Submicro Diagrams: A Useful Tool for Teaching and Learning Chemical Equations and Stoichiometry." *Chem. Educ. Res. Pract.*, 11, 154–164.
- Devetak, I., Erna, D.L., Mojca, J., and Glažar, S.A. (2009). "Comparing Slovenian Year 8 and Year 9 Elementary School Pupils' Knowledge of Electrolyte Chemistry and Their Intrinsic Motivation." *Chem. Educ. Res. Pract.*, 10, p. 281–290.
- Gkitzia, V., Katerina S., and Chryssa T. (2011). "Development and Application of Suitable Criteria for the Evaluation of Chemical Representations in School Textbooks." *Chem. Educ. Res. Pract.*, 12, p. 5–14.
- Guzel, B.Y. & Adadan, E. (2013). "Use of Multiple Representations in Developing Pre-service Chemistry Teachers' Understanding of The Structure of Matter," *International Journal of Environmental & Science Education*. 8, No. 1. p. 109-130.
- Herga, N. R., Grmek, M. I., & Dinevski, D. (2014). Virtual Laboratory As An Element of Visualization When Teaching Chemical Contents in Science Class. *Turkish Online Journal of Educational Technology*, 13 (4), p. 157.

- Hilton, A. & Nichols, K. (2011). "Representational Classroom Practices that Contribute to Students' Conceptual and Representational Understanding of Chemical Bonding," *International Journal of Science Education*, 33, No. 16. p. 2215–2246.
- Johnstone, A. H. (1993). "The development of Chemistry Teaching: A Changing Response to Changing Demand". *Journal of Chemical Education*, 70, No. 9. p. 701-705.
- Jaber, L.Z. and Boujaoude, S. (2012). "A Macro–Micro–Symbolic Teaching to Promote Relational Understanding of Chemical Reactions," *International Journal of Science Education*, 34, No. 7, p. 973–998.
- Liliasari, (2007). "Scientific Concepts and Generic Science Skills Relationship In The 21st Century Science Education," in the *Proceeding of The First International Seminar of Science Education*, 27 October 2007. Bandung. 13 – 18.
- Min, Y.K. (2014). Peer advising system: Collaborative-reflection-in-action model of professional development. *On-Line Journal of New Horizons in Education*, 4 (2), 96-101
- Park, E.J. & Light, G. (2009). "Identifying Atomic Structure as a Threshold Concept: Student Mental Models and Troublesomeness," *International Journal of Science Education*, 31, No. 2. p. 233–258.
- Park, E.J., Light, G., Swarat, S., & Denise, D. (2009). "Understanding Learning Progression in Student Conceptualization of Atomic Structure by Variation Theory for Learning." In *Paper presented at the Learning Progressions in Science (LeaPS) Conference*, June 2009. Iowa City, IA.
- Senge, P.M. (2004). "The Fifth Discipline. The Art and Practice of The Learning Organization." Doubleday Dell Publishing Group, Inc. New York. 405 page.
- Solaz-Portolès, J.J., and Lopez, V.S. (2007). "Representations in Problem Solving in Science: Directions for Practice," in *Asia-Pacific Forum on Science Learning and Teaching*, 8, No. 2. Article 4.
- Sunyono, Leny Y, & Muslimin I. (2011). "Model Mental Siswa Tahun Pertama dalam Mengenal Konsep Stoikiometri (Studi pendahuluan pada mahasiswa PS. Pendidikan Kimia FKIP Universitas Lampung," dalam *Prosiding Seminar Nasional V. 6 Juli 2011. Universitas Islam Indonesia. Yogyakarta*. ["First Year Student Mental Model in Identifying the Stoichiometry Concept (A preliminary study on students of Chemistry Education Program of FKIP of Lampung University," in the *Fifth National Seminar Proceedings*, July 6th, 2011, Universitas Islam Indonesia, Yogyakarta]
- Sunyono. 2014. Model Pembelajaran Kimia Berbasis Multipel Representasi dalam Membangun Model Mental dan Penguasaan Konsep Kimia Dasar Mahasiswa. *Tidak Dipublikasikan Disertasi. Universitas Negeri Surabaya*. [Chemical Learning Model Based On Multiple Representations in Building Mental Models and Basic Chemistry Concepts Mastery of Students. *Unpublished Dissertation*. State University of Surabaya.]
- Sunyono, Wirya, I.W., Suyadi, G., dan Suyanto, E. (2009) "Pengembangan Model Pembelajaran Kimia Berorientasi Keterampilan Generik Sains pada Siswa SMA di Propinsi Lampung," Tidak Dipublikasikan *Laporan Penelitian Hibah Bersaing Tahun I – Dikti, Jakarta*. ["Chemistry Learning Model Development Oriented to Scientific Generic Skills in High School Students in the Lampung Province," *Unpublished a Report of First Year Competitive Grants Research -Dikti, Jakarta*.]
- Tasker, R. & Dalton, R. (2006). "Research Into Practice: Visualization of The Molecular World Using Animations," *Chem. Educ. Res.Prac.*7, p.141-159.
- Treagust, D. F., Chittleborough, G. D., & Mamiala, T. (2003), "The Role of Submicroscopic and Symbolic Representations in Chemical Explanations," *International Journal of Science Education*, 25, No. 11, p. 1353–1368.
- Wang, C.Y. (2007). "The Role of Mental-Modeling Ability, Content Knowledge, and Mental Models in General Chemistry Students' Understanding about Molecular Polari," *Dissertation for the Doctor Degree of Philosophy in the Graduate School of the University of Missouri*. Columbia.
- Wang, C.Y. & Barrow, L.H. (2013). "Exploring Conceptual Frameworks of Models of Atomic Structures and Periodic Variations, Chemical Bonding, and Molecular Shape and Polarity": A Comparison of Undergraduate General Chemistry Students with High and Low Levels of Content Knowledge. *Chem. Educ. Res. Pract.*,14, p. 130–146.

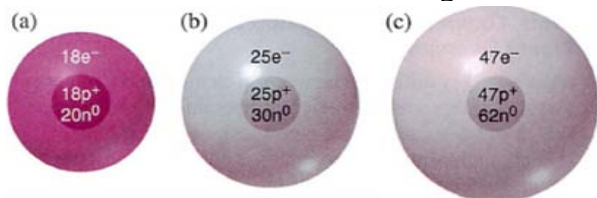
APPENDIX

TMS-01. Amongst these following stages, which one of these describe the process of physics change and which one describes a chemical change. Give your explanation!



TMS-02. a. Based on the experimental results of Rutherford, Thomson, Goldstein, and Chadwick. Give an explanation of the structure of atoms and draw an atomic model complete with its parts (protons, electrons, and neutrons) from the ${}_{11}^{23}\text{Na}$ and ${}^1_7\text{N}$!

b. Write the element with the symbol ${}^A_Z\text{X}$ for each atom notation as described below.



TMS-03. Based on the Bohr model of the atom, the number of electrons for each energy level follows the equation $2n^2$. Draw a picture the Bohr atomic model based on the results of your imagination of fluor atoms ($Z = 9$) and sodium atom ($Z = 11$), complete with energy levels according to Bohr! Explain your answer!

INVESTIGATING THE USE OF COLLABORATIVE TOOL IN AN ADULT LEARNING ENVIRONMENT

Siti Hajar Halili

Department of Curriculum & Instructional Technology,
Faculty of Education, University Malaya
ajai912@gmail.com

Rafiza Abdul Razak

Department of Curriculum & Instructional Technology,
Faculty of Education, University Malaya

Zamzami Zainuddin

Department of Curriculum & Instructional Technology,
Faculty of Education, University Malaya

Abstract: This study was carried out in order to investigate the Knowles (1980) adult learning principles preferred by adult learners using collaborative tool in teaching and learning process. The theoretical foundation for this study is the andragogy theory by Knowles (1980) that holds a set of adult learning principles such as learners' self-concept; motivation to learn, readiness to learn, role of learners' experience, learners' need to know and learning orientation. Five adult learners from the postgraduate program in University of Malaya were selected and interviewed. Data were collected and coded to summarize the main themes. The study findings show that in identifying the principles of adult learning introduced by Knowles (1980) with the use of Wiggio, the opinion of all respondents are positive toward application of collaboration tools in line with the adult learning principles. This means usage of Wiggio is suited to the principles of adult learning introduced by Knowles (1980). The findings have implications for educators especially for those involved in adult education field as they need to consider adult learners preferences when planning teaching and learning activities with the usage of technology.

Keywords: Adult learning, collaborative tool, adult students, collaborative learning

INTRODUCTION

According to Slentz (2009), adult learners have returned to learning institutions to get greater opportunities for learning to improve their livelihood and obtain better job opportunities. Among the factors affecting adult learners are the differences in the strategies adopted by the learners, activities in planning and the motivation of the learners themselves (Hisham Dzakiria & Rob Walker, 2003). Knowles (1980) defined the term adult from various aspects namely from the aspect of biology, law, social and psychology. From the biology aspect, an individual is defined as an adult when he or she has reached a certain age level and is capable of producing children. From the legal aspect, those defined as adults are qualified to vote and obtain a driving licence. From the social aspect, the term adult is seen when the individual plays a role as a mature person, with a career and family. From the psychological aspect, the individuals are regarded as adults when having achieved a level of capability to manage their own lives by themselves. Among the things to be understood in adult learning are from the aspect of the learner's own needs, the characteristics or nature of the learner as well as the background of the learner. Adult learners are an active group of learners who need knowledge to solve the problems they face and need a teaching and learning (T&L) process that can meet their interests and needs (Mazanah Muhamad & Carter, 2002). Clearly, adult learners have wide experience in the fields they undertake.

Several theories have been put forward to explain the learning process in adults. According to Merriam (2001), the theory of andragogy, theory of self-directed learning, theory of social learning, socio-cultural theory and theory of transformative learning are among the earliest theories in adult learning, while the cognitive situation theory, critical theory and post-modernism theory are the adult learning theories featuring extensions of adult learning theories. Andragogy is one of the new theories often used in adult learning (Merriam & Caffarella, 1991). Beginning from the 1960s, andragogy posited that adult learning differed from children's learning. This was because adults do not just receive knowledge but are active learners in processing their learning (Knowles et al., 2005). According to Merriam (2001), andragogy is accepted as a guide in adult learning. Knowles emphasized that adults are more self directed, responsible for their own decisions and the main aim of adult education is learning and not just teaching. The theory of adult learning, more widely known as andragogy, is appropriate for use in creating a program or course specifically using technology in the T&L process.

The study by Tasir et al. (2009) to ascertain the principles of adult learning that fulfil the needs and are appropriate to learners and pre-service teachers in Malaysia in online learning found that respondents involved were giving high agreement to the four principles of adult learning namely the need to know why one must learn a certain topic; readiness for learning; orientation to learning; and motivation for learning. The findings of this study also bring implications to the parties involved in designing online learning applications such that they consider learners' needs especially adult learner needs before planning any teaching and learning activity. This is because Lyle and Elizabeth (2002) have listed several aspects that can give a negative impact on adult learning namely lack of learning skills, limited knowledge of learning approaches and strategies, learners fail to choose and practise a learning approach suited to themselves that can enhance their learning, students do not show improvement in learning when compared with other students and the course followed hampers the smoothness of the learning process on the whole.

Knowles et al. (2005) stated that technology use in adult learning has opened up new opportunities and offered new and more interesting learning experiences. Technology use in adult learning can enhance the T&L process and attract the interest of learners to involve in the learning materials. Nevertheless, Berger (2008) emphasized that technology use still has not made a significant impact on adult learning. According to Hillesheim (1998), the problems related to technology use in information delivery specifically for online courses still are main obstacles in adult learning. Adult learners always face diverse types of learning situations. According to Ali Sher (2009), adult learners with families and careers prefer to follow more flexible learning programs more comfortable for them. In designing training using computers, Knowles (1980) applied the relevant principles of andragogy in designing the training. Before designing the training materials, lecturers must clarify why something needs to be taught, they need to orientate tasks and not rely on memorization, they need to take into account the diversity in background of learners and learning activities must be suited to the experience level and use of computers.

Applications of information technology (IT) must be designed in a systematic and organized way to guarantee the effectiveness of the T&L process. Garrison and Anderson (2003) stressed that technology use in the T&L process does not just depend on the content of learning only but must take into account the effectiveness of the T&L principles and accuracy in designing T&L systems for adult learners. Qayyum (2009) stated that adult learners were more marginalized with the use of technology as compared to younger learners. Mazanah Muhamad and Carter (2002) were of the opinion that if the learning situation was not related to career or future prospects of the adult learner, they shift their attention to other matters that give more benefit to them. Imel (1998) also stated that a learning environment capable of fulfilling the requirements of adult learners has to be identified first to ensure success in creating programs involving adult learners. Lyle and Elizabeth (2002) also stated that one of the aspects contributing to adult student learning problems is the aspect of failure of student to choose and apply a learning approach suited to their learning process. Hence, the researcher opined that using collaborative tools are suited to be use in T&L process so that adult learners are able to learn more effectively.

Collaborative means two or more people who are inter-related, together and they share the same social group. The concept of collaborative allows the students working together and helping each other to be successful learners in three aspects; intellectual, social and problem solving in the classroom (Yin, 2008). According to Wikipedia (2013), a collaborative tool is something that helps people to collaborate and everything that helps to solve a predefined task together in a group more easily is an effective collaborative tool. Moore (2007), Schrum & Solomon (2007), Alexander (2006) and Jenkins (2006) stated that the use of Wiggio, blogs, podcasts, and RSS feeds are considered a prominent Web 2.0 technology which it is a conceptual category for Internet tools that include emergent technological tools. These tools enable users to develop web content collaboratively in an open, public, and participatory manner. Further, these tools also enable students to interact with each other virtually and have become the best socialisation agents who require students to update their knowledge and skills through a collaborative learning.

It found that the 'Wiggio' as a collaborative tool enables to subdivide the users into the whole group or individuals. It is a user-friendly tool and includes with many features such as allow them to post assignments, calendar, file sharing, video, links to other website and more. Lecturer and students are able to have access to their own file, posting as well as sharing information which is found to be useful especially to adult learners. In this context, collaboration includes more than two people communicating with one another online to develop knowledge by contributing and sharing information on the Wiggio application. Collaboration using Wiggio can help lecturers and students to work closely together either synchronous or asynchronously on a Wiggio topic. These can increase students' reflective learning and enrich their experiences beyond the content being cogenerated as well as help to change students' writing practices to include more citations and critical evaluation of resources as well as influence individuals' knowledge and beliefs about the content. Through using Wiggio, interactions with other members of a group, some of which might be more knowledgeable others.

At University of Malaya, we have moved towards online collaborative learning practice in our postgraduate program for Effective Teaching Model course. One of the ideas behind these approaches is to encourage students to collaborate with each other, to share problems themselves, and to explain the issues to their peers. There are other advantages of using these methods such as students develop communication and interpersonal skills; enhances participation and their interest in their studies. During the session, lecturer and students actively interact with each other either synchronous or asynchronous. This involvement encourages students to feel that they are part of the university, and that the university experience is important and worthwhile. This is particularly important as students who enroll for this course are adult learners where they are part-time students, workers and tend to visit the University only for lectures and tutorials.

Yusup Hashim (2001) stated that the learning process is meant to produce students who are balanced form the physical, emotional and spiritual aspect and not just to pass examinations. The role of IT in adult education must be seen as something that activates and encourages the learning process more effectively. Thus, this research is aimed at determining the adult learning principles most suited to the adult learners undergoing postgraduate program by using collaborative tool, specifically Wiggio as one of the instructional media use for the course. This paper also attempts to fill the gap in adult education research by investigating the impact of information technology, specifically ‘Wiggio’ as collaborative tools to support T&L process for adult learners. Therefore, this study will enable deeper understanding regarding applications of the adult learning principles introduced by Knowles (1980) as they relate to use of the collaborative tool namely Wiggio to support T&L process.

METHODOLOGY

This study was conducted at the University of Malaya and focused on a collaborative tool namely Wiggio as a tool for supporting the T & L process. The use of Wiggio is focused in this study considering that Wiggio is one of the applications of Web 2.0 having characteristics such as collaborative, interactive, producing knowledge and enabling sharing of ideas including information through the web (Grosseck, 2009). Chen, Yen, and Hwang (2012), Kitsantas and Dabbagh (2011) and Aharony (2009) stated that using Web 2.0 technology in the T&L process encourages users to create their own content, collaborate, share information and interact among themselves.

In order to investigate the use of Wiggio among adult learners in an adult learning environment, a qualitative study was employed by the researcher and interviews were conducted with five adult learners who were registered in a Doctoral program in the Department of Curriculum of Instructional Technology, University of Malaya. The researcher interviewed the participants based on a list of questions expanded from the research questions. The questions were open-ended, which allowed the participants to freely express their experiences, thoughts, and feelings about their learning experience using Wiggio as a collaborative tool. Follow-up questions were improvised during the interview. Each interview lasted approximately 60 minutes and was recorded. These five students were purposefully sampled (Patton, 2002) from an Effective Teaching Model course for Semester 2, 2013/2014. The profile information for the five participants is briefly displayed in Table 1.

Table 1. The Profile of the Five Participants

No.	Participants	Gender	Profession
1	A	Female	Full-time student
2	B	Male	Teacher
3	C	Male	Lecturer
4	D	Male	Lecturer
5	E	Female	Consultant

The interview questions includes of 12 questions related to the adult learning principles that has the validity and reliability of which had been verified by previous research by Siti (2007). The researcher transcribed the interviews and coded the data pool with reference to the research questions in order to summarize the main themes. Through repeated reviews of the interview data, six major themes related to the adult learning principles such as learners’ self concept, readiness to learn, motivation to learn, learners’ experience of learning, need to know the reason for learning, and orientation to learning were summarized and reported in the section below. In reporting the research outcomes, pseudonyms were used to protect the students’ privacy.

FINDINGS AND DISCUSSION

Six themes emerged from the data analysis with reference to the research objective. In identifying the principles of adult learning introduced by Knowles (1980) with the use of collaborative tools, the findings of this study indicate that all respondents is positive toward application of collaborative tools, namely Wiggio in line with the

adult learning principles. This means usage of Wiggio is suited to the principles of adult learning introduced by Knowles (1980). Each of these findings will be discussed in this section:

1. LEARNERS' SELF CONCEPT

Q1.1: "I would be more responsible in the learning process when using this application"

Most students in this study mentioned that they developed into more responsible when using Wiggio to collaborate with peers. As adult learners, they constructed their knowledge with limited guidance from instructor to achieve their learning goal. Therefore, in this study they proved that they had to put much effort to share and contribute their own ideas, knowledge and almost everything in teaching and learning activities. From the students' responses, it could be deduced that all students agreed if Wiggio had constructed their responsibility when collaborating with peers. For example, student A mentioned when learning by using Wiggio, everyone has to contribute their own idea and knowledge and take more responsibility on their own learning.

It was inferred that the role of constructivist approach in a collaborative learning had constructed students' responsibility on learning behaviors and the synthesis of information required for effective critical thinking. This finding confirmed the testimony contributed by Hong, Yu and Chen (2011), when students learn collaboratively by using numerous Web 2.0 tools, they can be more responsibility and awareness on their own learning because of little guidance or instruction from instructor.

Q1.2: Are you more independent in your learning when using this application?

One objective of the collaborative learning activities was to develop affective behaviors such as independent participation and practice; and teamwork or a shared purpose among classmates. This study reported that the use of Wiggio had improved students' independent learning or self-directed learning skill. As adult learners, students already have much experience or at least the background of knowledge. Therefore, they could manage and obtain sources of knowledge independently or did not make the instructor as the central of knowledge. This means that knowledge came from themselves and from peers, while the instructor would only contribute the answer when necessary. According to interview report in this study, the students in general acknowledged that by using Wiggio had helped them to learn more independently on their awareness. They could choose the time of study flexibly according to their free time. For example, student C mentioned: "*Yup, I can manage my time to participate.*"

It was evident that the students who had a busy schedule like student C who worked as a lecturer could still contribute and collaborate with peers asynchronously by using Wiggio. This student looked convenient because by using Wiggio he could divide his busy time between work and study independently. It was coherence with the one by Hastings (2009), asynchronous type of communication is very useful for groups with busy schedules, which can make setting a specific time during their busy day and students can learn autonomously. The findings of this study showed that all of the participants agreed that they have put in effort to share and contribute their own ideas, knowledge and almost everything regarding learning process when using Wiggio in teaching and learning process. This showed that with the use of Wiggio, students were more responsible for their T&L process and were more independent in obtaining information required for learning.

2. MOTIVATION TO LEARN

Q2.1: Does the learning process through the application increases your motivation to learn?

The second adult learning principle was motivation for study. For more effective learning, motivation is important for encouraging the student to take action (Brophy, 2010). This is because when a student is motivated to learn something the learning process becomes more effective since the learner will pay more attention and observe the instructions given in the teaching and learning session. Students who are motivated to learn will have greater success than those who are not (Dornyei, 2003).

The analysis of this study showed that most students had motivation in learning by using Wiggio. The main reason of students' motivation is collaborative work, they could work together, exchange idea and solve the problem. Students believed that group activities were fun, enjoyable and interesting which also made students have ambition to learn. The researcher assumed that students had intrinsically motivated when learning collaboratively using Wiggio, it showed students' interesting toward group activities. It is supported by what mentioned by Deci and Ryan (2002), students' intrinsic motivation produced when they engaged in learning activities with positive feelings such as fun, exciting and enjoyable. It can be implied that online communities for collaborative learning such as by using Wiggio had contributed to the fact that most students thought the learning activities were fun and motivated.

Students' motivations were produced because the time to review the content was sufficient. It was mentioned by student A, she had motivated and more engaged in T & L activities because of more time to think and prepare the content to be mastered. Student B noted that by learning through Wiggio, he felt audacious to ask questions and explain his idea to others. He compared collaborative learning by using Wiggio with traditional classroom activities. He stated that in traditional classroom, high ability students tended to dominate the class and they became more active rather than low ability students, whereas low ability students tended to be silent and passive because of shyness and unconfident. Then, when students learned in collaborative way like using Wiggio, low ability students were also confident to participate in class discussion and could express their idea by using texts, video or audio. Such a possibility has been reported by Vizcaíno (2004) on a simulated student agent for improving collaborative learning, it showed when a passive student was encouraged to participate in a collaborative learning, they always took part by proposing an answer or giving his/her opinion. It could be assumed that learning collaboratively could increase students' motivation. All students in this study had motivation to learn by using Wiggio because they had occasions to express their idea virtually. Then, learning in peer had helped each other to achieve the same goal by exchanging idea.

Q2.2: Are you confident to use this application in your learning process in future?

When students have motivation in learning, they will feel confident in expressing their idea (Liou & Kuo, 2014). This is what mentioned by students in this study, most students declared that they were confident to use this application when learning activities because they had a motivation. The researcher assumed that students' motivation in learning activity brought a positive attitude toward students' confident. Most students in this study mentioned that they wished to apply this application in other learning course and group. Student A mentioned in the interview that she felt confident to use this tool in the future practice as her profession as a teacher, she believed that this tool was benefit for students and teacher, "..... *Nevertheless, I am glad that I was introduced to Wiggio because it can be useful in many ways, both for a student and for an educator, I will try to incorporate it in my teaching practice in the future.*" confessed by student A. Student B also felt confident by using this application in learning process. She mentioned that she would use this application it in her university to enhance students' interaction virtually outside the class. She also stated that this tool had helped her in learning activities.

3. LEARNERS' READINESS:

Q3.1: Are you ready to learn better and capable of achieving good performance by using Wiggio in their T&L process? Why?

The third principle of adult learning is learners' readiness. The readiness of students in learning activity produce engagements to active learning and performance in the class discussion. For example, student A mentioned that she could engage and think more effectively when learning with Wiggio because of team work. The researcher assumed that the students' readiness of T & L by using Wiggio generated by their collaborative work, they could exchange the idea and learn from each other to support their understanding toward the content. It was correlated to what mentioned by student B, he claimed that by exchanging the idea made him better understanding the subject and ready to learn and perform. This finding confirmed the testimony contributed by Mikkelsen and Gronhaug (1999), they noticed that team oriented work environments or collaborative learning provide opportunities for low ability person to learn from others, help one another through working together, sharing information, and watching out for one another, therefore all students felt ready to learn and perform. According to Van Merriënboer and Paas (2003), based on social constructivism, when students collaborate and join each other to achieve their learning goal together, it will strengthen the powerful learning environment.

Besides exchanging idea in group activity, students had much time to prepare and learn the content outside the class, it was different with traditional classroom which had limited time to learn. For example, student C mentioned that by using Wiggio, he had extra time to review the subject outside the class and continue discussing the issue with other students. He mentioned that he felt capable to achieve a good performance and master the content because of flexible and few time. It also was the same statement with student D, he expressed that he could learn better because he had her own flexible time to learn, but he admitted that sometimes asynchronous learning made him forget to check online assignment. Overall, the students in general acknowledged that they were ready to achieve good performances when collaborating using Wiggio.

The researcher is of the opinion that the T&L process will be more effective if the students can use their existing experience in their studies. This is because adult learning is effective if the topic of learning has immediate usefulness to their work or personal life, focused on problems, not orientated to content; in fact the basis of learning activity of the adult learner is experience including any mistake made.

Q3.2: Are you able to learn better with you use of this application?

Students in this study showed that they could learn better by using Wiggio, such as what mentioned by student A, “Yes, as mentioned earlier, Wiggio encourages me to learn independently and constructively as I get to collaborate with my course mates to widen my knowledge.” Exchanging idea was the most crucial thing to learn better when students collaborated in Wiggio. Interaction and exchanging idea also agreed by student B who mentioned that each student could exchange information and learn from other, also when teacher involved in discussion, it would be better to learn because they could ask the questions what they did not understand. Pargman and Wærn (2003) noticed that students learn better in collaborative learning because it is a learning scenario in which learners work together to solve the problems, exchange ideas and give feedback in peers. Brindley, Blaschke and Walti, (2009) also mentioned that by using various tools of Web 2.0 in collaborative learning, learners are able to be active in learning activities and they could actively participate in discussions and problem solving, exchange the idea and give feedback in peers.

Wiggio as a Web 2.0 tool could save the content they had learnt and they could review them after the class. It was expressed by student C that believed by using Wiggio, he could review of what he had learned before. Student D also mentioned the same view that Wiggio became the reference of study after the class. In this study, the researcher believed that learners are ready to learn better and capable of achieving good performance by applying Wiggio in their T&L process.

4. LEARNING EXPERIENCE

Q4.1: Do you think that the use of this application helps you to practice and develop new skills?

The finding of this study showed that by using Wiggio in a collaborative learning, students knew a new media of learning for T&L process. There are numerous Web 2.0 tool used in T & L, but not all students know and familiar with the tools. After introducing a new tool such as Wiggio, students obtained a new knowledge on the use of Web 2.0 tool for T&L process. For example, student A mentioned that after introducing to Wiggio, he finally knew a new media to collaborate with peers. Student D who had experienced and familiar with this application mentioned that he would consider using this tool in order to attract his students’ interest for the effectiveness in T&L process.

Q4.2: Is the use of these applications play an important role in your learning process?

Student B mentioned that this application was very important for her to interact and communicate with other students and lecturer outside the class. This application was really helpful for a tool of discussion activity. Student D mentioned that he thought her students preferred to have a face to face class activity and online collaboration, he intended to use this tool in her teaching to communicate with her students. In other words, student D noted that Wiggio could be implemented for blended learning approach, the students would learn with face to face in the classroom and interactive activities outside the class by using Wiggio. It is supported by McLaughlin (2012), in blended learning students learn face to face in the classroom and continue learning outside the class virtually by using various tools of Web 2.0 such as Wiggio.

5. LEARNERS’ NEED TO KNOW WHY THEY LEARN

Q5.1: Have you got what is required in the learning process when you use this application?

In this study, students reported that by using Wiggio application they knew how to learn collaboratively. “Aside from acquiring content knowledge, I learn how to learn collaboratively with other students because previously I was not very exposed to online collaborative learning,” Confessed student A. With regard to students’ statement, it was inferred that after introducing Wiggio application, students found a new way of learning which previously only familiar with traditional learning. Learning collaboratively by using various kinds of Web 2.0 gave many advantages for adult learners because as adult learners, they have much experience which could be shared to other students, they could exchange idea and work together. Student B and C mentioned that they could obtain much information and new idea through this learning. The students could share the content which will be very helpful to help other students. By using this application, students were aware that they should be active; everyone should be a teacher to explain the idea to others and sometimes became students who listen and respect other ideas. Fearon, Starr and McLaughlin (2012) mentioned that when learning in collaborative learning, adult learners should be aware that they learn with limited guidance from instructor, it means that all students can be instructor to share knowledge to others.

Q5.2: Does this application capable to improve your performance in your studies?

From the students respond in this study, we could conclude that students learn better and construct their critical thinking when they learn collaboratively by using Wiggio, it is supported by what mentioned by student A, “..... For me, it encourages a lot of thinking and independent learning when we do collaborative learning through Wiggio. Indirectly, I learn better.” It means that collaborative role played very significant role in enhancing

students' critical thinking and performance. It was confirmed the testimony contributed by Clark (2009), he mentioned that collaborative learning process can construct students' ideas, thoughts, arguments and information. Yukawa (2006) also noticed that students who engaged in collaborative learning will improve their critical thinking because they try to explore their experiences in order to reach new inter subjective understandings and appreciations.

The improvement of students' critical thinking in this study made them confident to respond and ask question in group discussion such as what mentioned by student B, he felt confident to ask critical question to instructor and express his idea virtually. Student C, D and E also noticed that their performance were better when using this application. The improvement of students' performance in collaborative learning had been reported by Walker (2005), he notes that collaborative learning activity leads students to successful learning where students will construct knowledge based on their experience. We can conclude that students are capable of changing their performance with use of Wiggio and this tool can help them improve their performance and critical thinking throughout the T&L process.

6. LEARNING ORIENTATION

Q6.1: Do you show a better performance in your learning process when you use this application?

The design of this course and the features of Wiggio made students learn better. Student B compared his study by using Wiggio with his previous conventional classroom. He noticed that the class by using Wiggio was better because of collaborative work and the application was equipped with impressive features. Student C also confidently mentioned that his performance was better by using Wiggio compared to other class, Wiggio provided many features especially a message or information which would alert the user new information, when other students posted or shared new knowledge, he would directly know and check it. It was different with other tool that not provided alert message. The researcher believed that their statements were related to what reported by Suarez-Brown, Hankins and Williams (2011), they mention that there are many features that effectively support collaborative learning in Wiggio and other application does not have such as events, reminder, forum, conference calls, calendar, poll, folder, meetings and links.

Using Wiggio gave opportunities for all students to talk and express their ideas much easier, such as mentioned by student D, *"I think it gives others a chance to talk. I am very noisy and opinionated in class. Some people don't like that."* this means that when using Wiggio, every student has the same occasion to express their idea and not only dominated by high ability or talk-active students. It is believed that when students learn collaboratively, it will bring whole students to active learning and all of them are equal (Summers, Gorin, Beretvas, & Svinicki, 2005).

Q6.2: Do you believe that the information received is easier to remember when using this application?

The information was easy to remember because all information has been recorded on the Wiggio, students could review the content after the class or whenever they need. *"..... I can remember better when there is a platform for sharing and I can actually read and re-read what is being discussed, With this application, we can track back all the information shared"* confessed student A. Student B also expressed the same idea, he stated that all knowledge had been discussed in the class would be saved on Wiggio and they could be reviewed whenever they needed. Then, Wiggio gave advantages for student who had a difficulty to remember, such as what mentioned by student C, he stated that Wiggio became a good reminder application for him because he had a problem with remembering things such as the content that had been taught in the class.

Overall, the findings of this study indicate that in identifying the principles of adult learning introduced by Knowles (1980) with the use of Wiggio, shows that the opinion of all respondents is positive toward application of collaboration tools in line with the adult learning principles. This means usage of Wiggio is suited to the principles of adult learning introduced by Knowles (1980).

CONCLUSION & RECOMMENDATION

Technology use in adult learning can enhance the T&L process and attract the interest of learners to involve in the learning materials. Adult learners refer to graduate and postgraduate students in higher education (Serdyukov & Serdyukova, 2006). Adult learners study independently because they are mature enough and have previous knowledge and experience in their learning activities. Adult pedagogy is built based on self-directed learners where the learners have their previous knowledge or experience in a current learning situation (Serdyukov & Serdyukova, 2006). The use of Web 2.0 will guide adult learners to study autonomously. The use of Web 2.0 technology in teaching and learning activity has given learners and lecturers many opportunities to establish intensive communication and interaction virtually. Some direct feedback can be given by the lecturer to the students using

Web 2.0. This study demonstrated how Wiggio application might be used to enhance collaborative learning. Students were more responsible and independent in the learning process, increased students' motivation and confident level, students were ready to learn and capable to develop new skills.

The findings have implications for educators especially for those involved in adult education field as they need to consider adult learners preferences when planning teaching and learning activities with the usage of technology. The use of Wiggio can be implemented for different level of students such as secondary school and different subjects. Wiggio also can be used as a platform of blended learning. Students will learn both traditional learning face to face in the class and combine with the use of Wiggio outside the class. The researcher acknowledges that further research and collaboration is needed on the use of various technology Web 2.0 tools in teaching and learning activities, it also should be conducted for all level of learners. Wiggio is potentially applied in blended learning where students use this tool to collaborate with peers when outside the class.

ACKNOWLEDGEMENTS

Financial support for this paper was provided from the University Malaya Research Fund Assistance, Malaysia.

REFERENCES

- Aharony, N.(2009). The influence of LIS students' personality characteristics on their perceptions towards Web 2.0 use. *Journal of Librarianship and Information Science*. 41.
- Alexander, B. (2006). Web 2.0: A new wave of innovation for teaching and learning? *Educause Review*, 41(2), 32-44.
- Ali Sher. (2009). Assessing the relationship of student-instructor and student-student interaction to student learning and satisfaction in web-based online learning environment, *Journal of Interactive Online Learning*, 8 (2), 102 – 120.
- Brindley, J., Blaschke, L. M., & Walti, C. (2009). Creating effective collaborative learning groups in an online environment. *The International Review of Research in Open and Distance Learning*, 10(3), 1-17.
- Brophy, J. (2010). *Motivating students to learn*. New York: Routledge
- Chen, S., Yen, D. C. & Hwang, M. I. (2012). Factors influencing the continuance intention to the usage of Web 2.0: An empirical study. *Computers in Human Behavior*, 28(3):933–941
- Clark, A. (2009). Spreading the joy? Why the machinery of consciousness is (probably) still in the head. *Mind*, 118(472), 963-993.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Dörnyei, Z. (2003). Attitudes, orientations, and motivations in language learning: Advances in theory, research, and applications. *Language Learning*,53(S1), 3-32.
- Fearon, C., Starr, S., & McLaughlin, H. (2011). Value of blended learning in university and the workplace: some experiences of university students. *Industrial and Commercial Training*, 43(7), 446-450.
- Garrison, D. R., & Anderson, T. (2003). *E-Learning in the 21st century: A framework for research and practice*. London: RoutledgeFalmer.
- Grosseck, G.(2009). To use or not to use web 2.0 in higher education?.*Procedia Social and Behavioral Sciences*. (1), 478–482.
- Hastings, R. (2009). Collaboration 2.0. *Library Technology Reports*, May-June 2009, 1-4.
- Hillesheim, G. (1998). Distance learning: Barriers and strategies for students and faculty. *The*

- Internet and Higher Education*, 1(1), 31-44.
- Hisham, D., & Rob, W. (2003). Understanding the culturally diverse Malaysian distance learners: does culture have a role and an effect on learning and practice in distance education. *Malaysian Journal of Distance Education*, 5 (1), 4.
- Hong, J. C., Yu, K. C., & Chen, M. Y. (2011). Collaborative learning in technological project design. *International Journal of Technology and Design Education*, 21(3), 335-347.
- Imel, S. (1988). *Guidelines for working with adult learners*. Adult Career and Vocational Education Columbus OH. (In ERIC Document Reproduction Service No. ED299 456).
- Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. Chicago: MacArthur Foundation.
- Jim Berger. (2008). *Cultural components of technology and its implications for adult education*. [Online]. {Accessed 20 June 2009}. Available from World Wide Web: <http://www.adulterc.org/Proceedings/2008/Proceedings/Berger.pdf>
- Kitsantas, A. & Dabbagh, N. (2011). The Role of Web 2.0 Technologies in Self-Regulated Learning. *New Directions For Teaching And Learning*, 126.
- Knowles, M.S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. 2nd ed. New York: Cambridge Books.
- Knowles, M. S., Holton, E. F., & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development*. 6th ed. London: Elsevier.
- Liou, P.-Y.*, & Kao, P.-J. (2014). Validation of an instrument to measure students' motivation and self-regulation towards technology learning. *Research in Science & Technological Education*, 32(2), 79-96.
- Lyle Yorks & Elizabeth Kasl. (2002). *Collaborative inquiry as a strategy for adult learning*. San Francisco: Jossey-Bass.
- Mazanah Muhamad & Carter, G. L. (2002). *Designing and facilitating adult learning*. Serdang, Selangor: Universiti Putra Malaysia.
- McLaughlin, J. E., Griffin, L. M., Esserman, D. A., Davidson, C. A., Glatt, D. M., Roth, M. T., ... & Mumper, R. J. (2013). Pharmacy student engagement, performance, and perception in a flipped satellite classroom. *American journal of pharmaceutical education*, 77(9).
- Merriam, S. B. (2001). Andragogy and self-directed learning: pillars of adult learning theory. *New Direction for Adult and Continuing Education*, 89, 3-13.
- Merriam, S. B., & Caffarella, R. B. (1991). *Learning in adulthood: A comprehensive guide*. San Francisco, California: Jossey-Bass.
- Mikkelsen, A., & Grønhaug, K. (1999). Measuring Organizational Learning Climate A Cross-National Replication and Instrument Validation Study Among Public Sector Employees. *Review of public personnel administration*, 19(4), 31-44.
- Moore, M. (2007). Web 2.0: Does it really matter? *The American Journal of Distance Education*, 21(4), 177-183.
- Patton, M. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage Publications.
- Pargman, T. C., & Wærn, Y. (2003). Appropriating the use of a Moo for collaborative learning. *Interacting with Computers*, 15 (6), 759-781.

- Qayyum, A. (2009). *Is there a technology bias against adult learners?*. [Online]. [Accessed 19 February 2010]. Available from World Wide Web: <http://www.adulterc.org/Proceedings/2009/proceedings/qayyum.pdf>
- Schaefer, D., Panchal, J. H., Thames, J. L., Haroon, S., & Mistree, F. (2012). Innovative design education in a global distance learning setting. *International Journal of Engineering Education*, 28(2), 381-396.
- Schrum, L., & Solomon, G. (2007). *Web 2.0: New tools, new schools*. Eugene, OR: ISTE.
- Serdyukov, P., & Serdyukova, N. (2006). Adult learners in an online college class: Combining efficiency and convenience of E-learning. In *Education for the 21st Century: Impact of ICT and digital resources* (pp. 205-214). Springer US.
- Siti Hajar Halili. (2007). *A survey of the effects of media attributes videoconferencing in distance learning programs*. Masters thesis, Universiti Sains Malaysia.
- Slentz, A. (2009). Going global to last. *HR Magazine*, 54 (8), 36-38.
- Suarez-Brown, T. L., Hankins, J., & Williams, J. (2011). Implementation of an Efficient Communication Infrastructure to Enhance Professional Leadership Development: A Case Study. *SOBIE 2011*, 19.
- Summers, J. J., Gorin, J. S., Beretvas, S. N., & Svinicki, M. D. (2005). Evaluating collaborative learning and community. *The Journal of Experimental Education*, 73(3), 165-188.
- Tasir, Zaidatun Aris, Baharuddin Ali, Mohamad Bilal Harun, Jamalludin Md Noor, Norah Mohd Said & Mohd Nihra Haruzuan. (2009). *A survey on andragogy principles for web based instruction in Malaysia higher education*. Project Report. Faculty of Education, Skudai, Johor. [Online]. {Accessed 13 May 2004}. Available from World Wide Web: <http://eprints.utm.my/9151/>
- Van Merriënboer, J. J. G., & Paas, F. (2003). Powerful learning and the many faces of instructional design: Towards a framework for the design of powerful learning environments. In E. De Corte, L. Verschaffel, N. Enstwestle, & J. J. G. Van Merriënboer (Eds.), *Powerful learning environments: Unravelling basic components and dimensions*. Oxford: Elsevier Science.
- Vizcaíno, A. (2004). A simulated student agent for improving collaborative learning. *Interactive Technology and Smart Education*, 1(2), 119-126.
- Walker, G. (2005). Critical thinking in asynchronous discussions. *International Journal of Instructional Technology and Distance Learning*, 2(6), 15-22.
- Wikipedia. (2013). Collaboration tool. [Online]. {Accessed 20 June 2014}. Available from World Wide Web: http://en.wikipedia.org/wiki/Collaboration_tool
- Wiggio (2014). Wiggio.com. [Online]. {Accessed 20 June 2014}. Available from World Wide Web: https://wiggio.com/?#tpl=home_0
- Yin Yin, K. (2008). "The Effectiveness Collaborative Problem Solving Method Among Form Six Economic Students", Penang, University Science Malaysia.
- Yukawa, J. (2006). Co-reflection in online learning: Collaborative critical thinking as narrative. *International Journal of Computer-Supported Collaborative Learning*, 1(2), 203-228.
- Yusuf Hashim. (2001). *Instructional and systems design*. Kuala Lumpur: Utusan.

IS WILLIAMS SYNDROME THE ‘CONVERSE’ OF AUTISM SPECTRUM DISORDER?

Nor Siti Rokiah binti Abdul Razak

Faculty of Education and Human Development
917 Jalan Mak Intan, 36000 Teluk Intan, Perak, Malaysia
linkia_nsr@yahoo.com

Abstract: Williams Syndrome (WMS) and Autism Spectrum Disorder (ASD) are neuro-developmental disorders associated with distinct social phenotypes. Infant and young children associated with these two disorders provided evidence of developmental delay. This paper attempts on analyzing the extent of convergence and divergence of the behaviours in WMS and the symptoms of ASD. Features of diagnosis and characteristics, as well as developmental achievements in these two disorders will also be addressed further. Moreover, in depth discussion and comparison on a number of aspects including; intellectual ability, visual-spatial skills, language and communication, social interaction and emotion detection, in regards to both disorders will be dealt in detail throughout the rest of this paper.

INTRODUCTION

Williams Syndrome

Children with Supra-Valvular Aortic Stenosis (SVAS) were referred to as Williams Syndrome (WMS), coined by Williams and colleague in the early 1960s (William & Campbell, 1960). These children were characterized with several physical appearances, which consist of medial flare of the eyebrows, lacy stellate (star-burst) pattern of the irises, flat nasal bridge with a bulbous tip and ante-verted nares. Their facial look is often described by the founder as elfin or ‘pixielike’ and symptoms of mental retardation were also reported (William & Campbell, 1960). Interestingly, similar characteristics were found in a study conducted by Beuren and colleague (1962). In their study, they identified another set of feature in which the children have hypoplastic teeth despite full lower lip with a wide smile, and small chin (Beuren, Apitz & Harmjan, 1962).

They are also characterized as being very friendly and active. For example, von Arnim and Engel (1964) described individuals with WMS as showing a very good rapport with anyone they meet and easily involved in the conversation with their communication partner. They were able to establish interpersonal contacts within a few minutes time. Those being identified with WMS seems like very curious of getting to know each without any worries even with strangers. Kaplan et al. (2001) had listed four characteristics that have elicited the most interest which are the individual’s social relationships, activity level, anxiety level, and sleep problems. The most consistent outcomes have been reported is that the children with WMS are highly interested in social interactions and very empathic.

In some cases, other personality characteristics appeared to be such as hyperactivity, impulsivity and low frustration tolerance (Tomc, Williamson & Pauli, 1990). Therefore, it may cause problems with social interactions. Along these lines of reasoning, researchers have found that individuals with WMS have difficulty in understanding other’s beliefs or points of view, which may contribute to some of their social difficulties. Individuals with WMS are also reported to present low IQ levels (Mervis, Morris, Bertrand & Robinson (1999). Despite the case, their cognitive functioning including vocabulary knowledge, face processing, and auditory rote memory remains intact (Bellugi et al., 1992; Mervis et al., 2000). Interestingly, when compared with other atypical groups (eg. Down syndrome or non-specific mental retardation) that matches their mental age, subjects with WMS were reported to gain significantly higher scores on cognitive abilities (Wang, 1996).

WMS is thought to be due to genetic mutation. Studies revealed that the mutation occurs at the long arm of Chromosome 7. Elastin gene, which is located at the aforementioned chromosome, is micro-deleted in the case of WMS. This deletion often results in severe physical abnormalities including; cardiovascular complications, elevated blood calcium levels, sensitive hearing and high blood pressure, failure to thrive in infancy, abnormal sensitivity to certain classes of sounds (hyperacusis) (Ewart et al., 1993), and moderate to severe learning

difficulties (Plissart & Fryns, 1999). In a study conducted by Paul et al. (2000) an estimate of 1 in 20,000 live births suffered WMS and nearly all cases resulted from de novo deletion events in the genetic material.

Autism Spectrum Disorder

Above paragraphs had described briefly on WS and its characteristic. Accordingly, this paper will explain some aspect to be known about ASD before further discussion. Autism is relatively diverse, and to define it properly is rather subjective. Children with ASD are described as without any obvious physical signs and biological markers (Frith, 2003). However, despite the lack of the previously mentioned characteristics, it is very similar to WMS in terms of mental retardation or learning disability. The developmental approach of cognitive theory referred to as the *mind-blindness hypothesis* explains the underlying features of autism. This theory proposes that, children with ASD have missing their intuitive ability to understand other people's thoughts and mental state (Baron-Cohen, 1995). In fact, previous study assumed that ASD as resemblance to an adulthood mental disorders named schizophrenia (Wing & Gould, 1979). However, since a question arises about the children who are diagnosed with schizophrenia before puberty, therefore it remains debated.

Despite numerous studies on ASD, the aetiology remains unknown. However, genetic and environmental factors are thought to play important roles in the development of ASD. Environmental factors including complication during pregnancy and birth often contributes to fetal abnormalities that present in children with ASD (Frith, 2003). Children suffered with ASD frequently presented with brain damage in comparison to normal individuals. Viral infection and immunization disorders were also thought to cause ASD however these factors are trivial. In terms of the genetic factor, Rutter and Folstein (1977) reported that approximately 90 percent of concordance was found in identical twins for milder forms of autism. In addition, Rutter (2000) reported that 3 to 6 percent the risk of second child being affected in family that has more than one child with ASD.

Originally referred by Kanner (1943) and Asperger (1944), ASD relates to a fundamental biological disturbance that is present from birth. Both authorities found some fascinating features of these children that seemed they have disturbance to establish normal relationships with the peers. A child with ASD is more interested in the world of objects rather than peers and people around them. Indeed, autistic loneliness, desire for sameness and islets of ability serve as a reference point for features of classic autism (Kanners, 1943). Unlike other typical developing children, Abbe Pierre-Joseph noticed that children with ASD are lack of imaginative play. This deviant characteristic was realized since 1800 towards a boy called Victor (Lane, 1976). All the findings come into logical conclusion that children with ASD appeared to be difficult to participate normally with other people and their surroundings thus, lead to disturbance in social integration.

Children with ASD were initially thought to be deaf. This premise was brought up given the lack of responsiveness to other people's voice. However, it was realized that these children were actually reacted unusually towards certain sound (Rapin & Allen, 1987). Children suffered with ASD are monotonously repetitious in all their performance just like as it was when they utter verbally. Besides that, communication impairment such as delayed speech production was also observed in ASD children (Bauman, 1999). While children with hearing impairment communicate through signs, gestures and facial expressions, children with ASD tended not to do so. Nevertheless, despite their handicap, these children exhibited unexpected outstanding achievements. These children have an excellent memory and often skilled in music and drawings (Happé 1999).

Using standard diagnostic handbooks, Chakrabarti and Fombonne (2001) showed a huge increase of prevalence approximately 60 per 10 000 of the population with ASD. The increasing prevalence is probably due to greater awareness of autism that meant for more cases looking forward to be diagnosed. Equally important, the increment of the prevalence accordingly reflected by varies definition of autism itself across professional in different countries. Recently, the diagnostic criterion of ASD is described in Diagnostic and Statistical Manual (DSM) (American Psychiatric Association, 2000). In the same way with classical features of autism, it was decided by American Psychiatric Association (APA) (2000), children must at least meet with two out three criteria, which include qualitative impairment in reciprocal social interaction, qualitative impairment in verbal and non-verbal communication relative to developmental level. Also, they must be a markedly restricted repertoire of activities and interests appropriate to developmental level. These criteria have been collectively accepted worldwide for ASD diagnosis and to the benefit of research purposes and clinical practice (Hill & Frith 2003). The following paragraphs will discuss issues that concern with converging aspects in both WMS and ASD.

Overlapping behavioral symptoms in Williams Syndrome and Autism Spectrum Disorder

There are numerous studies that indicate the similarities of WMS and ASD. Symptomology patterns for instance, especially unusual perception and sensitivity towards sound and noise, were found to be overlapped in children diagnosed with ASD and WMS (Levithin et al., 2005). The similarity in terms of genome analysis also has been discussed in years back (Berg et al., 2007). Another study conducted by Lincoln et al. (2002) showed patients with WMS exhibit inability to rapidly shift attention, a characteristic similar to adults with autism and cerebellar lesion patients. In this study, three main tasks were conducted mainly on visual and auditory focus, as well as shifting attention. However, due to individual differences in terms of their cerebellar vermis size, a much longer time was needed to allow them to shift their attention to match the performance present by individuals with ASD. Despite interesting findings, several limitations were found including small number of patients combined with issues concerning age groups. Further study with more parameters could be conducted to get much concrete results.

Additionally, mental retardation or learning disability is found to be frequently associated with both ASD and WMS. Chakrabarti and Fombone (2001) reported that 25% to 40% of patients with ASD have an IQ under 70. Other report showed approximately 25% of children with WMS to have learning disability while the remaining displays unlimited IQs and adaptive behavior quotient consistent with mental retardation (Mervis and Klein-Tasman 2000). However, the exact average cut of point of IQ levels in both disorders varies upon time as they might present in different degree of cognitive ability in each of the disorder. In fact, some of the evidence unlikely would affect the percentage obtained when some of the assessment were not conducted using the standardized test.

Furthermore, unique ability usually called as savant abilities were known to occur in both disorders. For example, children with ASD displayed extra-ordinary skills in areas of music, arts, and mathematics. As mentioned by Frith and Hill (2003), at least 10% of the autistic population to be present with these set of skills. Similarly individuals with WMS exhibited cognitive strength in music and arts. It is thought that certain areas of the brain are ‘preserved’ so as to influence their musical abilities (Lenhoff, Perales and Hickok 2001). This finding is supported in a study conducted by Schlaug, Jancke, Huang, and Steinmetz (1995). They revealed that the left planumtemporale (an auditory-related structure) is relatively enlarged in musicians. This correlates with their preliminary findings on brain structures of individuals with WMS. In years back the issues were less concerned about and investigated. Studies on ASD and WMS have redirected towards focusing on the cause and symptoms of the impairment for further intervention, rather than assessing their gifted talents. The reason being was, each individual have different distinct ability therefore it might be difficult for researchers to study and generalize the entire population. Nowadays, with the development of technology and advanced instruments, this topic has given much attention.

Through Autism Diagnostic Observation Schedule (ADOS; Lord et al., 2000), Lincoln et al. (2007) assessed the specific features commonly associated with ASD that may be observed in young children with WMS. The criteria comprise of communication, social interaction, restricted and repetitive behavior as well as both functional and imaginative play. This study suggests ADOS discriminated the groups of both disorders by the indicator of gesture and quality of social trend (Lincoln et al., 2007). Despite several disabilities in communication, children with WMS were found to engage with others more frequently given the appealing nature of social interaction in-comparison to ASD children. However, apart from the large differences has been noticed, the researchers have to admit that there are still coexisting symptoms and behaviours to occur in children with WMS upon those with ASD.

The development of language and speech

In spite of the overlapping behavioral symptoms, there were divergent patterns known in terms of linguistic abilities between children with WMS and ASD. The idea that language is an intact ability in children with WMS was consistently questioned when research demonstrated linguistic abilities were evenly balanced with general cognitive functioning in WMS. However, with mental age-matched across these groups of disorder, it was significantly proves that children with ASD often demonstrating limited and difficulties of speech and language in contrast to children with WMS. Children with WMS, who usually present language delay in early childhood, appear to be good in their verbal performance rather than IQ performance (Edgin, Pennington & Mervis, 2010). Generally, these children have the capacity of vocabulary approximately equal to normal developing children. In

a study conducted by Bellugi et al. (2000) where the general cognitive functioning and non-verbal ability of children with WMS were comparatively evaluated, strong linguistic ability were found in them. Similar results were obtained when a much larger sample were used (Karmiloff-Smith et al. (2003). In spite of the remarkable abilities showed, however in the set of conversation these children seem to have problem in understanding the full meaning of the topic discussed. Opposite to WMS, individual with ASD that to be known with language delay has shown better IQ's performance than their verbal performance. The following paragraph will discuss into greater extend on language ability between the two disorders in term of lexical development.

When compared with normal developing children, ASD and WMS children exhibited delayed achievements especially in finding their first and combining words. Up to 20% of children with ASD were reported to show language loss (Lord et al. 2004). Unlike delayed onset of first words by the majority of children with other disorders, children with ASD displayed deviant type of lexical growth (Berg, 2007). On the other hand, children with WMS presented pattern of vocabulary growth comparable to normal developing children at early ages (Lord et al. 2004). Intriguingly, these children have language skills greater than nonverbal skills when compared to children with Specific Language Impairment (SLI). Study conducted by Mervis (2004) demonstrated higher score ratings for language items than non-language items in toddlers with WMS.

In term of morphosyntactic abilities, children with WMS showed different trends with the one display by children with autism or even children with specific language impairment (SLI). Even though the morphological aspect was normally developed after the onset, the grammatical morphology seems to be delayed in children with WMS (Mervis et al., 1995). However, their findings suggested that delayed on grammatical morphology among individuals with WMS will not remain as it gradually improve and changing over the time. Unlike WMS, children with ASD and SLI may or may not acquire similar trend given the deviant pattern of their overall language acquisitions. For example, Roberts, Rice, and Tager-Flusberg (2000) have reported that children with ASD and SLI usually possess poor grammatical performance. They also found that, the most common errors made by these children were the omission of the finiteness marker. Although, over 90% of the time, children with ASD and SLI were able to produce other finiteness morpheme correctly, they are still struggling to elicit past tense and singular verbs of third person. Though this is the case, children with WMS presented different types of grammatical error.

In the study conducted by Zukowski (2004) more complex morphosyntactic skills had been investigated towards children with WMS. Similar pattern of errors made by typical developing children at early ages were observed in WMS samples. However, Zukowski (2004) had ignored the sentence samples by children WMS that contains relative clauses and negative questions. Such sentence productions were known to be difficult to comprehend by children with WMS. Albeit the fact that these studies did not make direct comparison between the two disorders, it somehow illustrates the different potential from each disorder in terms of morpho-syntactic skills. Additionally, it can be presumed that children with WMS are better (technically similar to typical developing children) in this area as compared to children with ASD.

The other convergent element in language ability to be discussed is speech fluency. The pattern of speech fluency identified among individuals with WMS is always the most essential criteria that inclusively used to compare with other neuro-developmental disorders. Due to the fact that only a small number of those with ASD have intact in speech production, it was less concern to investigate the ability of the speech fluency among the population. However, we will able to predict the outcomes implies from the study on other groups with neuro-developmental disorders. Rossi, Moretti-Ferreira and Giacheti (2007) revealed the speech fluency profiles in WMS. Result showed that the frequency of word repetitions in the WMS was higher than typically developing groups. Using the conversational data from two groups that mental age-matched, they suggested that there might be correlation between the difference levels and pathway of lexical-semantic and syntactic access of the children with WMS to the occurrence of the disfluency. Their suggestion is highly acceptable because children with WMS were already known to have different way on the language acquisition process. Similarly, the occurrence of disfluency among children with ASD might also indicate the different rate and frequency as they too present with deviant pattern of language acquisition. Other language element that correlates with the pattern of speech fluency which needs to be considered by the researcher is phonological development, as it is crucial to the profile of speech production and fluency.

Another aspect of language and linguistic abilities seems to be equally important to be discussed between the two disorders is pragmatic. This issue is probably not attracting much attention compared to other non-pragmatic counterparts could be due to some reasons; firstly, the reluctance of children with ASD to interact with people around them is a well-known fact. Secondly, it is widely accepted that pragmatic impairments are the defining

feature of ASD, rather than being a secondary result of the language impairment in contrast with children with other atypical disorders (Lord & Paul, 1997). However, it is necessary to be included in this essay in order to evaluate the potential between WMS and ASD. As described by many researchers, these pragmatic deficits include limited range of expressive language acts, for instance conversational and narrative skills (Tager-Flusberg & Sullivan, 1995). On the contrary, children with WMS have greater differences with ASD in terms of building rapport and engaging in conversation. That was indirectly presumed that pragmatic deficits were not a big concern to be included in the list of their impairment. However, from my own experience I have noticed that children with WMS did not respond and react correctly to the topic being discussed. This is in agreement with the findings from Paul & Cohen (1984) that these children lack the ability to understand the perspective of another person that they are communicating with. Further research needs to be carried out to clarify this matter.

The development of social interaction and emotional detection

Relating back to the previous topic, children with WMS characterized are as being excessively social and talkative, which is the opposite of individuals with ASD. According to, Riby and Hancock (2008), we need to give an equal focus to the social deficits that are associated with autism as much as what had been given to understand the implications of atypical social preferences in WMS. Their statement itself clearly describes convergent potential between these two disorders. Using the social scene picture as a stimulus items, Riby and Hancock (2008) obtained the results through eye-tracking procedure. Individuals with ASD were more interested with the body and background from the image given while those with WMS spent more time looking at the face. The ways both individuals with ASD and WMS present their view onto social interest were different depending on how they perceived and interpreted the social occurrences.

Despite the better performance on social interest among individuals with WMS, some of them was also associated with difficulties in social interaction. This issue was brought by Lincoln et al. (2007) as they noticed that some individuals with WMS showed one or two characteristics that enlisted for ASD. However, the occurred only in very small numbers among them, therefore this cannot be represented for the whole population. In fact, individuals with WMS are observed to be working hard to enhance their social performance and putting extra effort to interact with people around them, unlike those with ASD. Apparently, they are best described as having deficit in terms of seeking for attention compared with ASD that has always been oblivious towards others.

Another concern related to the earlier issue discussed is the ability to recognize and identify emotional state of facial expression. In their study, Lacroix et al. (2009) indicated that there was no difference between groups of WMS and ASD on the emotion matching and labeling tasks. It was shown that both children with WMS and ASD children have the same ability of labeling and matching emotions in facial expression without any verbal content. This result was similar to typically developing children. However, their findings was less concern in discussing the feedback when response to gender-based face processing to recognize and identify emotional state of facial expression. Indeed, in years back, Gagliardi et al. (2003) had found the convergent potential between the two disorders relating to this viewpoint. They used a naming task with participant in both group. Although one of the results was in line with Lacroix et al. (2009), interestingly the second result revealed that individuals with WMS provided correct response on gender-based face processing, significantly opposed to the group with ASD. The researchers described that lack of attention to faces present by individuals with ASD leads to the inability to respond correctly. Their ideas can be considered logical if we relate to eye-tracking tasks describe by Riby and Hancock (2008). In fact, if it happens to be variation in the outcome upon one or two of them with WMS, it was probably associated with interference of their overtly sociable behavior as described by Bellugi et al. (1994).

What follow is an analysis of fear problem which has been identified on most children with developmental disabilities particularly in children with WMS and ASD. Many sort of fear are perceived mainly as a natural occurrence among those children. Some element of fear being reported decreases gradually through years while others remain the same. In fact, different rate of fear has been discovered in each disorders. Interestingly, though an individual with WMS are known to be highly sociable, they are more fearful compare to other atypical groups such as Down Syndrome, Prader Willi Syndrome and even Autism Spectrum Disorder (Dykens & Rosner, 1999). However, it was not that simpler to make the conclusion. One possible comparison that can be made is an analysis on several factors of the fears. Dyken (2003) revealed the fact that the highest frequently fears in children with WMS is fearful of injury and animals. It was opposite with children with ASD as fearful on animal become the least compare to other factors such as situational phobias or medical fears (Evans et al., 2005). Albeit the fact that these findings did not reveals simultaneously, it somehow implies the different from each disorders in terms of fear components. Agreed with both authorities, this particular aspect of fearfulness were predictably in correlation

with individually behaviour symptoms. With deeper information such as diagnostic specificity and life experience, perhaps further research will making make more cohesive comparison and outcomes on this topic.

The potential of visual processing

Besides the divergent issues in language and communication development, as well as social performance, a different potential in perspective of visual processing between the two disorders was also observed. In fact, this topic is seen to be associated with others convergent issues that has been discussed earlier. In some reviews, researchers assumed that one possible explanation that an individual with WMS different from those with ASD is the ability on visual perception. The rationale for this is that almost individuals with WMS are associated with visual sensory problems particularly the stereoscopic perception. However, Atkinson et al. (2000) opposed the idea and stressed that there is no significant correlation between sensory visual problems as a cause to visual processing problems in individuals with WMS. The issue remains in debate until relevant findings with comparable evidence on neurophysiological perspectives are highlighted. When conducting a study towards eight adults on each group of WMS and ASD, Grice et al. (2001) identified different patterns of occulatory brain activities. The procedure involves face orientation detection. The result was obtained through electroencephalographic (EEG) signals which are recorded and measured as event-related potential (ERP). Even though, researchers did not found any specific difference in terms of face detection, they however have analysed successfully the difference of the γ burst pattern from the neuroimaging data that underlies deviant visual processing between WMS and ASD.

The differences on overall visual processing among them might be continually related to the visual-spatial in particularly. It has been described by Bryson et al. (2004) that visual-spatial is operated by neural structure that allow a person to develop visual attention to an object in certain location. Study by Riby and Hancock (2009) found the different outcomes between ASD and WMS. Both groups have dissimilar target items to be concern onto the stimulant images provided. While all participants were individually matched to chronological age (CA) and non-verbal ability (NV), the results showed that group with ASD spend longer time looking at the background or body area and less time looking at faces when stimulant picture was given, which is contradicted with responses showed by individual in group of WMS. They suggested that the deviance respective social phenotypes and sociocognitive abilities, affect on difference characteristic of the gaze behaviours between the WMS and ASD. However, in my views it is also possible to explain their findings in relation to the actual visual-spatial ability of ASD that to be known as different from WMS or other typical developing children. As confirmed by Paul et al. (2002), individuals with WMS have spatial deficits that affect on the poor performances during location matching task. Another study towards group of ASD revealed that, these population demonstrated better performance at identifying the orientation of simple and luminance-defined gratings rather than the complex one (Dowell & Wallace, 2009).

CONCLUSION

In summary, it has to be admitted that children with Williams Syndrome demonstrated some common character of Autism Spectrum Disorder and so of in vice versa. In early developing research, they found a lot of similarity in both disorders when concern on three general behavior such as language and communication, social interaction and intellectual ability. In fact, both children with WMS and ASD were associated with individually savant abilities that made them unique and special. However, the existence diagnostic test published and updating across year has narrowing the broad criteria of the disorder into groups and discriminate the overlapping criteria on both disorders. It have been proven divergent results appears in these two disorders when study investigated in detail in area of language and linguistic (including lexical capacity, morpho-syntax, speech fluency and pragmatic), socio emotion (including the study of eye-tracking, visual processing and emotion of facial expression) and intellectual ability related to IQ performance and learning ability. Both disorders were dissociated with evidence exposed from the advancement in genetic and neuro-science technology, as well as related psychological assessment and test.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders*. 4th Ed. Washington, DC: American Psychiatric Association.
- Asperger, H. (1944). Die 'Autistischen Psychopathen' im Kindesalter. In Frith U. 2nd Ed. (2003). *Autism: Explaining the enigma*. Blackwell Publishing, USA.
- Atkinson, J., Braddick, O., Anker, S., Curran, W., Andrew, R., & Wattam-Bell, J. (2000). Neurobiological models of visuospatial cognition in young children with Williams syndrome: Measures of dorsal stream and frontal function. *Developmental Neuropsychology*. In press.
- Bauman, M. (1999). Autism: Clinical features and neurobiological observations. In H. Tager-Flusberg (Ed.), *Neurodevelopmental disorders* (pp. 383-399). MIT Press, Cambridge, MA
- Bellugi, U., Bihrlé, A., Neville, H., Jernigan, T., & Doherty, S. (1992). Language, cognition, and brain organization in a neurodevelopmental disorder. In M. Gunnar & C. Nelson (Ed.), *Developmental Behavioral Neuroscience*, pp. 201-232. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bellugi, U., Wang, P. P., & Jernigan, T. (1994). Williams Syndrome: An unusual neuropsychological profile. In Broman, S. H. & Graf-man, J. (eds.) *Atypical Cognitive Deficit in Developmental Disorders: Implications for Brain Function*. pp. 23-56. Hillsdale, NJ: Lawrence Erlbaum Associates Inc.
- Bellugi, U., Lichtenberger, L., Jones, W., Lai, Z., & George, S. J. (2000). Neurocognitive Profile of Williams Syndrome: A complex pattern of strengths and weaknesses. *Journal of Cognitive Neuroscience*, 12, 7–29.
- Berg, J. S., Brunetti-Pierri, N., Peters, S. U., Kang, S. L., Fong, C., Salamone, J., Freedenberg, D., Hannig, V. L., Prock, L., Miller, D. T., Raffali, P., Harris, D. J., Erickson, R. P., Cunniff, C., Clark, G. D., Blazo, M. A., Peiffer, D. A., Gunderson, K. L., Sahoo, T., Patel, A., Lupski, J.R., Beaudet, A. L., & Cheung, S. W. (2007). Speech delay and autism spectrum behavior are frequently associated with duplication of the 7q11.23 Williams-Beuren syndrome region. *Genetic in Medicine*, 9, 427–441.
- Beuren, A., Apitz, J., & Harmjanz, D. (1962). Supravalvular aortic stenosis in association with mental retardation and a certain facial appearance. *Circulation*, 26, 1235–1240.
- Castelli, F. (2005). Understanding emotions from standardized facial expressions in autism and normal development. *Autism*, 9, 428–449.
- Chakrabarti, S., & Fombonne, E. (2001). Pervasive developmental disorders in preschool children. *Journal of the American Medical Association*, 285, 3093-3099.
- Dykens, E. M. (2003). Anxiety, fears, and phobias in persons with Williams Syndrome. *Developmental Neuropsychology*, 23(1&2), 291-316.
- Dykens, E. M., & Rosner, B. A. (1999). Refining behavioral phenotypes: personality-motivation in Williams and Prader-Willi syndromes. *American Journal on Mental Retardation*, 104(2), 158–169.
- Edgin, J. O., Pennington, B. F., & Mervis, C. B. (2010). Neuropsychological components of intellectual disability: the contributions of immediate, working, and associative memory. *Journal of Intellectual Disabilities Research*, 54(5), 406–417.
- Evans, D. W., Canavera, K., Kleinpeter, F. L., Maccubbin, E., & Taga, K. (2005). The fears, phobias and anxieties of children with Autism Spectrum Disorders and Down Syndrome: comparisons with developmentally and chronologically age matched children. *Child Psychiatry and Human Development*, 36(1), 3-26.

- Ewart, A. K., Morris, C. A., Ensing G. J., et al. (1993). A human vascular disorder, supraaortic stenosis, maps to chromosome 7. *Proceeding of the National Academy of Science U.S. A.* 90, 3226–30.
- Folstein, S., & Rutter, M. (1977). Infantile autism: a genetic study of 21 twin pairs. *Journal of Child Psychology Psychiatry*, 4, 297-321.
- Gagliardi, C., Frigerio, E., Burt, D. M., Cazzaniga, I., Perrett, D. I., & Borgatti, R. (2003). Facial expression recognition in Williams syndrome. *Neuropsychological*, 41, 733–738
- Hertzberg, J., Nakisbendi, L., Needleman, H. L., & Pober, B. (1994). Williams syndrome-oral presentation of 45 cases. *Pediatric Dentistry*, 16, 262–267.
- Hill, E., & Frith, U. (2003). Understanding autism: insights from mind and brain. *Philosophical Transactions of the Royal Society of London*, 358, 281-289.
- Kaplan P, Wang PP, Francke U. (2001). Williams (Williams Beuren) syndrome: a distinct neurobehavioral disorder. *Journal of Child Neurology*, 16, 177–190.
- Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child*, 2, 217–250.
- Karmiloff-Smith, A., Brown, J., Grice, S., & Paterson, S. (2003). Dethroning the myth: Cognitive dissociations and innate modularity in Williams syndrome. *Developmental Neuropsychology*, 23(1), 227–242.
- Lacroix, A., Guidetti, M., Roge', B., & Reilly, J. (2009). Recognition of emotional and nonemotional facial expressions: A comparison between Williams syndrome and autism. *Research in Developmental Disabilities*, 976–985.
- Lane, H. (1976). *The Wild Boy of Aveyron*. Cambridge, MA: Harvard University Press.
- Lenhoff, H. M., Perales, O., & Hickok, G. (2001). Absolute pitch in Williams syndrome. *Music Perception*, 18, 491-503.
- Levitin, D. J., Cole, K., Lincoln A., & Bellugi, U. (2005). Aversion awareness and attraction: investigating claims of hyperacusis in the Williams syndrome phenotype. *J Child Psychol Psychiatry*, 46, 514-523.
- Lincoln, A. J., Lai, Z., & Jones. W. (2002). Shifting attention and joint attention dissociation in Williams syndrome: implications for the cerebellum and social deficits in autism. *Neurocase*, 8, 226-232.
- Lincoln, A. J., Searcy, Y. M., Jones, W., & Lord, C. (2007). Social interaction behaviors discriminate young children with Autism and Williams Syndrome. *Journal of American Academy of Child and Adolescent Psychiatry*, 46(3), 323-331.
- Lord, C., & Paul, R. (1997). Language and communication in autism. In D. J. Cohen & F. R. Volkmar (Eds.), *Handbook of autism and pervasive development disorders* (2nd ed.). New York: Wiley.
- Lord, C., Risi, S., Lambrecht, L., Cook, E. H., Leventhal, B.L., & DiLavore, P.C. (2000). The Autism Diagnostic Observation Schedule–Generic: A standard measure of social and communication deficits associated with the spectrum of autism. *Journal of Autism Developmental Disorder*, 30, 205–223.
- Lord, C., Risi, S., & Pickles, A. (2004). Trajectory of language development in autistic spectrum disorders. In M. L. Rice & S. F. Warren (Eds.). *Developmental language disorders: From phenotypes to etiologies*. Mahwah, NJ: Erlbaum.
- Mervis, C. B., Bertrand, J., Robinson, B. F., Armstrong, S. C., Klein, B. P., & Turner, N. D. (1995). *Early language development of children with Williams syndrome*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

- Mervis, C. B., & Klein-Tasman, B. P. (2000). Williams syndrome: cognition, personality, and adaptive behavior. *Mental Retardation and Developmental Disabilities Research Reviews*, 6, 148–158.
- Mervis, C. B. (2004). Cross-etiology comparisons of cognitive and language development. pp. 153–186. In Rice, M. L., & Warren, S. F. *Developmental language disorders: From phenotypes to etiologies*. Mahwah, NJ: Erlbaum.
- Plissart, L., & Fryns, J. P. (1999). Early development (5 to 48 months) in Williams syndrome. A study of 14 children. *Journal of Genetic Counseling*, 10, 151–156.
- Rapin, I., & Allen, D. A. (1987). Developmental dysphasia and autism in preschool children: Characteristics and subtypes. In *Proceedings of the first international symposium on specific speech and language disorders in children* (pp. 20-35). London, England: Association of All Speech Impaired Children.
- Riby, D. M., & Hancock, P. J. B. (2008). Viewing it differently: Social scene perception in Williams syndrome and Autism. *Neuropsychologia*, 46(11), 2855-2860.
- Riby, D. M., & Hancock, P. J. B. (2009). Looking at movies and cartoons: Eye-tracking evidence from Williams syndrome and autism. *Journal of Intellectual Disability Research*, 53, 169–181.
- Rossi, N., Moretti-Ferreira, D., & Giacheti, C. (2007). Perfil comunicativo de indivíduos com a síndrome de Williams–Beuren. *Revista da Sociedade Brasileira de Fonoaudiologia*. 12(1), 1–9.
- Rutter, M. (2000). Genetic studies in autism: From 1070s into the millennium. *American Journal of Psychiatry*, 157, 2043-5.
- Tager-Flusberg, H., & Sullivan, K. (1995). Attributing mental states to story characters: A comparison of narratives produced by autistic and mentally retarded individuals. *Applied Psycholinguistics*, 16, 241–256.
- Tomc, S., Williamson, N., & Pauli, R. (1990). Temperament in Williams syndrome. *American Journal of Medicine and Genetics*, 36, 345–52.
- von Arnim G. & Engel, P. (1964). Mental retardation related to hypercalcemia. *Developmental Medicine Child Neurology*. 6, 366–77.
- Wang, P. P. (1996). A neuropsychological profile of Down syndrome: cognitive skills and brain morphology. *Mental Retardation and Developmental Disabilities Research Reviews*, 2, 102–108.
- Williams, H., & Campbell, P. (1960). Generalized bronchiectasis associated with deficiency of cartilage in the bronchial tree. *Arch Dis Child*. 35, 182–191
- Wing, L., & Gould, J. (1979). Severe impairments of social interaction and associated abnormalities in children: epidemiology and classification. *Journal of Autism and Childhood Schizophrenia*, 9, 11-29.
- Zukowski, A. (2004). Investigating knowledge of complex syntax: Insights from experimental studies of Williams syndrome. In M. L. Rice & S. F. Warren (Eds.), *Developmental language disorders: From phenotypes to etiologies*. Mahwah, NJ: Erlbaum.

POSITION OF A PUPIL AND A STUDENT IN THE PROCESS OF VALUE ORIENTATION FORMATION

Ján Danek

University SS. Cyril and Methodius in Trnava, Department of Pedagogy, (Slovakia)
jan.danek@ucm.sk

Eva Frýdková

University SS. Cyril and Methodius in Trnava, Department of Pedagogy, (Slovakia)
eva.frydkova@ucm.sk

Abstract: Value orientation of children and adolescents is a significant phenomenon of upbringing as well as of the target of an educational activity. This article focuses on the position of a pupil and a student in the process of value orientation formation in a school environment. It points out certain practical activities aimed at the development of social habits and at forming of a pupil's character which can be applied during an educational process or outside of it.

Key words: pupil, teacher, values, value orientation, education, classes

Introduction

Position of a pupil or a student in the formation of a value orientation is determined by a value orientation of the parents. It is projected into their attitude toward children, into the way they educate them. Melvin Kohn performed an analysis of the effect of the value orientation of parents based on the type of parents' occupation on their behavior toward children and how the values linked to the conformity to outside authority and values linked to the decision process itself project into the parent's approach to children. According to M. Kohn (In. Katrňák, 2004) different working conditions form values and influence the parents' approach to children. People working in conditions permitting independent decision making are more likely to put greater emphasis on values linked to this type of decision making when educating their children. People working in conditions where independent decision making is impossible or limited are much more likely to accentuate values linked to the conformity. Children thus acquire different values and ways of behavior, adopt different approach toward school, education and occupation and react differently to problems and new situations.

Behavior of a pupil or a student and all his/her acts are, in fact, fulfilled and internalized values. At an early age we are still recipients of values either through family or education, sometimes unconsciously, but not explicitly through our attitude or behavior, at other times intentionally through a curriculum. When talking about a transmission and education of values through a curriculum, we point out a systematic work via key topics of an educational process which should penetrate all the school subjects. Key topics of an educational process and values are closely connected when practical topics of school subjects can be connected with the content of values. When trying to influence the formation of value orientation we shouldn't forget our role of educators, which involves not only our continual thinking about values we want to pass on children, but also about the character of these values and about the way by which we want to transfer them.

The formation of value orientation of pupils in a school environment

Values education, definition of the values that should be transferred, eliminated or converted are all processes that take place in schools. In the last few decades there have been some worries connected with the value orientation formation and value preferences. Educational objectives contained in The Act No. 245/2008 Coll. on Education (the school act) are a testimony to the fact that our society continuously cares about values education. These objectives include areas like reinforcing respect of parents and others, of cultural and national values and traditions of a state, refusing race, age, religious and social status discrimination or learning to control one's own behavior, taking care of one's own health (including healthy diet) and the environment and respecting universal ethical values.

The process of value orientation formation occurs at schools in three levels.

1. During classes. The content of learning always pertains to values and norms which should be required and learned. Previous norms that the students had learned from their family, through their peers or media and which they apply in their own lives are being confronted with new ones arising from the teaching process and are being accentuated.
2. Through the school's standards. In order to make teaching possible and to ensure social coexistence it is necessary to be mindful of the basic rules of behavior. They enable individual activity and they must be obeyed otherwise there will be sanctions. These rules must not only be clearly formulated and known from the start, but also applied in everyday life. However, the issues of transparency and substantiation of the rules and the sanctions should not be omitted mainly because it pertains to the questions of power and self-assertion. Commonly created agreements seem to be good solutions here. Conflict management can help to adequately solve the breach of rules.
3. Through a school's culture. Pupils don't learn values only at school (for example during teaching process), but at school they also live in their own value connections. The formation of social environment (cooperation, co-decision, participation) can contribute to the creation of a culture which is perceived as satisfactory and with which all the participants identify, through which they achieve a feeling of community. It is however not a process of accommodation, but a process of accepting the differences and tolerance (Giesecke, 2005).

The task of education in schools is to create a room for pupils and students to form their own personalities. As a result of this students become competent, able to assert their own rights and duties and to perform their roles of citizens. Schools must support the overall education of children and young people. It is not enough to provide them only with knowledge at the professional and conceptual level. It is necessary to work on the formation of value orientation of students also outside the classes and thus educate people who are able to live and co-exist in a society. „Value orientation determines how the human will live, how will work, what kind of relationships will create, what kind his family and his descendants, who are called the next generation, will be” (Sirotová, M. 2014).

To realize activities in schools which help to develop social habits and character building means to encourage pupils' critical thinking about moral and ethical issues. Through these types of activities pupils receive an opportunity to learn to behave morally and ethically. Some of these activities are:

- Teaching of values as part of the curriculum. This approach means to implement value and ethical issues into common school subjects (e.g. history, natural sciences, literature etc.). To ask about personal qualities of the main characters, about moral issues etc.
- Games as methodical procedures and strategies. Games encourage children's pleasure from playing and induce a feeling of contentment, freedom, satisfaction and self-realization. Through games we can support values like friendship, cooperation, respect and help.
- Talking about an ethical topic. Stories offer us an opportunity to introduce children to a different reality and to teach them emphatic approach. They also offer a chance to ponder a situation or an idea. Experience gained through this form of the experiential learning becomes a new part of a continually formed individual personality (Krátká, 2010).
- Role playing. The content of roles concentrates on interpersonal relationships. Through these games pupils put themselves into position of others and empathize with them and thus acquire social skills and experiences in various situations which they might be able to encounter in real life (cf. Krátká, 2012).
- Debate. To enable proper interaction between participants, it is necessary to try to create an adequate climate and to steer the debate in a direction in which responses of each and every student are being respected and all expressed emotions and open ideas are being supported.
- Learning through serving as a method of character development. Its target is to utilize children's skills and abilities in favor of others. The core of learning through serving is a mutual mapping of needs and neglected issues in the surrounding area. Then comes critical weighing of possibilities, what could be done, what are we able to do. Then follows the planning, realization and final evaluation. Through this method children acquire a real experience of an ethical activity.
- Brainstorming. Significantly encourages creativity, each student can express his/her own ideas and thoughts, all opinions are taken into consideration
- Discussion. All students must participate in an open atmosphere dominated by respect of others, acceptance of other ideas, avoidance of discrimination or derogatory behavior. A teacher should provide each student with a fair chance of expressing his/her ideas in a friendly atmosphere, in which

students feel no fear of ridicule or verbal aggression. According to E. Komárik (2009) children yearn to talk about their ideas and the best way to encourage it is to establish a hypothetical situation and to use Socrates' dialog method.

- Round table. Each student presents his/her opinion of a certain topic. Other students simultaneously interfere with his/her statements while keeping in mind the importance of respecting the opinion of all participants. The core principle of the round table method is the equality of all participants.
- Philips 66. Pupils in class are divided into groups of six. Each group chooses his/her spokesperson who, after six minutes of debate about a chosen subject, presents the group's conclusions. This method encourages participation, listening to others, respect, consensus etc.
- Choice of topic and solving of moral dilemmas. The basis of moral dilemmas solving lies in an exchange of students' opinions about a subject. Attitudes of all students are being respected, doubts about certain value changes are being established, new ideas and concepts leading to moral thinking are being suggested. Through these activities pupils become aware of their feelings, emotions and behavior.
- Supporting pupils' moral reflections through reading, use of simulation games, panel discussions, news, advertising, commentaries and reviews from newspapers, free time activities, for example through films or music, through analysis of events, sport etc.
- Developing motivation and interest in outmatching oneself, prizing one's own learning, effort and everyday work.
- Organizing activities and experiments with an aim of overcoming problems for instance conflict solving, through which children participate in the dilemmas of others (Cobos Pino; Komárik 2009).

It might be easier for pupils and students to form their value orientation and to internalize the values, if they are able to receive them in a practical way, for instance through the above mentioned activities. When trying to influence children's value orientation formation parents and teachers must work in concert with each other, mainly by utilizing activities that might support and sustain these values.

However, many teachers' activity in this area seems to be quite mechanical and rather formal. They put pressure on children to know and respect certain values, but through their approach they only achieve awareness of these values and they consequently become undesirable. Sometimes we can see a situation when under the influence of a school stereotype and certain laziness a teacher succumbs to a "value inertia" which results in the teacher's loss of authenticity, he/she becomes unconvincing when presenting values or there is a discrepancy between his/her behavior and verbal statements (Gogová 2014). In this context it is important to point out that if we want a student to be authentic and autonomous, it is important for his/her teacher to possess the same qualities. Using the words of Soren Kierkegaard "a teacher teaches more by what he is than by what he says". The basis of a teacher's educational influence is an interaction between the teacher and his/her students. The teacher's approach to students, his/her everyday behavior, the way of life as well as his/her educational style are the determining factors of a value system formation. It is important for teachers to help develop students' personalities in institutionalized conditions and to create educational situations which the students can apply inside as well as outside the class.

According to B. Kosová (2000) if a teacher wants to achieve optimal personality development of students he/she must choose strategies and methods with the aim of mediating cultural contents, norms and requirements, various types of activities and positive interpersonal relationships, satisfying student's needs, leading them to understanding of norms and desired behavior through an experience of success, influencing their self-confidence and self-esteem and developing students' future life orientation.

One of the targets of a teacher's activity is to help form a type of personality that would be beneficial for the society. In this respect we can't look at the values mediated by school or teachers as permanent because they change depending on life experiences as well as on the maturity level of each individual.

The values that are presented to a student by the immediate socio-cultural environment are not always accepted. According to A. Gogová (2004) this can often be explained by the fact that the student associates with other social groups or individuals who respect different values. The student gradually subscribes to these values and refuses the original ones presented to him/her by school or family. The student is influenced not only by cognitive forces of the environment but also by the emotional ones. When he finds a deeper emotional satisfaction in a social group that recognizes specific values despite the fact that these values might be undesirable, he/she subscribes to them.

Conclusion

Position of a pupil and a student in the process of value orientation formation is influenced not only by the internal and external factors, but also by the type of values that he/she had received functionally or intentionally. Many of them are missing from the hierarchy of values or are unattractive. Children and adolescents often encounter situations which make them realize that the values that were presented to them in school or in family are in contrast with success and progress in a professional and social life. As a result children may respect certain values, but will not apply them in real life.

This problem often applies to moral values which are transferred from a family environment. In these types of situations it is difficult to find out the real status of values. Many surveys concentrate on the detection of values, but not on the information whether these values score high in the value system of pupils and students only formally or are truly accepted, socially desirable and applied in a real life. Education should therefore lead to a creation of conditions in which students would manifest their true value orientation. Reaching this goal is not going to be easy because the road toward this goal requires the presence of an authentic educator (parent or a teacher) who would be a natural moral authority for the student and a real, practical value model, not just a formal one.

References

- COBOS PINO, J.A. (2009). *Valores: Familia y escuela*. In. Innovación y experiencias educativas. N° 25 - december. ISSN 1988-6047.
- GIESECKE, H. (2005). *Wie lernt man Werte? Grundlagen der Sozialerziehung*. Weinheim/ München: Juventa. ISBN 3-779-91721-1.
- GOGOVÁ, A. (2004). *Axiológia výchovy*. In. GOGOVÁ, A. – KROČKOVÁ, Š. – PINTES, G. 2004. *Žiak – Sloboda – Výchova*. Nitra: PF UKF. ISBN 80-8050-675-2.
- KATRŇÁK, T. (2004). *Odsouzení k manuální práci. Vzdělanostní reprodukce v dělnické rodině*. Praha: SLON, s. 190. ISBN 80-86429-29-6.
- KOMÁRIK, E. (2009). *Reziliencia, výchova, vzdelávanie a podpora rozvoja osobnosti*. In. Reziliencia a nové prístupy k výchove a vzdelávaniu. Bratislava: UK. s. 5-14. ISBN 978-80-223-2729-9.
- KOSOVÁ, B. (2000). *Rozvoj osobnosti žiaka*. Prešov: Rokos. s. 34-40. ISBN 80-968452-2-5.
- KRÁTKÁ, J. (2012). Common values of young people in a virtual community: Specifics of social communication and fan activities. In The international handbook of cultures of teacher education: Comparative international issues in curriculum and pedagogy. Strasbourg: Analytrics, 2012. s. 723-736, 14 s. ISBN 979-1-09-036501-8.
- KRÁTKÁ, J. (2010). Experiential learning through the audiovisual fictional stories: The relation between viewer's identified and favourite characters. In Edulearn10 Proceedings. 1. vyd. Barcelona: IATED, 2010. 10 s. ISBN 978-84-613-9386-2.
- SIROTOVÁ, M. (2014). *Vysokoškolský učiteľ v edukačnom procese*. Trnava. ISBN 978-80-8105-563-8.
- Zákone o výchove a vzdelávaní č. 245/2008 Z.z

RELATIONSHIP BETWEEN NEGATIVE COGNITIVE STYLE AND DEPRESSION AMONG UNIVERSITY STUDENTS

Shagufta Perveen, (Phd scholar)

Designation: Lecturer, Psychology Department, Hazara University, Mansehra, Pakistan
shaguftak27@gmail.com

Abstract: Several studies have documented the link between negative cognitive style and depression. However, little is known about the mechanisms underpinning the relationship between negative cognitive style and depression. Using battery of scales naming Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR; Rush et al., 2003) Cognitive style Questionnaire (CSQ-SF; Meins, et al., 2012) and Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) study explored the relationship between cognitive styles and depression in a non clinical sample of 1000 Pakistani university students. The study result show positive relationship between negative cognitive style and depression among students. Exploring the gender differences results indicates that men have higher scores on self worth, stability and while women have high scores on Internality based cognitive styles.. Result also shows that the mean score of women is higher on Somatic Complaints, Depressed Affect and Interpersonal Problem. Whereas men scored higher on positive affect.

Key words: Negative Cognitive Style, Depression Gender.

INTRODUCTION

Depression is regarded as a natural reaction to the tragedies and some perceive it as a major disease. Depression comprises of negative emotions such as stress, sleep and appetite problem, feeling of worthlessness and despair which may lead to varying from negative emotions to self destructive thoughts (Ibrahim, Kelly, Challenor, & Glazebrook, 2010; Thapar et al., 2012).

Based on the World Health Organization (WHO; 2008) reports, mental disorders are the fourth major health problems in the world and among the mental disorders, the greatest disability and handicap in the world is related to depression. Depression is associated with reduced energy and passion, feeling guilty, lack of concentration, poor appetite and thoughts of death and suicide and is accompanied with changes in activity level, cognitive abilities, speaking, sleep and other biological rhythms (WHO, 2008).

Depression among university students

The university years often have more adverse effects on emotionally and intellectually functioning of an individual than almost any other stage of education. University life has an adverse effect on the academic performance, physical health, and psychological well being of the students. Depression is known as a universal and devastating problem amongst student affecting motivation level, concentration, mood and feelings of sense worth the occurrence rate of depressive symptoms among university students ranges from 10.2% to 71.2%, (Christensson, Vaez, Dickman & Runeson, 2011; Kumar, Jain & Hegde, 2012) .

Depression is a major problem faced by many college students today. Students with depression can have significant impairments in many areas of functioning, including social, academic, and occupational (Field et al., 2012). The prevalence of depression has been shown to be higher in college-aged students than in the general population, with around 30% of students at any given time with depression and around only 9% in the general population (Ibrahim, Kelly, Adams, & Glazebrook, 2012). Students in particular tend to face unique life challenges that can put them at an even greater risk for developing symptoms of depression (Yakunina, Weigold, Weigold, Hercegovac, & Elsayed, 2013). Depression is highly prevalent about 44% of students reporting suffering from depressive symptoms (Krucik, 2012) and later on about 9% developing major depression (Reyes-Rodriguez, Rivera-Medina, Camara- Fuentes, Suarez-Torres & Bernal, 2012).

With regard to student populations, stressors include the transition to university life, adjusting to a new environment, independently handling with the demands of daily life, launch new social networks, achieving their goals, tolerating academic burden and strain, economical problems (Tosevski, Milovancevic & Gajic, 2010) and parting from their usual support network (Sidana, Kishore, Gulati, Jiloha, & Arand, 2012). Depressive symptoms may put an adverse effect on learning abilities and knowledge grasping quality. Moreover, for university students depressive symptoms may be triggered by experienced financial burden (Tosevski, Milovancevic & Gajic, 2010). As a result of these stressors, students become susceptible to physical, mental health problems and academic difficulties, (Dolbier & Rush, 2012).

Depression is a most prevalent problem among students across the world. Depression among university students is exceedingly prevailing and common problem (Abedini, Davachi, Sohbaee, Mahmoodi, & Safa, 2007).

University students are subjected to a crucial period of transition from adolescence to adulthood experience, number of stresses they attempt to fit in, uphold good grades, makes future plans, causes stress and anxiety for a number of students (Buchanan, 2012). This unhandled stress, may result in to depressogenic symptoms.

A wealth of researches has been conducted studying the prevalence of psychological problems among the university population (Nordin, Talib, & Yaacob, 2009; Seim & Spates, 2010), mental health problems are proving to be increasing day by day among university students (e.g. Hunt & Eisenberg, 2010). Previous studies have suggested that around the world depression in university students is well documented (Eller, Aluoja, Vasar, & Veldi, 2006; Mahmoud, Staten, Hall & Lennie, 2012), and the prevalence rate is increasing day by day (Reavley, McCann & Jorm, 2012; Castaldelli-Maia et al., 2012).

Among university students significant negative correlation exists between life satisfaction and depression (Guney, Khalafat & Boysan, 2010). Moreover, earlier studies have revealed that all over the world, among university students there is higher rates of psychological disorders, specifically anxiety and depression (Stewart-Brown, et al., 2000; Tomoda, Mori, Kimura, Takahashi & Kitamura, 2000; Reynolds, MacPherson, Tull, Baruch, & Lejuez, 2011; Aselton, 2012).

Relation between Negative Cognitive Style And Depression

Cognitive theories lay heavy emphasis on the role of negative cognitions in causing depression. Abramson, Seligman, and Teasdale, (1978) anticipated that persons with a predisposition to attribute negative life circumstances as stable (enduring), and global (wide spread) causes and who assumes that negative characteristics about themselves are more vulnerable to have depression episodes. Based on Abramson-Seligman-Teasdale model of depression (1978), Wenier (2000) gave a model of cognitive style. Three dimensional model of attribution which comprises of three relatively independent dimensions; stable and unstable, internal and external and controllable or uncontrollable.

For assessing this model, Meins et al. (2012) developed a cognitive style questionnaire short form (CSQ-SF). This instrument was devised in accordance with the Beck's hopelessness theory of depressogenic cognitive style; which assumes that holding negative cognitive style increase the likelihood of developing depression after a negative life event (Alloy et al., 2006). Individuals who repeatedly interpret life events negatively are vulnerable to depression because they believe that they are worthless and that negative consequences are unavoidable (Alloy et al., 2000).

Joiner and Wagner's (1995) demonstrated that negative cognitive style predicts the onset and recurrence of depressive disorders. Both of these models are dependent on the idea that a stressful life event occurs for the individual. Thus, maladaptive cognitive style and stress are posited to work together in contributing to the development of depression. Therefore, a person with a negative cognitive style may never develop depression simply because that person never encountered a particularly stressful event (Slavik & Croake, 2006).

More specifically, Alloy et al. (2006) found that there was a greater likelihood of past depressive disorders and symptoms demonstrated in individuals with negative cognitive styles. A Number of studies have established a link between depression and cognitive vulnerability. Recent longitudinal studies involving a sample of university students indicated the association connecting cognitive functioning with depression (Cole et al., 2008). Furthermore, Abela and Hankin (2008) have postulated that cognitive functioning (Negative cognitive style) may become more interrelated among adults causing higher vulnerability for depressive symptoms. This may suggest that negative cognitive style, results in depression.

Abela, Stolow, Zhang, and McWhinnie (2012) reported the significant positive relationship between negative cognitive styles past experience of depressive episodes in university students. Hamilton et al. (2013) found that negative cognitive style prospectively predicted the experience of dependent interpersonal stress and relational victimization.

Xiaoting, Wei and Nan, (2010) explored the connection between negative cognitive style, and depressed mood among students; suggesting Negative cognitive style to be positively correlated with depressive mood. Each year about one third of the students suffer from depression that negatively affects their abilities (Arnett, 2000; Eiser, 2011). In addition, a study by Craighead, Sheets, Craighead, and Madsen, (2011) found that about 18% of students experience Major Depressive Disorder (MDD) later in their life (Furr, Westefeld, McDonnell, & Jenkins, 2011) about 53% of college student exhibits depressive symptoms at some point of life. Craighead et al. (2011) suggests that these students experiencing a first episode of depression are more vulnerable to have future depressive episodes.

Cognitive styles have an important link with psychological well being of individuals. The hopelessness theory (Abramson, Metalsky, & Hatlage, 1988) attempts to understand faulty cognitive style suggesting that particular negative cognitive styles increase individual's likelihood of developing episodes of depression. Individuals with the negative cognitive style (NCS) are at greater risk for depression (Fresco, Moore, Walt, & Craighead, 2009; Lacoviello, Alloy, Abramson, Whitehouse, & Hogan, 2007; Alloy et al., 2000). Hamilton et al.

(2013) reported that the negative cognitive style and rumination prospectively predicted the experience of dependent depression.

The most recent and convincing evidence of negative cognitive style as a predictor of depression has emerged revealing that individuals classified as high risk were more likely to experience an initial lifetime onset of Major Depression, minor depression, and hopelessness depression than individuals classified as low risk (Alloy et al., 2006), participants with high risk exhibited greater incidence of major depression in their lives to date than those with low risk, while controlling for current depressive symptoms (Alloy et al., 2000).

A plethora of research support suggests that as students related problems are increasing day by day researchers are now putting attention these issues (e.g. Harrar, Affsprung, & Long, 2010; Seim & Spates, 2010). With the recognition that learning environment, gender role may cause depressive symptomology among students, it became an important research question to identify what aspects of cognition, contribute in determining student's mental health. The current study hypothesized that negative cognitive style may lead to depression. Unlike any other factor there is limited research work is presented in cognitive styles, particularly on negative cognitive styles (Robins et al., 1994).

Method

Participants

In total, a sample of 1000 university students with an age range of 18-35 years was selected through convenient sampling technique from university of Islamabad, Huripur, Peshawar, Abbottabad and Hazara. Researcher contacted the students individually and briefed about the objectives of the study. Only those participants were selected who showed their consent to participate in the study. In phase I for screening purpose for Quick inventory of depressive symptomology was administered. Later on The participants were handed over with a questionnaire pack (including informed consent form, Quick Inventory of Depressive Symptomology–Self Report, Center for Epidemiologic Studies Depression Scale, and Cognitive style questionnaire). With response rate of 75%, 500 university students returned the completed questionnaires; among these ten incomplete questionnaires were dropped.

Measures

Quick Inventory of Depressive Symptomology – Self Report

For detecting depression among students sixteen item Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR; Rush et al. 2003) having .95 alpha coefficients with three point response category (0= never, 1= rarely, 2= often and 3= always) was used as screening tool. It comprises of nine subscales (Sleep, Psychomotor disturbance, Appetite/weight disturbance, depressed mood, Decreased interest, decreased energy, Worthlessness/guilt, Concentration/decision making, and suicidal ideation). The total score ranges from 0-27 whereas test score more than 6, depicts depressive symptomology.

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) consist of total 20 items with four sub scales naming somatic complaints, depressed affect, positive affect and interpersonal problems with 4 point Likert scale ranging from where (0) (use for rarely or none of the time (less than one day) to 3 (use for most the time (5-7 days)). The score range is 0-60. The higher scores indicated greater symptoms of depression, measured by frequency of occurrence in past week. CES-D>16 is typically employed as a cut-off for clinical depression.

Cognitive style Questionnaire (CSQ-SF) Cognitive Style of Questionnaire Short Form (CSQ-SF; Meins, et al., 2012) has 72 items having .81 alpha coefficients with scoring on a five - point scale. It is a measure of inferential style with sub-scales of Globality, Stability, and Negative Consequences, Self worth implications. The CSQ SF include four negative and four positive hypothetical situations to which respondents are asked to write down the causes of situation and then to evaluate the cause on a scale from one to seven regarding internal-external, global- specific, and stable-un stable attribution dimensions. There are 41 positive and 32 reverse items.

Procedure

For the purpose of data collection after obtaining the written informed consent by the respective authorities of each university, the researcher contacted the possible participants of study. The criterion of selection of participants of the study was that only those were included who showed their willingness to participate in the study, belonged to age group ranging from 18 to 35 years and screened on Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR; Rush et al. 2003) (scoring higher than 6 on QIDS formed a pool of potential high-risk (HR) participants, whereas those who scored low on QIDS formed a pool of potential low-risk (LR) participants).

The participants were approached individually; they were briefed about the purpose and objectives of the study. They were also assured about the confidentiality of the data and that the information obtained would purely be used for research purpose. In phase II, students who met the phase I criteria for the HR or LR groups were requested to respond on all remaining questionnaires. The participants were contacted after 2-3 days with follow up telephonic reminders speeded up respondents to response on time.

RESULTS

In pilot study the data of 1000 university students (women $n = 569$, men $n = 431$) have been analyzed. The results of these analyses are given below:

Table 1

Alpha Reliability Coefficients of Quick Inventory Depression Symptomology (QIDS), and its Subscales (N=1000)

S. No	Subscales	No. of Items	Alpha Coefficient
I	Sleep disturbance	2	.86
II	Sad mood	2	.79
III	Appetite/weight change	2	.86
IV	Concentration	2	.75
V	Self-outlook	2	.89
VI	Suicidal ideation	2	.77
VII	Involvement	2	.69
VIII	Energy	1	.81
IX	Psychomotor change	1	.84
	QIDS	16	.91

Table 1 indicates that the alpha reliability coefficient for Quick Inventory of Depressive Symptomology self report (QIDS) is .91, while for its subscales alpha value ranges from .75 to .89, which shows that the scale is internally consistent.

Table 2

Alpha Reliability Coefficients of Cognitive style Questionnaire (CSQ-SF) and its Subscales (N=1000),

S. No	Subscales	No. of Items	Alpha Coefficients
I	Negative consequences	08	.74
II	Stability	16	.65
III	Globality	16	.80
IV	Internality	16	.87
V	Self worth	16	.91
	CSQ-SF	72	.85

For the Cognitive style Questionnaire short form (CSQ-SF), the alpha coefficients are satisfactory as shown in the Table 2. The alpha reliability coefficient for the entire scale is .85, while for its subscales alpha values ranges from .65 to .91.

Table 3

Inter-Scale Correlation Coefficients for the Subscales of Cognitive style Questionnaire Short Form(CSQ;SF N=1000)

S. No	Subscales	I	II	III	IV	V
I	Negative consequences	----	.32**	.89**	.68**	.77**
II	Stability	----	----	.11*	.42**	.49**
III	Globality	----	----	----	.78**	.55**
IV	Internality	----	----	----	----	.19*
V	Self worth	----	----	----	----	----

* $p < .05$, ** $p < .01$

The Table 3 portrays that all subscales of CSQ-SF have significant positive correlation with each other, which indicates that CSQ-SF has satisfactory construct validity.

Table 4

Inter-Scale Correlation Coefficients for the Subscale of Center for Epidemiologic Studies Depression Scale (CES-D; N=1000)

S. No	Subscales	I	II	III	IV
I	SC	----	.82**	.80**	.41**
II	DA	----	----	.56**	.49**
III	PA	----	----	---	.17**
IV	IPP	----	----	----	----

Note. SC = Somatic Complaints, DA= Depressed Affect, PA= Positive Affect, IPP= Interpersonal Problems
 * $p < .05$, ** $p < .01$

The results of Table 4 describe that all personality traits of CES-D has significant positive correlation with each other.

Table 5

Correlation Coefficients between the Subscales of CSQ and Subscales of CES-D (N=1000)

Subscale of CSQ-SF	Subscale of CES-D			
	SC	DA	PA	IPP
Negative consequences	.52**	.49**	-.58**	.67**
Stability	.63**	.72**	.73**	.71**
Globality	.73**	.48**	.54**	.59**
Internality	.61**	.31**	.23**	.40**
Self worth	.53**	.39**	-.53**	-.60**

** $p < .01$

Note. CES-D= Center for Epidemiologic Studies Depression Scale, CSQ-SF= Cognitive Style Questionnaire Short form, SC= Somatic Complaints, DA= Depressed Affect, PA= Positive Affect, IPP= Interpersonal Problems.

Table 5 shows that sub scale Cognitive style questionnaire (Negative consequences, Stability, Globality and Internality) have significant positive relationships with all subscales of Center for Epidemiologic Studies Depression Scale (Somatic Complaints, Depressed Affect, Positive Affect, and Interpersonal Problem Scale); while on SELF worth sub scale have significant negative correlation with Somatic complaints and Positive affect subscales of CES-D.

Table 6

Mean, Standard Deviation, and t-values of Men and Women University Students on Subscales of Center for Epidemiologic Studies Depression Scale (CES-D; N=1000)

Subscale CES-D	Men (n = 431)		Women (n = 569)		t	p	CI 95%		Cohen's d
	M	SD	M	SD			LL	UL	
SC	83.49	19.50	86.94	14.20	3.19	.001	-1.82	2.71	0.21
DA	68.4	26.56	72.33	24.6	2.39	.008	-1.87	2.66	0.15
PA	30.99	9.78	28.97	9.42	3.77	.001	-0.48	1.13	0.24
IPP	49.75	7.89	50.6	9.32	1.52	.063	-0.75	0.78	-0.10

df = 998

Note. CI = Confidence Interval, LL= lower Limit, UL= Upper Limit, CES-D = Center for Epidemiologic Studies Depression Scale, SC= Somatic Complaints, DA= Depressed Affect, PA= Positive Affect, IPP = Interpersonal Problems.

Table 6 shows significant gender differences on subscales of Center for Epidemiologic Studies Depression Scale (SC, DA, PA and IPP). Whereas scores on subscale IPP indicates that insignificant difference exist between men and women. Result shows that the mean score of women is higher on Somatic Complaints, Depressed Affect and Interpersonal Problem. Where as men scored higher on positive affect.

Table 7
Mean, Standard Deviation, and t-values of Men and Women University Students on Subscales Cognitive style Questionnaire (CSQ-SFQ; N=1000)

Subscales	Men (n = 431)		Women (n = 569)		t	p	CI 95%		Cohen's d
	M	SD	M	SD			LL	UL	
Negative consequences	55.05	11.89	56.32	9.30	1.83	.033	-1.24	0.64	-0.12
Stability	66.85	2.38	65.94	1.60	13.06	.001	.77	1.04	0.45
Globality	52.02	7.01	53.1	10.72	1.87	.031	-0.77	0.81	-0.11
Internality	39.59	18.5	46.2	21.6	5.09	.000	-1.71	1.86	0.33
Self worth	24.8	15.21	22.03	11.28	3.31	.000	-1.27	1.05	0.20

df = 998

Note. CI = Confidence Interval, LL= lower Limit, UL= Upper Limit

Table 7 shows significant gender differences on subscale of Cognitive style Questionnaire (Negative consequences, Stability, Internality and Self worth). While on Globality and Negative Consequences non-significant difference exists. It indicates that men have relatively higher on stability and significantly higher scores on Self Worth, and while women have high scores on Internality based cognitive styles.

DISCUSSION

The current study was based on two objectives; 1) to explore the relationships between negative cognitive styles and depression, 2) to find the gender based differences on depression and negative cognitive styles. The alpha coefficient value for QDSI was .91, while for its subscales alpha value ranges from .75 to .89, (see Table 1); and for CES-D it was .85, while for its subscales alpha values ranges from .65 to .91 (see Table 2). The values of inter-scale correlation coefficients for CSQ-SF and CES-D indicated that all instruments have satisfactory level of construct validity (see Table 3 & 4).

The findings of Table 5 showed that Center for Epidemiologic Studies Depression Scale has a significant positive association with negative cognitive styles which support the first hypothesis of the current study. These findings are supported by previous studies (Alloy et al., 2006; Cole et al., 2008) which found a positive relationship between negative cognitive styles and depression. The results of Table 5 also support the second hypothesis of the current study by exploring that depressed affect shows significant positive correlation with negative consequences based cognitive style. These findings are supported by some previous studies (e.g., Kashdan & Roberts, 2007; Segerstrom, Tsao, Alden, & Craske, 2000; Segerstrom, Roach, et al., 2010) who explored that the negative consequences based repetitive thoughts appears to be more strongly associated with depressed mood. These results support the seventh hypothesis of the present study. These findings are supported by a previous study (Alloy et al., 2000), university students with past experience of depressive episodes exhibited negative cognitive styles (Abela, Stolow, Zhang & McWhinnie, 2012). Similarly another previous study also reported the relationship between negative beliefs and past record of major depressive episodes (Abela, Auerbach, Sarin & Lakdawalla, 2009). The third hypothesis of the present study also supported by analysis and explored the negative association of negative affect with self worth based cognitive style (see Table 5). These findings are partially supported by the results of some previous studies (Hofmann et al., 2012; Borton, Markowitz, & Dieterich, 2005), which stated that participants with lower state self esteem censored their negative thoughts more and were more depressed .

The analysis of the current study explored significant gender differences on all subscales of Center for Epidemiologic Studies Depression Scale (Somatic Complaints, Depressed Affect, Positive Affect, Interpersonal Problems). These results indicate that women show high scores on Somatic Complaints, Depressed Affect and Interpersonal Problem while men show high scores on positive affect which support the fourth hypothesis of the study (see Table 6). These results are in line with the findings of some previous studies which found that female shows high scores on somatic symptoms (Golding & Aneshensel, 1991; Mumford, Tareen & Bhatt, 1991) on depressed affect (Australian bureau of statistics, [ABS] 2007; Waghachavare, Dhumale, Kadam, & Gore, 2013),

on interpersonal problems while men show a high level of positive affect (Asgari & Almasi, 2013 ;Aparicio, Rosset, Diaz & Ucles, 2009).

The analysis of the current study shows significant gender differences on all cognitive style Questionnaire (Negative consequences, Stability, Globality Internality and Self worth). These findings of the study indicated that women have higher scores on Internality (Pearson et al. 2015), while men have high scores on self worth (see Table 7). These findings are consistent with the results of some previous studies which reported that males perform better in self –worth (Zeinwand, 2006) It has been reported that there is a significant difference with reference to self worth between male and women (SarAbadaniTafreshi, 2006; Malik & Sadi, 2013) The findings of the present research are also consistent with the findings of previous researches regarding cognitive style, girls attributed positive events to internal, stable, and global causes and negative events to external, unstable, and specific causes. Khodayarifard (1996) boys, on the other hand, tended to attribute negative events to internal, stable, and global causes and positive events to external, unstable, and specific causes. Similarly, another study reported that females experience more depressive symptoms and a more maladaptive cognitive style than males (Chen & Hongjing, 2012).

CONCLUSION

It is concluded that significant positive relationships emerged between negative cognitive styles and depression. The present study also found that women show higher scores on Somatic Complaints, Depressed Affect and Interpersonal Problem and Internality based cognitive styles while men show high scores on positive affect stability and significantly higher scores on self worth.

Limitations and Suggestions

The present research was confronted with some limitations. The present study was conducted only on university students ignore children and mature people in this study; only studied gender ignore some other important demographic variables (e.g., age, academic discipline, education differences and social class etc.). The present study only explores the relationship between depression and negative cognitive style and unable to give information about the cause and effect relationship.

Implications of the Current Study

The present is helpful in understanding the negative cognitive styles of individuals with respect to gender based differences and depressive symptomology. These findings can help educationists to know about the variables that negatively affects the mental health of the students. Present study will help in taking measure for improving psychological health of university students. The findings of the current study also have important implications in the fields of education, health and management. Specifically within the culture of Pakistan very limited studies were conducted in this field.

References

- Abedini, S., Davachi, A., Sohbaee, F., Mahmoodi, M., & Safa, O. (2007). Prevalence of depression in nursing students in Hormozgan University of Medical Sciences,” *Hormozgan Medical Journal*, 11(42), 139–145.
- Abela, J. R. Z., Auerbach, R. P., Sarin, S., & Lakdawalla, Z. (2009). Core beliefs and history of major depressive episodes in currently non-depressed university students. *Cognitive Therapy and Research*, 33, 50–58
- Abela, J. R. Z., & Hankin, B. L. (2008). Cognitive vulnerability to depression in children and adolescents: a developmental psychopathology perspective, in *Handbook of Depression in Children and Adolescents*. Edited by Abela, J. R. Z., & Hankin, B. L. New York, Guilford,
- Abela, J. R. Z., Stolow, D. Zhang M., & Mc-Whinnie C. M. (2012). Negative Cognitive Style and Past History of Major Depressive Episodes in University Students. *Cognitive Therapy and Research*, 36(3), 219-227.
- Alloy, L. B., Abramson, L. Y., Metalsky, G. I., & Hartlage, S. (1988). The hopelessness theory of depression: attributional aspects. *British Journal of Clinical Psychology*, 27, 5-21.
- Al-Faris, E.A., Irfan, F., Van derVleuten, C.P.M., Naeem, N., Alsalem A., Alamiri N., ... Alofaisan ,Y.(2012).The prevalence and correlates of depressive symptoms from an Arabian setting: a wake up calls. *Med Teach*, 34,32–36.
- Alloy, L. B., Abramson, L. Y., Hogan, M. E., Whitehouse, W. G., Rose, D. T., & Robinson, M. S. (2000). The Temple-Wisconsin cognitive vulnerability to depression project: Lifetime history of axis I psychopathology in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology*, 109, 403–418.
- Alloy, L. B., Abramson, L. Y., Safford, S. M., & Gibb, B. E. (2006). *The Cognitive Vulnerability to Depression (CVD) Project: Current Findings and Future Directions*. In Alloy, L. B., & Riskind, J. H. (Eds.), *Cognitive vulnerability to emotional disorders*. (pp. 33-61). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978).Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87, 49–74. doi:10.1037=0021-843X.87.1.49

- Aparicio, M.D.C., Rosset, M.C., Diaz, M.D., & Ucles, I.S. (2009). Gender differences in affect, emotional maladjustment and adaptive resources in infertile couples: a positive approach. *Annals of Clinical Health Psychology*, 5, 39-46.
- Arnett, J.J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480. doi: 10.1037//0003-066X.55.5.469.
- Aselton, P. (2012). Sources of stress and coping in American college students who have been diagnosed with depression. *Journal of Child and Adolescent Psychiatric Nursing*, 25(3), 119-123. doi: 10.1111/j.1744-6171.2012.00341.x.
- Asgari, A., & Almasi, S. (2013). The Relationship Between Core Self-Evaluations with Life Satisfaction and Positive and Negative Affect among Students. *Middle-East Journal of Scientific Research*, 16 (11): 1581-1588.
- Australian bureau of statistics. (2007) national survey of mental health and wellbeing: Summary of results. (document 4326.0).
- Borton, J. L. S., Markowitz, L.J., & Dieterich, J. (2005). Effects of Suppressing Negative Self-Referent Thoughts on Mood and Self-Esteem. *Journal of Social and Clinical Psychology*, 24 (2), 172-190. doi: 10.1521/jscp.24.2.172.62269
- Buchanan, J. L. (2012). Prevention of depression in the college student population: a review of the literature. *Archives of Psychiatric Nursing*, 26 (1), 21-42, 2012.
- Castaldelli-Maia, J. M., Martins, S. S., & Bhugra D. Machado, M. P., Andrede, A.G.D., Alexanderio-silva, C., Baldassin, S.P., Alvis, T.C. D.S. (2012). Does ragging play a role in medical student depression—cause or effect. *Journal of Affective Disorders*, 139(3), 291-297, 2012
- Chen, H. Q. Z., & Hongjing, T. J. H. Z. (2012). Students attribution methods and flexibility and mental health Relation of attribution styles and attribution flexibility to mental health in college students. *Chines Mental Health Journal*, 26(4), 310-314
- Christensson, A., Vaez, M., Dickman, P., & Runeson, B. (2011). Self-reported depression in first-year nursing students in relation to socio-demographic and educational factors: a nationwide cross-sectional study in Sweden. *Soc Psychiatric Epidemiology*, 46(4), 299-310.
- Cole, D.A., Ciesla, J.A., Dallaire, D.H., Jacquez, F.M., Pineda, A.Q., LaGrange, B., . . . Felton, J.W. (2008). Emergence of Attributional Style and Its Relation to Depressive Symptoms. *Journal of Abnormal Psychology*, 117(1), 16-31.
- Craighead, W.E., Sheets, E.S., Craighead, L.W., & Madsen, J.W. (2011). Recurrence of MDD: A prospective study of personality pathology and cognitive distortions. *Personality Disorders: Theory, Research, and Treatment*, 2(2), 83-97. doi: 10.1037/a0020456.
- Dolbier, C. L. & Rush, T. E. (2012). Efficacy of abbreviated progressive muscle relaxation in a high-stress college student sample. *International Journal of Stress Management*, 19(1), 48-68.
- Eiser, A. (2011). The crisis on campus. *American Psychological Association*, 42, 18-19.
- Eller, T., Aluoja, A., Vasar, V., & Veldi, M. (2006). Symptoms of anxiety and depression in Estonian medical students with sleep problems. *Depression and Anxiety*, 23(4), 250-256.
- Field, T., Diego, M., Pelaez, M., Deeds, O., & Delgado, J. (2012). Depression and related problems in university students. *College Student Journal*, 193-202.
- Fresco, D. M., Moore, M. T., Walk, L., & Craighead, L. W. (2009). Self-administered optimism training: Mechanisms of change in a minimally supervised psychoeducational intervention. *Journal of Cognitive Psychotherapy: An International Quarterly*, 23, 350-367. doi:10.1891/0889-8391.23.4.350
- Furr, R. S., Westefeld, S. J., McConnell, N. G., & Jenkins, M. J. (2001). Suicide and depression among college students: A decade later. *Professional Psychology: Research and Practice*, 32, 97-100.
- Golding, J.M., & Aneshensel, C.S. (1991). *J Clin Psychology*, 47:61-74 .
- Guney, S. Khalafat, T., & Boysan, M. (2010). Dimensions of mental health: Life satisfaction, anxiety and depression: A preventive mental health study in Ankara University students population. *Procedia Social and Behavioral Sciences*, 2, 1210-1213.
- Hamilton, J. L., Stange, J. P., Shapero, B. G., Connolly, S.L., Abramson, L.Y., & Alloy, L.B. (2013). Cognitive vulnerabilities as predictors of stress generation in early adolescence: pathway to depressive symptoms. *Journal of Abnormal Child Psychology*, 41(7), 1027-39, doi: 10.1007/s10802-013-9742-z.
- Harrar, W. R., Affsprung, E.H., & Long, J.C. (2010). Assessing Campus Counseling Needs. *Journal of College Student Psychotherapy*, 24, 233-240.
- Hofmann, S. G., Asnaani, A., Vonk, I. J. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive Therapy Research*, 36, 427-440.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, 46, 3-10.

- Ibrahim, A. K., Kelly, S. J., & Glazebrook, C. (2012). Reliability of a shortened version of the Zagazig Depression Scale and prevalence of depression in an Egyptian university student sample, *Comprehensive Psychiatry*, 53(5), 638–647.
- Ibrahim, A. K., Shona, J. K., Challenor, E. C., Glazebrook, C. (2010). Establishing the reliability and validity of the Zagazig Depression Scale in a UK student population: an online pilot study Ibrahim et al. *BMC Psychiatry*, 10, 107 <http://www.biomedcentral.com/1471-244X/10/107>
- Borton, J. L. S., Markowitz, L. J., Dieterich, J. (2005). Effects of Suppressing Negative Self-Referent Thoughts on Mood and Self-Esteem. *Journal of Social and Clinical Psychology*: Vol. 24, No. 2, pp. 172-190.
- Joiner, T. E., & Wagner, K. D. (1995). Attributional style and depression in children and adolescents: a meta-analytic review. *Clinical Psychology Review*, 15, 777-798.
- Kashdan, T. B., & Roberts, J. E. (2007). Social anxiety, depressive symptoms, and post-event rumination: Affective consequences and social contextual influences. *Journal of Anxiety Disorders*, 21, 284–301
- Khodayarifard, M. (1996). Students and their parent's attributional style, trait anxiety, and socio-demographic factors as predictors of teachers' perceptions of academic performance in late childhood
- Krucik, G. (2012, March 29). *Depression and college students*. Retrieved from <http://www.healthline.com/health/depression/college-students>
- Kumar, G.S., Jain, A., & Hegde, S. (2012). Prevalence of depression and its associated factors using Beck Depression Inventory among students of a medical college in Karnataka. *Indian journal of Psychiatry*, 54 (3) 223-226.
- Lacoviello, B. M., Alloy, L. B., Abramson, L. Y., Whitehouse, W. G., & Hogan, M. E. (2007). The role of cluster B and C personality disturbance in the course of depression: a prospective study. *J Pers Disord*, 21: 371–383.
- Malik, S., & Sadia, A. (2013). Gender differences in self-esteem and happiness among university students International *Journal of Development and Sustainability*, 2(1) 445-454
- Mahmoud, J. S. R., Staten, R. T., Hall, L. A., & Lennie, T. A. (2012). The relationship among young adult college students' depression, anxiety, stress, demographics, life satisfaction, and coping styles, *Issues in Mental Health Nursing*, 33(3), 149–156.
- Meins, E., McCarthy-Jones, S., Fernyhough, C., Lewis, G., Bentall, R. P., & Alloy, L.B. (2012). Assessing negative cognitive style: Development and validation of a Short-Form version of the Cognitive Style Questionnaire. *Personality and individual differences*, 52(5-2): 581–585. doi: 10.1016/j.paid.2011.11.026
- Mumford, D.B., Tareen, M.R., & Bhatt, M.A.Z. (1991). An investigation of "functional" somatic symptoms among patients attending hospital medical clinics in Pakistan: II. Using somatic symptoms to identify patients with psychiatric disorders. *Psychosom Res*, 35:257-264.
- Nordin, N. M., Talib, M. A., & Yaacob, S.N. (2009). Personality, Loneliness and Mental Health among Undergraduates at Malaysian Universities. *European Journal of Scientific Research*, 36(2), 285-298.
- Pearson, R.M., Heron, J., Button, K., Bentall, R.P., Fernyhough, C., Mahedy, L., Bowes, L., Lewis, G. (2015). Cognitive styles and future depressed mood in early adulthood: The importance of global attributions. doi:10.1016/j.jad.2014.08.057
- Radloff, L.S. (1977). The CED-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401.
- Reavely, N.J., McCann T.V., & Jorm A.F. (2012). Mental Health literacy in higher education students. *Early intervention in psychiatry*, 6, 54-52.
- Reyes-Rodriguez, M. L., Rivera-Medina, C., Camara-Fuentes, L., Suarez-Torres, A., & Bernal, G. (2012). Depression symptoms and stressful life events among college students in Puerto Rico. *Journal of Affective Disorder*. doi: 10.1016/j.jad.2012.08.010
- Reynolds, E.K., MacPherson, L., Tull, M.T., Baruch, D.E., & Lejuez, C.W. (2011). Integration of the brief behavioral activation treatment for depression (BATD) into a college orientation program: Depression and alcohol outcomes. *Journal of Counseling Psychology*, 58 (4), 555-564. doi: 10.1037/a0024634
- Robinson, C.J., Ladd, J., Welowitz, J., Blaney, P.H., & Diaz, R. (1994). The personal style inventory: Preliminary validation studies of new measures of sociotropy and autonomy. *Journal of psychopathology and behavioral assessment*, 16, 277-300.
- Rush, A.J., Trivedi, M.H., Ibrahim, H.M., Carmody, T.J., Arnow, B., Klein, D.N., Markowitz, ...Keller M.B. (2003). The 16-item quick Inventory of depressive symptomatology (QIDS) clinician rating (QIDS-c) and self-Report (QIDS-SR): a psychometric evaluation in patients with chronic major depression. *Biological psychiatry*, 54:573-583.
- SarAbadaniTafreshi, L. (2006). The relationship between academic achievement, Self-Esteem and Gender with Anxiety of Computer among Postgraduate of Students in University of Tabeiyat Moallem Tehran. University of Tabeiyat Moalem, Theran, Iran

- Segerstrom, S.C., Roach, A.R., Evans, D.R., Schipper, L.J., & Darville, A.K. (2010). The structure and health correlates of trait repetitive thought in older adults. *Psychology and Aging, 25*, 505-515
- Segerstrom, S.C., Tsao, J.C.I., Alden, L.E., & Craske, M.G. (2000). Worry and rumination: Repetitive thought as a concomitant and predictor of negative mood. *Cognitive Therapy and Research, 24*, 671-688.
- Seim, R.W., & Spates, C. R. (2010). The prevalence and comorbidity of specific phobias in college students and their interest in receiving treatment. *Journal of College Student Psychotherapy, 24*, 49-58.
- Slavik, S. & Croake, J. (2006). The individual psychology conception of depression as a stress-diathesis model. *The Journal of Individual Psychology, 62*(4), 417-428.
- Sidana, M., Kishore, J., Gulati, D., Jiloha, R., & Arand, T. (2012). Prevalence of depression in students of a medical college in New Delhi: a cross-sectional study. *Australian Medical Journal, 5*(5):247–250.
- Stewart-Brown, S., Evans, J., Patterson, J., Petersen, S., & Doll, H. (2000). The health of students in institutes of higher education: an important and neglected public health problem? *J Public Health Med, 22*(4): 492–499.
- Thapar, A., Collishaw, S., Pine, D.S., & Taper, A.K. (2012). Depression in adolescence. *Lancet, 379* (9820), 1056–1067.
- Tomoda, A., Mori, K., Kimura, M., Takahashi, T., & Kitamura, T. (2000). One-year prevalence and incidence of depression among first-year university students in Japan: a preliminary study. *Psychiatry Clin Neurosci, 54*(5): 583–588.
- Tosevski, D.L., Milovancevic, M. P., & Gajic, S.D. (2010). Personality and psychopathology of university students. *Curr Opin Psychiatry, 23*, 48–52.
- Waghachavare, V.B., Dhumale, G.B., Kadam, Y.R., & Gore, A.D. (2013). A Study of Stress among Students of Professional Colleges from an Urban area in India. *Sultan Qaboos University Med J, 13*(3), 429-460
- Weiner, B. (2000). *Human Motivation : Metaphors, Theories and Research*. Sage, Newbury Park, CA.
- World Health Organization (2008). World Health Organization. Global Burden of Disease 2004 update. Geneva.
- Xiaoting, S., Wei, H., & Nan, Z. (2010). Study on Relationships among Negative Cognitive Style, Remination and Depressive Mood. *China Journal of Health Psychology, 06*.
- Yakunina, E. S., Weigold, I. K., Weigold, A., Hercegovac, S., & Elsayed, N. (2013). International students' personal and multicultural strengths: Reducing acculturative stress and promoting adjustment. *Journal of Counseling & Development, 91*, 216-223.
- Zeinvand, A. (2006). Relationships between self esteem, social support and student's educational progression in a high school in Dareh Shar city in Iran. University of Tabiat Moallem, Theran, Iran.