

Published by International Association of Educators

ijpe

International Journal of Progressive Education

ISSN: 1554-5210



ijpe.penpublishing.net

 **PENACADEMIC**
PUBLISHING

IJPE

**International Journal of
Progressive Education**

Volume 14 Number 5 October 2018

DOI: 10.29329/ijpe.2018.157



An International Journal Published by International Association of Educators (INASED)

International Journal of Progressive Education

Frequency: Four times a year.

ISSN: 1554-5210

Owner: International Association of Educators

Publisher: Pen Academic Publishing

Indexing/Abstracting:

1. OCLC-WorldCat: <http://www.oclc.org/worldcat/default.htm>
2. Journal Finder: <http://journalfinder.uncg.edu/demo/>
3. Directory of Open Access Journals: (DOAJ): <http://www.doaj.org/home>
4. EBSCO Publication: <http://www.ebsco.com>
5. AERA e-journals: <http://aera-cr.asu.edu/ejournals/>
6. NewJour (A Listing of New Electronic Journals)
7. Cabell's Directory of Publishing: <http://www.cabells.com>
8. International Society for Exploring Teaching and Learning: <http://www.isetl.org>
9. Australian Government Education Portal: <http://www.education.gov.au/goved/go>
10. Education Network Australia: <http://www.edna.edu.au/edna/go>
11. ERIC: <http://www.eric.ed.gov>

2018 Subscription Rates

- \$35 Association Member USA (Canada: \$40; Rest of World: \$50)
- \$45 Individual USA (Canada: \$50; Rest of World: \$55)
- \$35 Student USA (Canada: \$40; Rest of World: \$50)
- \$140 Library/Institution USA (Canada: \$160; Rest of World: \$160)

Single Issues and Back Issues: \$25 USA (Canada: \$35; Rest of World: \$35)

If you wish to subscribe for the printed edition of IJPE, please send the subscription fee as check or money order (payable to International Association of Educators) to the following address:

International Association of Educators

c/o: Dr. Alex Jean-Charles
901 S National Ave Hill Hall 205D Springfield, MO 65897

Print copies of past issues are also available for purchased by contacting the Customer Service department ijpe-editor@penpublishing.net

International Journal of Progressive Education

Editor:

Hakan Dedeoglu

Hacettepe University, Turkey

Managing Editor:

Mustafa Yunus Eryaman

University of Hamburg, Germany

Associate Editor:

Chen Xinren

Nanjing University, China

Assistant Managing Editors:

Eryca Rochelle Neville

University of Missouri-Columbia, USA

Alex Jean-Charles

SUNY College at Oneonta, USA

Mustafa Koc

Isparta Suleyman Demirel University, Turkey

He Ning

Nanjing University, China

Editorial Board:

Bertram Chip Bruce

University of Illinois at Urbana-Champaign, USA

Peggy Placier

University of Missouri-Columbia, USA

Yang Changyong

Southwest China Normal University China

Sharon Tettegah

University of Illinois at Urbana-Champaign, USA

Fernando Galindo

Universidad Mayor de San Simón, Bolivia

Susan Matoba Adler

University of Hawaii West Oahu, USA

Carol Gilles

University of Missouri-Columbia, USA

Julie Matthews

University of the Sunshine Coast, Australia

Nezahat Guclu

Gazi University, Turkey

Cushla Kapitzke

University of Queensland, Australia

Catalina Ulrich

Universitatea din Bucuresti, Romania

Rauf Yildiz

Canakkale Onsekiz Mart University, Turkey

Juny Montoya

Universidad de Los Andes, Bogotá, Colombia

Winston Jumba Akala

Catholic University of Eastern Africa, Kenya

Kwok Keung HO

Lingnan University, Hong Kong

Sara Salloum

University of Illinois at Urbana-Champaign, USA

Pragasit Sitthitikul

Walailak University, Thailand

Serkan Toy

Iowa State University, USA

Catherine D Hunter

University of Illinois at Urbana-Champaign, USA

Bongani Bantwini

University of Illinois at Urbana-Champaign, USA

Mehmet Acikalin

Istanbul University, Turkey

Luisa Rosu

University of Illinois at Urbana-Champaign, USA

Sheila L. Macrine

Montclair State University, USA

Tuncay Saritas

Iowa State University, USA

Martina Riedler

Canakkale Onsekiz Mart University, Turkey

Ihsan Seyit Ertem

Gazi University, Turkey

Youngyung Min

University of Illinois at Urbana-Champaign, USA

Raul Alberto Mora Velez

University of Pontificia Bolivariana, Columbia

Van-Anthoney Hal

University of Illinois at Urbana-Champaign, USA

Chan Raymond M.C.
Pauline Sameshima
Erdal Toprakci
Hye-Young Park
Ali Ekber Sahin
Omer Kocer
Fatih Kana
John L. Pecore
Salim Razi
Yasser A. Al-Hilawani
Levent Cetinkaya
Serkan Yılmaz
John L. Pecore
David Ansong
Arturo Rodriguez
Michael Jessee Adkins
Thomas G Ryan
Mustapha Alhassan

Hong Kong Baptist University
Lakehead University, Canada
Ege University, Turkey
University of Illinois at Urbana-Champaign, USA
Hacettepe University, Turkey
Canakkale Onsekiz Mart University, Turkey
Canakkale Onsekiz Mart University, Turkey
University of West Florida, USA
Canakkale Onsekiz Mart University, Turkey
Yarmouk University, Irbid, Jordan
Turkish Educational Research Association
Hacettepe University, Turkey
University of West Florida
University of North Carolina at Chapel Hill
Boise State University, USA
Marshall University, USA
Nipissing University, Canada
Clark Atlanta University, USA

Advisory Board

Lu Youquan
Ma Hemin
Chrispen Matsika
Jeylan Woliye Hussein
Zorhasni Zainal Abiddin
Sevgi Kingir
Yalcin Yalaki
Serkan Yilmaz
Pinar Ozdemir
Nergiz Kardas
Hüseyin Kotaman
Ahmet Saylık
Hakan Sarıçam
Abuzer Akgün
Yalçın Yalaki
Munise Seçkin Kapucu
Şükran Uçuş
Engin Karadağ
M Bahattin Acat
Zeynep Sonay Polat Ay
Feyzullah Şahin
Özlem Çakır
Gökhan Güneş
Ann Marie Smith
Selim Soner Sütçü
Amrita Dhawan

East China Normal University
East China Normal University
Georgia College & State University
Almeya University, Ethiopia
University Pudra Malasia
Hacettepe University
Hacettepe University
Hacettepe University
Hacettepe University
Hacettepe University
Harran University
Ankara University
Dumlupınar University
Adıyaman University
Hacettepe University
Osmangazi University
Ahi Evran University
Eskisehir Osmangazi University
Eskisehir Osmangazi University
Hacettepe University
Düzce University
Ankara University
Hakkari University
University of Texas of the Permian Basin
Başkent University
City University of New York

Editorial Assistants

Levent Cetinkaya
Tayfun Tasbilek
Ulas Yabanova

Turkish Educational Research Association
Canakkale Onsekiz Mart University, Turkey
Dumlupınar University, Turkey

The views expressed in this publication are not necessarily those of the Editor or the Editorial Review Board, nor the officers of the International Association of Educators (INASED). Copyright, 2018, International Association of Educators (INASED). ISSN 1554-5210

TABLE OF CONTENTS

Volume 14, Number 5
October 2018

Articles

- 1 First Grade Students' Perceptions of Their Preschool and Elementary School Experience**
Author: Nefise Semra Erkan, İlknur Tarman, Zeynep Seda Şanlı, Yekta Koşan & Işıl Ömrüüzun
- 14 Grammar Attitude Scale: A Study of Validity and Reliability**
Author: Nuri Karasakaloğlu
- 22 The Relationship of Physical Activity Level, Leisure Motivation and Quality of Life in Candidate Teachers**
Author: Huseyin Gumus & Ozkan Işık
- 33 Educator Leaders: Inspiring Learners to Transform Society by Becoming Architects of their Own Learning**
Authors: Jenny E. Grigoropoulos & Stefanos Gialamas
- 39 A Case Study of Thai Secondary School Teachers' English Intercultural Teaching and Perception**
Author: Kewalin Jantadej & Sasima Charubusp
- 57 Preschool Teachers' Views on Science Education, the Methods They Use, Science Activities, and the Problems They Face**
Author: Yakup Doğan & Ahmet Simsar
- 77 School Principals' and Teachers' Views on Teacher Performance Evaluation**
Author: İlknur Maya & Yeliz Kaçar
- 89 The Stakeholder Perceptions of the Factors Affecting School Economy**
Author: Neşe Börü
- 103 The Investigation of Predictors of Cyberbullying and Cyber Victimization in Adolescents**
Authors: Bünyamin Ateş, Alican Kaya & Erhan Tunç
- 119 The Correlation between Speech Self-Efficacy and Communication Skills of Pre-Service Turkish Teachers**
Author: İlhan Erdem

130 Instructors' Views on the Assessment and Evaluation of the Speaking Skill in Turkish as a Foreign Language (TFL) Classes

Author: Ahmet Akkaya, Mehmet Yalçın Yılmaz & Gülnur Aydın

144 The Effects Of Q Matrix Misspecification On Item And Model Fit

Author: Seçil Ömür Sünbül & Semih Aşiret

First Grade Students' Perceptions of Their Preschool and Elementary School Experience*

Nefise Semra Erkanⁱ
Hacettepe University

İlknur Tarmanⁱⁱ
Özel Mba Okulları

Zeynep Seda Şanlıⁱⁱⁱ
Zafer Koleji

Yekta Koşan
Hacettepe University^{iv}

Işıl Ömrüuzun^v
Zümrüt Anaokulu

Abstract

The purpose of this study was to reveal first grade students' perceptions of their preschool and elementary school experience. Phenomenological research design was used in this qualitative study. Participants were twenty first grade students who had attended preschool. The data were obtained by using semi-structured interviews and pictures drawn by children, and analyzed by qualitative data analysis. The results showed that preschool, which offers an environment of play based activities, was perceived as a more enjoyable and desired place by children. The children also expressed that their elementary school experiences were based on rules, academic knowledge and skills in contrast to their preschool experience, and that elementary school entailed more duties and responsibilities.

Keywords: Preschool education, School perception, School readiness, Elementary school.

DOI: 10.29329/ijpe.2018.157.1

* This study was presented as oral presentation at 12. Congress of Qualitative Inquiry (ICQI), University of Illinois-Urbana-Champaign, USA, May 18-21, 2016

ⁱ **Nefise Semra Erkan**, Prof. Dr., Hacettepe University, Department of Elementary Education, Division of Preschool Education, Ankara/Turkey.

ⁱⁱ **İlknur Tarman**, Dr., Özel MBA Okulları, Turkey.

Correspondence: tarmanilknur@gmail.com

ⁱⁱⁱ **Zeynep Seda Şanlı**, Zafer Koleji, Preschool Education, Turkey.

^{iv} **Yekta Koşan**, Res. Assist., Hacettepe University, Department of Elementary Education, Division of Preschool Education, Ankara/Turkey.

^v **Işıl Ömrüuzun**, Zümrüt Anaokulu, Preschool Education, Ankara/Turkey.

Introduction

The transition from preschool to elementary school is a critical moment at the onset of children's formal education. The health and quality of this transition is vital for future school experiences. Therefore, preschool education is crucial not only for meeting children's cognitive, social, emotional, motor, linguistic and self-care needs, but also for a comfortable and smooth transition to elementary school.

The process of transition to elementary school and the factors affecting this process have been investigated by many researchers (White et al., 1996; Louizou, 2011; Aksoy and Baran, 2010; Spilt et al., 2010; Harel-Fisch et al., 2011; White, 2013; Yeboah, 2014; Phelps et al., 2014; Chan, 2014; Akman, Kent Kükürtcü, Tarman and Şanlı, 2017). Many factors influence the transition to elementary school and the process of adapting to a new culture with its own rules and needs. These factors include:

- The contents and quality of preschool education,
- The approaches used in school readiness activities and their developmental appropriateness,
- The quality of children's social environment and the experiences their families offer them,
- Motivation and conditioning for the transition to elementary school.

A child who undergoes a healthy transition to elementary school is expected to be happy and motivated in their future school life.

Children's perceptions of the school experience directly affect their school lives. Their perceptions are based on the learning environments offered to them, their motivation level, developmental competence level, teacher attitudes, peer attitudes, family attitudes, physical qualities of the school and the performance expected from them at school.

Critical factors which enable children to start elementary school with a high readiness level and a positive school perception include the content and quality of their preschool education. While children receive education which meets their developmental needs at preschool, they also prepare for the next stage of their education, elementary school, and the beginning of their formal education process.

The most important responsibility in preschool education and the transition to elementary school naturally rests with preschool teachers. With their one-to-one relationship with children and their role of guide for learning, teachers are the most important element in the learning experience. The teacher-child relationship, which depends on teacher qualities, attitudes and approaches, helps shape children's school perceptions. Teachers leave indelible marks on children's learning and school perceptions with their subject area knowledge, how they reflect their personal qualities and skills in the classroom environment, their professional perspective and the classroom management approaches they use. A close and healthy relationship between children and the teacher improves school performance, class participation, feelings of competence and school perceptions (White, 2013). The school principal is another figure with which children communicate verbally and non-verbally throughout their school lives. Yalçın and Erginer (2014) investigated elementary school children's perceptions of the school principal and concluded that a positive, understanding and problem-solving attitude on the principal's part affects children's school perceptions and thoughts.

Children's perceived family attitudes and the social, emotional and physical facilities provided by the family are also important factors for school perceptions. Erkan and Kırca (2010) and Erkan (2011) emphasize the importance of the facilities provided by the family and the social environment

on children's elementary school readiness levels. A positive family attitude towards school life, family support, the motivation level families provide, and a cooperative approach on the family's part are all perceived positively by the child and lead to feelings of trust and belonging in the school. In a study of Vietnamese children, Phelps et al. (2014) found that children whose families were interested in what they learned at school were happy children.

Vygotsky emphasized the importance of the socio-cultural environment and its elements in the development of a child as an individual. Children's social environment comprises their family, teachers, peers, people in their immediate environment and their community. Depending on their roles, these people create different perceptions and experiences in a child's life. The verbal and nonverbal messages received from these people, their behaviors and approaches, the surrounding cultural context and the social environment enable children to form perceptions of themselves and their society. This study is based on Vygotsky's socio-cultural theory, and evaluates the effects of the people and elements in children's social and physical environment on the formation of their school perceptions.

According to Vygotsky's theory, the child develops his perceptions through social interaction and by seeing himself as others see him (Sarı and Cenkseven, 2008; Moore, 2005; cited in Şanlı, 2012). While negative feedback, failure and judgmental reactions trigger higher levels of anxiety, children who feel valued and successful and are positively motivated have lower anxiety levels. Children who have access to a quality preschool education, find themselves in positive social and physical environments, feel understood and fairly treated, receive developmental support, and have adapted to their social environments also have a positive transition to school life.

The school climate involves elements such as the instructional environment, school rules and a fair approach based on love and trust, which in turn shape children's school perceptions. The instructional environment is a dynamic structure consisting of sub-elements such as school personnel, physical space, equipment, learning tools, and special arrangements. The physical environment is one of the dimensions of this structure and it includes the characteristics of the space assigned for educational activities (Arslan Karaküçük, 2008). Mahdjoubi and Akplotsyi (2012) showed in their study that children's affective perceptions and learning styles were shaped by the school's physical environment. The school's architectural qualities, lighting, colors, instructional materials, and the physical learning environment all affected children.

The transition from preschool to basic education is a milestone in a child's life. Many children face difficulties while adapting to this new situation. A great majority find it hard to cope with the requirements of basic education. This leads to negative school experiences and problems. Such negative experiences affect children's long term development, learning and stages of education. Many factors affect the transition from preschool to basic education, such as the new learning environment, school- and home-based factors, children's language and culture, and their personal qualities. A successful transition may be made possible by supporting and developing these factors. Many studies have been conducted in Turkey and elsewhere to investigate the transition to basic education from different perspectives (such as teacher beliefs and attitudes, family involvement and perspectives, programs and strategies for positive school readiness and smooth transition) (White et al., 1996; Louizou, 2011; Aksoy and Baran, 2010; Spilt et al., 2010; Harel-Fisch et al., 2011; White, 2013; Yeboah, 2014; Phelps et al., 2014; Chan, 2014; Akman, Kent Kükürtcü, Tarman and Şanlı, 2017). Even though children are the real actors of the transition to basic education, studies of their perspective are small in number and have often been conducted outside Turkey (Aksoy and Baran, 2010; Yeboah, 2014; Phelps et al., 2014; Chan, 2014). Children are directly affected by this crucial process, and it is important for them to personally voice their experiences, expectations, needs, wants and emotions. It is hoped that this study will help reveal children's positive and negative experiences in the transition from preschool to basic education and guide future studies for a successful transition.

This study aims to reveal the perceptions of first grade students who have been through preschool about their preschool and elementary school experiences from their own voices. The following research questions were investigated:

1. What are children's positive experiences in the transition from preschool to grade 1?
2. What are the difficulties that children face in the transition from preschool to grade 1?
3. What are children's perceptions of their preschool and elementary school teachers?
4. What are children's perceptions of the educational environment in their preschool and elementary school?
5. What are children's perceptions of the physical environment in their preschool and elementary school?

Method

Study Model

The study used the qualitative research design of phenomenology. In phenomenology studies, “data sources include individuals or groups that are experiencing the phenomenon at the heart of the study and that can reveal or represent this phenomenon” (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2013, p.20). This model was chosen in order to enable each child to interpret their transition from preschool to grade 1 in relation to their own experiences.

Study Group

The study group comprised 20 first graders who were attending elementary schools located in Ankara and affiliated with the Ministry of Education, who had received preschool education. For validity reasons and in order to include a wide array of experiences, the students were chosen from different elementary schools.

Data Collection Tools

Data in this study were obtained with the method of free flow/chat type interviews based on certain basic questions in order to determine elementary school first graders' perceptions of their preschool and elementary school experiences. Children were encouraged to describe and compare their preschool and current elementary school experiences. The literature was reviewed to write the basic open-ended questions used in the interviews with children. Then, expert views were taken and adjustments were made to the items. The intelligibility of interview questions were checked with a pilot trial with five first grade students, and they were finalized after taking expert views once again.

Another tool used in data collection was children's drawings. These not only present a criterion to understand children psycho-pedagogically, but are also tools of expression that reflect their emotions, thoughts and inner lives. Children use drawings to complete their inner experiences and perceptions, and to relate their outer experiences and perceptions with their external environments (Çiçekler and Koruklu, 2013). In this study, children were asked to draw a picture depicting their preschool experiences on one side of the drawing paper, and their grade 1 experiences on the other side of it. They were also invited to talk about their drawings. Using this method in conjunction with interviews yielded a better understanding of how children evaluated both environments and gave the opportunity to double-check children's comments during the interviews. The semi-structured interviews with children and their descriptions of their drawings were audio recorded.

Data Collection Process

Data collection started three months after the beginning of the school year so that the children could reflect on and compare the two experiences. The researchers first met with school administrators, explained the purpose of the study, and obtained their consent for working with

children. Following this, children who had received preschool education were identified with the help of grade one class teachers. Children's parents were informed about the study and their consent was obtained as well. After this, 15-25 minute informal interviews were held with the children, based on the principle of volunteering. These interviews were audio recorded.

As a second data collection method, children were asked to draw pictures reflecting their views about their preschool and current elementary school experiences. Each child was given a drawing paper and asked to draw a picture reflecting their preschool experiences on one side of it and their current grade one experiences on the other side. They were then asked to describe their drawings and these descriptions were audio recorded.

Data Analysis

The data obtained were analyzed by using qualitative data analysis methods. Interviews with the children were first transcribed and read several times by each researcher to identify categories from the responses. Then the data were classified and analyzed in relation to the research questions.

At the same time, children's drawings were examined and emerging themes were noted. Following this, children's verbal descriptions of their drawings were transcribed and read several times by each researcher. Then, the drawings and children's verbal descriptions were compared to spot common points and differences.

Findings and Discussion

This section includes findings about children's perceptions of preschool and elementary school and their interpretations.

Positive Experiences in the Transition from Preschool to Elementary School

In the transition from preschool education to elementary school, children were found to be positively affected by activities and peer relationships. The sentences below represent these experiences:

"Activities at preschool and elementary school are similar. The drawing activities, too."

"We draw pictures and we have tiffin bags, we had these at preschool too."

"Just like we did in preschool, we have flags in this classroom, too. There's also Atatürk."

"The lockers at preschool and elementary school are similar, and the prints."

"Here too, we make pictures just like we used to do in preschool."

An important reason why children liked school was, in their own words, being "with their friends" (Phelps et al., 2014). Peers are an important and indispensable element of social environments, directly affect other children's development, and determine their perceptions about the environment.

"There are friends both at preschool and at elementary school."

"I'm happy that my preschool friends are here because we play games just like we did there."

"I had more friends at preschool because there were a lot of young children. And there were very few girls, most were boys. Kaan was there too, he was always up to something naughty."

"I have more friends here. I wouldn't like my preschool friends to come here because some of them were bad."

Children who are loved and accepted by their peers feel more valuable and happy. Peers affect children's school perceptions, not only with positive communication approaches but also negative ones, such as bullying (Gülay, 2010). Therefore, good peer relationship management improves children's school perceptions.

As shown in the responses given above, the educational environment of preschools and peer play processes have positive effects on children's transition to grade one. When children are presented with similar experiences in elementary school, their adaptation is affected positively and they are able to fit in more easily.

"We used to play with toys at preschool. Here too, we sometimes play with play dough. Look at that reflection (pointing to the projected image on the board). They used the wall for reflections at preschool, here they use the board."

Presenting children with high quality and rich preschool environments helps them discover themselves and their environments and actualize themselves (Güleş & Erişen, 2013). Allowing children to experience the processes of elementary school in advance at preschool affects children's readiness levels positively. Children's responses showed that their preschool experiences familiarized them with elementary school.

"Line drawing is similar, we used to do that at preschool too. Now we're also learning how to write letters."

The transition from preschool to elementary school is made easier by teachers using educational approaches which satisfy children's developmental needs. Informing preschool teachers about the educational approaches and learning environments of elementary school may also help children's transition to elementary school (Yeboah, 2014).

Difficulties Faced by Children in their Transition from Preschool to Grade One

Children's responses to the questions about the difficulties they had in the transition from preschool to grade 1 revealed that preschool was more enjoyable and worth missing as it offered an environment involving play activities. On the other hand, negative comments about the elementary school included the higher ratio of homework and activities to be completed at a desk, higher responsibilities, less rich and less diverse activities, and lack of flexibility or free play time.

"In preschool we used to play games, there were a lot of toys. No toys in this classroom. At this school, there is only reading and writing."

"Preschool is much more fun than elementary school because you get to play a lot of games, do fun things, draw pictures, play with play dough."

"Preschool is more fun than elementary school because they make you write a lot in grade 1. Preschool doesn't tire you out."

"We used to play nice games and draw pictures at preschool. We would play with toys and then tidy up the classroom and go home. The teacher gave us homework but only short ones. I used to love my teacher."

Children's drawings also supported this point:

“These children are playing with toys, and these children are drawing pictures. And these are spring stuff (flow of seasons), he is playing with a toy car. And this is the teacher.” (Preschool drawing)

“There was a teacher, a ball, a carpet, a car.” (Elementary school drawing)

In Chan’s (2014) study, elementary school children said they loved and missed their preschool experiences and teachers. Chan’s (2014) participants also stated that some classes at elementary school were difficult and tedious; they liked the toys and materials in preschool classes more; and they faced sanctions more often at elementary school.

As can be understood from the children’s responses, the lack of toys and play opportunities at elementary schools present a difficulty for first graders who are still play children. In addition, children also made an emphasis on handwriting and homework. They stated that the reading and writing practice in grade 1 was long and tiring. It is obvious that children felt challenged by these activities. At the same time, there were statements showing that children thought school experiences in both stages of education were enjoyable.

“I think grade one is more fun than preschool because we write and read.”

“Grade one is more fun. Homework is fun. I love it.”

“Preschool was fun, and so is my classroom now. I love both.”

A positive attitude towards the transition process may be ensured by using interesting activities and developmentally appropriate methods.

Children's views about their preschool and elementary school teachers

Children's views about their preschool and elementary school teachers showed that they liked both teachers and emphasized their teachers’ behavioral and physical characteristics in their responses:

“My preschool teacher had hair like my mother’s. It was the same color. My teacher was little (young). I also like our elementary school teacher. She’s gentle. She goes away and we sit in her chair.”

“Our preschool teacher treated us well. My elementary teacher gets us to read. She’s fine.”

‘My preschool teacher used to let us play with toys everyday, and then we drew pictures. I used to want to start over again as soon as the activities ended. Our current teacher checks our homework, and she assigns more work when she is done.’

“My preschool teacher was a little overweight, her face was round. She got us to do fun things. My present teacher is also fun. She teaches us things, which is also fun.”

“My preschool teacher’s name was Fatma. She was very gentle. We could do whatever we wanted to. My current teacher sometimes gets us to do activities. She doesn’t require objects or materials like they did at preschool. She asked for a drawing book. We don’t take glue with us to school. We just take pencils. We sometimes draw pictures.”

Communication and empathy skills, which influence the way teachers approach children, also have a determining effect on children’s school perceptions. Teachers’ emphatic tendencies require them to understand children’s feelings and thoughts by putting themselves in their shoes in their interactions (Uğurlu, 2013).

Children's responses showed that elementary school teachers sometimes used rewards and punishments. Children defined their preschool teachers as more lenient and sharing:

“Our preschool teacher sometimes shouted at us. My elementary teacher shouts at everyone, but not me. She sends some children outside the classroom, but not everyone.”

“My preschool teacher’s name was Duygu, she never got angry with us, she let us do anything we wanted. My present teacher was also good at first, but now she is always angry with us.”

In the early childhood period, children are influenced by characteristic emotional facial gestures and other nonverbal elements of communication. These play a vital role in children’s definition of their emotions. Children can interpret other people’s and their own feelings easily through these, and they become greatly affected by the moods of people around them, particularly the people who are dear to them. The quality of children’s communication with these people in their immediate environment is vital in their socio-emotional development and self-perception (Çelik et al., 2002).

“My preschool teacher was very pretty, she never got angry with us, and she always painted her nails. I loved her. Our current teacher sometimes gets angry with us, but never with me because I’m well-behaved.”

“My preschool teacher used to do her hair differently. Our current teacher shouts at us when we make noise.”

Louizou (2011) reported in a study that children mentioned the following as they evaluated their elementary school and preschool teachers: “shouting at students, occasionally letting students bend the rules, giving students freedom, respecting students, establishing a positive relationship with students by treating them respectfully as adults”. The perceived teacher attitudes in the present study are parallel to Louizou (2011)’s results.

Teachers’ attitudes are highly related to school maturity and, consequently, school success in future school experiences (Spilt et al., 2010). Children need to feel secure and warm in the school environment. Teacher attitudes causing insecurity and condescension make children sense the relationship between themselves and teachers negatively, which may affect children’s school experiences and school perceptions adversely. Therefore, the attitudes and approaches of preschool and elementary school teachers are vital for children to develop a positive perception about the school process.

Children's Views about the Educational Environment at Preschool and Elementary School

Children's responses about the educational environment in their preschool and elementary school revealed that they found their preschool experiences more enjoyable owing to the higher number of play activities:

“I really would like to have preschool games and activities in elementary school too because they were so much fun.”

“Preschool was more enjoyable because there were games. I would love to have toys in elementary school too. I’d play with them during the break time.”

“I would love to have “toy days” like we used to have at preschool. Toys made it real fun.”

“Preschool was fun, and so is elementary school. But there are no toys at our school, no rubber house.”

"Is there play dough here? I would like that."

Children can be given the best start possible when quality education is offered by qualified teachers in environments which are designed, constructed and organized in line with children's development (Güleş and Erişen, 2013). Preschool programs should be suited to children's developmental qualities and needs, allow for self actualization and discovery of the environment, be multifaceted and rich. High quality preschool education should present children with rich and diverse experiences; enable them to guide their own behaviors when faced with new environments and roles; develop socially accepted and healthy personal qualities and approaches; and cope with new situations. These may bring an emotionally stable, happier and readier transition to elementary school.

Children stated in their responses that their elementary school experiences were more rule-bound, based more on information and skills, and were more responsibility- and task-oriented than their preschool experiences:

"The activities here are different from the ones at preschool."

"I can write now. I used to play at preschool, but here I have to study."

"We don't play those fun games we used to play at preschool anymore. We used to go out a lot at preschool, we do less of that here."

Children's drawings also corroborated these views:

"I've drawn myself, I've drawn my teacher. I ask my teacher if I can play. She says yes, that's all." (Preschool drawing)

"First the school entrance, the playroom, the classroom, learning room, and this space is for your shoes, the principal's room, exit door, shoe cabinet, ball pool, slides, covered slides and outdoor slides." (Preschool drawing)

"The teacher gets us to write. These are Şeyma, myself and Samet." (Elementary school drawing)

"The National Anthem, the flag, a tree, the school, door to the principal's room, door to the assistant principal's room, doors to the classrooms, stairs, things from which we hear the National Anthem and break time signal (loudspeakers)" (Elementary school drawing)

Children's responses showed that preschool was perceived as an enjoyable environment with rich materials and better interaction.

New elementary school experiences increase children's motivation. Chan (2014) stated that preschool children who visited elementary school reported positive views about it and felt excited to start elementary school as it would mean they are now "older children". At the same time, Chan (2014) also added that while children were impatient to start elementary school, they also worried about academic expectations and having enough competence.

Children whose development and school readiness are supported by preschool education do not have such worries owing to their self-confidence caused by their knowledge and skills, and they have higher motivation in the transition to elementary school.

"I love doing homework, writing and singing the National Anthem here."

"I like learning how to read and write."

"I love learning the letters of the alphabet."

"I like buying things from the canteen and the stationery shop."

"I like writing down numbers."

Children's views showed that preschool environments which supported school readiness levels affected elementary school perceptions positively. Children's responses entailed positive attitudes towards preschool and elementary school, but also clearly revealed children's need to play in elementary school as well.

Children's Views about the Physical Environments of Their Preschool and Elementary School

As can be understood from the previous responses, children's views about the physical environment of the preschool and elementary school focused on the rich play materials and toys in the former. The elementary school materials they frequently emphasized were desks and the board. Children's drawings corroborated this finding:

"These are balloons, this is the stuff in which we leave our toys, this is the entrance to our school, and these are flower" (Preschool drawing)

"I drew our teacher's seat, desk, our desks, my friends, the door, and the board" (Elementary school drawing)

"On the teacher's desk a vase, the teacher's seat, the teacher, our desks, books, Muhammed sitting next to me, the stained glass window." (Elementary school drawing)

Children stated that there were no toys at elementary school and they defined the word "joy" with play and toys. At the same time, there were no findings that elementary school environments included materials that would allow children to rest such as suitable floor covering, carpets, cushions. Children mentioned feeling fatigue at elementary school due to literacy practice and home assignments. Preschools have appropriate areas and materials for children to engage in restful activities. Aksoy and Baran (2010) studied children's school perceptions via their drawings and concluded that the children were highly sensitive to physically adequate preschool educational environments. The emphasis that the children in our study placed on materials is parallel to the findings of Aksoy and Baran (2010).

Phelps et al. (2014) studied the views of elementary school children in Vietnam about their school. They found that the children mentioned the following about their schools: Being with friends, having an understanding teacher, the school being an interesting place where new things can be learned, and having accessible materials. The authors also stated that children found school cleanliness, decoration, green spaces, equipment, and school-related responsibilities important. The overall findings of Phelps et al. (2014) were similar to the findings of the present study. In their responses about both school types, children mentioned teachers, peers, their attitudes and approaches, the physical characteristics of school, and the developmental appropriateness of the instructional process.

Conclusion and Recommendations

The children who participated in this study had developed a positive attitude towards school experience and reported a huge difference between their preschool and elementary school experiences, despite the similarities. The children also had expectations about the social and physical environment of the school based on their interests and developmental needs. The school is among the most important environments in children's lives regarding both quality and the amount of time spent there. It is a place where children, who are adapting to social life and becoming socio-emotionally

independent, acquire vital experiences and shape their characters and lives. Children's responses showed that they were sensitive about the instructional process, teachers, peers and the physical environment. They were also observed to have developed an awareness of and a positive attitude towards the concepts of school, peers and teachers at preschool. At elementary school, on the other hand, their motivation was high but the transition from preschool to elementary school was not smooth. The children also stated that the educational environment, physical characteristics and teacher attitudes in their elementary school was rather different from those in their preschool.

In light of these findings, the following recommendations can be made:

For a smoother transition from preschool to elementary school, an effort may be made the characteristics of the two physical environments more similar. The adaptation to elementary school process may include more frequent play activities, and play-based learning experiences may be designed by considering children's physical and emotional development. The physical environment and materials may enable children to play and have more fun.



"Our teacher's seat, desk, Our seats, friends, the door and the board"



"These are windows and this is the door, these are my friends"



"My preschool teacher, she never gets angry, She let us do anything."



"On the teacher's desk a vase, the teacher's seat, our seats, books Muhammed sitting next to me, stained glass window"

References

- Akman, B., Kent Kükürtçü, S., Tarman, İ., & Şanlı, Z.S. (2017). Examining preschool and first grade teachers' opinions on the effects of school readiness to classroom management. *International Journal of Progressive Education (IJPE)*, 13 (1), 22-41.
- Aksoy, P. Baran, G. (2010). 60-72 aylık çocukların okula ilişkin algılarının resim yoluyla incelenmesi. *International Conference on New Trends in Education and Their Implications. 11-13 Kasım, 2010. Antalya, Türkiye.*
- Arslan-Karaküçük, S. (2008). Okul öncesi eğitim kurumlarında fiziksel/mekansal koşulların incelenmesi: Sivas ili örneği. *C.Ü. Sosyal Bilimler Dergisi*, 32(2), 307-320.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş. & Demirel, F. (2013). *Bilimsel araştırma yöntemleri* (15. Baskı). Ankara: Pegem Akademi.
- Chan, W. L. (2014). Expectations for the transition from kindergarten to primary school amongst teachers, parents and children. *Early Child Development and Care*, 182 (5), 639-664.
- Çelik, E., Tuğrul, B., Yalçın, S. S. (2002). Dört-Altı yaşlar arasındaki anaokulu çocuklarının duygusal yüz ifadesiyle kendilerini, anne-babalarını ve öğretmenlerini algılaması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [H. U. Journal of Education]*, 22, 29-39.
- Erkan, S., & Kırca, A. (2010). Okul öncesi eğitimin ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluklarına etkisinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [H. U. Journal of Education]*, 38, 94-106.
- Erkan, S. (2011). Farklı sosyoekonomik düzeydeki ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluk düzeylerinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [H. U. Journal of Education]* 40, 186-197.
- Gülây, H. (2010). *Okul öncesi dönemde akran ilişkileri*. Ankara: Pegem Akademi.
- Güleş, F., Erişen, Y. (2013). Okul öncesi eğitimde fiziksel çevre standartlarını belirleme: Paydaş görüşlerine dayalı bir analiz. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 30, 129-138.
- Harel-Fisch, Y., Walsh, S. D., Fogel-Grinvald, H., Amitai, G., Pickett, W., Molcho, M., Due, P., Gaspar de Matos, M., Craig, M. (2011). Negative school perceptions and involvement in school bullying: A universal relationship across 40 countries. *Journal of Adolescence*, 34, 639-652.
- Loizou, E. (2011). Empowering aspects of transition from kindergarten to first grade through children's voices. *Early Years* 31(1), 43-55.
- Mahdjoubi, L., Akplotsyi, R., (2012). The impact of sensory learning modalities on children's sensitivity to sensory cues in the perception of their school environment. *Journal of Environmental Psychology*, 32, 208-215.
- Phelps, R., Grahama, A., Tuyet, N. H. T. & Geeves, R. (2014). Exploring Vietnamese children's experiences of, and views on, learning at primary school in rural and remote communities. *International Journal of Educational Development*.
<http://dx.doi.org/10.1016/j.ijedudev.2013.12.004>

- Sarı, M., Cenkseven, F. (2008). İlköğretim öğrencilerinde okul yaşam kalitesi ve benlik kavramı. [Elektronik Versiyon] *Uluslararası İnsan Bilimleri Dergisi*, 5(2). Erişim: 20.10.2010, <http://www.ucurtmakres.com/pdf/ilkogretim-ogrencilerinde-benlik-algisi.pdf>.
- Spilt, J. L., Koomena, H.M.Y., & Mantzicopoulos, P. Y. (2010). Young children's perceptions of teacher-child relationships: An evaluation of two instruments and the role of child gender in kindergarten . *Journal of Applied Developmental Psychology*, 31, 428-438.
- Şanlı, Z. S. (2012). *Probleme dayalı altı aşamalı ders işleme modeli 'nin anaokuluna giden 60-72 aylık çocukların benlik algılarına etkisi*. Yüksek Lisans Tezi, Hacettepe Üniversitesi, Ankara.
- Uğurlu, C. T. (2013). Öğretmenlerin iletişim becerisi ve empatik eğilim davranışlarının çocuk sevmeye düzeyleri üzerine etkisi. *Pegem Eğitim ve Öğretim Dergisi*, 3(2), 51-61.
- White, K. J., Sherman, M. D., Jones, K. (1996). Children's perceptions of behavior problem peers: effects of teacher feedback and peer-reputed status. *Journal of School Psychology*, 34(1), 53-72.
- White, K. M. (2013). Associations between teacher-child relationships and children's writing in kindergarten and first grade. *Early Childhood Research Quarterly*, 28, 166-176.
- Yalçın, M., Erginer, A. (2014). İlköğretim okulu öğrencilerinin okul müdürü algılarına ilişkin yaptıkları çizimler. *Eğitim ve Bilim*, 39 (171), 270-285.
- Yeboah, D. A. (2014). Enhancing transition from early childhood phase to primary education: Evidence from the research literature. *An International Research Journal*, 22 (1), 51-68.
- Yıldız-Çiçekler, C.& Öner-Koruklu, N. (2013). 4-6 Yaş arasındaki çocukların serbest resim çalışmalarındaki resim özellikleri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [Hacettepe University Journal of Education]*, 28 (2), 551-563.

Grammar Attitude Scale: A Study of Validity and Reliability

Nuri Karasakaloğluⁱ

Adnan Menderes University

Abstract

It is believed that there is a positive relationship between the attitudes of the teachers towards the lesson they teach and the attitudes of the students towards this lesson. Within this context, it is considered important to determine the attitudes of teachers who develop an attitude in a way to be able to make the subject achieve the goal effectively. Together with this, it is more significant to determine the attitudes of teachers during their undergraduate education since attitude is a phenomenon that cannot be altered easily. In this study, a scale was developed to measure the attitudes of teacher candidates towards grammar. The validity and reliability analyses of the research designed according to screening model were conducted on 252 undergraduate students. According to the results of Exploratory Factor Analysis (EFA) of the data collected from the 25-item trial form prepared, it was found that the scale had a 15-item, 4-factor structure and explained 67.84% of the total variance. As a result of the Confirmatory Factor Analysis (CFA) performed, the fit index values were examined, and it was seen that the 4-factor structure of the 15-item scale was confirmed as a model. The results of EFA and CFA exhibited that the scale had a valid structure. Cronbach-Alpha internal consistency and test-retest reliability coefficients were calculated to determine the reliability of the scale and according to the values obtained, it was concluded that the scale was reliable.

Keywords: Grammar, attitude, scale development, validity, reliability.

DOI: 10.29329/ijpe.2018.157.2

ⁱ **Nuri Karasakaloğlu**, Assoc. Prof. Dr., Adnan Menderes University, Faculty of Education, Aydın/ Turkey.

Correspondence: nkarasakaloglu@adu.edu.tr

Introduction

Language is the most effective tool used for conveying the cultural accumulation that creates a nation as well as being a communication tool that allows people to communicate with each other. In the dictionary, the word 'language' is defined as the agreement that people make with words to convey what they think (Turkish Language Society, 1998). According to Aksan (1998), language is a multifaceted, highly developed system that allows the feelings, thoughts and desires to be transmitted to others in a society by using common elements in terms of voice and meaning. Karatay (2014) defines language as the verbal and written communication tool which mankind has created at the end of his experiences for generations. Toklu (2003) indicates that language should not be viewed only as a communication tool but is a mirror reflecting the culture of that society and the most important element effecting the way that culture perceives the world.

Together with accepting the importance of language, the importance of language education has been a concept that is often expressed. First of all, the development of communication skills, and also the improvement of mental skills and learning abilities is closely related to teaching mother tongue. This significance has brought about the debate on the quality of language education (Balci, 2014). Within this context, one of the areas the teaching of which is discussed has become grammar.

Grammar is the study field that examines the sounds, word structures, word meanings, word etymologies, sentence structures of the language and the rules related to all these. In short, grammar teaches the scientific method of speaking and writing correctly (Er & Ünal, 2016). Teaching grammar includes, together with the comprehension and narration language skills of Turkish, supporting, explaining and organizing activities in these areas where information about language is given. The aim of teaching grammar is not to teach or memorize the rules of the language but to provide the development of the language skills in order. Taking into account the developmental characteristics of the students in the Turkish Lesson Teaching Program (Ministry of National Education, 2017), the learning outcomes related to grammar and writing rules have gradually been structured in an increasingly intense manner and it is aimed to ensure that the students use Turkish language consciously, accurately and carefully in accordance with the rules of speaking and writing.

According to Barin and Demir (2008), when teaching grammar is accomplished, it will have a positive impact on the acquisition of four basic language skills. At the same time, it will contribute to the decrease in the mistakes made about language, mental development, effective communication, using language safely, and learning a foreign language. In this sense, it is important that teachers who will teach grammar to their students in schools have the necessary equipment in this regard. As known, there is a positive relationship between the attitudes of the teachers towards the lesson they will teach and the achievements of the students in this lesson.

Attitude, which is one of the most important concepts in social psychology, can be defined as the path, behavior taken. Attitude, which is one of the significant dimensions of affective field in education, is the emotional and mental preparation state that has a directive or dynamic power of influence on the behaviors of the individual against all the related objects and situations encountered as a result of experiences (Tavşancıl, 2010). Attitude is an affective feature that directs the individuals' behaviors acquired by learning and that causes bias in the decision-making process. If an object or an attitude developed against an object or event is positive, the decisions taken against that object and event are likely to be positive, and if the attitude is negative, the decisions are likely to be negative (Ülgen, 1995). Accordingly, it can be considered that teachers who may have an impact on the achievements of the students should have a positive attitude towards their lessons. For this, by determining the attitudes of teacher candidates regarding the course or topic they will teach, interventions can be made in order to change the behaviors of the teacher candidates who have negative attitudes.

It is observed that the teacher candidates having undergraduate education in the field of Classroom Education, and especially Turkish Language Education, do not give the necessary

importance to teaching grammar and that some teacher candidates exhibit negative attitudes in this respect. They face this situation as a barrier to use Turkish consciously, accurately and carefully in line with the rules of speaking and writing. Therefore, it is difficult to expect the students who will be taught by the teachers at this level to use Turkish accurately. In this respect, increasing the interest levels of teacher candidates towards Turkish grammar and leading them to develop positive attitudes will directly affect the achievements of their future students.

As explained above, it is observed that teacher candidates resist against grammar. It is seen that they develop negative attitude with such expressions as boring, memorization based, pile of rules. It is considered that identifying these attitudes at first and then investigating the reasons for these attitudes will be useful for the literature. For this reason, in this study, it was aimed to develop a measurement tool that can measure the attitudes of teacher candidates towards grammar.

Method

Research Model

This research was designed according to screening model as it was aimed to develop grammar attitude scale for teacher candidates. In screening models, the individual or object being the subject of the research is aimed to be defined within its own conditions just as it is (Karasar, 2013).

Study Group

The study group of the research is composed of 252 undergraduate students studying in the Departments of Turkish Education and Classroom Education in Adnan Menderes University, Faculty of Education. Comrey and Lee (1992) indicate that a sample size of 300 and above is appropriate for data analysis in scale development studies. Furthermore, Child (2006) states that the sample size in scale development studies should be at least five times more than the number of items that will be subjected to factor analysis. In this sense, it is thought that the sample size is enough for this research. Besides, test-retest reliability studies were conducted on 42 teacher candidates.

The Development Phase of the Scale

While developing the Grammar Attitude Scale, relevant literature was searched by the researchers and the academic staff studying on the topic was contacted both within the country and abroad. In accordance with the views obtained, an item pool of 35 items was provided. In line with the views of language and assessment experts and those of the experts in the field, 10 items that were unclear, ambiguous and that included multiple judgements were removed from the item pool, and a 25-item trial form was created. The items in the scale were rated in 5-point-Likert type.

Data Analysis

In order to determine the validity of Grammar Attitude Scale, content and construct validities were examined. For content validity, the views of the academic staff who were the experts on the topic were taken. For construct validity, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were performed. By performing EFA, a meaningful structure of the scale was established, and it was determined under how many factors the items in the scale were collected. In order to test the appropriateness of the model presented in EFA, CFA was performed. The adequacy of the model was evaluated by examining the fit and error indexes obtained with CFA. In order to determine the reliability of the scale, internal consistency and test-retest methods were applied. For internal consistency, Cronbach's Alpha values of the overall scale and the factors forming it were calculated and for the test-retest reliability applied to determine the stability of the scale, Pearson

correlation coefficient was calculated. For the validity and reliability analyses of Grammar Attitude Scale, SPSS 23.0 and LISREL 8.80 package programs were used.

Findings

In this section, the findings and evaluations related to the validity and reliability analyses of Grammar Attitude Scale are presented.

Exploratory Factor Analysis

In order to prove the construct validity of the scale developed, Exploratory Factor Analysis (EFA) was performed first. For this, the data was tested for the appropriateness to factor analysis first, and the results of Kaiser-Meyer-Olkin (KMO) test and Barlett's Test of Sphericity were examined. KMO aims to test whether the structure of the data is appropriate for factor analysis in terms of sample size. The fact that KMO value is .80 and above means the sample size is excellent and that the Chi-Square test statistics obtained by Barlett's Test of Sphericity is significant is interpreted as the fact that the data shows multivariate normal distribution (Tavşancıl, 2010). As a result of the analyses performed, KMO value of the scale developed was calculated as .827, and the Chi-Square test statistics obtained as a result of Barlett's Test of Sphericity was found significant ($\chi^2 = 1910.481$, sd: 136, $p < .001$). In accordance with these findings, it could be said that the data of the research was appropriate for factor analysis.

As a result of the first EFA performed on the research data, it was revealed that the scale was collected under 6 factors. Because of the fact that some of these factors obtained after Varimax axis rotation technique had less than 3 items (Comrey & Lee, 1992), that the factor loadings of some items were lower than .40, that some items had more than one factor loadings above .40, and that the difference in the factor loadings of these items were lower than .20, these items were removed from the scale and EFA was repeated. As a result of the analyses performed, it was seen that the remaining 15 items in the scale were collected under 4 factors. The factor loadings of the items found in these factors are presented in Table 1.

Table 1. EFA results of Grammar Attitude Scale

Items	Factor 1	Factor 2	Factor 3	Factor 4
8. I like finding the derivational suffixes put to words.	.820			
9. I like learning the verbals (verbal nouns-verbal adjectives-verbal adverbs).	.695			
10. I like finding the inflectional suffixes put to words.	.793			
18. I like finding the constructions (possessive-adjective constructions) in a sentence.	.716			
12. I like learning the topic of meaning in words (real meaning-figurative meaning etc.).		.522		
21. I like classifying the sentences according to meaning (affirmative-negative-question).		.856		
22. I like classifying the sentences according to structure (simple-compound-correlated-coordinate).		.660		
23. I like classifying the sentences according to the order of elements (inverted-regular).		.767		
1. I like classifying the vowels according to characteristics (back-front vowels, narrow-wide vowels etc.).			.892	
2. I like classifying the consonants according to characteristics (strong-soft consonants, steady-tenuis consonants etc.).			.818	
3. I like learning the topic of vowel harmony (palatal harmony-labial harmony).			.747	
7. I have difficulty in accurately finding the stems of the words				.587

in a sentence (e.g. evir-en→evren, çevir-e→çevre)	
15. I have difficulty in finding the complementary verb within a sentence.	.739
17. I have difficulty in determining the types of compound verbs in the sentences. (compound verb with auxiliary verb, regular compound verb, etc.)	.724
20. I have difficulty in finding the elements of the sentence while analyzing it syntactically.	.635

According to the results of EFA, it was found that the 15-item scale developed was collected under 4 factors and that it explained 67.84% of the total variance. It is suggested that the variance explained by the factors should be 50% and above in exploratory factor analysis (Erkuş, 2012). The items forming the factors were examined and the first factor was named as “Attitude towards the Knowledge of Structure”, the second factor was named as “Attitude towards the Knowledge of Sentence”, the third factor was named as “Attitude towards the Knowledge of Phonetics”, and the fourth factor was named as “Negative Attitudes towards Grammar”. CFA was performed to test the appropriateness of the values and the structure obtained as a result of EFA.

Confirmatory Factor Analysis

CFA was performed to confirm the 4-factor-structure obtained as a result of EFA for Grammar Attitude Scale developed. Factor distributions and t values obtained as a result of CFA performed are given in Figure 1.

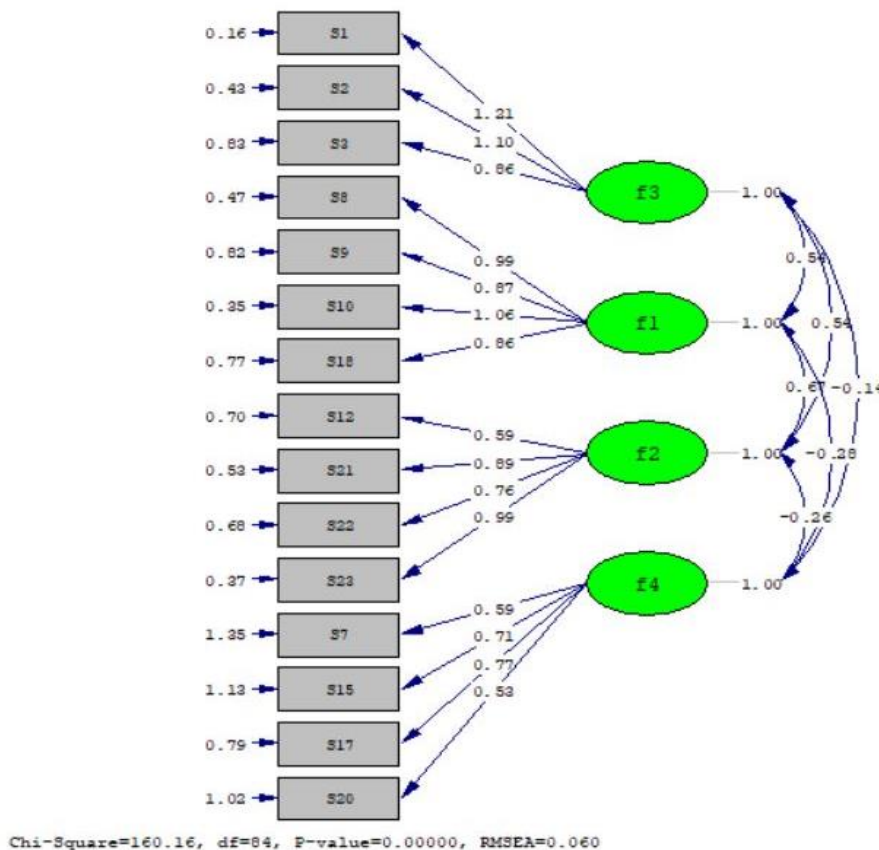


Figure 1. Path Diagram Related to Grammar Attitude Scale

One of the values that should be examined at this phase is p value. This value gives information about the significance of the difference between the expected covariance matrix and the observed covariance matrix (χ^2 value). Naturally, it is desirable that p value is significant (Raykov & Marcoulides, 2008). As shown in Figure 1, p value was significant at .01 level. Besides, the fit and error indexes obtained as a result of CFA are presented in the table below.

Table 2. CFA Results of Grammar Attitude Scale

χ^2	sd	p	χ^2 /sd	RMSEA	GFI	AGFI	RMR	SRMR	NFI	NNFI	CFI	IFI
160.16	84	.00	1.90	.060	.92	.90	.078	.055	.95	.96	.97	.97

One of the important values that should be examined in CFA is the fit statistics. This value is evaluated by comparing with the degree of freedom. If χ^2 /sd ≤ 2 , it means that there is a perfect fit (Tabachnick & Fidell, 2007). When the table was examined, it could be seen that this value was 1.90 in the scale developed. This value is the evidence that the model exhibits perfect fit.

The fact that RMSEA value, which is less sensitive to sample size and more sensitive to the relationship between the errors, is between .05 and .08 point out that the model is acceptable (Jöreskog & Sörbom, 1993). When RMSEA value obtained from the scale as a result of the analyses (.060) was analyzed, it could be seen that the an acceptable fit index was obtained.

When the other fit indexes in Table 2 were examined, it could be seen that GFI was calculated as .92 and AGFI was calculated as .90. The fact that GFI and AGFI indexes are .95 and above means there is a perfect fit, and that they are .90 and above means there is good fit (Sumer, 2000). Accordingly, it could be said that GFI and AGFI had good fit.

The fact that standardized RMR and RMR values are between 05 and .08 indicates that there is good fit (Brown, 2006). When Table 2 was analyzed, RMR was found as .078 and SRMR was found as .055. Within this framework, it could be seen that RMR and SRMR had good fit.

Finally, when NFI, NNFI, CFI and IFI fit indexes were examined, it could be seen that the values were .95, .96, .97, and .97, respectively. The fact that NFI, NNFI, CFI and IFI fit indexes are above .95 means there is perfect fit (Sümer, 2000). Accordingly, it could be said that NFI, NNFI, CFI and IFI fit indexes had perfect fit. Within this framework, it could be said that the 15-item, 4-factor-structure of Grammar Attitude Scale was confirmed as a model.

Reliability Analysis

Cronbach's -Alpha internal consistency and test-retest reliability coefficients were calculated in the reliability analyses of Grammar Attitude Scale. Cronbach's Alpha coefficients calculated for each factor are given in Table 3.

Table 3. Reliability Analysis Results Related to the Factors of Grammar Attitude Scale

Factors	Cronbach's Alpha Internal Consistency Coefficient (α)
Attitude towards the Knowledge of Structure	.851
Attitude towards the Knowledge of Sentence	.807
Attitude towards the Knowledge of Phonetics	.862
Negative Attitudes towards Grammar	.711

When the table was examined, it could be seen that the reliability coefficient of each factor was higher than the critical value of .70 (DeVellis, 2003; Kline, 1986). As a result of the reliability analyses performed, it was determined that the Cronbach's Alpha internal consistency coefficient of the scale in general was .854. These results indicated that the scale was reliable in terms of internal consistency.

In order to calculate the test-retest reliability coefficient of the scale, the scale was reapplied to 42 teacher candidates 4 weeks after the first application. The Pearson correlation coefficient between the scores obtained from both applications of the scale was calculated as .812. This is proof that the scale provides consistent results from practice to practice.

Conclusion and Suggestions

A 15-item attitude scale was developed in this study to determine the attitudes of teacher candidates towards grammar. In the development phase of Grammar Attitude Scale, validity and reliability analyses were performed on a 25-item test form as a result of expert evaluations. Content and construct validities were examined for the validity analyses. For the content validity, the views of the academic staff who were experts on the subject were obtained. EFA and CFA were performed for construct validity. As a result of EFA, it was found that the scale had a 4-factor-structure and it explained 67.84% of the total variance. As a result of CFA performed, fit index values were examined and it was seen that the 4-factor-structure of the 15-item scale was confirmed as a model. EFA and CFA results indicated that the scale had a valid structure. In order to determine the reliability of the scale, Cronbach's Alpha internal consistency and test-retest reliability coefficients were calculated. According to the values found, it was concluded that the scale was reliable.

From the explanations given above, it can be said after the validity and reliability analyses performed during the research that the scale is able to measure the attitude towards grammar. It is believed that this scale will be a guide to measure the attitudes of teacher candidates towards grammar. As a result of the scale developed, the attitudes of teacher candidates towards grammar can be determined and the suggestions below can be made for the solutions to the problems encountered.

1. By determining the attitudes of teacher candidates towards grammar, trainings can be provided for the teacher candidates with negative attitudes towards grammar by applying different instructional methods.

2. Empirical studies can be carried out in order to increase the attitudes of teacher candidates towards grammar.

3. Studies can be carried out to reveal whether there is a relationship between the attitudes of teachers and the attitudes of students towards grammar.

References

- Aksan, D. (1998). *Her yönüyle dil ana çizgileriyle dilbilim*. Ankara: Türk Dil Kurumu Yayınları.
- Balcı, A. (2014). Cumhuriyet dönemi ilköğretim Türkçe dersi öğretim programlarında dil bilgisi öğretimi. M. Özbay (Ed.), *Türkçe eğitimi açısından dil bilgisi öğretimi içinde* (s. 1-44). Ankara: Pegem Akademi Yayıncılık.
- Barın, E., & Demir, C. (2008). *Türk dil bilgisi 2: Biçim bilgisi*. Ankara: Öncü Kitap.
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: The Guilford Press.

- Child, D. (2006). *The essentials of factor analysis* (3th edition.). London: Continuum.
- Comrey, A. L. & Lee, H. B. (1992). *A first course in factor analysis* (2. edition). New Jersey: Lawrence Erlbaum Associates.
- DeVellis, R. F. (2003) *Scale development* (2. edition). California: Sage Publication Inc.
- Er, K., & Ünal, F. (2016). Ortaokul öğrencilerine yönelik dil bilgisi tutum ölçeği geliştirilmesi: Geçerlilik ve güvenirlik çalışması. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 40, 343-356.
- Erkuş, A. (2012). *Psikolojide ölçme ve ölçek geliştirme-I: Temel kavramlar ve işlemler*. Ankara: Pegem Akademi Yayıncılık.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the simplis command language*. Lincolnwood: Scientific Software International, Inc.
- Karatay, H. (2014). *Okuma eğitimi kuram ve uygulama* (2. bs.). Ankara: Pegem Akademi Yayıncılık.
- Karasar, N. (2013). *Bilimsel araştırma yöntemi* (25. baskı). Ankara: Nobel Yayın Dağıtım.
- Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design*. New York, NY, US: Methuen.
- Ministry of National Education (2017). *Türkçe dersi öğretim programı*. Ankara: MEB.
- Raykov, T., & Marcoulides, G. A. (2008). *An introduction to applied multivariate analysis*. New York: Routledge Taylor & Francis Group.
- Sümer, N. (2000). Yapısal eşitlik modelleri: Temel kavramlar ve örnek uygulamalar. *Türk Psikoloji Yazıları*, 3(6), 49-74.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5. edition). Boston: Allyn and Bacon.
- Tavşancıl, E. (2010). *Tutumların ölçülmesi ve SPSS ile veri analizi* (4. baskı). Ankara: Nobel Yayın Dağıtım.
- Toklu, M. O. (2003). *Dilbilime giriş*. Ankara: Akçağ Yayınları.
- Turkish Language Society (1998). *Türkçe sözlük*. Ankara: TDK.
- Ülgen, G. (1995). *Eğitim psikolojisi: Birey ve öğrenme*. Ankara: Bilim Yayınları.

The Relationship of Physical Activity Level, Leisure Motivation and Quality of Life in Candidate Teachers

Huseyin Gumusⁱ
Mersin University

Ozkan Işıkⁱⁱ
Sakarya University

Abstract

The inactivity, defined as the disease of the century, has reduced the quality of life by making a negative impact on the health of human beings and has led governments to take urgent measures on physical activity and scientists to make multidimensional studies on this issue. For this reason, in this study, it was aimed to examine the relationship between physical activity levels, leisure motivations and life quality of candidate teachers who will be a model in the future to the students. A total of 472 candidate teachers (258 male and 214 female) from Afyon Kocatepe University participated in the study. As a data collection tool, in addition to the "Leisure Motivation Scale" (LMS), developed by Pelletier et al. and adapted to Turkish by Mutlu (1991); "World Health Organization Quality of Life Assessment" (WHOQOL-BREF) and "International Physical Activity Evaluation Questionnaire Abbreviated Version" (IPAQ-Short Form) were used. In the analysis of the data, in addition to descriptive statistical methods for personal information, correlation and multiple linear regression analyzes were used. According to research findings, it was determined that 38.6% of the candidate teachers had a low level of physical activity and they had a high leisure motivation levels in the identified/introjected subscale. Moreover, the correlation results showed that there was a positive correlation between the quality of life and physical activity level and all sub-dimensions of leisure motivation. According to the results of multiple linear regression analysis, it was determined that the most important variable to predict the quality of life was the level of physical activity.

Keywords: Physical Activity, Leisure Time, Leisure Motivation, Quality of Life

DOI: 10.29329/ijpe.2018.157.3

ⁱ **Huseyin Gumus**, Assoc. Prof. Dr., Mersin University, Physical Education and Sport, Mersin/Turkey.

Correspondence: huseyinn.gumuss@gmail.com

ⁱⁱ **Ozkan Işık**, Assist. Prof. Dr., Sakarya University, Physical Education and Sport School, Sakarya/Turkey

Introduction

Physical activity, which is one of the most basic human functions, is seen as a necessary condition for the survival of human beings throughout history. However, with the effects of industrial developments on the point reached today, work life and leisure activities are increasingly inactive. Many health problems caused by inactivity have led to accelerated the studies in this area, especially in recent years. The World Health Organization (WHO) reports that on average, more than 2 million people lose their lives each year due to lack of action. Furthermore, it has been reported that regular and moderate physical activity for a healthy life can be achieved with physical activity of at least 5 days per week, preferably 30 minutes per day (WHO, 2013). It is known that physical and mental health problems caused by inactive life in every part of the world have reached a worrisome level (Korkmaz and Deniz, 2013). It is also known fact that with the physical activity, defined as the whole body movements involving energy expenditure on the basal level (Pitta et al., 2006), early death (Lahart et al., 2015), cardiovascular diseases (Myers et. al., 2015) certain types of cancer can be prevented (Schmid and Leitzmann, 2014). Many different are types depending on the intensity of physical activity. For example, basic mobility skills such as regular walking, dancing, long and brisk walking, cycling, various types of sports, and different structured exercises, active game and leisure activities are also considered physical activity (WHO, 2016). Especially, high level of physical activity during aging process will increase the quality of life (Günaydn, 2018).

The leisure time is called as the remaining time period after having performed the obligatory activities such as eating, sleeping, working (Karaküçük, 2008) and how it is used and consumed is an important factor affecting the quality of life. Using the leisure time effectively and efficiently provide many benefits such as increasing work efficiency, ensuring work order. It is also known that it enables people to escape from their routine work experience and survive in the way they want; thus it provides emerging of developing energy in a cultural sense in society (Nixon and Jewett, 1980). The leisure time that is increased especially by the post-industrialization mechanization was reported to be changed depending on the many factors such as cultural structure (Seo and Lee, 2015) social factors (Chang et al., 2014), economic factors (Kestila et al., 2015), family type, education level (Estaban-Cornejo et al., 2015) and gender (Mansfield et al., 2018). Leisure activities, which aim to meet personal and social needs in the individual, increase motivation. The concept of motivation can be defined as mental and emotional energy that directs the individual to a specific behavior (Altunay and Balci, 2018). Like many other activities, motivation comes first among the elements that enable people to perform leisure activities (Binbaşıoğlu and Tuna, 2014). Motivation, which is called a kind of force that pushes individuals to do something to achieve a purpose (Harmer, 2001), is divided into two as intrinsic and extrinsic. Deci and Ryan (1985) define intrinsic motivation as the type of motivation that allows any action to perform simply because it is enjoyable or satisfying to the person; extrinsic motivation as the type of motivation in which one's behavior is controlled by external factors such as reward or punishment.

While the intrinsic motivations of individuals emerge as an escape in experience impulse (such as people who are relieved from the daily running of life), it emerges as a personal expertise dimension in result impulse (such as individuals who are only interested in increasing own development). Moreover, while the extrinsic motivations emerge as increasing the relationships in experience impulse (such as individuals who like to spend a good time with friends or family), it emerges as a winning in the resulting impulse (as individuals who want to win all the races they participate in) (Binbaşıoğlu and Tuna, 2014).

In recent studies it was seen that the spatial scales focused more on the psychological and sociological causes of participation in leisure activities (Chen and Pang, 2012, Sarol and Cimen, 2015; Gümüş and Özgül, 2017; Isik et al., 2015; Kara et al., 2014; Haworth and Veal, 2004). In the 21st century, variously influenced quality of life such as economic, social, health, political and environmental conditions, especially leisure motivation, manifests itself as a new marketing strategy, especially in the urban area. The life quality, a multi-dimensional concept, can change over time and is

directly related to the expectations of the individual. Because, in general terms, quality of life is determined by sociological, psychological, economic and cultural factors in order to define the individual well-being (Tekkanat, 2008). High-quality life is expressed as a healthy life that is adjusted according to basic requirements to produce, to relax, to enjoy, with appropriate time frames. One of the basic requirements of having a high quality of life is the level of physical activity.

Previous studies have shown that the more life quality increases, the level of physical activity increases (Ayhan et. al., 2018; Koçak et. al., 2017; Ayhan et. al., 2017). One of the important factors affecting physical activity is leisure motivation. In this context, the purpose of this study was to examine the relationship between physical activity levels, leisure motivations, and life quality of candidate teachers who will be a model in the future to the students. In particular, the absence of a study in the literature that examined the relationship between physical activity, leisure motivation, and quality of life components reveals the original value of the research.

Material Method

Participants: 566 candidate teachers from Afyon Kocatepe University participated to the research as voluntarily. The 94 scales thought to be missing or inaccurate were not evaluated. Finally, a total of 472 (\bar{X}_{age} : 23.56±2.49) candidate teachers comprised of 258 males and 214 females were selected by the purposive sampling method.

Data Collection Tools: In addition to the "Demographic Information Form" which questioned the demographic characteristics of the candidate teachers in the research, "Leisure Motivation Scale", "World Health Organization Quality of Life Abbreviated Version" and "Short Form of International Physical Activity Questionnaire" were used.

Leisure Motivation Scale (LMS) developed by Pelletier et al. (1991) was used in order to determine leisure motivation. The original scale was composed of 28 items. The Turkish adaptation study of the scale was performed by Mutlu (2008). According to the factor analyses; six items were excluded from the Turkish version because factor loads of these six items which were written in the original scale were lower than 0.40. The Turkish version of the scale included a total of 22 items and five subscales. These subscales were motivation, to know and accomplish, experience stimulation, identified regulations, and external regulations. In our study; total internal consistency coefficient of the scale was 0.79. In addition, internal consistency coefficients of the subscales ranged between .71 and .87.

The World Health Organization Quality of Life Scale (WHOQOL-BREF), developed by the World Health Organization (1998), consists of 23 items and 5 sub-dimensions. The Turkish validity and reliability of the scale was performed by Sevil (2015). The Turkish form of the scale supported 14 items and 3 sub-scales structure, and it was determined that the reliability coefficients for the "physical and environmental quality" subscale were 0.786, for the "social quality" sub-dimension was 0.826 and psychological quality subscale was 0.811. The scale was 5 Likert-type scale; "1 = Very Poor, 5 = Very Good". The high score on the scale indicates the high quality of life. For this reason, the quality of life can be evaluated on the total score.

International Physical Activity Assessment Questionnaire-Short Form: The International Physical Activity Questionnaire (IPAQ) short form developed by Craig et al., (2003) and Turkish validity and reliability of the scale was performed by Öztürk (2005). In IPAQ, physical activity is measured at least once every 10 minutes. IPAQ questions the duration of severe physical activity (such as football, basketball, aerobics, fast bike turning, weight lifting, cargo handling etc.), moderate physical activity time (light load handling, cycling at normal speed, folk dancing,), walking and one-day sitting time of the individuals within the last 7 days in minutes. The total physical activity score (MET-minute /week) is calculated by converting severe activity, moderate activity, and walking times

to MET, which corresponds to the basal metabolic rate. The following formula was used to calculate the MET value:

$$\text{Walking score (MET- minute/week)} = 3.3 * \text{walking time} * \text{walking day}$$

$$\text{Medium intensity activity score (MET- minute/week)} = 4.0 * \text{medium intensity activity duration} * \text{medium intensity activity day}$$

$$\text{Severe activity score (MET- minute/week)} = 8.0 * \text{severe activity duration} * \text{severe activity day}$$

$$\text{Total Physical Activity Score (MET- minute/week)} = \text{Walking} + \text{Moderate activity} + \text{Severe activity scores.}$$

According to total physical activity score, participants are classified as "Low" if the physical activity levels are below 600 MET- minute/week, "Medium" if 600-3000 MET- minute/week and "High" if above 3000 MET- minute/week (Craig et al., 2003).

Collection of Data:

"Demographic Information Form", "Leisure Motivation Scale", "Quality of Life Scale", and "International Physical Activity Questionnaire" were applied in the academic year of 2015-2016 to the volunteers who were studying at Afyon Kocatepe University, Faculty of Education, Faculty of Arts and Sciences, Faculty of Fine Arts and School of Physical Education and Sports and the candidate teachers who have no obstacles in their appointment as a teacher (who has a Pedagogical formation education). Prior to the application of the scales, the candidate teachers were informed about the data collection tools and the importance of responding sincerely to the questions was explained. The scales took an average of 9 minutes to complete.

Data Analysis:

In the analysis of the obtained data; besides the descriptive statistical methods for personal information, person correlation coefficient was used to determine the relationship between the physical activity level, quality of life and leisure motivation of the research group. Multiple Linear Regression analysis was used to explain the relationship between variables. Significance were set at $p < 0.05$ and $p < 0.01$.

Results

Table 1. Quality of Life and Leisure Motivation Levels of Candidate Teachers

Variables		\bar{x}	S.D
Quality of Life		3.58	0.57
Leisure Motivation	Amotivation	2.34	0.64
	To know and accomplish	3.35	0.55
	To experience stimulation	3.46	0.75
	Identified/introjected	3.49	0.70
	External regulation	3.42	0.67

When the analysis results were examined, it was determined that the average score of life quality was 4.05. In addition, when the subscales of the leisure motivation scale were examined, it was observed that the average of the highest score was in the know and accomplish ($\bar{x}=3,86$), followed by

Identified/introjected (\bar{x} = 3.06), experience stimulation (\bar{x} = 2.98), external regulation (\bar{x} =2.94), and amotivation sub-dimensions (\bar{x} = 2.74).

Table 2. Level of Physical Activity of Candidate Teachers

Physical Activity Level	F	%
Low (<600 METmin/week)	182	38.6
Moderate (600-3000 METmin/week)	170	36.0
High (>3000 METmin/week)	120	25.4
Total	472	100.0

When the results of the participants' physical activity levels were examined, it was observed that 38.6% of them had a high level of physical activity, 36% of them had a medium level, and 25.4% had a high level of physical activity.

Table 3. The Relationship of Candidate Teachers' Quality of Life, Physical Activity, and Leisure Motivation Levels

Scales/Subscales		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical Activity Level (1)										
Quality of Life	Total Quality of Life (2)	r	.572**							
		p	.000							
	Physical and Environmental Quality (3)	r	.352**	.512**						
		p	.000	.000						
	Social Quality (4)	r	.378**	.478**	.138**					
		p	.000	.000	.003					
	Psychological quality (5)	r	.421**	.490**	.230**	.140**				
		p	.000	.000	.000	.002				
	Amotivation (6)	r	.279**	.361**	.154**	.274**	.183**			
		p	.000	.000	.001	.000	.000			
Leisure Motivation	To know and accomplish (7)	r	.353**	.409**	.242**	.198**	.158**	.496**		
		p	.000	.000	.000	.000	.001	.000		
	To experience stimulation (8)	r	.211**	.273**	.181**	.169**	.134**	.357**	.352**	
		p	.000	.000	.000	.000	.004	.000	.000	
	Identified/introjected (9)	r	.339**	.371**	.234**	.160**	.158**	.395**	.503**	.295**
		p	.000	.000	.000	.000	.001	.000	.000	.000
	External regulation (10)	r	.309**	.382**	.198**	.172**	.174**	.391**	.434**	.355**
		p	.000	.000	.000	.000	.000	.000	.000	.000

*p<0,05

When the correlation analysis results related to Quality of Life were examined, it was determined that there was a low and moderate positive correlation between the quality of life and physical activity level and the subscales of leisure motivation scale ($p < 0,05$). Therefore, it is possible to say that the increase in the level of physical activity and/or leisure motivation will increase the quality of life.

Table 4. The results of multiple regression analysis related to the prediction of life quality by the subscales of physical activity level and leisure motivation

Variables	β	Standard Error $_{\beta}$	Standardized β Coefficient	t
Constant	.946	.158	-	6.018**
Physical Activity Level (PA)	.330	.030	.437	11.108**
Amotivation (A)	.085	.038	.095	2.197*
To know and accomplish (KA)	.102	.048	.098	2.117*
To experience stimulation (ES)	.034	.030	.045	1.0131
Identified/introjected (II)	.065	.035	.079	1.844
External regulation (ER)	.105	.036	.123	2.938**
	R=0.643	R ² =0.413	F=54.558**	

n=472; *p<0.05; **p<0.01.

When the parameters related to the regression model were examined, according to the standardized regression coefficient (β), the order of importance of the predictive variables on the quality of life was; Level of Physical Activity, External Regulation, To know and accomplish, Amotivation, Identified/introjected, To experience stimulation. When the results of the t-test on the significance of the regression coefficients were examined, it was observed that only the experience stimulation and the Identified/introjected sub-dimensions were not significant predictors of quality of life. Other variables had a significant effect on the quality of life.

The regression equation (mathematical model) related to the quality of life according to the results of regression analysis were given below.

$$\text{The quality of Life} = 0.946 + (0.330 \times \text{PA}) + (0.85 \times \text{A}) + (0.102 \times \text{KA}) + (0.034 \times \text{ES}) + (0.65 \times \text{II}) + (0.105 \times \text{ER})$$

Discussion and Conclusion

In this study which was aimed to investigate the relationship between the quality of life, physical activity levels and leisure motivation of the candidate teachers, it was determined that 38.6% of the teachers had low physical activity levels. The most important factor in the formation of this result was thought as the existence of a difficult exam, which the candidate teachers have to accomplish in order to be appointed, and the serious working hours spent to accomplish it. As a matter of fact, researches on university students reported that the level of physical activity was affected not only by factors such as the education department, gender but also by class ratings, and that the students in the last class had lower levels of physical activity than the other students (Oguz et al., 2018; Kurtipek and Sonmezoglu, 2018; Kyoutova and Sigmund, 2016; Bozkuş et al., 2014; Aslan et al., 2007; Zhao et al., 2007). Güven and Öncü (2006), who emphasize the family factor in participating to the physical activity indicated that the participation of individuals in physical activity from a young age was largely related to the perspective of the parents' viewpoints. The approach of the parents in this regard was the most determining factor. While some parents are aware of the positive effect of physical activity on the development and socialization of people and support their children's participation in these activities, most families recently have not particularly concerned about their children's participation in these activities. Especially in recent years, social media usage, which has become widespread due to technological developments, has blocked the individuals on smart phones and computers, and the frequent changes in the education system and imposition of the examination system are the biggest obstacles to physical activity. As another reason for the low physical activity of candidate teachers, the inadequacy of physical activity areas can be argued. It is known that the

diversity of physical activity areas has a significant effect on the participation of people and the time they have spent in these areas (Işıköz et al., 2018; Honca and Çetinkaya, 2017; Gümüş and Özgül, 2017).

According to another finding obtained from the findings of the research, the mean scores of leisure motivation levels were high in the Identified/introjected ($\bar{x}=3,49$) and experience stimulation ($\bar{x}=3,46$) subscales. On the other hand, the lowest mean scores was in the sub-dimension of amotivation ($\bar{x} = 2.34$). According to these results, it can be said that the most important factors that motivate the candidate teachers to leisure activities were subdimensions of Identified/introjected and experience stimulation. It was believed that the city and the campus which had limited opportunities in the recreational sense were the factors affecting the low scores related to motivating the candidate teachers to leisure activities. As a matter of fact, Torkildsen (2012) stated that the most important factor motivating the leisure time activities of the individuals was the range of recreational opportunities. Chan et al. (2013) noted that leisure motivation influences leisure time participation and relationships more than leisure time satisfaction, while Kim et al. (2015) indicate that individuals are directly related to the motivation levels of their chosen activities. On the other hand, while Clark and Stankey (1979) stated that the unique requirement of providing maximum satisfaction with the activities they participate in leisure time was the creation of a sense of winning something, Ragheb and Tate (1993) emphasizes that having an advance knowledge of the details of the leisure activities before they participated increases the motivation and satisfaction levels of the individuals. It should not be forgotten that the candidates who will serve in different regions of the country with the central appointment system may have much more limited recreational opportunities in the regions they are assigned to. In this respect, it is important for giving lessons to the candidate teachers such as time management, leisure education and creative thinking style in terms of providing different recreation opportunities to their students in future school.

In the correlation analysis, Pearson correlation coefficients representing the relationship between quality of life, physical activity level, and leisure motivation sub-dimensions were calculated. The results of the analysis showed that the dimension of physical activity level ($r = 0.572$) had the strongest correlation with quality of life. When the correlation coefficients between the other variables and quality of life were examined, it was determined that the dimensions of amotivation ($r = 0,279$), To know and accomplish ($r = 0,353$), To experience stimulation ($r = 0,211$), Identified/introjected ($r = 0,339$), and external regulation ($r = 0,309$) statistically significant ($p < 0.01$) and a positive relationships. It is, therefore, possible to say that an increase in the level of physical activity and/or subscales related to leisure motivation will increase the quality of life.

The F-score of the regression model which formed in order to demonstrate the effect of dimensions and physical activity level on leisure quality that constitutes leisure motivation was 54,558 and the level of significance was $p < 0,01$. All of the dimensions explain the quality of life as 41.3%. According to the analysis results, the level of physical activity ($\beta = 0,330$, $p < 0,01$) was the independent variable that has the strongest influence on the quality of life. Although some research has shown that a good quality of life does not necessarily lead to positive living conditions (Tsfazghi et al., 2010; McCrea et al., 2011), most research suggests that psychological positive attitudes towards physical activity and recreational activities and subjective well-being had a positive results on life quality (Kırtepe, Çetinkaya, and Uğurlu, 2018; Cini et al., 2013; Diener 2000; Pi et al., 2014). Candidates teachers with low quality of life for various reasons should adopt a physically active life model and create recreational opportunities for themselves will contribute to their quality of life. Teachers who are a model figure will be able to serve their students better with the high quality of life. For this reason, improving all kinds of infrastructure activities affecting the quality of life of teachers who will train the new generations of the society is important for educating healthy generations.

According to the results of this study, it is possible to increase the number of on-campus recreational areas and activities where candidate teachers can evaluate their leisure time, thereby increasing the adoption of an active lifestyle and quality of life. It is possible to encourage the students to direct their students accordingly. Universities can organize a variety of recreational activities in

cooperation with other public institutions, non-governmental organizations and private businesses in order to increase their leisure motivation. It is recommended that policy-makers, who are obliged to increase the quality of life of the individual, should develop policies for the leisure of the individual, taking into account these consequences. Examining the leisure motivation in our country culture and the concepts related to it (such as the quality of life, leisure time, leisure time physical activity constraints, coping with leisure time obstacles) in different groups of samples with different qualifications may provide generalizable results.

Reference

- Altunay, B. R., & Balcı, V. (2018). Ankara İli Keçiören İlçesindeki İlköğretim Okullarında Görev Yapan Öğretmenlerin Boş Zaman Etkinliklerine Katılım Motivasyonu. *Spor ve Performans Araştırmaları Dergisi*, 9(1), 50-63.
- Aslan, U. B., Livanelioğlu, A. & Aslan, Ş. (2007). Fiziksel Aktivite Düzeyinin Üniversite Öğrencilerinde İki Farklı Yöntemle Değerlendirilmesi. *Fizyoterapi Rehabilitasyon*, 18(1), 11-19.
- Ayhan C, Ekinci N. E, Yalçın, İ, Yiğit Ş. (2018). Investigation of Constraints that Occur during Participation in Leisure Activities by High School Students: A Sample of Turkey. *Education Sciences*, 8(2), 86.
- Ayhan, C., Eskiler, E. & Soyer, F. (2017). “Aktif Sporcuların Rekreatif Etkinliklere Katılımlarına Engel Oluşturabilecek Faktörlerin Yaşam Tatmini ve Yaşam Kalitesi Üzerine Etkisi,” Erpa Int. Congresses on Education, Hungary, 164-175, Budapest, Hungary,
- Binbaşoğlu, H. & Hakan, T. (2014). Üniversite Öğrencilerinin Boş Zamanlarına Yönelik Tutumları: Doğu Anadolu Bölgesindeki Myo Öğrencilerine Yönelik Bir Araştırma. *Akademik Yaklaşımlar Dergisi*, 5(2).
- Bozkuş, T., Türkmen, M., Kul, M., Özkan, A., Öz, Ü. & Cengiz, C. (2014). Beden Eğitimi ve Spor Yüksekokulu’nda Öğrenim Gören Öğrencilerin Fiziksel Aktivite Düzeyleri ile Sağlıklı Yaşam Biçimi Davranışlarının Belirlenmesi ve İlişkilendirilmesi. *International Journal of Science Culture and Sport*, 1(3), 49-65.
- Chang, P. J., Wray, L., & Lin, Y. (2014). Social relationships, leisure activity, and health in older adults. *Health Psychology*, 33(6), 516.
- Chen, M. & Pang, X. (2012), Leisure Motivation: An Integrative Review. *Social Behavior and Personality*, Cilt: 40, Sayı: 7, Ss. 1075-1082.
- Cini, F., Kruger, S., & Ellis, S. (2013). A Model of Intrinsic and Extrinsic Motivations on Subjective Well-Being: The Experience of Overnight Visitors to a National Park. *Applied Research in Quality of Life*, 8(1), 45–61.
- Clark, R. N., & Stankey, G. H. (1979). The Recreation Opportunity Spectrum: A Framework For Planning, Management, And Research. *Gen. Tech. Rep. Pnw-Gtr-098. Portland, or: Us Department Of Agriculture, Forest Service, Pacific Northwest Research Station. 32 P, 98.*
- Craig C. L., Marshall A.L., Sjöström M., Bauman A.E., Booth M.L., Ainsworth B.E., Pratt M., Ekelund U., Yngve A., Sallis J.F., Oja P. (2003). International Physical Activity Questionnaire: 12-Country Reliability and Validity. *Med. Sci. Sports. Exerc.* 35. Pp. 1381-1395.

- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
- Diener, E. (2000). Subjective Well-Being: The Science of Happiness and a Proposal for a National Index. *American Psychologist*, 55(1), 34-43.
- Esteban-Cornejo, I., Martinez-Gomez, D., Sallis, J. F., Cabanas-Sánchez, V., Fernández-Santos, J., Castro-Piñero, J. & UP & DOWN Study Group. (2015). Objectively measured and self-reported leisure-time sedentary behavior and academic performance in youth: The UP&DOWN Study. *Preventive medicine*, 77, 106-111.
- Gümüş, H., & Özgül, S. A. (2017). Development of Scales for Barriers to Participation and Preference Factors in The Use of Recreation Area. *Journal of Human Sciences*, 14(1), 865-882.
- Günaydın, E. İ. (2018). Yaşlılıkta Fiziksel Aktivitenin Önemi. *Türkiye Klinikleri Journal of Nutrition and Dietetics-Special Topics*, 4(1), 38-44.
- Güven, Ö. & Öncü, A. G. E. (2006). Beden Eğitimi ve Spora Katılımda Aile Faktörü. *Sosyal Politika Çalışmaları Dergisi*, 10(10).
- Harmer, J. (2001). *The Practice of English Language Teaching*. Essex: Longman Press.
- Haworth, John T. & Veal, A. J. (2004), *Work and Leisure*, Routledge, Sussex.
- Honça, A. A., & Çetinkaya, T. Rekreasyonel Faaliyetlere Katılım Engelleri Algısı: Üniversite Öğrencileri Örneği. *International Journal of Recreation and Sports Science*, 1(1), 30-37.
- Isık, O., Gumus, H., Okudan, B., & Yılmaz, M. (2015). Üniversite Öğrencilerinin Yaşam Kalite Düzeylerinin Depresyon Düzeyleri Üzerine Etkisinin İncelenmesi. *International Journal of Science Culture and Sport*, 2(Special Issue 1), 836-843.
- Işıkgöz, E., Esentaş, M., Şahin, H.M. (2018). Beden Eğitimi ve Spor Alanında Öğrenim Gören Öğrencilerin Fiziksel Aktivite Mekân Seçimini ve Fiziksel Aktiviteye Katılımını Etkileyen Faktörlerin İncelenmesi *Inonu University, Journal of Physical Education and Sport Sciences (Iujpess)*, 5(1), 21-32.
- Kara, F. M., Gürbüz, B., & Öncü, E. (2014). Leisure Boredom Scale: The Factor Structure and the Demographic Differences. *The Turkish Journal of Sport and Exercise*, 16(2), 28-35.
- Karaküçük, S. (2008). *Rekreasyon Boş Zamanları Değerlendirme*. (6.Baskı) Ankara: Gazi Kitabevi.
- Kestila, L., Maki-Opas, T., Kunst, A. E., Borodulin, K., Rahkonen, O., & Prattala, R. (2015). Childhood adversities and socioeconomic position as predictors of leisure-time physical inactivity in early adulthood. *Journal of physical activity and health*, 12(2), 193-199.
- Kırtepe A., Çetinkaya, T. & Uğurlu, F.M. (2018). Examination of the Factors Effecting the Use of Parks and Recreation Areas in Terms of Different Variables. *Asian Journal of Social Sciences and Management Studies*, 5(2), 60-64.
- Kim, Y. M., Yang, J. S., Lee, J. K., Kim, I. G., & Park, S. S. (2015). An Influence of Leisure Participation Motives of Married Immigrant Women on the Leisure Satisfaction and Social Adaptation to Korea. *Indian Journal of Science and Technology*, 8(S1), 405-411.
- Kocak, Y., Tukul, U., Tolan, B., Gumus, H., & Tolukan, E. (2017). Spor ve Sağlıklı Yaşam Merkezlerinde Hizmet Kalitesine Yönelik Müşteri Beklentilerinin ve Algılarının Analizi

- (Afyonkarahisar İli Örneği). *International Journal of Recreation and Sports Science*, 1(1), 38-46.
- Korkmaz, N.H.; Deniz, M. (2018). Yetişkinlerin fiziksel aktivite düzeyi ile sosyo-ekonomik düzeyleri arasındaki ilişkinin incelenmesi. *E-J. New World Sci. Acad. Sport Sci.* 8, 46-56.
- Kurtipek, S., & Sonmezoglu, U. (2018). Determination of the Perceptions of Sports Managers about Sport Concept: A Metaphor Analysis Study. *International Journal of Higher Education*, 7(4), 17.
- Kvintova, J., & Sigmund, M. (2016). Physical Activity, Body Composition and Health Assessment in Current Female University Students with Active and Inactive Lifestyles. *Journal of Physical Education and Sport*, 16, 627.
- Lahart, I. M., Metsios, G. S., Nevill, A. M., & Carmichael, A. R. (2015). Physical activity, risk of death and recurrence in breast cancer survivors: a systematic review and meta-analysis of epidemiological studies. *Acta Oncologica*, 54(5), 635-654.
- Mansfield, L., Caudwell, J., Wheaton, B., & Watson, B. (2018). Contemporary Feminist Issues in Sport, Leisure and Physical Education. In *The Palgrave Handbook of Feminism and Sport, Leisure and Physical Education* (pp. 517-522). Palgrave Macmillan, London.
- McCrea, R., Marans, R., Stimson, R., & Western, J. (2011). Subjective measurement of quality of life using primary data collection and the analysis of survey data. In R. W. Marans & R. J. Stimson (Eds.), *Investigating quality of urban life* (pp. 55-75). Netherlands: Springer.
- Mutlu, I. (2008). Egzersiz Yapan Kişilerin Boş Zamanlarına Yönelik Tutumları Üzerine Bir Araştırma (Kayseri İli Örneği), Niğde Üniversitesi Sosyal Bilimler Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi, Niğde.
- Myers, J., McAuley, P., Lavie, C. J., Despres, J. P., Arena, R., & Kokkinos, P. (2015). Physical activity and cardiorespiratory fitness as major markers of cardiovascular risk: their independent and interwoven importance to health status. *Progress in cardiovascular diseases*, 57(4), 306-314.
- Nixon, J.E. & Jewett, A.E. (1980). *An Introduction to Physical Education*, 9th Ed. Philadelphia: Saunder'S College.
- Oğuz, S., Çamcı, G., & Yılmaz, R. K. (2018). Üniversite Öğrencilerinin Fiziksel Aktivite Yapma Durumu ve Fiziksel Aktivitenin Kalp Sağlığına Etkisini Bilme Durumu. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*, 7(1), 54-61.
- Öztürk, M. (2005). Üniversitelerde Eğitim-Öğretim Gören Öğrencilerde Uluslararası Fiziksel Aktivite Anketinin Geçerliliği ve Güvenirli ve Fiziksel Aktivite Düzeylerinin Belirlenmesi, Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi, Ankara.
- Pi, L. L., Lin, Y. H., Chen, C. Y., Chiu, J. C., & Chen, Y. M. (2014). Serious Leisure, Motivation to Volunteer and Subjective Well-Being of Volunteers in Recreational Events. *Social Indicators Research*, 119(3), 1485-1494.
- Pitta, F., Troosters, T., Probst, V. S., Spruit, M. A., Decramer, M., & Gosselink, R. (2006). Quantifying Physical Activity In Daily Life with Questionnaires and Motion Sensors in Copd. *European Respiratory Journal*, 27(5), 1040-1055.
- Ragheb, M. G., & Tate, R. L. (1993). A Behavioural Model of Leisure Participation, Based on Leisure Attitude, Motivation and Satisfaction. *Leisure Studies*, 12(1), 61-70.

- Sarol, H., & Çimen, Z. (2015). The Effects of Adapted Recreational Physical Activity on the Life Quality of Individuals with Autism. *The Anthropologist*, 21(3), 522-527.
- Schmid, D., & Leitzmann, M. F. (2014). Association between physical activity and mortality among breast cancer and colorectal cancer survivors: a systematic review and meta-analysis. *Annals of Oncology*, 25(7), 1293-1311.
- Seo, Y. J., & Lee, S. K. (2015). Group Activity and Leisure Activity of University Students: Comparison between the Students from both Japan and Korea. *Journal of Culture Industry*, 15(4), 39-47.
- Sevil, T. (2015). Terapatik Rekreasyonel Aktivitelere Katılımın Yaşlıların Algıladıkları Boş Zaman Tatmini, Yaşam tatmini ve Yaşam Kalitesine Etkisi, Doktor Tezi, Anadolu Üniversitesi Sağlık Bilimleri Enstitüsü Beden Eğitimi ve Spor Anabilim Dalı
- Tekkanat, Ç. (2008). *Öğretmenlik Bölümünde Okuyan Öğrencilerde Yaşam Kalitesi ve Fiziksel Aktivite Düzeyleri* (Master's Thesis, Pamukkale Üniversitesi Sağlık Bilimleri Enstitüsü).
- Tesfazghi, E., Martinez, J., & Verplanke, J. (2010). Variability of Quality of Life at Small Scales: Addis Ababa, Kirkos Sub-City. *Social Indicators Research*, 98(1), 73–88.
- Torkildsen, G. (2012). Leisure and recreation management. Routledge, 2012.
- World Health Organization. (2013). World Health Report. Available online: <http://www.who.int/whr/2013/report/en/> (accessed on 28 May 2018).
- World Health Organization. (2016). Who Avrupa Bölgesi İçin Fiziksel Aktivite Stratejisi 2016–2025. Who Avrupa Bölge Ofisi Yayınları. Copenhagen, Denmark. 2016.
- Zhao, Y., Sigmund, E., Sigmundova, D., & Lu, Y. (2007). Comparison of Physical Activity between Olomouc and Beijing University Students Using an International Physical Activity Questionnaire. *Acta Universitatis Palackianae Olomucensis. Gymnica*, 37(4), 107-114.

Educator Leaders: Inspiring Learners to Transform Society by Becoming Architects of their Own Learning

Jenny E. Grigoropoulosⁱ

American Community Schools of Athens

Stefanos Gialamasⁱⁱ

American Community Schools of Athens

Abstract

In the evolving global stage, educators are continuously challenged to keep up with the changing expectations and unknown future needs of their students. Educators must engage in professional development and growth through numerous practices, including the pursuit of graduate studies in higher education institutions. Their curiosity, love, compassion, accountability, and eagerness to learn are some of the motivators that drive life-long learners to seek their personal and professional goals. When leaders and administrators support this learning process, they lead their organizations to innovation and change, while building on employee morale, pride, loyalty, and providing guidance towards high performance for their students, educators, and community, as a whole. Meanwhile, educators become teaching and learning leaders inspiring their students to become architects of their own learning in order to transform society and promote justice and fair trade leading by example. Furthermore, it is essential that educational institutions provide a consistent, high-quality academic experience in order for their students to become citizens and leaders of the world, especially given the level and degree of local, national, and global challenges that societies face. This can be achieved through the provision of a holistic, harmonious educational experience, guided by ethical discipline and universal principles and values while attending to students' needs and competencies.

Keywords: Educator-leaders, ethos, holistic education, Morphosis, Teaching, and Learning

DOI: 10.29329/ijpe.2018.157.4

ⁱ **Jenny E. Grigoropoulos**, Instructor, American Community Schools of Athens, English/Business, Greece.

Correspondence: grigoropoulouj@acs.gr

ⁱⁱ **Stefanos Gialamas**, Dr., American Community Schools of Athens, Counselling Psychology, Greece.

Introduction

In the continuously changing and evolving global stage, principles, values and ethics are challenged every minute. People in different parts of the world attempt to correlate the current crisis with the insinuation that it is caused by the economic crisis when in reality the critical situations faced by societies are caused by ethical issues. Meanwhile, governments and communities underestimate the profound impact educators make on their students' lives and the long-term effects they have on them. Furthermore, they do not understand that the actual instructional material taught at present will have limited if any applications in the future given the "fast-paced, complex, and multi-dimensional" transformations taking place in today's society. (Gialamas, 2017). Moreover, programs designed by previous century educators seem to be obsolete with reference to the education of tomorrow's global citizens and leaders.

Academic institutions are now faced with the challenge and desire to keep up with the changes by dedicating their resources (time, funds, and personal resources) towards professional development and growth of their educators and institutional leaders (Eryaman, 2017). In particular, how can educators keep up with the changes when the education they received ten, twenty, thirty or even more years ago has no direct relevance to today's complex societal needs? How can they adapt their mentality and practices to today's ever-changing world and tomorrow's unknown needs and expectations? This can occur through the adaptation of change and innovation in life-long learning practices and the creation of new knowledge, to be shared with colleagues and the educational community in general. Life-long learning is a term used quite often but seldom adopted. The reasons to avoid or neglect personal progress or advancement are numerous; limited time, funds, or even apprehension of the commitment. However, most times these are simply excuses. There needs to be a revolutionary change in the mental DNA of an educator in order for him/her to take on this challenge.

This change is a process, most painstaking, resulting in a distinctive transformation for each individual. Meanwhile, there are certain elements often present, which bridge the educator's desires with their pursuit of higher, continuous learning. Educators' engagement, curiosity, love, compassion, empathy, accountability, and eagerness are some of the personality traits that life-long learners ought to have (Bustin, 2014). It is an inner drive that when triggered by external conditions, it stimulates motives directed towards seeking personal and professional development and growth. In addition to the internal drivers, motivators, and external conditions, the surrounding environment plays a significant role in the process. When the institution treats its educators with respect, building on their confidence, pride, morale, loyalty, and security levels, sharing common objectives, mission, and vision, while enhancing collaborative communities, team building, and team learning, the outcome is employee satisfaction and elevated productivity leading to high performance (Senge, 2006; Eryaman & Schneider, 2017). High performance is carried over to their instructional methodologies and outcome promoting student higher and holistic learning.

Meanwhile, talent management is enhanced, identifying skill and knowledge available and applicable to the needs of the institution, at present and in the future, as they arise. Moreover, learning becomes contagious, spreading within and across the institution transforming it into a learning institution promoting the shared mission and team learning. The entire process follows the ripple effect attracting students who recognizing their instructor's thirst for "morphosis" cannot remain indifferent, as well as colleagues identifying the beauty that the combination of teaching and learning reveals and promotes. Thus the educators' model is adapted by students' seeking to adopt the exemplary they look up to. Educators become Teaching and Learning Leaders inspiring their students and younger generations by example (Noe, Hollenbeck, Gerhart, & Wright, 2014).

What is gMp

The **global Morfosis paradigm (gMp)** has been founded by Dr. Stefanos Gialamas in the quest towards a holistic education compatible to the ancient Greek educational paradigm, including principles, values, and virtue in the education of young learners. It has been embedded in ACS Athens School's daily practices and procedures. This paradigm promotes strategic approaches, innovative methodologies, and a leadership philosophy that guides educational institutions in its adoption and implementation (Gialamas, 2015). gMp is a holistic educational model relevant to all teacher-learners who seek to advance, as well as expand their knowledge and experience for their personal growth, in addition to the quest on motivational procedures and practices directed towards the younger generations, composing their students.

The Global Morphosis Paradigm (gMp) is a dynamic 3-dimensional model consisting of 3 inseparable, interconnected and interrelated components. These are the "Morfosis" Educational Philosophy, the i²Flex Delivery Methodology and the "Aristeia" Leadership approach (Gialamas, 2015). gMp is relevant to all teacher-learners, who seek to advance, as well as expand their knowledge and experience for their personal and professional growth, in addition to the motivation of the younger population, composing their students. Morfosis is the consistent, high quality, an academic experience aimed towards the students of today who are the citizens and leaders of tomorrow.

Educators have the responsibility to provide their students with a holistic, meaningful, harmonious educational experience, guided by ethical discipline and universal principles and values. Holistic is defined as the understanding and successful combination of the academic, emotional, physical, intellectual and ethical components to ensure a healthy and balanced individual. Meaningful refers to being in alignment with the individual's principles and values as well as his/her personal and professional goals. Moreover, education ought to be meaningful in relation to the students' dreams, strengths, capabilities, desires, and talents. Harmonious refers to the conception that all human dimensions, such as emotions, intelligence, and intellect must be in harmony. Ethical discipline is guided by ethos which is the essence and the focus of integrity. It refers to the individual's conscience and his/her acting upon higher intent guided by what he/she knows that is moral, virtuous, and noble. (Gialamas, 2017; Gialamas, Pelonis, & Medeiros, 2014). Moreover, Morfosis is the consistent, high quality, academic experience aimed towards the students of today who are the citizens and leaders of tomorrow. Educators are exposed to the responsibility to provide their students with a "meaningful, holistic, harmonious educational experience, guided by ethical discipline and universal principles and values" (Gialamas, 2015).

i²Flex Delivery Methodology is a constructivist blended teaching methodology which integrates independent, inquiry-based, flexible face-to-face learning that is meaningfully supported by educational media and technology (Gialamas & Avgerinou, 2016). "Aristeia leadership is the continuous act of effectively engaging all members of an organization, or community, as well as utilizing their differences, their authentic energies, creative ideas, and diverse qualities primarily for the benefit of their constituencies. It is comprised by three interrelated, inseparable and interconnected components: the establishment of an Authentic Leadership Identity (ALI), the creation of a Collective Leadership-Partnership Approach (CPA), and Service to Humanity (Gialamas, Cherif, Pelonis, & Medeiros, 2016; Gialamas & Pelonis, 2017).

Service learning, internships and civic responsibility acts of kindness are significant learning experiences designed and delivered by educators. However, the gMp model provides a holistic educational experience intended for educators and students, as it embraces academic, social, and personal growth and advancement. Specifically, gMp empowers students to become architects of their own learning while undertaking responsibility for their actions and initiatives. In particular, students decide on the initiative to be undertaken, plan for the most efficient, effective and purposeful execution, while delivering the initiative, reflects upon it, and assess its effectiveness. For example, students at ACS are responsible for designing and implementing a learning program for unaccompanied refugee children in Greece. In particular, they analyze the academic level of the

refugee students, develop a meaningful curriculum, and design appropriate delivery approaches. An example of a delivery approach is a hybrid program during which refugee students meet with ACS Athens students for seven hours on Saturday mornings and 2-3 times every week through webinars.

Now more than ever, there is a need to focus on providing a consistent, high-quality academic experience for our young people. The local, national, regional, and global challenges are very visible and intense. Social, economic, and ethical struggles are making people skeptical, concerned, and sometimes fearful (Gialamas, 2015). Educators and administrators must provide young people with a meaningful, holistic, harmonious educational experience, guided by ethical discipline and universal principles and values. We believe that the global Morfosis paradigm is necessary now, more than ever, in order to inspire young people to transform the world by becoming architects of their own learning. To accomplish that, we need to redefine several concepts such as “education”, “educators”, “teaching and learning” and finally “shaping the character” of a student (Gialamas, 2015).

How gMp inspiring Educators to become Teaching and Learning Leaders for the benefit of their students

“Children are great imitators. So give them something great to imitate”. Students, more than ever need the guidance and support of the people they spend the most time with; their educators. Educators are called upon to carry out a multi-level mission; facilitator, educator, mentor, guide, supporter, role model, advisor, confidante, and inspirational leader. Therefore, they need “leadership by example” and educators have such an opportunity or calling to do this. Although service learning, internships and civic responsibility as acts of kindness are significant learning experiences, they do not provide a comprehensive teaching and learning experience. On the other hand, the gMp model provides a holistic educational experience intended for educators and students, as it embraces and encourages academic, social, and personal growth and advancement.

In the challenging times that mankind is experiencing, students need to be motivated and guided. They need to be led rather than managed. Classroom management is a term tending to be obsolete taking into account the multiple drivers influencing student learning. Students ought to be approached holistically, providing them with multi-faceted education adopting Aristeia leadership approach while promoting values and excellence in academics and character. Aristeia leadership is combined with the i²Flex model of education merging multiple instructional methodologies in pursuit of high-quality educational practice designed for students. These practices can be designed, developed, and enhanced when educators advance and progress, on a personal as well as, professional level.

Providing students with a holistic approach to education enriched with passion, ethos, and empathy, prepares them to be fully functional and independent in the demanding societies they are growing in. Having a well-rounded, holistic education provides them with the bedrock necessary to challenge the given infrastructure of the modern society. They become fully equipped and prepared to be architects of their own learning. Furthermore, their educators, as teaching-learning mentors and leaders promote the quest for knowledge and the magic that pursuing it, entails.

Particularly, a first manifestation is the Youth-to-Youth program which is designed for 42 unaccompanied minors from different origins and backgrounds. These students meet with 42 ACS Athens students once a week face-to-face and 2-3 times weekly through webinars. ACS Athens students design the learning and instructional methodologies while planning activities to engage the refugee students in academics, sports, and arts while building on skills such as computer usage, professional dress code and etiquette, and so on. Through this process, the refugee students are equipped with skills, tools, and knowledge that prepare them to be integrated into the educational system in Greece and abroad. Meanwhile, ACS Athens students become architects of their own learning while they plan, design, and implement educational, social, and emotional strategies for their peers. gMp is manifested in the Youth-to-Youth program through the holistic practice's building on the student's intellectual background while embracing the students in the emotional and physical groundwork through the arts and sports. Moreover, the ethical foundation is enhanced through the awareness of equity, respect, and appreciation for each other.

ACS Athens students learn by serving humanity and carrying out good deeds. Meanwhile, educators inspire their students by educating them holistically, while offering the unaccompanied minors the chance to dream. The philosophy that ACS Athens supports and encourages, inspired the Shapiro Foundation, a foundation focusing on “improving the lives of the world’s most vulnerable populations” (TNH, 2018, para. 11). A significant outcome and manifestation of the Youth-to-Youth program is the Shapiro Foundation’s announcement that for the academic year 2018-2019, they will offer eighteen scholarships to unaccompanied minors to attend ACS Athens academic program, taking Youth-to-Youth to a next level. Meanwhile, teaching and learning are further developed through holistic processes. Students engage and participate in an academic environment, which is based on kindness, through their academic lessons. Subjects, such as mathematics, inspire students to engage in creative processes through which they are exposed to the curriculum in a harmonious and holistic manner.

A second manifestation is the Elderly Home Initiative which is designed and carried out in the Middle School. Middle School students under the supervision of their advisors visit elderly people who are Alzheimer’s patients during the school day, to spend time with them. Students become architects by designing approaches which they sense that will make sense to the elderly people including music, art, and games. Students have expressed their gratitude upon their return. Moreover, they stated that they experienced contentment realizing that they had brought happiness to the elderly people. Both manifestations are examples of gMp practices, which encompass meaningful, harmonious and educational experience, guided by ethos. The Global Morphosis Paradigm as conceived by Dr. Stefanos Gialamas, is the quest towards a holistic education, including principles, values, and virtues in the education of young learners. It has been embedded in ACS Athens School’s daily practices making the tri-fold model an undoubtedly powerful, meaningful, and purposeful tool in the hands of educators and administrators.

Manifestations

Teaching and learning is a passion. It is a pursuit driven by curiosity and deep eagerness towards significance and excellence. The more advanced the level of the quest, the higher the enthusiasm to accomplish it. Meanwhile, the inner drive and external motivators are further enhanced by progress and accomplishment. When the educator’s attempts and practices are welcomed and celebrated by the administration, peers, and professors, while the process and success are achieved, the hard work becomes less painful and the long hours become a quest for further achievement enhanced by more intense dedication. The process is continual and inexhaustible. As long as there are learning and accessibility to resources, there is an incentive and an inspiration for advanced education and higher achievement.

An educator who is a social constructivist teacher recognizes the significance and priority to give voice and stimulus to students. Educators ought to actively listen, engage, and find ways and practices through which they can motivate students to become active learners and achieve the highest of their potential. Professional development paves the journey, which leads to new, interesting, and engaging methods to promote knowledge, information, and learning. Once teaching is combined with the pursuit of continuous learning on behalf of the educator for the benefit of the students and their development, the outcome is Morphosis. The exchange of knowledge, expertise, and insight lead to the scholarship of teaching handed over to tomorrow’s global citizens of the world while preparing them to make a transformational impact on the world.

Meanwhile, the educator-learners’ achievements drive him/her more intensely in an attempt to be adaptable to student needs and competencies. Furthermore, having the capacity to update knowledge on new instructional methodologies and meaningful didactic tools provides alignment of the person with the professional. The appreciation of the students for their accomplishments provides a strong incentive to strive for excellence. The support from administration and colleagues enhances the passion for the realization of her objectives and goal. In the meantime, the deep need for learning provides the path towards completion of the learning process and achievement. It seems that teaching

and learning becomes a practice driven by a continuum attracting educators to become Teaching and Learning leaders for their benefit as well as, their students. In the process, colleagues and peers are attracted in a contagious manner. The exchange of knowledge and expertise leads the educator to the scholarship of teaching through the pursuit of higher education and degrees.

Conclusion

Today, more than ever, we need educator-leaders who will be empowered to undertake new leadership roles, open new knowledge paths, create unique opportunities, and lead their learners with ethos. These learners must be prepared and guided to become architects of their own life structure, poets of their own life poetry, and cultivators planting their own life tree under which their children, grandchildren, and the children of other people will sit to reflect while writing their own life's journey manuscript. All of these begin with the educator leader; a leader who will transform the world for the benefit of all people, but mostly for the less privileged human beings.

References

- Bustin, G. (2014). *Accountability: The key to driving a high-performance culture*. New York, NY: McGraw-Hill Education.
- "Children are great imitators. So give them something great to imitate." -Anonymous. (2011, July 02). Retrieved October 01, 2017, from <https://foreignpolicyblogs.com/2008/02/01/children-are-great-imitators-so-give-them-something-great-to-imitate-anonymous/>
- Eryaman, M. Y. (2017). Understanding Public Good in the Context of Evidence Discourse in Education. In M. Y. Eryaman & B. Schneider (Eds.), *Evidence and Public Good in Educational Policy, Research and Practice*. New York: Springer.
- Eryaman, M. Y. & Schneider, B. (Eds.) (2017). *Evidence and Public Good in Educational Policy, Research and Practice*. New York: Springer.
- Gialamas, S. (2015). Global Morphosis Paradigm. Retrieved October 03, 2017, from <http://www.g-morfosis.gr/category/theory/>
- Gialamas, S. (2017, February 20). Redesigning Educational Systems for the Future. Retrieved January 15, 2018, from <http://www.wise-qatar.org/redesigning-educational-systems-future-stefanos-gialamas>
- Gialamas, S., & Pelonis, P. (2017). Transforming K-12 Educational Institutions: The Global Morfosis Paradigm (gMp). *The International Schools Journal*, 37(1), 23-31.
- Gialamas, S., Pelonis, P., & Medeiros, S. (2014). Metamorphosis: A Collaborative Model to Promote Educational Change in *International Schools Journal for Progressive Education*, Volume 10 Number 1, 2014
- Gialamas, S., Avgerinou, M., (2015). Aristeia Leadership: A Catalyst for the i²Flex Methodology Educational Policy Analysis and Strategic Research, V 10, N 1, 2015
- Noe, R. A., Hollenbeck, J. R., Gerhart, B., & Wright, P. M. (2014). *Human resource management: Gaining a competitive advantage* (9th ed.). New York: McGraw-Hill/Irwin.
- Senge, P. (2006). *The fifth discipline: The art and practice of the learning organization* (Rev. and updated. ed.). New York, NY: Doubleday/Currency.
- TNH. (2018, June 19). The HOME Project, the Shapiro Foundation, & ACS Athens Helping Refugee Children. Retrieved from <https://www.thenationalherald.com/204901/the-home-project-the-shapiro-foundation-ac-s-athens-helping-refugee-children/>

A Case Study of Thai Secondary School Teachers' English Intercultural Teaching and Perception*

Kewalin Jantadejⁱ

Lampang Rajabhat University

Sasima Charubuspⁱⁱ

Mae Fah Luang University

Abstract

This study investigated the integration of English intercultural teaching of Thai secondary school teachers using questionnaires and classroom observations. The results from the questionnaires revealed that participants perceived that they integrated English intercultural teaching at a low level. In the actual classroom, they placed a paramount focus on teaching English intercultural 'knowledge', whereas assessing students' intercultural 'attitudes' and 'behavior' gained the least attention. Finally, it should be noted that the aspects of cultural bias during the teaching practice of participants require further attention.

Keywords: English intercultural teaching, intercultural competence, foreign language education

DOI: 10.29329/ijpe.2018.157.5

* This article is a part of a dissertation submitted for the degree of Doctor of Philosophy Program in English for Professional Development in School of Liberal Arts, Mae Fah Luang University.

ⁱ **Kewalin Jantadej**, English Department, Faculty of Humanities and Social Sciences, Lampang Rajabhat University, Lampang, Thailand.

ⁱⁱ **Sasima Charubusp**, Dr., School of Liberal Arts, Mae Fah Luang University, Chiang Rai, Thailand.

Correspondence: ajarnjoy@yahoo.com

Introduction

Intercultural competence (IC), or the ability to communicate in international settings effectively and appropriately through awareness of differences in one's own and others' culture, is crucial for global context. Building Intercultural Competence (2010), Deardoff (2006), INCOM VET (2014), and Root and Ngampornchai (2012) accumulated IC components and summarized that IC is constructed mainly from three constitutional components—knowledge (cognitive), attitudes (affective), and skills (behavioral/actional). According to Fantini (2009), the end result of IC requires effective and appropriate performance when interacting with others who have different linguistic and cultural backgrounds. It is also stated that IC is unlikely to take place naturally. Yet, it has to be instructed directly and continually to learners, both for educational, and organizational purposes.

The educational system of Thailand also places the emphasis on IC. In the Language and Culture strand enacted by Ministry of Education (MOE), it aims to enable Thai learners to use English languages to harmonize with the English native speakers' culture, create relationships, appreciate similarities and differences between the two languages and cultures, and make use of languages and cultures appropriately (MOE, 2008).

Nonetheless, the integration of IC to English as a Foreign Language (EFL) teaching in the Thai context is in dispute. On the one hand, IC is proposed as the important key in language learning; on the other hand, it is obvious that Thai EFL teachers mainly focus on teaching grammar (Noom-ura, 2013; Saengboon, 2017; Wenjing, 2014) and communication skills (Bruner, 2015; Methitham, 2009; Saengboon, 2017). Although it may be true that the students can develop their cultural knowledge by themselves when they go through a tremendous amount of media such as movies or the Internet (Ito et al., 2009; Kukulska-Hulme, 2010), it is uncertain that they will acquire all of the three constitutional components of IC. Moreover, the students may have bias towards particular norms or cultures depending on their past cultural experiences.

As such, components of IC need to be instructed directly in classes, starting from Grade 7 and Grade 8 levels as MOE indicates that these two levels are the beginning levels to learn to understand one's own and other cultures in order to use appropriate language, gestures, and manners in intercultural communication (MOE, 2008). In this way, the students can gradually apply the three constitutional components of IC to continually enhance appropriate behaviors, and effective communication in intercultural interactions based on each individual capability.

Although studies regarding IC have been widely conducted, it is surprising that so little empirical research aims to investigate how Thai EFL secondary school teachers establish their concerns over IC. Therefore, it is of great significance to conduct a research to know the perceptions and practices of teachers' awareness of their tendencies and limitations in developing students' IC. Most importantly, parts of this study's findings will be used as a baseline framework to further develop a model for English intercultural teaching—the next stage of the main study.

For the reasons above, the objectives of this study, therefore, are to investigate Thai EFL Grade 7 and Grade 8 teachers' perceptions on the practice of their English intercultural teaching, and sort out components regarding English intercultural teaching in their actual practice. The research questions were as follows:

Research Question 1: To what extent do Grade 7 and Grade 8 Thai EFL teachers perceive the integration of English intercultural teaching in their classroom?

Research Question 2: What English intercultural teaching components do Grade 7 and Grade 8 Thai EFL teachers employ to teach in the actual classroom?

Literature Review

Guided by the above research questions, the literature relevant to this study includes IC to language teaching, intercultural perspectives to Thailand EFL teaching at the basic education level, and the possibility of implementing the IC theory to EFL teaching practice in Thailand's basic education context. In addition, the conceptual framework is illustrated.

IC to language teaching

Deardorff (2006), one of the famous intercultural scholars, summarized the general consensus on a definition of IC among top intercultural scholars of nationally and internationally known and academic administrators as "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (p.247).

In language teaching education, IC concepts have been introduced to teaching practitioners for more than two decades (Byram, Holmes & Savvides, 2013). Deardorff (2006; 2009) indicated that achieving effective intercultural interactions are the keys to success in international and foreign language (FL) education while having language skills alone is not sufficient for IC. In this regard, Tomalin and Stempleski (1993) asserted that it is necessary to facilitate students IC concurrently with linguistic and communicative competence to diminish misunderstandings where the language is used by the speakers of that language, as having linguistic, communicative, and intercultural competences are the pivotal achievements of language learning.

To make the IC concept comprehensible in FL education, in 2006, Deardorff conducted a widespread study by working with a large number of leading intercultural scholars across countries in reaching consensus on the components comprising IC. The findings yielded that there were about 22 common intercultural components that are notable among the scholars (INCOM VET, 2014). She then revised and introduced the Pyramid Model of IC, and the Process Model of IC in 2006; 2009 to include accepted IC components in the models. Both models are rooted in applying 1) attitudes – (respect, openness, curiosity) 2) knowledge – (cultural self-awareness, specific cultural knowledge, sociolinguistic awareness) 3) skills – (listening, observing, and evaluating; analyzing, interpreting, relating) 4) desired internal outcomes – (adaptability, flexibility, ethnorelative view, empathy), and 5) desired external outcomes– (effective communication, and appropriate behavior in an intercultural situation).

Though the two models comprise the same elements, the Process Model of IC is more oriented to the process. As it highlights a lifelong cycle process of IC which begins from the attitudes and continues to the external outcomes, which follow a path from the personal to the interpersonal level time and again where at no one point could an individual completely attain intercultural competency (Deardorff, 2006; 2009; Nagy, 2009).

Despite a large number of IC models, Deardorff's models are still distinguished and acceptable to use for IC curriculum development in FL educational institutions. For instance, in 2014 VET institutions have applied Deardorff's (2006; 2009) these two models to guide their curriculum and assessment of the development of IC (INCOM VET, 2014). The models had proved their utilities in terms of practicality, pliability, adaptability, and yielding the perspectives of today's leading intercultural scholar (INCOM VET, 2014). Another is, Bertelsmann Foundation, which employed the Process Model of IC to use in its institution in 2008, found that the Model could differentiate skills and attitudes which empower both students and teachers to perceive and perform in intercultural situations effectively, flexibly, and appropriately (INCOM VET, 2014). The aforementioned background and review make it possible to view Deardorff's Process Model of IC as a combination between language teaching and IC disciplines.

Intercultural perspectives to Thailand EFL teaching at the basic education level

The significance of intercultural perspectives to EFL teaching in the most current Thailand Basic Education Core Curriculum of the year 2008 are represented through its aims. The Curriculum aims to enable learners to better understand themselves and others in terms of languages and cultures, and become aware of diversities in worldviews, customs, traditions, society, economy, politics, and administration to create friendship and cooperation with various countries through four learning areas 1) Communication 2) Culture 3) Relationship with Other Learning Areas 4) Relationship with Community, and the World (MOE, 2008).

Intercultural perspectives are further listed explicitly starting from Grade 7 and Grade 8 Level Indicators for the cultural learning area. It indicates that English language learners need to 1) be aware of the knowledge of Thai and native cultures 2) express attitudes of interests and feelings on various matters including cultural relativities 3) gain the skills of cultural comparing, analysing, communicating, and acting/behaving (For more details see MOE, 2008, p. 270-273).

Based on the document, intercultural perspectives are rather essential for English language teaching for compulsory education in Thailand. More importantly, the document makes a clear requirement to contribute cultural self-awareness values to Thai learners to encourage them to be proud of Thai identity as well as raise an awareness of cultural diversities to minimize conflicts and create relationship among the world citizens.

The possibility of implementing the IC theory to EFL teaching practice in Thailand's basic education context

Although several studies propose an intercultural approach to FL teaching, the practical application of intercultural teaching is somewhat rare in FL classrooms worldwide (Alyan, 2011; Byram et al., 2013; Garrido & Álvarez, 2006; Sercu, 2006). A review of literature disclosed that the lack of a firm grasp on how intercultural approach works in language classrooms hinders FL teachers' efforts to encourage learners with intercultural knowledge, attitudes, and skills (Atay, Kurt, Çamlıbel, Ersin & Kaslioglu, 2009; Gu, 2016; Sercu, 2006; Tran & Dang, 2014; Cheng, 2007; Tian, 2013).

Another point is deemed to be an incompatible, and inapplicable context of FL teaching, and social circumstance in each region of the world that limit an implementation of intercultural approaches or concepts that mostly originated from the West into every localized FL teaching context. For instance, one of the most original, and the most recognizable IC model which has long been extensively cited in several FL research studies is the Developmental of Intercultural Sensitivity Model of Bennett (1986) — a leading American intercultural scholar. Though Bennett's model depicts the process from the stages of being ethnocentric to ethnorelative, and has been promoted for use in many cross-cultural awareness training courses such as Communicaid's Developing Global Competence (see Communicaid, 2018), Spencer-Oatey & Franklin (2009); Hu & Byram (2009) argued that Bennett's model was not designed for FL classes as it has had a major influence on study abroad courses and theories of culture shock.

However, the review literature in this current study discovered that though Deardorff's Process Model of IC was developed in a Western country, its process and components tend to be applicable to the EFL teaching in secondary education contexts in Thailand. When comparing the core and sub-components of the Process Model of IC to the English language Level Indicator for Grade 7 and Grade 8: Thailand Basic Education Core Curriculum A.D. 2008, it reveals the similarity and compatibility on the whole.

To elaborate, both Deardorff's Process Model of IC, and the English language Level Indicator for Grade 7 and Grade 8 not only aim to enhance learners' cultural knowledge, attitudes, and skills but they also require somewhat similar sub-components (e.g., cultural self-knowledge, culture-specific,

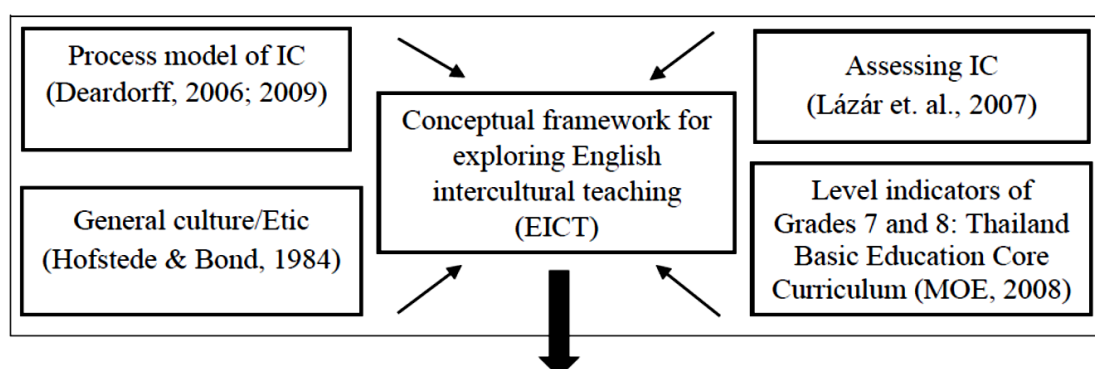
attitudes of interests/openness, feelings toward cultural relativities, cultural comparing, analysing, communicating, and acting/behaving) that can be used to develop learners' IC (For further details of each component see Process model of IC,

2006; 2009, and MOE, 2008, p. 270-273).

As such, it is likely that Deardorff's Process Model of IC can be incorporated into FL Grade Level Indicators: Thailand Basic Education Core Curriculum A.D 2008 to set a primary guideline for English intercultural teaching.

Conceptual framework

To develop the conceptual framework for exploring perception and practice on English intercultural teaching of Grade7 and Grade 8 Thai EFL teachers, theories, concepts, policies, and related documents regarding IC in language classroom were synthesized as follows:



EICT core components	EICT sub-components	Definitions
Knowledge	Sociolinguistic knowledge	Provide knowledge of English language usage for social interactions
	Cultural self- knowledge	Provide knowledge of Thai culture; e.g., history, lifestyle, food, festival, beliefs, values, identity, and worldviews
	Culture-specific knowledge	Provide knowledge of one specific country's lifestyle, beliefs or values
	Culture-general knowledge	Provide knowledge of practice, manners, behaviors, values, beliefs or phenomena that similar to all culture
Attitudes	Openness	Encourage open-mindedness and willingness to move beyond one's comfort zone when learning or encountering differences of other cultures
	Respect	Encourage value and respect for Thai and other cultures
	Withholding-judgment	Encourage attitude suppressing judgment and bias toward Thai and other cultures by not taking sides, and restraining judgment

Continued

EICT core components	EICT sub-components	Definitions
Skills	Comparing & Analyzing	Practice comparing and analyzing similarities and differences between Thai's and other cultures' lifestyles, behaviors, values, or beliefs
	Communicating	Practice communicating in English with proper vocabulary, grammar, convention, or tone in different social occasions through speaking
	Behaviors	Practice performing proper manners while interacting with English users of other cultures in social situations
Assessments	Internal learning outcome assessments:	Knowledge assessment: Assess students' cognition of 'sociolinguistic knowledge', 'cultural self-knowledge', 'cultural-specific knowledge', and 'cultural-general knowledge'
		Attitudes assessment: Assess students' 'openness', 'respect', and 'withholding-judgment' attitudes
		Skill assessment: Assess students' skill in 'comparing and analyzing' similarities and differences regarding history, lifestyle, food, festival, beliefs, values or worldviews among cultures together with assessing their reasoning toward these features
	External learning outcome assessments:	Communicating assessment: Assess students' effectiveness of English verbal communication in intercultural situations
		Behavior assessment: Assess students' ability to demonstrate appropriate behavior in intercultural situations

Note: The synthesis framework for exploring English intercultural teaching comprises four core components – 1) Knowledge 2) Attitudes 3) Skills, and 4) Assessments.

Figure 1: Conceptual framework for exploring English intercultural teaching

Methodology

Research design

The research study employed a mixed methods approach in which the quantitative data and qualitative data were collected and analyzed. With the integration of the two research methods, the data collected in this study was validated through triangulation and, as a consequence, the accuracy of the findings were ascertained.

Participants

This study involved 50 Grade 7 and Grade 8 Thai EFL teachers from 12 schools under the jurisdiction of Secondary Education Service Areas. These schools were located in six Central and Northern provinces of Thailand including Bangkok, Uthai Thani, Kanchanaburi, Khampangphet, Phrae, and Chiang Mai provinces. Purposive sampling was used to select the participants.

Research instruments

This study employed two research instruments— the self-perception questionnaire, and the classroom observation checklist and field note form. Both instruments were developed by the researchers based on the synthesized conceptual framework for exploring English intercultural teaching (see Figure 1). They were used to retrieve information on an integration of English intercultural teaching in the Thai secondary educational context. The content of items in the research instruments were developed corresponding to the four central points of this study—knowledge, attitudes, skills, and assessment of teachers' English intercultural teaching.

Self-perception questionnaire (SPQ) on an integration of English intercultural teaching

The SPQ consisted of 20 items, aiming to examine the level of respondents' self-perception on an integration of English intercultural teaching practice, and sort out English intercultural teaching components that they perceived they employed to teach in the classroom. Therefore, 20 items reflected all sub-components of English intercultural teaching listed in the conceptual framework (see Figure 1). The 4-point rating scale, ranging from 1 (never practiced) to 4 (practiced in every unit), was adopted to assess all items in this part.

The internal consistency reliability for the SPQ was computed, which achieved a Good level—the Cronbach alpha coefficient value was .88 ($n = 50$). As Nunnally and Bernstein (1994) recommended that an alpha level of .70 is considered a fairly small reliability to construct validation in research whereas .80 or greater is a good level.

Classroom observation checklist and field note (COCF) form

The COCF form was used to record the teachers' English intercultural teaching practice in their classroom. This form collected both quantitative and qualitative data. The checklist consisted of 20 items with the express aim of aiding the researcher and a peer observer to collect quantitative data and then triangulate the data from respondents who achieved a predetermined minimum score from the SPQ— that is from those with a mean score of 2.51. The COCF form utilized a checklist to tabulate the occurrences or absence of all English intercultural teaching sub-components listed in the conceptual framework (see Figure 1) as noted when observing the teacher participants. The field note noted down qualitative data from teachers' instructions involving English intercultural teaching. The checklist statements complemented the questions posed on the SPQ.

To ensure that all questions in the SPQ and statements in the COCF form were valid, five professors holding doctoral degrees in Teaching English as a Foreign Language, Language and Communication, and Applied Linguistics who are also experts in intercultural studies were requested to perform an item-objective congruency (IOC) test of each question, and statement item for both research instruments. In respect of IOC scores, Rovinellin and Hambelton (1997) as cited in Turner and Carlson (2003) recommended that each item's accepted score was established at 0.5 or greater. The IOC test on each item of the SPQ and the COCF form was rated from 0.6 to 1, indicating that all items were valid.

Procedure

This study was initiated in June 2017. The respondents were contacted and requested for consent for data collection. After receiving the consent forms from the respondents, the SPQ on an integration of English intercultural teaching was distributed to them. When the questionnaires were returned and collected, they were calculated for the mean score. The respondents whose mean scores of 2.51 or greater—showing the moderate up to the high degree of IC integration in English teaching—were directly contacted by the researchers to receive permission for classroom observation. Out of 20 participants whose mean scores met the requirement, only two of them agreed to classroom observation.

The classroom observation started from August to September 2017. Each participant's teaching practice was observed three times. For validity reasons, the teaching was investigated by one researcher and a peer observer using the COCF form. Additionally, each observation session was video recorded so as to capture the participants' teaching practice. As such, the researchers could replay the recordings for in-depth analysis.

Results

Research question 1:

To what extent do Grade 7 and Grade 8 Thai EFL teachers perceive the integration of English intercultural teaching in their classroom?

By using descriptive analysis (mean and standard deviation), the results from the self-perception on an integration of English intercultural teaching were classified into four categories, high integration ($M = 3.26-4.00$), moderate integration ($M = 2.51-3.25$), low integration ($M = 1.76-2.50$), and lowest integration ($M = 1.00-1.75$).

The results showed that three out of 50 respondents (6%) achieved the high integration, 17 respondents (34%) reached the moderate integration, 27 respondents (54%) obtained low integration, and three respondents (6%) gained the low integration of English intercultural teaching. The overall results reported that the respondents perceived that they applied low integration of English intercultural teaching practice in their classroom ($M = 2.43$, $SD = 0.39$).

Respondents perceived that they employed to teach IC Knowledge to the greatest extent ($M=2.96$), followed by IC Skills, IC Attitudes, and IC Assessments, — $M = 2.57$, 2.41 , and 2.18 respectively. The following paragraphs elaborate their perceptions from the greatest to the lowest practice of English intercultural teaching in their classroom.

IC Knowledge:

IC Knowledge teaching comprises four sub-components 1) sociolinguistic knowledge, 2) cultural self-knowledge, 3) culture-specific knowledge and 4) culture-general knowledge. The results

showed that respondents perceived that they employed to teach ‘sociolinguistic knowledge’ to the greatest extent ($M= 3.34$) and ‘culture-general knowledge’ to the lowest extent ($M=2.76$), (For further details on IC sub-components’ definitions, see Figure 1).

IC Skills:

IC Skills teaching entails three sub-components 1) comparing and analyzing, 2) communicating, and 3) behavior. Respondents perceived that they encouraged the students to practice ‘comparing and analyzing’ cultural differences to the greatest extent ($M=2.92$) and performing appropriate ‘behavior’ to the lowest extent ($M=2.26$).

IC Attitudes:

IC Attitudes teaching contains three sub-components 1) openness, 2) respect, and 3) withholding-judgment. Respondents reported that they encouraged the students to have an ‘openness’ in learning other cultures to the greatest extent ($M = 2.70$) and ‘respect’ to their own and other cultures to the lowest extent ($M= 2.22$).

IC Assessments:

IC Assessments include internal learning outcome and external learning outcome assessments. The internal learning outcome assessments assess students’ cognition and affection that involve all sub-components of IC Knowledge, all sub-components of IC Attitudes, and the ‘comparing and analyzing’ sub-component of IC Skill. Whereas, external learning outcome assessments assessed students’ ‘communicating’, and ‘behavior’ skills.

Respondents revealed that they applied internal learning outcome assessments more often than the external one. They perceived that ‘sociolinguistic knowledge assessment’ was employed to assess the students’ internal learning outcome to the greatest extent ($M= 3.06$) and the ‘withholding-judgment assessment’ to the lowest extent ($M=1.80$). In the meantime, ‘communicating assessment’ was employed to assess the students more often than ‘behavior assessment’ as the external learning outcome assessments ($M=2.28$ and $M=1.44$).

In sum, respondents perceived that they applied a low integration of English intercultural teaching practice in their classroom by mainly providing IC Knowledge but rarely assessing the students’ IC Attitudes and ‘behaviors’.

Research question 2:

What English intercultural teaching components do Grade 7 and Grade 8 Thai EFL teachers employ to teach in the actual classroom?

The Classroom Observation Checklist and Field note (COCF) form was employed to collect data from two volunteer participants who achieved the moderate score from the SPQ. They were Thai EFL teachers who came from different secondary schools in Lampang—the Northern Province of Thailand. In order to cover their identities, these two teachers will be addressed as Teacher A and Teacher B.

Teacher A and Teacher B were 54 and 50 years old with 20s years of English teaching experience. One of them taught Grade 7 while the other taught Grade 8 students. Both teachers held English teaching degrees—one held a Master’s degree and another held a Bachelor’s degree. They both used EFL textbooks written by Evans and Dooley (2013)—Access 1 for Grade 7, and Access 2 for Grade 8 students. Teacher A used purely Thai as a medium of his instruction, whereas Teacher B

used 60% English. It was marked that both of them have never had any overseas training or living experiences.

The English intercultural teaching components in participants' classroom

The findings from the six classroom observations of Teacher A and Teacher B calculated from the three classroom observations of each participant are as follows.

Table 1. The overall components of English intercultural teaching (EICT) occurring from the classroom observations of two teacher participants

EICT core components	EICT sub- components	Teacher A (%)	Teacher B (%)	Overall (%)
Knowledge:	1) Sociolinguistic knowledge	100	100	100
	2) Cultural self-knowledge	100	100	100
	3) Culture-specific knowledge	100	100	100
	4) Culture-general knowledge	66.67	100	83.34
	Overall	91.67	100	95.83
Attitudes:	5) Openness	66.67	100	83.34
	6) Respect	66.67	33.33	50
	7) Withholding-judgment	66.67	33.33	50
	Overall	66.67	55.56	61.11
Skills:	8) Comparing & Analyzing	66.67	100	83.34
	9) Communicating	100	100	100
	10) Behavior	66.67	66.67	66.67
	Overall	77.78	88.89	83.34
Assessments:				
- Internal learning outcome assessments				
	11) Sociolinguistics assessment	100	100	100
	12) Cultural self-knowledge assessment	33.33	100	66.67
	13) Culture-specific assessment	33.33	100	66.67
	14) Culture-general assessment	0.00	33.33	16.67
	15) Openness assessment	0.00	33.33	16.67
	16) Respect assessment	0.00	0.00	0.00
	17) Withholding-judgment assessment	0.00	0.00	0.00
	18) Comparing & Analyzing assessment	33.33	0.00	16.67
	Overall	25	45.83	35.42
- External learning outcome assessments				
	19) Communicating assessment	0.00	100	50
	20) Behavior assessment	0.00	0.00	0.00
	Overall	0.00	50	25
Overall internal & external learning outcome assessments		20	46.67	33.33

Notes: The percentages were calculated from three classroom observations—100% = happened in all three observations, 66.67% = happened in two observations, 33.33% = happened in one observation of each participant.

Quantitative results from the classroom observation checklist section on components of English intercultural teaching occurring in participants' classroom were portrayed using descriptive statistics (percentage and mean). While a constant comparative analysis—data were analyzed into

smaller topics or issues and sorted into categories, (see Merriam, 2009) was utilized in categorizing, and interpreting qualitative results from the classroom observation field note section.

To report each category's results, the quantitative results are first reported followed by the qualitative results for elaboration.

IC Knowledge:

For the teaching category, Knowledge teaching appeared in the greatest extent in participants' classrooms at 95.83%. Three out of four knowledge sub-components including 1) sociolinguistic knowledge, 2) cultural self-knowledge, and 3) culture-specific knowledge were noticed in all six classroom observations at 100% except the 4) culture-general knowledge that appeared in participants' classrooms at 83.34%. These following excerpts illustrate participants' teaching instructions while supplementing the students with some IC Knowledge's sub-components in their teaching:

Sociolinguistic knowledge:

Teacher A: (Observation 3, Grade 8; Unit 4: Superstitions in the UK, Thai instruction)

T: Suppose that you have a mission to do, so you can't go to the party. Can you give me two sentences to refuse the party invitation?

S1: "I'm sorry. I can't. I do homework."

T: Good! It's good to begin the refusal with 'I'm sorry, I can't or I'm afraid' because it is a convention. Then, you should add modal verb like "have to" to make your reason sounds obligated. So, instead of saying "I do homework." you say, "I have to do my homework."

Culture-general knowledge:

Teacher A: (Observation 1, Grade 8; Starter Unit: Has/Have got, Thai instruction)

T: Nowadays, the value of people all around the world is to have white and shiny teeth, and fresh breath. We all accept that this type of person has good health, is attractive and full of charm. Though you are not handsome but clean, you can be a popular person better than a handsome yellow-toothed guy with "a dragon breath", you know?

IC Skills:

Skills teaching appeared in participants' classroom for 83.34%. Participants offered cultural 'communicating' skill practice to their students in all six classroom observations at 100%. Whereas, offering 'behavior' skills practice achieved the lowest degree at 66.67%. The following excerpt illustrates participants' teaching instruction in encouraging the students to practice 'behavior' skill:

Behavior skills:

Teacher B: (Observation 1, Grade 7; Unit 2: My things, Thai instruction)

T: No matter how much you don't like the present you get, try to restrain that feeling, and behave yourself in a polite manner by smiling and saying "Thank you. I like it." to the giver. Keep it in mind that they give you a present because they see you as an important person for them.

T: Can anyone come up to act in an appropriate manner when you get a present from a friend but you don't like that present, please?

IC Attitudes:

The last core component under the teaching category was the Attitudes teaching which appeared in the classroom observations at 61.11%. Participants encouraged cultural ‘openness’ attitude to the students in their teaching practice to the greatest extent at 83.34%, and cultural ‘respect’ and ‘withholding-judgment’ to the lowest extent at 50%. The excerpt below involves teacher’s encouragement on cultural ‘openness’ attitude:

Openness attitude:

Teacher A: (Observation 2, Grade 8; Unit 3: Characters larger than life, Thai instruction)

T: Whenever you go aboard, try to be curious and observe what people in that country do. Being open to learn the ways of others can save you from facing conflicts among you and the people of the host country.

IC Assessments:

Internal and external learning outcome assessments were employed to assess participants’ students in the lowest degree at 33.33% among the four core components. Participants assessed the students’ internal learning outcomes at 35.42% more often than the external one at 25%.

Among the eight sub-components, ‘Sociolinguistic knowledge’ was employed to assess students’ internal learning outcomes to the greatest extent at 100% while cultural ‘respect’; however, ‘withholding-judgment’ assessments were completely absent.

Observations for external learning outcome assessments found that participants assessed students’ cultural ‘communicating’ at 50% but completely ignored the aspect of appropriate ‘behavior’.

To sum up, all sub-components of IC Knowledge, IC Skills, and IC Attitudes were employed to teach in participants’ classroom except three sub-components of IC Assessments—‘respect’, ‘withholding-judgment’, and ‘behavior’ assessments.

Discussion

The perception on English intercultural teaching practice in EFL classroom

The findings from this study revealed that 50 Grade 7 and Grade 8 Thai EFL teachers perceived an integration of English intercultural teaching practice in their classroom in a low level. They preferred to provide IC Knowledge rather than encourage IC skills and IC Attitudes to their students. Furthermore, they realized that they hardly assessed the students’ attitudes, and the ability to perform appropriate behavior in intercultural situations.

The English intercultural teaching components in the actual EFL classroom

Seventeen out of 20 sub-components of English intercultural teaching from the synthesized framework for exploring English intercultural teaching were employed in participants’ classroom except for the IC Assessments on ‘respect’, ‘withholding-judgment’, and appropriate ‘behavior’.

It is noteworthy that participants’ perceptions paralleled with their practice in the real setting where IC Knowledge was employed to teach in Grades 7 and 8 English classrooms to the greatest extent and IC Assessments to the lowest extent especially on attitudes and behavior.

This finding also reflects similarity to numerous previous studies (e.g. Ho Si Thang Kiet, 2011; Ryan, 1995; Wright, 2000) and helps to confirm that a large number of EFL teachers taught culture as information, and cultural knowledge as the main aim for cultural teaching.

Nevertheless, largely focusing on providing cultural information does not correspond to IC development concepts, on the contrary, it tends to create drawbacks. Concerning this, IC scholars such as Byram and Feng (2004); Gu (2016); Sercu (2006) agreed with other several proponents that providing cultural knowledge alone to students cannot significantly increase their IC. In this regard, the study of Ho Si Thang Kiet (2011) proved that cultural fact focus resisted EFL Vietnamese learners from intercultural awareness.

Moreover, Hu and Gao (1997) pointed out in their study that teachers tended to mislead their students into judgments that may create stereotypes from providing them with cultural knowledge. This study's findings also agreed with the drawbacks of teachers' misleading judgments about culture in their teaching, which will be discussed in the section below.

The challenge of English intercultural teaching in Thailand secondary educational context

This study's findings reflect three major obstacles in integrating English intercultural teaching into Thailand secondary EFL teaching context—teacher's cultural bias, the lack of IC attitudes assessment, and the lack of IC behavior assessment.

Teacher's cultural bias:

Concerning the relationship with the previous study of Hu and Gao (1997) about the drawbacks of solely teaching cultural knowledge in EFL classroom coincides with what have been found in this study. It was noted that Teacher B might have unintentionally endorsed students' negative reinforcement with her personal judgment every time she tried to provide cultural knowledge teaching to her students. The following excerpts taken during three classroom observations of Teacher B illustrate criticism, sarcasm, and judgment on Thai' culture, values, and manners in terms of the lack of identity, and inferiority to foreign cultures. These expressions came from her personal perspectives that cannot be generalized to the entire context in Thailand:

Teacher B: (Observation 1, Grade 7; Unit 2: My things, English instruction)

T: The foreigners are not like some Thais. We don't want to unwrap the presents we get right in front of the giver. If we unwrap it as soon as we get it, we might not be able to hide our disappointed face for the presents we don't like.

Teacher B: (Observation 2, Grade 7; Unit 2: Souvenirs, English instruction)

T: If the foreigners come to Thailand what would they do, you know? They would love to sit in our Tuk Tuk because it's a signature transportation of Thailand, but why don't Thai people like to sit in a Tuk Tuk? One reason is that we don't want to be considered as a poor person.

Teacher B: (Observation 3, Grade 7; Unit 2: Reviewed unit, English instruction)

T: When you stay at home you have a lot of servants or Kon Chai, right?

Ss: No! (Unanimously)

T: Yes, you have. When you are doing homework and you feel hungry you would say, “Dad I want to have noodles can you go out to buy it for me?” or “Mom, I have to wear sports uniform to school tomorrow, can you wash them for me?”, right?

Ss: No! No! (Unanimously)

T: Yes, you are! Thai children are spoiled and get very good care from their parents.

Ashcroft, Griffiths, & Tiffin (1989) defined the phenomenon above as ‘cultural cringe’ or ‘cultural alienation’. A person who holds this attitude is inclined to devalue their own country's cultural, academic and artistic life, and to venerate the “superior” culture of other countries or a colonizing country, (Hume, 1993).

This type of attitude could work against equipping students with positive cultural self-identity while, in the meantime, supporting them to disrespect or devalue their own culture. The aforementioned three excerpts of Teacher B reaffirmed that the ‘withholding-judgment’ (Attitudes’ sub-component) is genuinely a must for English intercultural teaching in terms of a reminder for Thai EFL teachers to eliminate attitudes that would withhold students from understanding, and valuing their own culture, as it is not the goal of English intercultural teaching.

The lack of IC attitudes assessment:

The second obstacle was that IC Attitudes assessments especially on ‘respect’ and ‘withholding-judgment’ were absent from participants’ teaching practice. Attitudes were addressed in Thailand Basic Education Curriculum A.D. 2008 in terms of an appreciation on the relationship, and similarities and differences between language and culture of native speakers (see MOE, 2008, p. 270-272). In order to encourage students to appreciate relationship, and cultural differences, students need to have basic attitudes of openness, respect, and withholding-judgment among cultures. Thus, assessment tasks such as portfolio, attitude inventory, attitude survey, writing expressions, and so on can be the alternative ways to check whether or not students achieve this expected appreciation.

The lack of IC behavior assessment:

Another obstacle was the absence of ‘behavior assessment’, which is one of the external learning outcome assessment sub-components. The findings showed that participants did not design assessment tasks to assess appropriate behavior in social contexts among cultures in their classroom. If we look back to see the curriculum, it does not only focus on fostering students with effective communication but also on appropriate behavior (see more detail in MOE, 2008, p.271, 273). Thus, students are also expected to be aware of and be encouraged to perform with proper manners in social situations. Appropriate ‘behavior’ could be assessed through performance tasks i.e. simulations, role-plays, real-time conversation with English users, and other performance tasks.

The findings suggested that Thai EFL secondary school teachers, especially for Grade 7 and Grade 8 may need to teach culture in a more processed way. As Deardorff (2006) and Kramsch (1998) found that process teaching fosters students’ knowledge, attitudes, and skills to participate in intercultural contexts positively through effective communication by understanding their own culture, and gaining the acceptance of speakers from other cultures. Fantini (2009) elaborated that acceptance in this case often relies on appropriate behaviors and interactions even more than grammatical correction.

Conclusion

To sum up, this study found that Grade 7 and Grade 8 Thai EFL teacher participants perceived that they employed English intercultural teaching at a low level. The results from their perception were similar to their practice in the way that they placed an emphasis on providing IC Knowledge while ignored assessing students' IC attitudes and IC behavior. Three major concerns were sorted out – the teacher's cultural bias, the lack of attitudes and behavior assessments.

It is remarkable that the case of Teacher B reminds all language teachers to be aware of the unintentional judgments of their own, and other cultures. As disability to control or withhold cultural judgment or bias of the teachers could lead the students to an ethnocentric view or feeling inferior to other cultures (Hu and Gao, 1997). Thence, when positive attitudes are blocked by bias, disrespect, or narrow-mindedness, progress in IC could stop and in reality shift foreign language learners away from even attempting to perceive the world around them.

Finally, it is suggested that Grade 7 and 8 Thai EFL teachers should begin to put more time and effort to provide students with ongoing intercultural teaching and assessing to assist them to learn about others while, in the meantime, learning more about themselves through process learning. When the recursive contact among attitudes, knowledge, skills, and assessment come into play during the process learning, students tend to gradually develop favourable attitudes, intercultural views, effective communication, and appropriate behavior. These abilities can facilitate students to create interrelationships with people from other cultures in today's world, seek knowledge, successfully engage in a livelihood, and pursue further education at higher levels – Thailand ELT's aims.

References

- Bruner, D. A., Sinwongsuwat, K., & Radić-Bojanić, B. (2015). EFL Oral Communication Teaching Practices: A Close Look at University Teachers and A2 Students' Perspectives in Thailand and a Critical Eye from Serbia. *English Language Teaching*, 8(1), 11-20. ISSN 1916-4742 E-ISSN 1916-4750. Retrieved from <https://pdfs.semanticscholar.org/68de/48b3a8abdd84db201b7577e88f0bb5c94369.pdf>
- Alyan, A.A. (2011). *Exploring teachers' beliefs regarding the concepts of culture and intercultural communicative competence in EFL Palestinian university context: A case study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3461969)
- Ashcroft, B., Griffiths, G., & Tiffin, H. (1989). *The Empire Writes Back*. London: Routledge.
- Atay, D., Kurt, G., Çamlıbel, Z., Ersin, P., & Kaslioglu, Ö. (2009). The role of intercultural competence in foreign language teaching. *Inonu University Journal of the Faculty of Education*, 10(3), 123-135.
- Bennett, M. J. (1986). A developmental approach to training for intercultural sensitivity. *International journal of intercultural relations*, 10 (2), 179-196.
- Building intercultural competence: *Handbook for professionals in education, social work and health care* (eds. M. G. Onorati, F. Bednarz). (2010). Leuven: Acco.
- Byram, M. & Feng, A. (2004). Culture and language learning: Teaching, research and scholarship. *Language Teaching*, 37, 149-168.

- Byram, M., Holmes, P., & Savvides, N. (2013). Intercultural communicative competence in foreign language education: questions of theory, practice and research. *The Language Learning Journal*, 41(3), 251-253.
- Cheng, C. (2007). *The Influence of EFL teachers' understanding of intercultural competence on their self-reported pedagogical practices in higher education institutes of technology in Taiwan* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3249489)
- Communicaid Group Limited. (2018). *Cultural profile: Milton J. Bennett*. Retrieved from <https://www.communicaid.com/cross-cultural-training/blog/cultural-profile-milton-j-bennett/>
- Deardorff D. (2006). The identification and assessment of intercultural competence as a student outcome of internalization at institutions of higher education in the United States. *Journal of Studies in International Education*, 10, 241-266.
- Deardorff D. (2009). Implementing intercultural competence assessment. In: *The SAGE handbook of intercultural competence* (ed. D. Deardorff). Thousand Oaks: Sage. P. 477-491.
- Fantini A. (2009). Assessing intercultural competence: Issues and tools. In: *The SAGE handbook of intercultural competence* (ed. D. Deardorff). Thousand Oaks: Sage. P. 456-476.
- Garrido, C., & Alvarez, I. (2006). Language teacher education for intercultural understanding. *European Journal of Teacher Education*, 29(2), 163-179.
- Gu, X. (2016). Assessment of intercultural communicative competence in FL education: A survey on EFL teachers' perception and practice in China. *Language and Intercultural Communication*, 16(2), 254-273.
- Hofstede, G., & Bond, M. (1984). Hofstede's Culture Dimensions. *Journal of Cross-Cultural Psychology*, 15(4), 417-433. <http://dx.doi.org/10.1177/0022002184015004003>
- Ho Si Thang Kiet. (2011). *An investigation of intercultural teaching and learning in tertiary EFL classrooms in Vietnam*. Doctoral dissertation. Victoria University of Wellington, New Zealand.
- Hu, A., & Byram, M. (2009). *Intercultural competence and foreign language learning. Models, empiricism, assessment*.
- Hume, L. (1993). *Another look at the cultural cringe*. St. Leonards, NSW, Australia: Centre for Independent Studies.
- Hu, W. Z. & Gao, Y. H. (1997). *Waiyu Jiaoxue yu Wenhua (foreign language teaching and culture)*. Changsha: Hunan Education Press.
- INCOM-VET. (2014). *Handbook of Methodology for Development of Intercultural Competence*. Retrieved from http://incom-vet.eu/wp-content/uploads/2014/01/HANDBOOK-OF-METHODOLOGY-FOR-DEVELOPMENT-OF-INTERCULTURAL-COMPETENCE-2nd-draft_2014-08-25.pdf
- Ito, M., Baumer, S., Bittanti, M., Boyd, D., Cody, R., Herr-Stephenson, B. (2009). *Hanging out, messing around, and geeking out: kids living and learning with new media*. MIT Press, Cambridge, MA.

- Kramsch, C. (1998). The cultural discourse of foreign language textbooks. In J. Singerman (Ed.), *Toward a new integration of language and culture* (pp. 63-88). Middlebury: Vermont.
- Kukulska-Hulme, A. (2010). Learning cultures on the move: where are we heading? *Journal of Educational Technology and Society*, 13(4), 4-14.
- Lazar, I., Huber-Kriegler, M., Lussier, D., Matei, G., & Peck, C. (2007). *Developing and assessing intercultural communicative competence: a guide for language teachers and teacher educators* Strasbourg: Council of Europe.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: John Wiley & Sons.
- Methitham, P. (2009). *An Exploration of Culturally-based Assumptions Guiding ELT Practice in Thailand, a Non-colonized Nation*. Unpublished PhD dissertation, Indiana University of Pennsylvania, USA.
- Ministry of Education (MOE). (2008). Basic education core curriculum B.E. 2551. Retrieved from <http://www.act.ac.th/document/1741.pdf>
- Nagy, G. (2009). *Book Review: The SAGE Handbook of Intercultural Competence. Deardorff, D., K. (Ed.) Derek Bob (Fwd.)*. Thousand Oaks, CA, USA: SAGE Publications, Inc. 2009, 542 pp. ISBN 978-1-4129-6045-8
- Noom-ura, S., (2013). English-Teaching Problems in Thailand and Thai Teachers' Professional Development Needs. Retrieved from <http://www.ccsenet.org/journal/index.php/elt/article/viewFile/31115/18208>
- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory. Third ed.* New York: McGraw-Hill.
- Root E., Ngampornchai A. (2013). I came back as a new human being: Student descriptions of intercultural competence acquired through education abroad experiences. *Journal of Studies in International Education*, 17(5), 513-532.
- Ryan, P. M. (1995). Foreign language teachers' perceptions of culture and the classroom: A case study. *Eric Journal*, 1-25. Retrieved from <https://eric.ed.gov/?id=ED385135>
- Saengboon, S. (2017). English Grammar and Thai University Students: An Insurmountable Linguistic Battle?. *English Language Teaching*, 10(11), 22-36. DOI: 10.5539/elt.v10n11p22
- Sercu, L. (2006). The foreign language and intercultural competence teacher: the acquisition of a new professional identity. *Intercultural Education*, 17(1), 55-72.
- Spencer-Oatey, H., & Franklin, P. (2009). *Intercultural interaction*. John Wiley & Sons, Inc.
- Tian, J. (2013). *Beliefs and practices regarding intercultural competence among Chinese teachers of English at a Chinese university* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3589650)
- Tomalin, B. & Stempleski, S. (1993). *Cultural awareness*. Oxford: Oxford University Press.
- Tran, T. Q., & Dang, H. V. (2014). Culture teaching in English language teaching: Teachers beliefs and their classroom practices. *Global Journal of Foreign Language Teaching*, 4(2), 92-101.

- Turner, R. C., & Carlson, L. (2003). Indexes of item-objective congruence for multidimensional items. *International Journal of Testing*, 3(2), 163-171.
- Wenjing, L. (2014). An Appraisal Analysis of the Discourse of Foreign English Teachers: A Case Study at a Private School in Ratchaburi, Thailand. *The New English Teacher* 8.1. Retrieved from <https://repository.au.edu/handle/6623004553/13008>
- Wright, D. A. (2000). Culture as information and culture as affective process: A comparative study. *Foreign Language Annals*, 33, 330-341.

Preschool Teachers' Views on Science Education, the Methods They Use, Science Activities, and the Problems They Face

Yakup Doğanⁱ

Kilis 7 Aralık University

Ahmet Simsarⁱⁱ

Kilis 7 Aralık University

Abstract

The aim of this study is to reveal preschool teachers' views on science education, science activities they carry out, methods and techniques they use as well as problems they encounter while performing science activities. This study was carried out according to the case study which frequently used in qualitative research methodology. The study group was identified using the convenience sampling method. The study group constitutes 32 preschool teachers working in preschools in Kilis province. A written interview form prepared by field experts was used to collect data. Content analysis procedure was used to analyse the data.

According to the results obtained in the study, it has been determined that the vast majority of preschool teachers consider themselves competent in teaching science, and state that the science education environment should be equipped and rich in teaching materials, and that science concepts can be better taught to children through hands-on activities as well as supporting them with visual materials. Additionally, it has been determined that teachers try to develop scientific process skills in children through science activities. It has also been identified that teachers use common science materials while performing science activities that they mostly use spontaneous/nature-related activities, prefer group activities, and carry out science activities at least once a week. It has further been determined that teachers especially use such methods as experiment, observation, demonstration more than other methods when performing science activities. Besides, it has been specified that the experiment method is children's most favourite method, which is also easy to apply. The main problem faced by the teachers during science activities was determined to be the lack of teaching materials, crowded classrooms, physical inadequacy of classrooms and uninterested parents. It has also been found that the problems encountered are mostly depend on schools, classrooms, parents and lack of materials.

Keywords: Science education, preschool teachers, science activities, methods and techniques, problems

DOI: 10.29329/ijpe.2018.157.6

ⁱ **Yakup Doğan**, Assist. Prof. Dr., Kilis 7 Aralık University, Department of Elementary Education, Kilis/Turkey.

Correspondence: yakupdogan06@gmail.com

ⁱⁱ **Ahmet Simsar**, Dr., Kilis 7 Aralık University, Department of Elementary Education, Kilis/Turkey.

Introduction

Preschool education is a type of education in which the developmental characteristics, individual differences and abilities of children are taken into consideration in order to enable them to develop physically, emotionally, socially, intellectually and language-wise in a healthy way, and in which positive personality traits are initiated and creative aspects are revealed so that children can develop self-confidence, as well as a systematic education in which parents and trainers are efficient (Ministry of National Education (MoNE), 2013). Preschool education, which is becoming more and more important nowadays, is very helpful for children in understanding and conceptualizing life (Sansar, 2010). Receiving an effective and accurate preschool education in early childhood, where the child is progressing rapidly, ensures that the child is a successful individual in the future.

According to the results of many researches in the literature (Broinowski, 2002; Can-Yaşar & Aral, 2010; Dağlı, 2007; Dursun, 2009; Erkan & Kırca, 2010; Kök, Tuğluk & Bay, 2005; Pagani, Rubenson & Runco, 2003; Pehlivan, 2006; Polat-Unutkan, 2007; Taner & Başal, 2005; Yazıcı, 2002; Yıldız, Özkal & Çetingöz, 2003) children with preschool education are in a more advanced stage in many different areas (language development, creative thinking skills, mathematics and Turkish language skills, maturity at school, motor and social skills, etc.) than those who do not have preschool education. Thus, developed countries place great importance on early childhood education and preschool education programs. In Turkey, the latest preschool education program prepared by the Ministry of National Education in 2013, is being implemented in preschool institutions. This program is based on children-oriented, flexible, spiral, eclectic, balanced, game-based features and includes other features such as exploratory learning, creativity development, daily life experiences and use of nearby facilities for educational purposes, and establishing learning centres. In this context, the teachers are required to prepare and effectively implement the activity plans in line with the achievements and demonstrations determined within the framework of the basic characteristics (MoNE, 2013).

The preschool period is the period in which the bases of knowledge and skills to be used by children all through their life will be established, in which they observe facts and events, seek for answers to questions, and get to understand the primary science-related concepts. Therefore, it is necessary to start science education in preschool period. For this reason, it is of great importance that science education is planned and taught in accordance with the development of the children. Teachers working in the preschool period, therefore, play an important role in science-related academic life of children in the future. From this point of view, teachers should know the importance of science education and support the development of children in this direction by preparing appropriate programs (Lind, 1996, Özbek, 2009). In the preschool period, teachers have significant responsibilities to develop a positive tendency and positive attitudes towards science (Davies & Howe, 2003).

The science activities to be carried out in line with the acquisitions in the preschool program are of great importance in terms of the development of the preschool age children. The science activities performed during this period include activities that support the skills of children to pay attention, ask questions, observe, research and analyse, explore, and make deductions (MoNE, 2013). The effective implementation of science activities in preschools will be very beneficial in terms of contributing to the future life of children. The scientific skills required for a child's life as well as the concepts and skills that form the basis of science education begin to develop in the preschool period (Kallery & Psillos, 2002). In this period, trying to perceive the environment through curiosity and inquiry skills of children makes an important contribution to their achievement in science education. The development of science concepts in children begins with an effort to understand their nature and environment, and then this process is followed by the acquisition of basic process skills with the help of teachers and their environment (Elkind, 1989). The fact that children participate effectively in science activities in pre-school period and they are willing to learn science-related concepts positively affects the development process of science concepts.

During the practices of the preschool science activities that constitute the basis of science education, convenient settings should be created that can provide opportunities for children to investigate, to make predictions and talk about any subject, to be able to satisfy their curiosity, and to create cause-effect relationships between events (Uğraş, Uğraş & Çil, 2013). Effective teaching of science concepts is achieved when the teacher correctly plans and applies the science and nature-related activities in the program during the activities (Özbek, 2009).

The aim of the science-related activities in the preschool period is not to explain the science-related concepts to the children based on memorizing but to help them learn such concepts by hands-on activities. Contrary to learning by hands-on activities the transfer of knowledge based on memorization does not contribute to the cognitive development of children and will only cause the knowledge in the mind to increase. It is important for children to ensure that they acquire scientific thinking by helping the development of basic process skills such as research, analysis and observation in this period (Aktaş-Arnas, 2003; Özbek, 2009; Toğrul, 2012).

Learning will be facilitated if appropriate methods, strategies and techniques are used in the teaching of concepts that are abstract or difficult to understand in science teaching. A variety of methods and techniques should be utilized in applying science and nature-related activities (Yağlıkara, 2006). The preschool program enacted by the MoNE in 2013 includes activities that can be conducted in science and nature education. These include nature-walking, observing the nature and living and non-living beings in nature, informing about the necessity of considering them as valuable and protecting them, making discovery and inventions, preparing food in kitchens, making collections, preparing air graphics, reviewing various books and magazines, taking photographs, observing photographs, watching documentaries, recognizing and using simple science tools, examining natural and unnatural materials, inviting experts in the field of science as guests to the classroom, and concept training studies (MoNE, 2013).

In the preschool period, teachers play an important role in the development of scientific thinking in children and the development of positive attitudes of children towards science courses in primary school years. Teachers' behaviours and the methods used in the science activities lead the children to research, to examine, and to question, which is the basis of scientific thinking. In the preschool period, science activities are those in which both children and teachers can learn at the same time and gain new experiences (Alisinanoğlu, Özbey & Kahveci, 2011). In the preschool period, children should be introduced to science and environment related skills, materials and science education for the sake of their development. Rich learning experiences consisting of activities and materials that are appropriate to the developmental characteristics of children and support their development are of great importance in science education. In this context, taking into account the assumption that their knowledge of science is sufficient, preschool teachers should not only try to develop children with all their developmental aspects and give science education to children, but also to prepare a rich environment to educate children who are interested in science and nature activities and performing relevant activities.

Preschool children construct science and nature knowledge through science education and use the information they learn in different areas of life. To this end, preschool teachers' educational practices should be in such a way as to support children's development and to discover their own knowledge and skills. In preschool period, teachers should present experiences that will enable children to form their knowledge and skills in daily activities. Therefore, the content and nature of the science activities that teachers apply are of great importance. In this respect, the contents and scientific process skills in the science activities in the preschool period, the materials and types of materials in the classrooms, the qualifications of the teachers, their attitudes towards science education and the teachers' viewpoints on the science education significantly affect the quality of science education (Dağlı, 2014).

Activities in science and nature centres in preschool education are the most important of all the activities as they increase children's knowledge of science and nature and provide them with opportunities to gain important experiences. Children make many discoveries by playing games with the materials in this centre. Therefore, an educational environment should be constituted in such a way that will awaken and satisfy the curiosity of preschool children for whom focusing the attention is quite hard to achieve (Karaer & Kösterelioğlu, 2005). The task of the teacher does not end with creating an appropriate and well-equipped educational environment. While a teacher is telling children about topics during science and nature activities, she should ask them such thought-provoking questions to guide and steer them so that they can focus on the topics, explore the events, and solve problems. Through these creative questions, children can actively participate in scientific thinking process (Kıldan & Pektaş, 2009). Since preschool science activities are carried out in a period in which scientific skills and basic science concepts necessary for a child's life have begun to develop and have been acquired in large scale, it is necessary to determine the problems faced by teachers in carrying out the science-related activities in this period and teaching the children about these activities for the purpose of increasing the quality of preschool science education in our country (Karamustafaoğlu & Kandaz, 2006).

In addition to preschool teachers' training in the process of their undergraduate education, many other factors such as the training they receive for science education, the institutions they are teaching at, environmental conditions, the current status of their classrooms, their qualifications in science education, their attitudes towards science education etc. play an important role in the planning and implementation of science education. Likewise, many other factors, such as the current state of preschool classrooms, teaching stuff and materials, and teachers' graduation from different fields can have positive or negative effects on science education. In preschool institutions, the science activities are not given importance and the teachers lack in knowledge and skills about the aims of preschool science education and methods and techniques used in science education (Avcı, 2005). Preschool teachers' competencies related to the subject matter and their attitudes towards the subject matter are as important as their competency in terms of content in this area. It has been observed that there is not much research on how much science and nature content is included in class activities, whether it should be given or not, and on the opinions of teachers on this subject. In this study, it was aimed to reveal the opinions of preschool teachers working in preschools about the problems of science education, science activities, methods and techniques used in preschool period.

Method

Research Design

This study is structured using the case study method in the qualitative research paradigm. Qualitative research includes detailed descriptions by studying the facts, events or behaviour in the natural environment in which they are realized in order to get a deep understanding of the research topic by directly reaching the data. A case study is the in-depth study of one or more events, environment, program, or interconnected systems. Case studies are used to describe and view details of an event, to develop explanations and to evaluate the event (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2013, Yıldırım & Şimşek, 2013).

Participants

The research group of the study was selected according to the convenience sampling from among the purposeful sampling methods. This sampling method accelerates the investigation as in this method the researcher chooses a situation that is close and easy to access. This sampling method is often used when the researcher cannot use the other sampling methods (Yıldırım & Şimşek, 2013). Accordingly, this study group consists of 32 preschool teachers working in different schools in the city centre of the province of Kilis in the academic year of 2016-2017.

Table 1. Demographic Data of Teachers and Their Classes

		f	%
Place of Work	Kindergarten	14	43.75
	Preschool	18	56.25
Number of Students in Classrooms	11-20 children	24	75.00
	21 and over	8	25.00
Age Range of Children in Classrooms	36-48 months old	3	9.37
	48-66 months old	29	90.63
Teachers' Years of Teaching Experiences	0-5 years	13	40.61
	6-10 years	16	50.00
	11-15 years	1	3.13
	16-20 years	1	3.13
	21 years and over	1	3.13
Teachers' Field of Graduation	Preschool Education	24	75.00
	Other (Child Development etc.)	8	25.00
Teachers' Educational Levels	Associate Degree	2	6.25
	Undergraduate	30	93.75
High Schools where Teachers Graduated	Vocational High School	18	56.25
	Others	14	43.75

According to Table 1, 14 of the teachers work in kindergarten and 18 of them work in preschools. In the vast majority of the classrooms (24 classrooms) in which teachers work, the number of children in the classroom varies between 11 and 20, while the number of children in the classroom is over 21 in 8 classrooms. In 29 classrooms, children age 48-66 months and children in three of the classrooms are in the age group of 36-48 months. The half of teachers have 6-10 years (16 teachers) and 0-5 years (13 teachers) of professional teaching experience. Very few teachers have experience for 11 years and over. It can be said that the vast majority of teachers in the scope of the study have experience of working for 10 years or less and they are mainly composed of young teachers. Twenty-four of the teachers are graduates of preschool education, while eight are graduates of other departments (Child Development etc.). Thirty teachers have a bachelor's degree while two teachers have an associate degree. It appears that almost all of the participants are composed of teachers with undergraduate degrees. While 18 of the teachers graduated from vocational high schools, the remaining 14 graduated from other types of high schools. It appears that most of the participants graduated from vocational high schools.

Data Collection Tool

This study was conducted according to the qualitative research methodology in order to obtain in-depth knowledge about the problem situations of teachers working in preschool education institutions. In qualitative research, the process followed includes data collection methods such as observation, interview and document analysis, and the perceptions and events are presented in a natural setting in a realistic and holistic manner. Interviewing is a very powerful method used to reveal people's perspectives, experiences, feelings and perceptions (Yıldırım & Şimşek, 2013). The interview form used in this study consists of two parts. In the first part, some information on the demographics of teachers and the schools/classrooms they work in is given. In the second part, there are questions prepared to get teachers' opinions on science education, science activities, methods they use and problems they encounter. Before the interview form was prepared, necessary literature was searched, problem situation was determined and relevant questions were prepared. Later on, opinions of three specialist faculty members (from department of science education, preschool education and educational sciences) were taken for the content validity of the questionnaire. After the pilot study with the five preschool teachers outside the study, necessary corrections were made and a total of fifteen questions were included in the questionnaire. The final version of the questionnaire was distributed through interviewing the teachers in the study group and their opinions were taken in writing.

Data Analysis

Within the scope of the research, the answers given to the questions in the data collection tool were analysed in terms of qualitative paradigm and analysed using content analysis method. The content analysis was carried out with the aim of reaching the concepts and associations that could explain the collected data. Also, it is the technique of determining the themes that explain the data by way of the first conceptualization of the data and then the logical arrangement according to the emerging concepts. The basic process in content analysis is to bring together similar data within the framework of certain concepts and themes and to interpret them by arranging them in a way that readers can understand (Yıldırım & Şimşek, 2013).

The data obtained from the views of the teachers were coded separately by two researchers. Then the two researchers' codes were compared and the differences found were discussed and agreed. In order to estimate the reliability of the work in the next stage, two different experts, one of whom was from educational sciences and the other from science education, were given the researchers' code lists and asked to match the first list with the second list. Comparisons of the lists produced by the coders with the lists produced by the experts are used to estimate the reliability of the work after identifying the number of agreements and disagreements. To this end, the formula [Reliability = (Consensus) : (Consensus + Dissidence) x100], as specified by Miles and Hubermann (1994), was used. Experts consulted within the framework of the reliability study evaluated seven codes differently from the coding performed by the researchers and associated them with the themes. Accordingly, the reliability of the study was found as [Reliability = (89): (89 + 7) x100 => Reliability = 92%] in the reliability analysis. In qualitative studies, it is stated that once the correspondence between the evaluations of the researchers/coders and the experts approaches to or over 0.90, a satisfactory level of reliability will be achieved (Miles & Hubermann 1994; Saban, 2008).

Results

This section presents findings from preschool teachers' views on science education, science activities, methods and techniques they use, and the difficulties they encounter in science activities. The results obtained from the interviews were presented in tables and some sample teacher views of the theme were directly cited.

Results Obtained from Teachers' Views on Science Education

Teachers were asked questions to get their views on science education. In this regard, in order to get the opinions of the teachers on their level of qualification on science education, they were firstly asked the following questions: "Do you consider yourself competent on science education? Will you explain, please?", and the findings obtained from the answers were indicated in the following table. Sample teacher views on the codes obtained in relation to this topic are also included.

Table 2. Teachers' Qualification about Science Education

Theme	Code	F	%
Teachers' Qualification about Science Education	Qualified	16	50.00
	Partly qualified	10	31.25
	Unqualified	6	18.75

According to Table 2, 50% of the teachers consider themselves qualified about science education, 31.25% consider themselves as being partially qualified and 18.75% regard themselves as unqualified about science education. Some of the expressions that teachers give about not considering themselves as qualified about science education are as follows: The teacher with the code Ö4 says, "Yes. I consider myself qualified because I do research according to the level of the children and I

prepare practices accordingly", whereas the teacher with the code Ö1 states that she considers herself unqualified and says, *"I do not consider myself qualified because I did not receive enough training in my first year in my profession and at university"*. Another teacher coded Ö13 considers herself moderately qualified and says, *"I can say that I consider myself moderately competent. I think that I can be better if the environment is better and the physical conditions are more appropriate."*

In order to determine the opinions of the teachers about the science education environment, the teachers were asked, "How should the environment of science education be like for you?", and the findings obtained from the answers were presented in the following table. Sample teacher views on the codes obtained in relation to this topic are included.

Table 3. Teachers' Opinions about Environment of Science Education

Theme	Code	F	%
Environment of Science Education	Equipped laboratory facilities and natural setting	17	53.13
	Rich in teaching materials	10	31.25
	Experiment and observation-based	3	9.37
	Modern, rational, instructive	2	6.25

According to Table 3, 53.13% of the teachers state that schools should be equipped with laboratory facilities and natural settings, 31.25% state that schools should be rich in teaching materials, 9.37% state that schools should be based on experiment and observation, 6.25% state that school settings should be designed in a modern, rational and informative manner. In the context of science education, teachers often say that the setting should be natural, convenient for learning by hands-on activities, attention-taking, enabling the active participation of children, enriched with visual materials as well as having an open space. Some exemplary statements in this regard are as follows: The teacher with the code Ö23 states that *"There should be a laboratory environment and it should be a natural setting instead of being dependent to a classroom"* for the science education environment. Another teacher coded Ö4 states, *"The laboratory environment should be equipped with materials suitable for the child's age and experiences."* Similarly, the teacher coded Ö25 says, *"The science education environment should be based on experimentation and observation, and it is necessary for children to be involved in the environment."* Also, the teacher coded Ö3 says, *"Science education environment must be modern, rational and informative"*.

In order to reveal the opinions of teachers on how science-related concepts in science education can be taught to children better, the question of "How can science-related concepts be better taught to children?" was asked and the findings obtained from the answers were presented in the following table. Sample teacher views on the codes obtained in relation to this topic are included.

Table 4. How Science Concepts Taught to Children

Theme	Code	f	%
Teaching Science Concepts	By hands-on activities	18	56.25
	Through visual materials	8	25.00
	Through simple activities	5	15.63
	Through books and science materials	1	3.13

According to Table 4, teachers express their opinions about how science concepts can be better taught to children. 56.25% of the teachers state that science concepts can be better taught through hands-on activities, 25% of them state the necessity of visual materials. Similarly, 15.63% of them state the necessity of simple activities and 3.13% of them state the necessity of books and science materials so that children they can be taught well. Some examples of teachers' opinions about this theme are as follows: The teacher coded Ö4 says, *"I use science activities. Air pollution, evaporation, weight experiments can be better taught through concretizing them via first-hand*

experiences gained by hands-on." Likewise, teacher coded Ö27 states, "Science concepts can be better taught to children with visual materials. Video slides are useful." Another teacher coded Ö17 says, "The science lessons are taught better by making simple experiments with activities according to the age of the children." Similarly, the teacher coded Ö30 says, "Well-prepared teaching cards and books should be published in order to teach children science concepts better".

In order to determine the opinions of the teachers about which scientific process skills children acquire during science education, the following question, "Which scientific process skills do you bring in to children with the science activities that you apply?" was asked and the findings obtained from the answers were presented in a table.

Table 5. Scientific Process Skills in Science Education

Theme	Code	f	%
Acquired Scientific Process Skills	Observation	32	100.00
	Experiment	30	93.75
	Classification	29	90.63
	Prediction	28	87.50
	Interpretation	28	87.50
	Inferring	28	87.50
	Using data and constituting a model	22	68.75
	Setting a number-space relationship	20	62.50
	Measuring	19	59.38
	Determining variables	18	56.25
	Changing and checking variables	16	50.00
	Hypothesizing and testing	16	50.00
	Recording data	10	31.25

According to Table 5, all of the preschool teachers (100.00%) state that they have brought in observation skills to children with the science activities they conduct. Also, a majority of teachers state that, through science activities, they have achieved to make children acquire scientific process skills such as experiment (93.75%), classification (90.63%), prediction (87.50%), interpretation (87.50%), and inferring (87.50%). Recording data (31.25%) seems to be the lowest gained skill from among the scientific process skills that teachers have expressed as an acquisition through the science activities that they have implemented.

Results Obtained from Teachers' Views on Science Activities

Teachers were asked questions to learn about their opinions on science activities carried out in their classrooms. To this end, teachers were first asked "What materials/objects do you use in science activities?" so as to get their opinions about what materials teachers use in science activities, and the findings were presented in the following table. Sample teacher views on the codes obtained in relation to this topic are included.

Table 6. Materials Used by Teachers in Science Activities

Theme	Code	f	%
Materials/Objects Used in Science Activities	Common science materials	32	100.00
	Animals and plants	7	21.88
	Natural materials	8	25.00

According to Table 6, all of the teachers use common science materials (magnifiers, magnets, models, scales, spheres, waste materials, etc.). And also 21.88% use animals and plants, and 25.00% use natural materials (water, salt, sand, soil, stone, flour, sugar, spices, etc.) while performing science

activities as well as. Some examples of teachers' views on this theme are as follows: Teacher coded Ö2 said -while performing science activities- "*I use common and easy-to-find materials such as magnets, magnifiers, animal models, three-dimensional prisms, a sphere etc.*" Another teacher coded Ö7 stated that she mostly used animals and plants and said, "*I mostly use organ vests, water turtles, budgies, and plants. I also use other teaching materials such as a solar system model, tooth model, animal models, scales and so on.*" The teacher coded Ö21 stated that she used more natural materials with the expression "*I prefer natural materials (such as water, sand, soil, soap, stone)- materials that can be found quickly*".

To get teachers' views on spontaneous/natural science activities, the question of "Do you use spontaneous/natural activities in science activities?" was asked and the findings were presented in a table. Sample teacher views on the codes obtained in relation to theme in this subject are included.

Table 7. Doing Spontaneous/Natural Activities in Science

Theme	Code	f	%
Spontaneous/Natural Activities	I do	28	87.50
	I sometimes do	3	9.37
	I rarely do	1	3.13

The majority of the teachers (87.50%) state that they do spontaneous and natural activities in science. Only one teacher states that she has rarely do yet while three teachers state that they sometimes give time spontaneous and natural activities (Table 7). Some examples of teacher views are: The teacher coded Ö4 said, "*Yes, I include spontaneous activities to my lesson plan. For example, I can change my activity instantly when it is raining.*", which signifies that she uses spontaneous/natural activities when a natural phenomenon is taking place. The teacher coded Ö16 said, "*I sometimes use a nature-related activity when an important phenomenon coincides*", which signifies that she sometimes uses such activities. Similarly, the teacher coded Ö1 stated that she has rarely done such activities by saying, "*I have rarely had the opportunity to include spontaneous events.*"

To get their opinions about their preference for individual or group activities when doing science activities, the following question of "Do you prefer an individual or a group work in science activities?" was asked, and the findings were given in the following table. Sample teacher views on the codes obtained in relation to theme in this subject are included.

Table 8. Preferences of Individual or Group Work in Science Activities

Theme	Code	f	%
Preferred Type of Activity	Group activities	20	62.50
	Individual and group activities	8	25.00
	Individual activities	4	12.50

The majority (62.50%) of the teachers state that they prefer group work while doing science activities, while 25% say that they include both group and individual work, and 12.50% state that they only include individual work (Table 8). Some examples of teachers' opinions on this theme are as follows: The teacher coded Ö15 said, "*I usually include group work because children enjoy working together*", which signifies that she prefers group work in science activities. Another teacher coded Ö26 said, "*I sometimes give individual and sometimes group work according to the activity type*", and the teacher coded Ö12 expressed that she prefers individual work by saying, "*I include individual work because it is more instructive*".

To get opinions about how often do science activities and how much time teachers spend on science activities, teachers were asked, "How often do you do science activities? How much time do

you spend?", and the findings were given in two tables. Sample teacher views on the codes obtained in relation to the themes in this subject are included.

Table 9. Frequency of Science Activities and Spending Time on Science Activities

Theme	Code	f	%
Frequency of Science Activities	Once a week	21	65.63
	Once every two weeks	8	25.00
	Once in more than two weeks	3	9.37
Spending Time on Science Activities	0-30 minutes	16	50.00
	31-60 minutes	2	6.25
	1 hour	9	28.12
	2 hours	1	3.13
	2 hours and more	4	12.5

According to Table 9, 65,63% of the teachers carry out science activities once a week, 25% every two weeks and 9,37% more than every two weeks. Some examples of the teachers' opinions on this theme are as follows: The teacher coded Ö9 says, *"I try to do science-related activities at least once a week because I think that the sooner and more the children meet with the concepts related to science, the more I can contribute to the future probability of their being a good scientist."* The teacher coded Ö27 also states, *"It depends on the acquisitions, but every two weeks I do experiments according to the possibilities available."* Another teacher coded Ö11 says, *"Actually, there is not much opportunity in our school. We are trying to do it once or twice a month, according to the possibilities available"*, which represents that she carries out very few science activities. Table 9 shows that half of the teachers (50%) spend time on science activities between 0-30 minutes and 28.12% can devote to one hour. Moreover, 12,5% of the teachers state that they spend more than two hours on science activities. The teacher coded Ö11 mentions the time she spent on science activity with the response of *"The science activity carried out with children usually takes about 30 minutes"*. The teacher coded Ö7 says, *"The duration of science activities vary according to the activity, but I can say that it lasts for an hour."*

To get teachers' views on the efficiency of science activities, the question of "What should the number of children in the classroom be in order for the science activities to be efficient?" was asked, and the findings were given in the following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 10. The Optimum Number of Students in a Classroom for Efficient Science Activities

Theme	Code	f	%
The Optimum Number of Students	0-10 children	7	21.88
	10-15 children	20	62.50
	15 children and over	5	15.62

According to Table 10, the majority of the teachers (62.50%) state that the number of children in the class should be between 10-15, 21.88% of them state it should be between 0-10, and 15.62% state that the number of children should be 15 and over. Some examples of the teachers' views on this theme are as follows: The teacher coded Ö23 says, *"I think if there are 8-10 students in the school, we can do more science activities. In fact, in order to be able to perform effective science activities, the lab is a must, and sometimes it has to be taken to natural settings."* The teacher coded Ö17 says, *"The classroom size must be 15. There are difficulties in learning when there are few or many students."*. Similarly, the teacher coded Ö3 says, *"The classroom size is important, but average 18 students can be an optimum number."*

Results Obtained from Teachers' Views about Methods and Techniques Used in Science Activities

Teachers were asked about their views about the methods and techniques they used in the process of science activities. In this regard, firstly, the question of "Which method or techniques do you use in the process of science activities" was asked to investigate the methods and techniques teachers used to perform science activities and the findings obtained from the answers were given in the following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 11. Using Methods and Techniques while Performing Science Activities

Theme	Code	f	%
Methods and Techniques Used in Science Activities	Experiment	23	71.88
	Observation	20	62.50
	Demonstration	12	37.50
	Brainstorming	7	21.88
	Narration	5	15.62
	Concept maps	5	15.62
	Questioning	4	12.50
	Drama	4	12.50
	Trips	4	12.50
	Simulation	3	9.37
	Case study	2	6.25
	Trial and error	2	6.25
	Discussion	1	3.12

According to Table 11, experiment (23 teachers), observation (20 teachers) and demonstrations (12 teachers) are the most common among methods and techniques used by the teachers while performing science activities. Some teachers' views on the theme of methodology-techniques used in the process of science activities are as follows: The teacher coded Ö7 mentions the method-techniques she uses with the expression, "*I often use methods and techniques such as experiment, observation, demonstration, narration, and a mind map.*" The teacher coded Ö25 says, "*I mostly prefer brain storm, simulation, drama, and observation when doing science activities.*" Similarly, the teacher coded Ö11 says, "*I use experiments, observations, demonstrations, narration and mind maps etc.*".

The question of "Which of the methods and techniques you use are favoured by children?" was asked to determine which of the methods and techniques teachers used to perform science activities were more liked by children, and the findings obtained from the answers were given in the following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 12. Children' Favoured Methods and Techniques in Science Activities

Theme	Code	f	%
Favoured Methods and Techniques	Experiment	21	53.85
	Demonstration	9	23.07
	Observation	5	12.82
	Drama	2	5.14
	Trips	1	2.56
	Simulation	1	2.56

According to Table 12, of all the methods and techniques used by the teachers in the science activities process, the children mostly prefer the experiments (53.85%), demonstration (23.07%) and observation (12.82%) respectively. Some example teacher views about the methods and techniques that are used during science activities, and which are most favourable for children are as follows: The teacher coded Ö12 says, "*Children usually like experiment as they include learning by hands-on*". Similarly, the teacher coded Ö2 says, "*I use the demonstration method most. In fact, I think that all methods and techniques related to science would be favourable by children if carried out properly*." The teacher coded Ö15 says, "*Experiment and observation. Learning is permanent during experiments because children learn both the construction phase and the result. Observation is also enjoyable. For example, they express their ideas on the weather and watch the plants we grow with pleasure*."

To determine which of the methods and techniques teachers use to perform science activities is easy to implement, the question of "Which method/technique do you use makes it easy for you to apply?" was asked, and the findings obtained from the answers are given in the following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 13. Methods and Techniques Facilitating the Implementation for Teachers in Science Activities

Theme	Code	f	%
Methods and Techniques Facilitating the Implementation	Experiment	11	28.95
	Observation	9	23.68
	Demonstration	7	18.42
	Brainstorming	3	7.89
	Narration	2	5.26
	Concept maps	2	5.26
	Trips	2	5.26
	Simulation	1	2.64
	Drama	1	2.64

According to Table 13, what teachers expressed among the methods and techniques that facilitated their process of science activities were experiment (28.95%), observation (23.68%) and demonstration (18.42%). Some examples of teachers' opinions about the methods and techniques that facilitate teachers during the process of science activities are as follows: The teacher coded Ö5 says, "*Experimental method, because the children in this age group like it and it is easy to do and fun to try*". Likewise, the teacher coded Ö12 says, "*Observation. It is easy for me to observe an event or a situation and to get the ideas of the children about it*". Moreover, the teacher coded Ö16 says, "*Demonstration. I have prepared visual materials and applications that I demonstrate to my students and get them to do them*", which signifies that demonstration facilitates the science activities.

Results Obtained from Teachers' Views about Problems Faced During Science Activities

Results obtained from the questions asked to get teachers' opinions about the problems they face while performing science events are given in the following table. In this regard, firstly, the question of "What problems do you encounter while performing science activities?" was asked and the findings obtained from the answers are given in the following table in order to determine what problems teachers encounter while performing science activities. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 14. Problems Faced While Performing Science Activities

Theme	Code	f	%
Problems During Science Activities	Lack of materials	24	36.92
	Crowded classrooms	16	24.62
	Insufficiency of classrooms	9	13.85
	Indifferent families	8	12.30
	Insufficiency of schools	3	4.62
	Inadequate in-service trainings	3	4.62
	Indifferent children	2	3.07

According to Table 14, when science activities are carried out, teachers mostly encounter such problems as lack of materials (36.92%), crowded classrooms (24.62%), insufficiency of classrooms (13.85%) and indifference of families (12.30%). Some example teacher views on the problems faced by teachers in the process of realizing science activities are as follows: The teacher coded Ö1 says, *"Especially due to lack of materials, family indifference, and crowded classes, we cannot carry out science activities properly"*. The teacher coded Ö31 says, *"To me, it is a very big problem to have large classes while conducting the activities,"* while the teacher coded Ö5 says, *"There are many problems arising from the classroom environment. The classes are not very suitable for preschool teaching"*.

In order to determine the sources of the problems faced by the teachers during the science activities, the question of "Where do you think the problems you encounter in science activities stem from" was asked, and the findings obtained from the answers are given in the following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 15. Sources of Problems Faced During Science Activities

Theme	Code	f	%
Sources of Problems	School (administration, facilities etc.)	13	27.09
	Classroom environment	13	27.09
	Parents	8	16.66
	Materials	6	12.50
	Implementation	3	6.25
	Teachers	3	6.25
	Children	2	4.16

According to Table 15, schools (27.09%), classroom environment (27.09%), parents (16.66%) and materials (12.50%), respectively are among the sources of the problems faced by teachers in performing science activities. Some sample teacher views on the sources of the problems encountered during the science activities are: The teacher with the code Ö6 expresses the problem of the school and materials as the sources of the problems they encountered, *"I am suffering from the school or administration about finding materials, taking field trips and getting permission"*. The teacher with the code Ö5 says, *"The problems result from the classroom environment because the conditions in the classroom are not suitable for preschool education"* and adds that the physical condition of the classes is a source of problems. Another teacher with the code Ö13 says, *"Problems are sometimes caused by the school, financial potential and the timid or indifferent behaviour of parents. Especially, families are very insensitive. They consider us as babysitters."* and expresses the indifferent parents as a source of problems.

In order to determine the competence of teachers to solve the problems they face during their science activities, the question of "Are you satisfied with the way you handle the difficulties you encounter during science activities?" was asked, and the findings from the answers are given in the

following table. Sample teacher views on the codes obtained in relation to the theme in this subject are included.

Table 16. Teachers' Competence of Handling with Problems

Theme	Code	f	%
Handling the Problems	Yes	20	62.50
	Partly	9	28.13
	No	3	9.37

According to Table 16, 62.50% of the teachers state that they are competent to handle the problems encountered in conducting science activities, 28.13% of them consider themselves to be partially competent, and 9.38% find themselves incompetent to overcome the difficulties encountered in science activities. Some examples of teachers' views on the situations that teachers consider themselves as being competent to overcome the difficulties they encounter while performing science events, and the solutions they develop are as follows: The teacher coded Ö15 says, *"Yes, I consider myself competent. In general, I deal with the problems I have encountered. I am using something different if there is material shortage. If I need to collect the attention of the children, I do a different activity and continue the science activity."* Another teacher with the code Ö21 says, *"Partially. I get prepared before problems. I separate children into groups because they are crowded."* The teacher with the code Ö13 says, *"I do not consider myself competent. The difficulties we face sometimes cause teachers to be unable to do these activities. We're putting them off. I think that if we have a science workshop where kindergarten classrooms can use in every school, we will not encounter these difficulties and I think that we will be able to make the science activities more efficiently and successfully in a better environment."*

Conclusion, Discussion and Suggestions

This study was carried out according to the case study design within the scope of qualitative research methodology in order to reveal the opinions of preschool teachers about whether they consider themselves qualified in science activities, the kind of science activities they use, the methods and techniques they use in science activities, and the problems they encounter.

According to the results reached in the study, the vast majority of preschool teachers consider themselves qualified in terms of science education. Teachers often state that the science education environment should be equipped with laboratory facilities and a natural environment but should also be rich in materials. Uğraş, Uğraş, and Çil (2013) found that preschool teachers' competence in science activities was good according to the professional experience of the preschool teachers. Özbey (2006) concluded that teachers in preschool education institutions generally encountered problems at the planning and implementation level of science activities, and that they could not apply science activities regularly, although they were qualified in the preschool science activities. Garbett (2003) concluded that preschool teacher candidates regarded themselves as unqualified in science teaching, and the knowledge of teacher candidates and their planning skills of science activities suitable for children were inadequate. In a study conducted on preschool teachers' qualifications for science and nature activities, Şahin (1996) found that more than half of the teachers who participated in the study felt themselves incompetent during science teaching. Ayvacı, Devocioğlu, and Yiğit (2002) found that most preschool teachers did not understand the importance of science and natural phenomena, and that they did not have the ability to plan and implement science and nature activities in the desired quality. According to the study conducted by Karaer and Kösterelioğlu (2005), teachers stated that their levels of proficiency in science studies were low and that science-related knowledge levels were also limited to pre-service education. Hashweh (1987) emphasizes that missing concepts and conceptual mistakes that exist in the teacher will pass on to the students.

The vast majority of teachers state that science concepts can be better taught to children through learning by hands-on activities as well as using visual materials. It has also been observed that as a result of the science activities teachers have applied, they make efforts to improve scientific process skills in children. In a study conducted by Kefi, Çeliköz, and Erişen (2013) to identify the extent to which preschool teachers use basic scientific process skills, the writers found that preschool teachers mostly include observation into the science activities. On the other hand, it was observed that teachers did not use the ability to predict, measure, record and infer data when practicing science activities. Furthermore, in a study by Öztürk-Yılmaztekin and Tantekin-Erden (2011) in which they observed the science teaching practices of preschool teachers, it has been found that all of the preschool teachers sampled are performing activities that bring in the ability to observe in science activities and do not include any of the the basic scientific processes such as measuring and recording data.

Almost all teachers state that they use common science teaching materials, while few number of them express that they use animals, plants, and natural materials. According to the results of the study conducted by Karaer and Kösterelioğlu (2005), all of the teachers in the study stated that there should be a science corner (center) in preschool classrooms. In addition, while teachers felt themselves incompetent to develop science-related material, they stated that they considered themselves to be most competent in experimentation.

Nearly all of the teachers were observed to include spontaneous/natural activities in science activities. More than half of the teachers often say that they prefer group activities in science and that they perform science activities at least once a week. Half of the teachers state that they perform science activities for 0-30 minutes. Again, more than half of the teachers say that the number of children in the classroom should be between 10 and 15 children so that science activities can be effective. Özbek (2009) states that individual and group-based activities, which include processes such as being aware of the problems children encounter in science activities, the ways of finding creative solutions and the putting them into life have improved the creativity of children towards their problem solving skills.

It has been revealed that teachers use many methods and techniques when performing science activities. In particular, experimentation, observation and demonstration are the most widely used methods and techniques. More than half of the teachers say that the experimentation method is the most favourite method for children. Teachers also indicate that methods and techniques such as experiment, observation, demonstration can be easily implemented while performing science activities. In a study conducted by Karaer and Kösterelioğlu (2005), in order to determine the teaching methods used by preschool teachers in science teaching, it was determined that a large proportion of the preschool teachers sampled operated their science activities through experimentation. In addition, Şahin (1996) has also found that preschool teachers use experimental methods in science activities and that they do not benefit from other science teaching methods such as concept mapping and analogy. Many field studies in the literature indicate that preschool teachers mostly use experimental methods in science teaching (Alabay, 2007, Karamustafaoğlu & Kandaz, 2006, Kıldan & Pektaş, 2009, Özbek, 2009). In his study, Şahin (1996) found that teachers mostly use play and experiment as teaching methods and use very few other teaching methods. According to Sansar (2010), it is clear that demonstration method is mostly used in science activities. The demonstration method is followed by experiment, observation, question-answer and use of visual materials, respectively. The results of these studies are in parallel with the results obtained in the present study. However, when the teaching methods and techniques used by teachers in science activities are examined, it is observed that methods and techniques such as field trip, case study, trial and error, drama, analogy and discussion are rarely carried out in science activities.

The teachers in the study express the leading problems they face in science activities as lack of materials, crowded classrooms, insufficiency of classrooms in physical terms, and indifferent parents. They also indicate that the problems encountered are often caused by school, classroom, family and material shortage. A large number of teachers consider themselves competent enough to overcome the

problems they encounter in the process of realizing science activities. According to the study conducted by Karamustafaoğlu and Kandaz (2006), most of the pre-school teachers do not find the equipment they use in science nature activities sufficient. In their study Kandir, Özbey, and İnan (2009) report that teachers have a hard time choosing and preparing materials and arranging the environment because of the large number of children in the classroom. Çınar (2013) state that teachers face with problems such as lack of source materials and equipment, inadequacy of information about science subjects, and negative attitudes and behaviours of parents and administration while conducting activities. Kıldan and Pektaş (2009) found that the physical equipment of the classrooms was not sufficient in teaching science and nature subjects. Aslan, Zor, and Cicim (2015) ranked the most common problems of pre-school teachers in science education as lack of material, lack of information, lack of sample/guide experiments, insufficient level of readiness of children and attitude of administrators. Similar results have been found by Karaca and Aral (2011) in their study of preschool teacher candidates to identify problems they encounter in teaching practice. In the study of Özşırkıntı, Akay, and Yılmaz-Bolat (2014) on the preschool teachers' views on preschool education programs, it has been concluded that the physical possibilities of schools and the density factors in classrooms cause various difficulties in establishing learning centers. In addition, teachers have indicated that adequate in-service training was not provided at the appropriate time. Teachers have also indicated that there must be in-service trainings, courses, seminars on the program; and that solutions should be provided to eliminate in the event that problems arise. Kallery (2004) emphasized that the problems faced by teachers include the lack of teaching materials, the inadequate classroom environment for activities, and the difficulties in choosing appropriate materials for activities. However, with the establishment of a better infrastructure system, the state must pay more attention to preschool education. An appropriately organized physical environment for effective learning in preschool education programs is of great importance. Care should be taken to ensure that learning centers in the classroom and the materials in these centers are in a position to organize children's learning (Kandir, Özbey & İnal, 2010; Kandir et al., 2012). The classroom environment needs to have comfortable and modifiable features according to the children's interests, which allow them to do research (Brunton & Thornton, 2010).

For science education at preschool education institutions, physical inconveniences in education settings (small classrooms, crowded classes, difficulties in forming learning centers) quantitative and qualitative lacking of science teaching materials and guide resource materials, deficiencies in educational areas, lack of resources, materials, and guidance materials to be provided by MoNE (s) still remain and lead to problems for teachers such as having to undertake all responsibilities including having to shape the educational process in line with their own initiative. It is thought that all innovations and updates to the problem areas will undoubtedly provide positive reflections to preschool science education. Based on the results of this study and similar studies in the literature, the following suggestions can be made:

- Teachers can increase their knowledge and skills by participating in various courses and seminars at regular intervals so that they can follow the innovations and changes related to science and nature education.
- The number of courses for science education can be increased in terms of quality and quantity by arranging undergraduate preschool teacher education programs.
- Preschool teacher candidates can be made more practical to be able to use science materials effectively.
- Teachers can organize activities by investigating different methods and techniques in the course of implementing the activities, and they can support children's senses of discovering and curiosity.
- In the preschool education program, the materials and equipment indicated in the MoNE 2013 program for science education can be provided to the schools every year.

- A standard may be set for the number of children in the class.
- Some renovation studies could be carried out with the purpose of enabling learning centres more efficient and applying the sample classroom order mentioned in MoNE schedule.
- Informational meetings on the structure and function of preschool education should be organized for parents and more participation the parents into science activities should be achieved.

References

- Aktaş-Arnas, Y. (2003). Okulöncesi dönemde fen eğitiminin amaçları. *Çocuk Gelişimi ve Eğitimi Dergisi*, 1, 1-7.
- Alabay, E. (2007). Okulöncesi öğretmenlerin fen ve doğa eğitiminde kullandıkları öğretim metotları. *UMES'07-Ulusal Teknik Eğitim, Mühendislik ve Eğitim Bilimleri Genç Araştırmacılar Sempozyumu*, 20-22 Haziran, Kocaeli.
- Alisinanoğlu, F., Özbey, S., & Kahveci, G. (2011). *Okul öncesinde fen eğitimi*. Ankara: Maya Akademi Yayınevi.
- Aslan, O., Zor, T., & Cicim, E. (2015). Okul öncesi öğretmenlerinin fen eğitime yönelik görüşlerinin ve hizmet içi eğitim ihtiyaçlarının belirlenmesi. *Uluslararası Sosyal Araştırmalar Dergisi*. 40(8), 519-530.
- Avcı, N. (2005). Fen doğa eğitiminde proje yaklaşımı. M. Sevinç. (Ed.), *Gelişim ve eğitimde yeni yaklaşımlar* (2) içinde (s.359-365). İstanbul: Morpa Yayınları.
- Ayvacı, H.Ş., Devecioğlu, Y., & Yiğit, N. (2002). Okul öncesi öğretmenlerinin fen ve doğa etkinliklerindeki yeterliliklerinin belirlenmesi. *V. Ulusal Fen Bilimleri ve Matematik Eğitim Kongresi*, 16-18 Eylül, Orta Doğu Teknik Üniversitesi, Ankara.
- Broinowski, I. (2002). *Toward creativity in early childhood education: a case study of the creative processes used by early childhood educators in curriculum planning for young children*. Unpublished Phd Thesis, University of South Australia, School of Education. Australia.
- Brunton, P., & Thornton, L. (2010). *Science in the early years: Building firm foundations from birth to five*. UK: Sage Publications
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2013). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Akademi.
- Can-Yaşar, M., & Aral, N. (2010). Yaratıcı düşünme becerilerinde okul öncesi eğitimin etkisi. *Kuramsal Eğitimbilim*, 3(2), 201-209.
- Çınar, S. (2013). Okul öncesi öğretmenlerin fen ve doğa konularının öğretiminde kullandıkları etkinliklerin belirlenmesi. *Eğitim ve Öğretim Araştırmaları Dergisi*, 2(1), 363-371.
- Dağlı, A. (2007). Okulöncesi Eğitimi Alan ve Almayan İlköğretim Birinci Sınıf Öğrencilerinin Türkçe ve Matematik Derslerindeki Akademik Başarılarının Karşılaştırılması. Yayınlanmamış Yüksek Lisans Tezi. Selçuk Üniversitesi, Sosyal Bilimler Enstitüsü, Konya.
- Dağlı, H. (2014). Okul Öncesi Eğitim Kurumlarında Uygulanan Fen Eğitiminin İçeriği Konusunda Öğretmen Görüşlerinin İncelenmesi. Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

- Davies, D., & Howe, A. (2003). *Teaching science and design and technology in the early years*. London: David Fulton Publishers.
- Elkind, D. (1989). Developmentally appropriate education for 4-years-olds. *Theory into Practice*, 28(1) 47-52.
- Erkan, S., & Kırca, A. (2010). Okul öncesi eğitimin ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluklarına etkisinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 38, 94-106.
- Garbett, D. (2003). Science education in early childhood teacher education: Putting forward a case to enhance student teachers' confidence and competence. *Research in Science Education*, 33, 467-481.
- Hashweh, M. Z. (1987), Effects of subjects matter knowledge in the teaching of biology and physics. *Teaching and Teacher Education*, 3(2).109-120.
- Kallery, M., & Psillos, D. (2002). What happens in the early years science classroom? The reality of teachers' curriculum implementation activities. *European Early Childhood Education Research Journal*, 10(2), 49–61.
- Kallery, M. (2004), Early years teachers' late concerns and perceived needs in science: An exploratory study. *European Journal of Teacher Education*, 27(2).147-165.
- Kandır, A., Can-Yaşar, M., İnal, G., Yazıcı, E., Uyanık, Ö. & Yazıcı, Z. (2012). *Etkinliklerle bilim eğitimi*. Ankara: Efil Yayınevi.
- Kandır, A., Özbey, S., & İnal, G. (2009). Okul öncesi öğretmenlerinin eğitim programlarını planlama ve uygulamada karşılaştıkları güçlüklerin incelenmesi. *Uluslararası Sosyal Araştırmalar Dergisi*, 2(6), 373-387.
- Kandır, A., Özbey, S., & İnal, G. (2010). *Okul öncesi eğitimde program (1) kuramsal temeller*. İstanbul: Morpa Kültür Yayınları.
- Karaca, N. H., & Aral, N. (2011). Okul öncesi öğretmen adaylarının öğretmenlik uygulamalarında karşılaştıkları sorunlar. *II. International Conference on New Trends in Education and Their Implications*, 22-29 Nisan, Antalya.
- Karaer, H., & Kösterlioğlu, M. (2005). Amasya ve Sinop illerinde çalışan okulöncesi öğretmenlerin fen kavramlarının öğretilmesinde kullandıkları yöntemlerin belirlenmesi. *Kastamonu Eğitim Dergisi*, (13)2, 447-454.
- Karamustafaoğlu, S., & Kandaz, U. (2006). Okul öncesi eğitimde fen etkinliklerinde kullanılan öğretim yöntemleri ve karşılaşılan güçlükler. *Gazi Üniversitesi Eğitim Fakültesi Dergisi*, 26(1), 65-81.
- Kefi, S., Çeliköz, N., & Erişen, Y. (2013). Okulöncesi eğitim öğretmenlerinin temel bilimsel süreç becerilerini kullanım düzeyleri. *Eğitim ve Öğretim Araştırmaları Dergisi*, 2(2), 300-319.
- Kıldan, O., & Pektaş, M. (2009). Erken çocukluk döneminde fen ve doğa ile ilgili konuların öğretilmesinde okulöncesi öğretmenlerinin görüşlerinin belirlenmesi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 10(1), 113-127.
- Kök, M., Tuğluk, M. N., & Bay, E. (2005). Okul öncesi eğitimin öğrencilerin gelişim özellikleri üzerindeki etkisinin incelenmesi. *Kazım Karabekir Eğitim Fakültesi Dergisi*, 11, 294-303.

- Lind, K. (1996). *Exploring science in early childhood: A developmental approach*. New York: Delmar Publishers.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage Publications.
- Milli Eğitim Bakanlığı (MEB). (2013). *Okul öncesi eğitim programı*. T.C. Milli Eğitim Bakanlığı, Temel Eğitim Genel Müdürlüğü, Ankara.
- Özbek, S. (2009). Okul Öncesi Öğretmenlerin Fen Eğitimine İlişkin Görüşleri ve Uygulamalarının İncelenmesi. Yayınlanmamış Yüksek Lisans Tezi, Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, Adana.
- Özbey, S. (2006). Okul Öncesi Eğitim Kurumlarında Görev Yapan Öğretmenlerin Fen Etkinliklerine İlişkin Yeterliliklerinin Belirlenmesi. Yayınlanmamış Yüksek Lisans Tezi. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.
- Özsırkıntı, D., Akay, C., & Yılmaz-Bolat, E. (2014). Okul öncesi öğretmenlerinin okul öncesi eğitim programı hakkındaki görüşleri (Adana İli Örneği). *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 15(1), 313-331.
- Öztürk-Yılmaztekin E., & Tantekin-Erden F. (2011) *Early childhood teachers' views about science teaching practices*. Special Issue: Selected papers presented at WCNTSE Western Anatolia Journal of Educational Sciences (WAJES), Dokuz Eylül University Institute, pp.161-166, ISSN 1308-8971 161.
- Pagani, L. Rubenson, D., & Runco, M. A. (2003). The impact of junior kindergarten on behaviour in elementary school children. *International Journal of Behavioral Development*, 27(5), 423–427.
- Pehlivan, D. (2006). Okul öncesi eğitim alan ve almayan öğrencilerin ilkokuma yazmaya geçiş sürecinin, öğretmen ve öğrenci görüşleri doğrultusunda değerlendirilmesi (nitel bir araştırma). Yayınlanmamış Yüksek Lisans Tezi. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, Adana.
- Polat-Unutkan, Ö. (2007). Okulöncesi dönem çocuklarının matematik becerileri açısından ilköğretime hazır bulunuşluğunun incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 32, 243-254.
- Saban, A. (2008). Okula ilişkin metaforlar. *Kuram ve Uygulamada Eğitim Yönetimi Dergisi*, 55, 459-496
- Sansar, S. B. (2010). Okul Öncesi Öğretmenlerin Fen Eğitimine Yönelik Tutumları İle Fen Etkinliklerinde Kullandıkları Yöntemler Arasındaki İlişkinin İncelenmesi. Yayınlanmamış Yüksek Lisans Tezi, Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu.
- Şahin, F. (1996) Okulöncesi öğretmenlerinin kullandıkları metotların tespiti. II. *Ulusal Eğitim Sempozyumu Bildirileri*. 18-20 Eylül, Marmara Üniversitesi, İstanbul.
- Taner, M., & Başal, A. H. (2005). Farklı sosyoekonomik düzeylerde okulöncesi eğitimi alan ve almayan ilköğretim birinci sınıf öğrencilerinin dil gelişimlerinin cinsiyete göre karşılaştırılması. *Uludağ Üniversitesi Eğitim Fakültesi Dergisi*, 18(2), 395–420.
- Toğrul, Z. (2012). Okul Öncesi Fen Eğitiminde Rehber Materyallerinin Hazırlanması. Yayınlanmamış Yüksek Lisans Tezi, Kafkas Üniversitesi Fen Bilimleri Enstitüsü, Kars.

- Uğraş, H., Uğraş, M., & Çil, E. (2013). Okul öncesi öğretmenlerinin fen eğitimine karşı tutumlarının ve fen etkinliklerine ilişkin yeterliliklerinin incelenmesi. *Bitlis Eren Üniversitesi Fen Bilimleri Dergisi*, 2(1), 44-49.
- Yağlıkara, S. (2006). Okul Öncesi Dönem Çocuklarına Çevre Bilinci Kazandırmada Fen ve Doğa Etkinliklerinin Etkileri Konusunda Öğretmen Görüşleri. Yayınlanmamış Yüksek Lisans Tezi, Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü, Eskişehir.
- Yazıcı, Z. (2002). Okul öncesi eğitimin okul olgunluğu üzerine etkisinin incelenmesi. *Milli Eğitim Dergisi*, 155-156. <http://yayim.meb.gov.tr/dergiler/155-156/yazici.htm> adresinden edinilmiştir.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.
- Yıldız, V., Özkal, N., & Çetingöz, D. (2003). Okul öncesi eğitimi alan ve almayan 7-8 yaş grubu çocuklarda yaratıcı potansiyelin değerlendirilmesi. *Eğitim Araştırmaları Dergisi*, 4(13), 129-137.

School Principals' and Teachers' Views on Teacher Performance Evaluation^{*}

İlknur Mayaⁱ

Çanakkale Onsekiz Mart University

Yeliz Kaçarⁱⁱ

Classroom Teacher, Minister of National Education

Abstract

This study aims to detect school principals' and teachers' views on teacher performance evaluation, which is made for teachers- who are one of the most important resources of education- to develop themselves. Semi-structured interview method, one of qualitative research methods, was used in this study. The study group was composed of 18 school principals and 60 teachers working in the Çan district of Çanakkale province. "Interview Form 1" to obtain school principals' views on teacher performance evaluation and "Interview Form 2" to obtain teachers' views- both of which were developed by the researchers- were used for data collection. The collected data were put to inductive content analysis. The majority of the school principals were informed of the goals of teacher performance evaluation. School principals considered teacher performance evaluation as positive in that it was objective, that it helped teachers in self-development, that it contributed to students' development, that it made students active in the classroom and that it used the method of reward and punishment. According to principals and teachers, leaving teacher performance evaluation to the managers of the institutions was positive in terms of reliability and objectivity. Yet, both school principals and teachers were of the opinion that conflicts could occur in schools unless the criteria for evaluation were not clear and distinct and unless evaluation is fair.

Keywords: Performance Evaluation, Teacher Performance Evaluation, School Principal, Teacher.

DOI: 10.29329/ijpe.2018.157.7

^{*} This study is derived from Yeliz Kaçar's Master's Thesis conducted under the supervision of Assoc. Prof. Dr. İlknur Maya. The initial version of the study is presented as an oral presentation at the X. International Congress of Educational Research in 2018 and included in the summary textbook.

ⁱ **İlknur Maya**, Assoc. Prof. Dr., Çanakkale Onsekiz Mart University, Faculty of Education, Çanakkale/Turkey.

Correspondence: mayailknur@comu.edu.tr

ⁱⁱ **Yeliz Kaçar**, Classroom Teacher, Minister of National Education, Çan, Çanakkale/Turkey.

Introduction

Performance evaluation means measuring the efficiency of employees in an organisation in order to achieve its target and making decisions accordingly. In this sense, performance evaluation is the comparison between what is expected of individuals in an organisation and individuals' achievement (Açıkalın, 2002). In other words, it means reaching a conclusion by evaluating employees' capacity according to the evaluation criteria set. The goal of performance evaluation is to determine the extent to which the employees in an organisation help to attain the organisational objectives, to ensure the continuity of communication between the employees, to increase their motivation and to guide them in self-actualisation and personal development. This is because performance evaluation is available for setting the standards in an organisation for its mission and for developing the standards or for determining the areas it needs and forming the basis for the system of rewarding (De Cenzo & Robbins, 1988; Pehlivan, 2001).

The system of performance evaluation is very important for individuals working in an organisation because employees wish to receive the recompense for their effort and their work. When humans- wishing to be appreciated- face positive reactions, their motivation increases and thus they begin to take greater care with their work. Yet, performance evaluation should be made correctly and honestly. Evaluations made objectively raise employees' believe and confidence in their organisation (Ertürk, 2009). Besides, employees are expected to notice their deficiencies in consequence of performance evaluation and to make efforts to overcome the deficiencies (Özgen, Öztürk & Yalçın, 2005; Sabuncuoğlu, 2000).

An effective system of performance evaluation is important for educational institutions where learning and teaching processes are available; because performance evaluation system is necessary for teachers' self-development and for students' achievement. Many studies conducted in the field of education in recent years consider the correlations between teachers' self-development and students' learning (Elliott, 2015; Hayes, Mills, Christie & Lingard, 2006; Taylor & Tyler, 2012). Evaluating teachers' performance and their involvement in professional development activities ensure student achievement (Bownan, 2013; Sahlberg, 2015).

Studies concerning performance evaluation have been available in the literature in Turkey for a long time. For instance, objectives were set for performance evaluation in public institutions in the 8th, 9th and 10th five-year development plans. Ministry of National Education (MoNE), on the other hand, has conducted activities to "Develop Performance Model in Supervision" since the early 2000s. Consequently, according the 10th five-year development plan, teachers in Turkish system of education were given performance evaluation in 2015-2016 academic year by school principals; but, work on evaluation based on multiple sources of data was started by the Ministry of National Education with feedback from school principals, and the process of teacher performance evaluation was stopped temporarily in 2017-2018 academic year due to the above mentioned reason (MoNE, 2018).

However, teacher performance evaluation is used in many countries today consistently with contemporary supervision conception. Therefore, studies conducted abroad on the issue have been increasing. The effectiveness of teacher performance evaluation has been emphasised in studies abroad in recent years (Campbell, 2014; Colins, 2004; Elliott, 2015; Isore, 2009; Marshall, 2005). A review of literature show that the number of such studies has also increased recently in Turkey. The studies were conducted with the participation of managers, teachers, students and/or supervisors (Aygün, 2008; Boyacı, 2003; Fırıncioğulları Bige, 2014; Günbayı & Yıldırım, 2012; Öksüz, 2008; Sarpkaya, 2004; Süzen, 2007; Şengül, 2010; Üzmez, 2006). Yet, the number of studies assessing the application in 2015-2016 academic year especially and conducted with the participation of both school principals and teachers is rare. This is a study describing the importance of making teacher performance evaluation in the field of education. Therefore, it can contribute to the development of alternative approaches of evaluation in addition to teacher performance evaluation criteria and methods used in the field of education. The study is significant in that it guides educational policy makers and the

managers of institutions in decision-making and in implementation. The study aims to determine school principals' and teachers' views on teacher performance evaluation made for the self-development of teachers- one of the most important sources of education. In accordance with its purpose, it seeks answers to the following sub-problems:

- What are the goals of teacher performance evaluation in school principals' views?
- What are the criteria for teacher performance evaluation in school principals' views?
- What are the positive sides of leaving teacher performance evaluation to institution managers in school principals' views?
- What are the negative sides of leaving teacher performance evaluation to institution managers in school principals' views?
- What alternative evaluation activities can be done with institution managers in the process of teacher performance evaluation in school principals' views?
- What are the positive sides of leaving teacher performance evaluation to institution managers in teachers' views ?
- What are the negative sides of leaving teacher performance evaluation to institution managers in teachers' views ?

Method

The research model, study group, data collection and data analysis are described in this section.

Research Model

This study was conducted in survey model because it aimed to obtain the views held by school principals and teachers at the time when the interviews were made. Since the study tried to collect detailed data answering the questions of how and why about a certain unit in the population, it used case study survey model (Karasar, 2000; Yıldırım & Şimşek, 2013; Yin, 2014).

Study Group

The study was conducted with 18 school principals and 60 teachers working in primary, secondary and high schools located in Çan district of Çanakkale province in 2016-2017 academic year. Both school principals assessing teachers' performance and teachers being assessed were included in the study group. Thus, purposeful sampling was made.

The demographic properties of school principals and teachers included in the study are shown below in Table 1 and Table 2. According to Table 1, the majority of school principals are male, in the 31-40 age range and had at least 10 year-experience except for one. 6 of them work in primary schools while 6 work in secondary schools and 6 in high schools. According to Table 2, 40 of the teachers are female, 20 are male, the majority of them are in the 31-50 age range and 10- year or more experience in teaching. Additionally, 37 of them are teachers of branches. 28 of them teach in primary schools, 22 in secondary schools and 10 in high schools.

Table 1. The Demographic Properties of School Principals

School Principals	Gender	Age Range	Seniority	School Level	Title
P1	Female	31-40	11-20	Primary	SP
P2	Male	31-40	11-20	Primary	SP
P3	Male	41-50	11-20	Primary	SP
P4	Male	31-40	11-20	Primary	SP
P5	Male	51 and more	21 and more	Primary	SP
P6	Male	41-50	21 and more	Primary	SP
P7	Male	31-40	0-10	Secondary	SP
P8	Male	41-50	21 and more	Secondary	SP
P9	Male	41-50	21 and more	Secondary	SP
P10	Male	31-40	11-20	Secondary	SP
P11	Male	31-40	11-20	Secondary	SP
P12	Male	41-50	21 and more	Secondary	SP
P13	Male	31-40	11-20	High School	SP
P14	Male	41-50	21 and more	High School	SP
P15	Male	31-40	11-20	High School	SP
P16	Male	41-50	11-20	High School	SP
P17	Male	41-50	11-20	High School	SP
P18	Female	41-50	21 and more	High School	SP

P and SP: School Principal

Table 2. The Demographic Properties of Teachers

Teachers	Properties	N
Gender	Female	40
	Male	20
	21-30	10
Age	31-40	30
	41-50	15
	51 and more	5
Branch	Classroom teacher	23
	Branch teacher	37
	0-10 year	25
Seniority	11-20 year	25
	21 and more	10
	Primary	28
School Level	Secondary	22
	High School	10

T: Teacher

Data Collection and Analysis

First, literature on teacher performance evaluation was reviewed for research data collection. Then, “Interview Form 1” containing five open-ended questions to be answered by school principals was prepared. In addition to that, “Interview Form 2” containing two open-ended questions to be answered by teachers was prepared. After that, the following steps were taken for validity and reliability analysis of the interview forms. To begin with, 3 lecturers working in Educational Sciences Department of the Educational Faculty of Çanakkale Onsekiz Mart University (ÇOMU) and 2 lecturers working in the Educational Sciences Department of Uludağ University- 5 lecturers in total- were consulted for expert opinion. Later, a pilot study was carried out by giving “Interview Form 1” to 15 school principals and “Interview Form 2” to 15 teachers in schools located in Çanakkale city

centre. Semi-structured interviews were used in collecting the data. The interviews with school principals were made face-to-face by making appointment beforehand and were recorded using a voice recorder. The interviews with teacher were made by giving “Interview Form 2” to the teachers and asking them to complete it in writing. The school principals and teachers were found to answer the questions sincerely.

The research data were put to writing and were analysed in inductive method. Inductive analysis is performed so as to reveal the concepts underlying the data and the correlations between the concepts through coding (Yıldırım & Şimşek, 2013). The analysis was done in three stages: Stage one the stage at which the data was coded first by the researcher and then by an expert in the field. After that, the formula $\text{Reliability} = \frac{\text{agreement}}{\text{agreement} + \text{disagreement}} \times 100$ was used with the codes given by the researcher and the expert (Miles & Huberman, 1994). Consequently, the percentage of agreement between coders was found to be 95%. Since having 70% or above agreement was considered adequate, reliability was attained for data analysis. Themes were distinguished on the basis of codes given by the researcher and the expert in accordance with the sub-problems.

Findings

The findings obtained with the analysis of the data in accordance with the sub-problems are as in the following.

The Goals of Teacher Performance Evaluation in School Principals’ Views

The first sub-problem of the research was “what are the goals of teacher performance evaluation in school principals’ views?”. The findings for the problem are shown in Table 3.

Table 3. The Goals of Teacher Performance Evaluation in School Principals’ Views

Main Theme	Sub Themes	f
	Positive development in consequence of objective evaluation	11
The goals of teacher performance evaluation	an application whose goal was incomprehensible	7
	self-development	7
	student development	5
	activating to student	4
	reward and punishment	2

As is clear from Table 3, the majority of school principals state that teacher performance evaluation has such goals as positive development in consequence of objective evaluation, contributing to teachers in self-development, contributing to students’ development by making sacrifice, making students active in the classroom, and using the system of reward and punishment. Only seven principals said that it was an application whose goal was incomprehensible and which was unnecessary. In this matter, a school principal, P18 made the statement “*it is a right approach for teachers to be evaluated by the managers with whom they work together since those teachers’ work is followed one-to one and continuously*”. Another principals, P9, said, “*it is important in making the staff more efficient, more eager and tidier.*” Still another principal, P3, on the other hand said, “*The method of reward and punishment is not used in performance evaluation. Therefore, I don’t believe it will be healthy in guiding. Thus, it will remain as an activity which cannot achieve its goal*” and

implied that reward and punishment should be available in order for performance evaluation to achieve its goal.

The Criteria for Teacher Performance Evaluation in School Principals' Views

The second sub-problem of the research was “what are the criteria for teacher performance evaluation in school principals' views?” The findings for the sub-problem are shown in Table 4.

Table 4. The Criteria for Teacher Performance Evaluation in School Principals' Views

Main Theme	Sub Themes	f
The criteria for teacher performance evaluation	teachers' adopting their school	8
	working with sacrifice	7
	the development of their institution	6
	professional competence	6
	communication	6
	discipline	5
	MEBBIS Form	5
	sincerity	3
	feedback from parents	3
	Command of the programme	3

It is clear from Table 4 that a number of criteria for performance evaluation which is made for teachers' self-development have been set beforehand. The criteria include such things as teachers' adopting their school, working with sacrifice and voluntarily, contributing to the development of their institution, professional competence, communication, discipline, sincerity, feedback from parents and command of the programme and of the domain. Besides, a few of the principals laid emphasis on the evaluation scale containing 50 items available in “Performance Evaluation Module” in the Ministry of National Education data processing system (MEBBIS). As is evident from this finding, school principals are informed of the criteria for performance evaluation but they are uncertain about how to implement them. A school principal, P10, responded the question with the statement “*the criteria for evaluation have been set in the regulation*”. P5 supported the principal in the statement “*the form which is available in the Ministry of National Education data processing system.*” Another principal, P16, mentioned more specific things in the statement “*may be teachers' approach towards students, their communication with colleagues, their command of the programmes, their efforts for self-development, their communication with students and parents, their adaptation into the environment and their contributions to the school.*” P12, on the other hand, said, “*performance criteria are very general and inadequate.*”

Work and evaluation on institutions should not be made randomly. If it is made according to a plan on the basis of pre-set criteria, progress is made in the workplace. Although there are pre-set criteria for the evaluation of teacher performance by school principals, pilot projects should be carried out and training should be offered in order for teacher performance evaluation to be effective.

The Positive Sides of Leaving Teacher Performance Evaluation to Institution Managers in School Principals' Views

The third sub-problem of the research was “what are the positive sides of leaving teacher performance evaluation to institution managers in school principals' views?”. The findings for the sub-problem are shown in Table 5.

Table 5. The Positive Sides of Leaving Teacher Performance Evaluation to Institution Managers in School Principals' Views

Main Theme	Sub Themes	f
The positive sides of leaving teacher performance evaluation to institution managers	objective evaluation in education	10
	following the works done by teachers	9
	the opportunity to solve problems	5
	feedback from managers	4
	contribute to the authority of managers	1

As clear from Table 5, the majority of school principals think it is positive to leave teacher performance evaluation to institution manager. This is because school principals are objective in evaluation, they follow and analyse the work done by teachers in their school closely throughout the year, they have the opportunity to solve problems when and where they occur and they can give instant feedback. Besides, school principals also emphasised that such evaluation contributed to the authority of institution managers. In this matter, a school manager, P2, said, *“because institution managers spend all their time in school in terms of making evaluation and because they follow teachers’ work closely, planning will be more appropriate; but only if it is objective”* and stressed objectivity. In support of P2, another principal, 16, made the statement *“because managers spend more time with teachers.... Supervisors of education come to school one day, they make observations and then they go. Therefore, performance evaluation is more positive.”* Another principal, P8 called attention to the fact that the results of performance evaluation did not have any sanctions by saying, *“supervision done at the right time and in the right place is more efficient. It is then possible to get to know the individuals. But authority for sanctions is not sufficient.”*

The Negative Sides of Leaving Teacher Performance Evaluation to Institution Managers in School Principals' Views

The fourth sub-problem of the research was “what are the negative sides of leaving teacher performance evaluation to institution managers in school principals' views?”. The findings for the sub-problem are shown in Table 6.

Table 6. The Negative Sides of Leaving Teacher Performance Evaluation to Institution Managers in School Principals' Views

Main Theme	Sub Themes	f
The negative sides of leaving teacher performance evaluation to institution managers	conflict between teachers and managers	10
	disruption in communication	9
	getting away from objectivity	7
	ambiguous criteria	3

As is evident from Table 6, the negative sides of leaving teacher performance evaluation to institution managers are conflicts between teachers and institution managers, disruption in communication, getting away from objectivity and absence of distinct and clear criteria. P3 described the negative sides in the statement *“conflicts occur between administration and staff in objective evaluations. Different marks given to teachers in evaluation do not increase the sense of competition*

but on the contrary they cause increase in disintegration and in rumours. Principals and teachers supervising each other cause chaos in terms of authority". P8 said, "Work environment in schools requires a bit more intimate relations. So, bilateral relations make evaluation difficult" and thus stated that problems could occur in communication after performance evaluation.

Alternative Evaluation Activities that Can Be Done with Institution Managers in the Process of Teacher Performance Evaluation

The fifth sub-problem of the research was "what alternative evaluation activities can be done with institution managers in the process of teacher performance evaluation in school principals' views?". The findings for the sub-problem are shown in Table 7.

Table 7. Alternative Evaluation Activities that Can Be Done with Institution Managers in the Process of Teacher Performance Evaluation

Main Theme	Sub Themes	f
Alternative evaluation activities in the process of teacher performance evaluation	all the staff should participate in the process of teacher performance evaluation	6
	institution managers' evaluation adequate	5
	educator seminar should be available	4
	students and parents evaluation	3
	performance-based wage system	2
	supervisor evaluation	1
	examination system	1

According to Table 7, school principals mentioned evaluation based on multiple source of data by stating that all the staff should participate in evaluation in the process of teacher performance evaluation, that students and parents should be encouraged to make evaluation and supervisor evaluation should also be made. In addition to the above mentioned views, there are also views that educator seminars should be available and performance-based wage system and examination system should be introduced. 5 of the school principals considered institution managers' evaluation adequate in teacher performance evaluation system. One of the school principals said, "*Students, parents and even school employees and teachers' colleagues can be included in teacher evaluation.*" Another principal, P13, pointed out that supervisors should not be kept away from educational environments by saying, "*it would be appropriate for supervisor to carry out general supervision at certain intervals.*" P17 stated that it would be appropriate to evaluate teachers with a central examination saying, "*An examination should be given to see whether or not teachers' knowledge is up to date. Teachers' performance mark should be law unless they have in-service training.*" P17 also said, "*Institution managers are sufficient*" and stated his/her satisfaction with evaluation practice.

The Positive Sides of Leaving Teacher Performance Evaluation to Institution Managers in Teachers' Views

The seventh sub-problem of the research was "what are the positive sides of leaving teacher performance evaluation to institution managers in teachers' views ?". The findings for this sub-problem are shown in Table 8.

Table 8. The Positive Sides of Leaving Teacher Performance Evaluation to Institution Managers in Teachers' Views

Main Theme	Sub Themes	f
The positive sides of leaving teacher performance evaluation to institution managers in teachers' views	deficiencies will be revealed by school principals	28
	more objective and reliable	28
	positive communication between principals and teachers	15

According to Table 8, the most positive side of leaving teacher performance evaluation to institution managers in teachers' views is that they consider the practice as more objective and reliable. In addition to that, teachers think that deficiencies will be revealed by school principals. In this respect, T15 said, *"school principals can make more reliable evaluation since they know teachers better according to the supervisors of the ministry"*. The other hand, T3 said, *"Teachers can see their deficiencies when they are evaluated from the eyes of someone from outside and thus they can compensate for their deficiencies"* and stressed another positive side of evaluation. T21 stated that performance evaluation would contribute to the communication between principals and teachers in his/her statement *"I think it will contribute positively to the communication between school principals and teachers."* T20 stated his/her view as *"feedback is given in after evaluation is made in our school. This enables us to see the deficiencies."*

The Negative Sides of Leaving Teacher Performance Evaluation to Institution Managers in Teachers' Views

The eighth sub-problem of the research was "what are the negative sides of leaving teacher performance evaluation to institution managers in teachers' views?". The findings for this sub-problem are shown in Table 9.

Table 9. The Negative Sides of Leaving Teacher Performance Evaluation to Institution Managers in Teachers' Views

Main Theme	Sub Themes	f
The negative sides of leaving teacher performance evaluation to institution managers in teachers' views	getting away from objectivity	26
	unclearly and indistinctness of criteria for performance evaluation	26
	unnecessary practice	3
	disruption in communication between managers and teachers	3
	conflict	2

According to Table 9, the negative sides of leaving teacher performance evaluation to institution managers in teachers' views are getting away from objectivity, ambiguity stemming from the unclarity and indistinctness of criteria for performance evaluation, disruption in communication between principals' and teachers and having conflicts. Additionally a small number of teachers believe that it is unnecessary practice. In this respect, T10 said, *"I don't think those who will make the evaluation will behave objectively. How objective can students' and parents' evaluation be?"*. T37, on the other hand, said, *"I don't think there is objective performance evaluation. Personal intimacy influences evaluation."* T40 said, *"Teacher performance evaluation is an unnecessary practice. It does nothing but destroy teachers' self-confidence."*

Discussion, Conclusion and Recommendations

Educational systems, just as all other systems, should also be renewed considering the changing circumstances of time and scientific development today. The system of supervision functioning as the feedback mechanism should also be renewed in the system of education. Therefore, teachers taking on leadership roles in the educational system, managers and supervisors should be pioneers in innovations in the system of education and they should adapt into the innovations; because the system of supervision is important to ensure the continuity and development of an organisation. Today, the approach of performance evaluation has been adopted in educational institutions in many countries for the supervision of teachers. This study, which was performed so as to determine school principals' and teachers' views on teacher performance evaluation- which has just started in Turkish system of education- obtained the following findings:

According to the majority of principals of schools of various levels, teacher performance evaluation has important goals in that it contributes to teachers' self-development and that it causes positive development in consequence of objective evaluation. Accordingly, school principal are informed of the goals of performance evaluation. The principals also stated that criteria such as teachers' adoption of their school, their sacrificed and volunteering work, contributing to the development of their organisation, professional competence, communication, discipline, sincerity, feedback from parents and teachers' command of the programmes and the domain should be the criteria for performance evaluation. They considered performance evaluation positive due to the fact that it was an objective evaluation system, it contributed to teachers' self-development and students' self-development, it made students active in the classroom and that it used reward and punishment method. According to the school principals, the fact that it caused conflicts in school and that communication broke down were the negative sides of performance evaluation. This was a find parallel to the one obtained by Boyacı (2003) and Demirci (2011). On the other hand, half of the school principals recommended that alternative methods of evaluation should be used.

In this current study, the most positive side of leaving performance evaluation to institution managers according to teachers was that it was a reliable and objective practice. Teachers thought that the negative sides of leaving performance evaluation to institution managers were getting away from objectivity, ambiguity due to unclear and indistinct criteria for evaluation and problems of communication and conflicts. These were the findings similar to the ones obtained by Boyacı, (2003), Brown (2005), Demirci (2011), Odhiambo (2005) and Süzen (2007). Those studies report that the majority of teachers point to negative human relations between evaluators and the ones who are evaluated in the process of teacher evaluation.

According to the results of this study, the following may be recommended so that teacher performance evaluation can be used effectively in Turkish system of education: Firstly, the goals and criteria for teacher performance evaluation should be described clearly and distinctly. Secondly, who is to make teacher performance evaluation should be explained with reasons. Besides, evaluation process should also be performed objectively and reliably. Only in this way can contributions be made to personal and professional development. How teacher performance evaluation results will be used should be explained at the end of the process. Reward and punishment to be given at the end of the process or the in-service training to be offered should be clear. In addition to that, effective mechanisms through which feedback can be received from teachers should be designed. The fact that the study was conducted in a district of Çanakkale province- that is to say, with a small population- was the restriction in this study. Therefore, it may be recommended that similar studies be performed with larger population.

References

- Açıklalın, A. (2002). *İnsan kaynağının geliştirilmesi*. Ankara: Pegem Yayıncılık.
- Aygün, Ç. S. (2008). *Ankara ili genel liselerinde performansa dayalı denetimin uygulanmasına ilişkin öğretmen görüşleri*. (Yayınlanmamış yüksek lisans tezi). Ankara Üniversitesi, Ankara.
- Bownan, L. (2013). *A study of teacher effectiveness evaluation models in American schools*. (Unpublished master thesis). Purdue University, Indiana.
- Boyacı, A. (2003). *İlköğretim örgütlerinin performans yönetim sistemi süreçleri açısından değerlendirilmesi* (Yayınlanmamış doktora tezi). Anadolu Üniversitesi, Eskişehir.
- Brown, A. (2005). Implementing performance management in England's primary school. *International Journal of Productivity and Performance Management*, 54(5/6), 468-481.
- Campbell, B. A. (2014). *Understanding the teacher performance evaluation process from the perspective of Jamaican public school teachers*. (Unpublished doctoral dissertation). University of Toronto, USA.
- Colins, A. (2004). Teacher performans evolution: A stressful experience from a private school. *Educational Research*, 46(1), 43-54.
- De Cenzo, D. & Robbins, S. (1988). *Performance appraisals: Personal human resource human resource management*. (3th ed.). Printice Hall: Englewood Cliffs.
- Demirci, C. (2011). *Okul öncesi yöneticilerinin öğretmenler tarafından algılanan performans değerlendirme sistemleri ile öğretmenlerin motivasyon düzeyleri üzerine ilişkisel bir araştırma* (Yayınlanmamış yüksek lisans tezi). Yeditepe Üniversitesi, İstanbul.
- Elliott, K. (2015). Teacher performance appraisal: More about performance or development?. *Australian Journal of Teacher Education*, 40(9), 102-116.
- Ertürk, M. (2009). *İşletme bilimini temel ilkeleri*. İstanbul: Beta Yayıncılık.
- Fırıncioğulları Bige, E. (2014). *İlkokul müdürlerinin ders denetimleri ile ilgili öğretmen görüşleri*. (Yayınlanmamış yüksek lisans tezi). Adnan Menderes Üniversitesi, Aydın.
- Günbayı, İ. & Yıldırım, S. (2012). Performans yönetimine ilişkin yönetici ve öğretmen görüşleri. *NEÜ Sosyal Bilimler Enstitü Dergisi*, 1, 1-22.
- Hayes, D., Mills, M., Christie, P. & Lingard, B. (2006). *Teachers and schooling making a difference: Productive pedagogies, assessment and performance*. Sydney: Allen and Unwin.
- Isore, M. (2009). Teacher evaluation: Current practices in OECD countries and a literature review. OECD education working papers, No. 23: Paris: Organisation for Economic Cooperation and Development. <http://dx.doi.org/10.1787/223283631428>
- Karasar, N. (2000). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayıncılık.
- Marshall, K. (2005). It's time to rethink teacher supervision and evaluation. *Phi Delta Kappan*, 86(10), 727-735.
- Miles, M. B. & Huberman, M. A. (1994). *An expanded sourcebook qualitative data analysis*. London: Sage Publication.

- MoNE. (2018). *Öğretmen performans değerlendirme sistemi bu yıl uygulanmayacak*. <http://meb.gov.tr>.
- Odhiambo, O. G. (2005). Teacher appraisal: Teacher experiences of Kenyan secondary school teachers. *Journal of Educational Administration*, 43(4), 402-416.
- Öksüz, S. (2008). *Endüstri meslek ve teknik liselerde çalışan yönetici davranışlarının öğretmen performansına etkisi*. (Yayınlanmamış doktora tezi). Yeditepe Üniversitesi, İstanbul.
- Özgen, A., Öztürk, A. & Yalçın, A. (2005). *İnsan kaynakları yönetimi*. Adana: Nobel Yayınları.
- Pehlivan, İ. (2001). *Öğretmenlerin performans değerlendirme modeli ve sicil raporları*. Ankara: MEB Yayınları.
- Sabuncuoğlu, Z. (2000). *İnsan kaynakları yönetimi*. Bursa: Ezgi Kitabevi.
- Sahlberg, P. (2015). *Finnish lessons 2.0: what can the world learn from educational change in Finland?*. New York: Columbia University.
- Sarpkaya, R. (2004). İlköğretim denetmenlerinin denetim sürecinde karşılaştıkları sorunlar. *Süleyman Demirel Üniversitesi Burdur Eğitim Fakültesi Dergisi*, 8, 114-129.
- Süzen, A. Z. (2007). *İnsan kaynakları yönetim süreçleri çerçevesinde öğretmen değerlendirmesinde performans değerlendirme; özel bir ilköğretim okulundaki sınıf öğretmenlerinin görüşü*. (Yayınlanmamış yüksek lisans tezi). Anadolu Üniversitesi, Eskişehir.
- Şengül, Y. (2010). *İlköğretim okulu yönetici ve öğretmenlerinin 360 derece performans değerlendirme sistemine ilişkin görüşleri*. (Yayınlanmamış yüksek lisans tezi). Samsun Ondokuz Mayıs Üniversitesi, Samsun.
- Taylor, E. S. & Tyler, J. H. (2012). The effect of evaluation on teacher performance. *American Economic Review*, 102(7), 3628-51.
- Üzmez, İ.T. (2006). *İlk ve ortaöğretim kurumlarında performans değerlendirme süreci: Sicil raporlarına ilişkin sorunlar ve beklentiler. Elazığ ili örneği*. (Yayınlanmamış doktora tezi). Fırat Üniversitesi, Elazığ.
- Yıldırım, A. & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.
- Yin, R. K. (2014). *Case study methods: Design and methods* (5. Baskı). Thousand Oaks: Sage Publication.

The Stakeholder Perceptions of the Factors Affecting School Economy

Neşe Börüⁱ

Nevşehir Hacı Bektaş Veli University

Abstract

School management gets use of human and material resources to ensure equality of opportunity in education. Financial and information resources as well as staff of the schools may be inadequate. The schools with a wealthy environment can offer rich programs and educational activities to their students, while others aim to apply only basic academic programs and are insufficient to offer additional programs. In this context, this study aims to determine the views of school principals and members of the board of school-parent partnership related to the school economy. The research was designed according to qualitative research method. The phenomenological approach method was used in the research. The data of the study were collected from 12 principals working in different types of high schools through semi-structured interview technique. The research concluded that school principals or members of the board of school-parent partnership have an effective environment, they should be successful in communication and persuasion skills and be sociable; school principals need new regulations to meet the urgent needs of school; the importance of the usefulness of school buildings and therefore paying attention opinions of school principals and teachers in the building process of the schools will lead to the reduction of the school principals' workload in the future and so they allocate time and efforts for improving the academic success of students; reasons that affect donation to the school can be regarding with selfish or unselfish intentions; ways persuading donors such as being honest and keeping words, the power of motivation, producing projects in school.

Keywords: School economy, school principals, the board of school-parent partnership

DOI: 10.29329/ijpe.2018.157.8

ⁱ Neşe Börü, Assist. Prof. Dr., Nevşehir Hacı Bektaş Veli University, Department of Education Sciences, Nevşehir/Turkey.

Correspondence: nboru@hotmail.com

Introduction

The economic insufficiencies of the world societies continue to increase day by day. This increase deepens the inequalities by opening the distance of the educational opportunities of the individuals. The education systems of undeveloped and developing countries are challenged in responding to the needs of the times. Unequal educational conditions cause negative consequences for the lives of individuals (Yılmaz & Sarpkaya, 2016, p.1).

According to Taymaz (2003), schools that have to cope with economic insufficiencies to provide equal opportunities in education benefit from human and material resources. On the other hand, financial, personnel and information resources are scarce in schools (Aldrich, 1972; Benson, 1975; cited by, Hoy & Miskel, 2015, p.243). Schools are both racing with their counterparts for these scarce resources and sharing these resources with them. While schools with a wealthy neighborhood can offer rich programs and educational activities to students, poor schools can implement only basic academic programs and fail to offer additional programs (Hoy & Miskel, 2015, p. 243). The required resources for national education institutions depend on the Ministry of National Education, the board of school-parent partnership, the qualifications of the school administrators and donors.

The national education ministry supplies schools with electricity, water and fuel. The board of school-parent partnership helps to increase quality and success in education and to organize educational activities such as courses, examinations, seminars, music, theater, sports and arts in the school. It tries to serve the equality of education and to take part in the evaluation of educational environments such as classrooms, libraries, gymnasiums, workshops and laboratories, providing financial and moral support to students who do not have appropriate conditions. It also does the managing the same and cash donations to the school and purchase goods and services to supply school needs, managing school economy, such as supporting for important days, weeks and competitions according to National Education Law (1739:16). Under this law, school principals are responsible for conducting and controlling the board of school-parent partnership.

Genç's (2005) research on determining parental and teacher opinions about cooperation between school and parents; the research of Akbaşlı & Kavak (2008) which is trying to determine the level of the board of school-parent partnership to fulfill their duties; the study of Özbaş & Badavan (2009) determining the level of relation in between the school and parents; the study of Aydoğan (2006) examining the relation with the school's the environment were taken into consideration in this current research. However, Turan *et al.* (2012) and Aslanargun & Bozkurt (2012) research related to the duties and responsibilities of the school administrator; the study of Pollock *et al.* (2015) on school principals' occupations were used to reach the behaviors of the school administrator. The study of Aksoy (2018) reaches findings about whether parents' education spending are difference according to some variables. The study of Dinçer (2018), the allowance of high schools is sent by Turkish national education ministry. However, this amount is not enough for the high school except the pension of high school. For this reason, the high school administrators and the board of school-parent partnership apply special techniques to increase incomes of school such as applying to donors, organizing charity bazaars and tea parties. In transporting schools, the government meets all the transportation and food expenses of all students and no money is collected from the students' families.

The present research contributes to the literature on the administration of the school economy by taking into consideration school-environment relations. In addition, the study aims to contribute the literature related to the duties and responsibilities of school principals and the board of school-parent partnership in the context of school economy administration. This research also aims to present proposals for the improvement of Turkish national education policies. This research has reached the data on donations to schools, which have not been studied enough in the Turkish literature. As a result, this research tries to present a more detailed viewpoint on the subject of considering school principals' qualifications, school-environment relationship, national education policies and donors in the context of the administration of school economy.

Leadership of school principals

The qualifications of school principals are within the framework of leadership skills. Issues such as analyzing the problem, running the decision-making process and developing appropriate solution strategies are closely related to the leadership abilities of school principals (Bursalioğlu, 2002, 15).

According to Sargut (2015, pp. 6-12), leadership should exist as a complementary manner in the administration. While the leader side is idealistic, synthisist, dreamy and pursuing creativity, the administrator side takes into account the rational and pragmatic facts. The leader side serves internal dynamics of the system and predicts the future in the long time, whereas the administrator side maintains the success of the work and the continuation of stability. The leader administrator is able to manage change in creative and innovative ways instead of showing standard attitudes towards change. Therefore, the leader administrator should be open to learning, show high tolerance for uncertainty and complexity. The leader administrator should allow team members to express themselves freely. The leader might create a ground resulting in false decisions by permitting excessive confidence in the environment that is constantly verifying discourses. For this reason, the leader should consider participant and consultant.

Donations to school

One of the factors influencing income sources in school economy is donation. While individuals can make donations because of altruism, they can donate with selfish intentions (Penner *et al.*, 2005, p. 368). Meeting with new people, learning new things, personal development (Ryan *et al.* 2001), participating in groups etc. selfish intentions can cause people to participate in activities related to philanthropy. People can get seats, get recognized by giving their names to the university or any building, avoid pressure of peers, take social applause, take part in annual reports, have the right to name for scholarships granted, get involved in special events etc. (Drezner, 2008, p. 48), they can attend to activities regards philanthropy because of the extreme forms of selfishness.

Schools may develop dependencies on suppliers around them if they can not provide the necessary resources with the available resources. The school's dependency on suppliers empowers suppliers about school decisions (Hoy & Miskel, 2015, p. 243). Schools are more flexible and less bureaucratic in such situations. This weakens the intrinsic controls of schools and increases externality. School principals should come up with the environmental uncertainty without increasing the dependence (Wood & Gray, 1991, p.141, cited by Hoy and Miskel, 2015, p.245). School principals limit the suppliers when necessary; the position of school principals act as a buffer to protect the educational objectives of the school, the curriculum and the teachers and influence the perceptions of the suppliers for the benefit of the school. School administration uses planning and strategies to deal with environments where are more challenging and ambiguity. School administration implements the planning process by estimating important environmental changes and recognizing environmental elements (Hoy & Miskel, 2015, pp. 246-247).

Purpose

School principals are expected to manage both the school's limited income sources and the school's effectiveness. To handle this challenging task, school principals benefit from parents-school partnership, donors and leadership skills. The purpose of the current study is to determine the views of school principals and members of the board of parents-school partnership on the administration of the school economy. The sub-aims of the research are:

Regarding the administration of the school economy;

1. To determine views about school principals' qualifications

2. To determine views about qualifications of members of the board of parents-school partnership.
3. To determine views about educational policies.
4. To determine views about school budget plans.
5. To determine views about donations to the school.
6. To determine views about the preservation of the state property and savings in school.

Methods

This research is designed according to qualitative research method. The phenomenological study approach was used in the research.

Participants

The participants of the research are the school principals and members of the board of school-parent partnership working in the high schools. Maximum variation sampling method was utilized to sample school principals in the study. To ensure the variation of school principals, school principals working in different types of high schools were reached. Therefore, interviews were held with the school principals working in schools, such as science high school, anatolian high school, health vocational high school, multi-program anatolian high school, religion of high school and vocational and technical of high school. For the selection of members of the board of school-parent partnership, “convenience sampling method” was used.

Table 1. Characteristics of participants

Code	Participant's duty
P1	A member of the board school-parent partnership
P2	A member of the board school-parent partnership
P3	A member of the board school-parent partnership
P4	A member of the board school-parent partnership
P5	A member of the board school-parent partnership
P6	A member of the board school-parent partnership
P7	A school principal
P8	A school principal
P9	A school principal
P10	A school principal
P11	A school principal
P12	A school principal

Data collection tool and the process

Interview questions were prepared according to the research's purposes. The interview questions consist of 9 open-ended questions. The interview form was presented to the experts of the field to control it. After this study, a pilot interview was held with a school principal to test whether the teachers understood the form. At the end of this study, the internal validity of the questions was determined. Before starting the interview, the participants read the interview questions and approved making the interview with the researcher. During the interviews, the researcher asked extra questions to the participants thanks to reliable communication process.

Data Analysis and reliability

In the analysis of the data obtained from the participants, descriptive analysis approach was used. The stages of descriptive analysis approach (Yıldırım and Şimşek, 2006, p.224) were taken into consideration, which are

Write-down of interview records: At this stage, the speeches in the voice recordings were transferred to the interview form without any changes. *Coding of the data:* The reached data are divided into words, sentences, paragraphs even pages and each one is conceptually understood and encoded. *Finding the Themes:* The codes obtained are categorized. Each set of categorized code bundle is a subject to encode as a theme and each theme shows its general case. *Organizing and defining data according to codes and themes:* The codes and themes are presented systematically for the sake of readers' concern that cannot understand easily. *Interpretation of findings:* The codes and the themes presented in a particular system are discussed and interpreted by the researcher with the past researches

The reliability of the study was calculated by using P (Percentage of divergence) = $(Na / (Na + Nd)) \times 100$ formula. (Number of agreement) / Na (Number of Agreement) +Nd (Number of Disagreement)) x100 formula. The numbers of 'agreement' and 'disagreement' were determined from the researcher and an expert. Over 70% of the reliability calculations are accepted as reliable (Miles and Huberman, 1994, p.64). According to this calculation, the reliability was found as 0,81.

Findings

Participant's views obtained by analyzing research data were classified into 6 themes, 10 sub-themes and 4 categories. Themes and sub-themes:

1) School principals' qualifications regarding with the administration of the school economy

(a) The views of school principals on school principals' qualifications in the administration of the school economy

(b) The views of members of the board of school-parent partnership on school principals' qualifications in the administration of the school economy

2) Members of the board of school-parent partnership' qualifications regarding with the administration of the school economy

3) National education policies in the administration of the school economy

(a) The views of school principals on national education policies in the administration of the school economy

(b) The views of members of the board of school-parent partnership on national education policies in the administration of the school economy

4) The school budget

(a) The views of school principals on school budget

(b) The views of members of the board of school-parent partnership on school budget

5) Saving and protecting state property in school

(a) The views of school principals on saving and protecting state property in school

(b) The views of members of the board of school-parent partnership on saving and protecting state property in school

6) The donations to the school

(a) The reasons of donors preferring the school for donation

(b) The qualifications that convince the donors

School principals' qualifications regarding with the administration of the school economy

"School principals' qualifications regarding with the administration of the school economy" was designated as the first theme of the research. Under this theme, 2 sub-themes were defined; these are the views of school principals qualifications in the administration of the school economy and the views of members of the board of school-parent partnership qualifications in the administration of the school economy.

The views of school principals on school principals' qualifications in the administration of the school economy

The codes on this sub-theme are about school principals' qualifications regarding with the administration of the school economy in terms of school principals. Codes: *"To supply the needs of the school, to know the parent profile well, to know the possibilities of school environment well, to recognize school graduates, to act with teachers, to introduce the school achievements to district governorship and public, to buy in economical and high quality product, to choose the members of the board of school-parent partnership effectively, to have a vision, to have goals, to receive administration and organization training, to be a researcher, to be detailer, to have aesthetic perception, to be selectiveness, to be able to think more than one thing at the same time, to be a perfectionist, to be warm in communication"*

Regarding the code of *-To supply the needs of the school-*, P10 said, "I would sit here at this school and I would not make the conference room here, nor would I design the additional building there; nobody would ask me why you did not make this. But for this school it is a necessity. It is a necessity if you see it, otherwise it isn't."

The views of members of the board of school-parent partnership on school principals' qualifications in the administration of the school economy

The codes on this sub-theme are about school principals' qualifications regarding with the administration of the school economy in terms of members of the board of school-parent partnership. Codes: *"To consider suggestions and thoughts of members of the board of school-parent partnership, to visit parents, to think about ways to increase success in education, not to strive to increase school income, to work to make the physical structure of the school clean and order, to collaborate with parents, to cooperate with civil society organizations in the city, not having any business other than school, to cooperate with the school environment, to supply the school requirements, to solve school problems and conclude projects, to be effective in supervision, to recognize school graduates, explain what the purpose of the donation to donors, to ensure that the school gains popularity with its achievements in the city, not to smoke in front of the school, to communicate with philanthropists, to pay attention to his appearance, to be social, to have strong rhetoric, to have merit, to be in peace with society, to be sociable, to have high ability of persuade"*.

On the code of *-To consider suggestions and thoughts of members of the board of school-parent partnership-* P6 said "The school principal imposes on the board of school-family partnership

what he wants to do with the school, even if the board of school-family partnership wants to get out of it, I think that there are very few people who go to national education governorship of the district for complaint. He thinks that his child will be hurt when he goes to school with such harm on things, by teachers and principals". On the code of - *Not having any business other than school* – P6 said "If you have additional work, if the teacher or principal is dealing with the stock market, if he is buying and selling cars, if there is something different, then his mind will get in private things after he arrives at the school. He will do his other job as well at school. "

Members of the board of school-parent partnership' qualifications regarding with the administration of the school economy

"Members of the board of school-parent partnership' qualifications regarding with the administration of the school economy" was designated as the second theme of the research. Codes: "To focus only on the education of the student, not to pay attention to the school budget, not to be seen as a rich man, to have authority of supervisory of school, to be element of pressure on school staff, to make suggestions about teachers, to work only to increase the academic success of the student, to say no when it is needed, not to influence teachers to raise student achievement, to give importance to the academic success of the student, to deal with students' disciplinary problems, to have consensus with school administration, to provide economic contribution to the school, to participate in parent visits, to be volunteer, to have an effective social environment, to be active, not to give offence to philanthropists"

-To be element of pressure on school staff- P1 said "One of the most important problems of the board of school-parent partnership is not to have a voice. You do not have a chance to say to servant that there isn't liquid soap out there ... even school can say that this is my inner work, you can not interfere with it ... On the code of *-to have authority of supervisory of school-* P1 said "I think that the board of school-parents partnership is a free inspector by preparing the report about the supervision. The board is in the school every day, you know the school very well, you know all about the service staff, the principal, your students. The inspector from Ankara can be under political pressure. Of course, this is not a sanction." On the code of *- not to pay attention to the school budget-* P4 said "What is it for? Set up a fund. ... from the taxes we have given, according to the population of each municipality, at a certain rate of municipal taxation, a monthly income of six percent will be collected every month as a share and sent to the municipalities as state contributions. In other words, to ensure that each school gains economic freedom in an economic sense, so as not to be dependent on the parents ... "

National education policies in the administration of the school economy

"National education policies in the administration of the school economy" was set as the third theme of the research. Under this theme, 2 sub-themes were defined, including the views of school principals on national education policies regarding with school economy and the views of the board of school-parent partnership on national education policies regarding with school economy.

The views of School principals on national education policies regarding with school economy

The codes under this theme are about national education policies regarding with school economy in terms of school principals. Codes: *"The ministry of national education provides enough funding for important needs, it is not easy to meet daily and urgent needs through the ministry of education, the ministry of education provides enough funding for our extra demands, there must be a budget that school principals can autonomously manage for daily needs, practical solutions need to be developed for our daily needs, it is necessary to take into consideration the characteristics of school type in construction of schools, the views of school principals and teachers need to be taken into account when in process of designing the construction of schools, I am against the fact that the Ministry of National Education allows anyone to have opportunity of free tablet and free books*

regardless of one's economic situation, the administration work of the school economy consumes the time and energy which allocate to educational activities in the school, the Ministry of National Education allocates more budget for vocational training than other school types, the Ministry of Education gives the allowance of the school budget to the school heads in secondary schools, new school buildings have more expenditure, weekend courses are not valuable because they are free, it's hard to get money from the bank account of the board of school-parent partnership illegally, it would be more suitable for the school to have a technician, school works slowly get ahead because of tender regulations and technicians, school is need of parents if not reaching any solution through education policies.

On the code - I am against the fact that the Ministry of National Education allows anyone to have opportunity of free tablet and free books regardless of one's economic situation - P10 said "For example I always criticize in the system, I am against the fact that the state is making the transportation. I am against that the government gives the book. I disagree. You give the book to both the rich and the poor. How much is Ahmet Aga's annual income, which has thousands of acres in the village, and you transport his child to the center, give him money just because he lives in the village. Other man lives in city center, he has no food, you do not transport him. It needs a distinction between them. "

The views of the board of the school-parents partnership on national education policies regarding with school economy

The codes under this theme are about national education policies regarding with school economy in terms of members of the board of school-parent partnership. Codes: *"To support weak students in terms of socio-economics, to give more support to schools of socio-economically weak regions, to take measures for possible inequalities of opportunity between private schools and public schools, to be aware that parents can not keep up with the rapid change of the education system, to gain support from experts on what students will learn, to give importance to quality education, to realize that the expenses of the newly built school are more, to improve the physical conditions of the school, to grant adequate allocation for education and training, not to grant more allocation to vocational high school"*

On the code of - *To give more support to schools of socio-economically weak regions* - P1 said "my graduated school transformed into immigrated by Syrian and Iranian immigrants. I saw poor parents ... I think this is an unfair education condition. I think that this government should give more support to such schools about the system." On the code of - *To support weak students in terms of socio-economics*- P4 said that "For example, books, publications, supplementary resources for exams have been canceled and removed in accordance with the decision passed last year in schools. Now there are kids going to college. These children may be a little more free, they can get additional course materials. They may be able to get these possibilities if they are a bit more economic. The government pays a certain contribution to public school. Not all children can have an opportunity to go to college"

The school budget

"The school budget" was designated as the fourth theme of the research. Under this theme, 2 sub-themes were defined, including the views of school principals on the school budget and the views of the members of the board of school-parent partnership on the school budget.

The views of school principals on the school budget

Codes according to categories on the sub-theme are: **"Income sources of the school budget:** National Education Ministry, donors, parents, the board of school-parent partnership, teachers. **Ways to increase the school's income sources:** To convince construction workers or renovators for donation, to bargain with tradesmen on behalf of charity, to solve the matters of expenses related to the district municipality through communication, to get support from the district municipality on

transportation matters, using school gardens for income, it is not easy to persuade people to donate, constructors who are persuaded to donate can not come later, parents of socio-economically weak schools do not want to donate to school. **Planning of school budget:** To make plans according to our basic needs and experiences, to make an estimated plan for the amount of donation cannot be predicted in advance. **School budget' priorities:** Expenses for renovation of educational environments, education of the student, to supply needs of needy students, classrooms, teaching materials, security costs and computer”.

On the code of *-Constructers who are persuaded to donate can not come later-* P8 said: "the constructor does not come, he does not come easily. We are using our personal relationships. Therefore, a school principal assistant calls the constructor, the constructor does not take him into consideration, the principal should call him. Or I say 'How much Turkish lira?', He says 'One hundred liras.' I say 'Let's handle it, take that fifty liras.' The next time the constructor does not come, because we cuts his money." On the code of *-Using school gardens for income-* P10 said: "the school is in center, a principal can make it as a car park, it can be used as income for the school.”

The views of members of the board of school-parent partnership on the school budget

Codes on the sub-theme are: “To give importance to cultural activities, to give importance to sportive activities, to give importance to language education, to give importance to technological infrastructure, to give importance to academic activities, to give importance to school trips, to give importance to cleaning, to give importance to healthy food consumption, to improve the physical conditions of the school”

On the code of *-To give importance to cultural activities-* P3 said "We wish our children to go to the theater more often and it will be very useful for children' motivation."

Saving and protecting state property in school

“Saving and protecting state properties in school" was designated as the fifth theme of the research. Under this theme, 2 sub-themes were defined, including the views of school principals on saving and protecting state property in school and the views of the members of the board of school-parent partnership on saving and protecting state property in school.

The views of school principals on saving and protecting state property in school

Codes on the sub-theme are: “Families and students need education immediately for saving and protecting state properties in school, to take quality and effective products to the school”

As regards the code of *- Families and students need education immediately for saving and protecting state properties in school -* P10 said "we raise awareness of student and parents with education for not harming the school."

The views of the members of the board of school-parent partnership on saving and protecting state property in school

Codes on the sub-theme are: “To educate students and teachers about savings, to find graduation ceremonies unnecessarily, to find sponsors for cleaning needs”

On the code of *“To find graduation ceremonies unnecessarily”* P1 said, "We can use the money collected by students for designing English lab instead of the graduation ceremony.”

Donations to the school

"Donations to the school" was designated as the sixth theme of the research. Under this theme, two sub-themes have been identified as "the reasons of donating to the school" and "qualifications that persuade the donation lovers".

The reasons of donors preferring the school for donation

The codes under the sub-theme of "The reasons of donors choosing the school for donations" tries to reach codes about why donors prefer schools for giving their own time, energy or money. Codes: *"There are donors willing to employ school graduates, there are donors voicing unfair expectations about the academic achievement of students, there are donors having social responsibility awareness, there are people donating because of cultural values, there are people donating because of religious values, there are donors not giving importance to recognition by people, there are donors wanting to advertise their workplaces, there are people donating because of the poor economic situation of the student, current economic conditions of country affect people donating, there are donors who competitive with peers, there are people donating because of country love, some donors give importance of hanging their pictures at school"*

On the code of - *There are donors who are willing to employ school graduates* - P8 said "Sure, students coming back to donors. After all, donors are running students, employing students. A student can be a very good cook for the institution, so it is more advantageous for companies to run a staff member who were be sponsored by the company at past."

The qualifications that convince the donors

The codes under the sub-theme of "The qualifications that convince the donors" are: *"To show donors that we keep our words and we do a job, to be respectful, to say donors words that will make them feel good but that are not incoherent, to make a reliable impression, to emphasize the importance of religious values on donations, to value their ideas, to emphasize the importance of school working for future generations, to meet donors with a project, to be transparent, to show the public that the project has started even if there are not enough resources and to take risks when necessary, not to show the public the project as if it is over before all the needs of the project are over, to explain the importance of education and its contribution to the public, to benefit from the features of school type in the persuasion process, to know well whom to ask for a donation, to explain the issue well, to highlight the success of the school"*

On the code of -*To show that we keep our words and we do a job* P9 said: "Donors do not regret it because we have seen our commitment, our effort." - *To say words that will make them feel good but that are not incoherent* - P9 said: "I said, who would be a better person than you for this job? There is also the truth that I have said. I encouraged him."

Discussion, Interpretation, Suggestion and Conclusion

When the findings of this research are examined, the most highlighted qualification of school principals related to the administration of school economy was found to be sociability. The importance of school principals having an effective environment and well knowing the environment of the school was frequently mentioned by the participants in terms of the effectiveness of the administration of school economy. This may be related to the scarce human and material resources of the school (Aldrich, 1972; Benson, 1975; cited by, Hoy & Miskel, 2015, p.243). Some principals who participated in the survey expressed that while national education ministry responded to the extra demands of schools, some principals felt that the regulations did not provide sufficient level of service to meet urgent needs and therefore the school administration resorted establishing cooperation with the board of school-parent partnership for urgent needs. Akbaşlı & Kavak (2008) and Genç (2005) stated

that the board of school-parent partnership met daily and urgent needs. Dinçer's (2018) research also stated that high schools have the allowances sent by Turkish national education ministry. However, this amount is not enough for the high school except the pension of high school. According to National Education Law (1739:16); the board of school-parent partnership the school should provide services towards school economy.

According to the findings of the current research, school administration benefits from public institutions, sponsors and donors to come up with problems with insufficient substance sources. The board of school-parent partnership also believes that the school administration can cooperate with the parents and civil society organizations to overcome the school's economic problems. On the other hand, not all schools have the same environmental conditions. The findings of the current research supported that a member of the board of school-parent partnership had a view that poor areas in terms of social and economic should be given more support to handle economic requirements of the school.

A participant said that alternative solutions could be developed to meet school requirements. The same participant believes that alternative solutions could help overcoming school problems related to their dependence on parents in terms of school economy. The board of school-parent partnership for utilization of resources can cause the school to be dependent on the community as described in Hoy & Miskel (2015, p.243). A participant of this study expressed that the board of school-parent partnership may request unfair wishes from school administration such as demanding the success of their students. This attitude supports the statements of Hoy & Miskel (2015) about that the school administration must be a buffer zone to get rid of dependency on community in terms of school. The same participant affirmed a past practice using school as a car park or as a wedding saloon for supplying income to school was good. New studies can be done regarding with whether this view can be assessed as a solution for claim of Hoy & Miskel (2015) about independency of school from community.

The board of school-parent partnership expected a clean school according to the current research. This expectation overlapped with the views suggested by Turan *et al.* (2012). On the other hand; according to both school principals and members of the board of school-parent partnership, efforts for improving the school facilities consume energy and time about efforts for improving the academic success of students. Moreover, some participants thought that principals and the board of school-parent partnership should service for only the advancement of the success of students. Researchers can pay attention that how much time the school principals spend cleaning and improving the school and new researches can be done in Turkey. The research of Pollock *et al.* (2015) also shows that the inequality of school budget and resources is one of the most difficult barriers getting rid of effectiveness of school. According to the research of Genç (2005), the most talked-about subjects at the meetings of the board of school-parent partnership were the needs of the school, then the contribution of the parents to the school's income and the success level of the students. According to Akbaşlı & Kavak's (2008) survey, the most important subject of the board of school-parent partnership was related to the needs of the school and how to provide financial support to the school.

The current research found that school principals should take demands of members of the board into consideration and should not manipulate them. The findings of Aslanlargin & Bozkurt (2012) supported these views. There are some views related to paying attention of opinions of school principals and teachers during the process of building schools. The views expressed in this direction belong to a school principal working in a vocational school. The same school principal also said that the requirements of new school buildings are higher than old ones, therefore new schools need more income. Moreover, the giving an importance to plans of school buildings during the construction is necessary for school economy because the restructuring of unplanned school buildings consumes the school's budget.

The views of some members of the board of school-parent partnership on national education policies in the administration of the school economy were related to the inequality opportunities in education caused by the economic imbalances in society, the negative effects of rapid changes in

education system and the quality of education. In addition, a parent considers that allowing more allocation to the vocational high school is unfair. The views of some principals on the same theme are about *it would be more suitable for the school to have a technician, school works slowly get ahead because of tender regulations and technicians, school is need of parents if not reaching any solution through education policies*. These views state that principals face difficulties because of dependencies to parents, regulations and the lack of technicians. These troubles cause their job to advance slowly. These findings refer troubles being source of centralized structure of national education system.

The board of school-parent partnership disturbed from some principals and teachers smoking in front of the school according to this research's findings. According to Özbaş & Badavan's (2009) research; the board of school-parent partnership was responsible for "the prevention of students' bad habits". A teacher who participated in the research of Husu & Tirri (2003) also states that students' smoking can not be prevented if their colleagues smoke at school. This finding was taken into account by the researcher as an indirect impact on the administration of the school economy. Smoking has an impact on the expenditure of the individual. According to statistical data of Turkish statistical institute (Household consumption expenditures in Turkey in 2005-2014); while education expenditures were in the 11th place, alcohol and cigarettes expenditures were in the 8th place. Smart-phone expenditures were in the 9th place. In parallel to this information, a school principal said that parents might not want to support education expenditures, however spending on tobacco products and telephones would be vice-versa

The school budget should be used for activities such as cultural, sports, academic and language learning according to a member of the board of school-parent partnership. He thought that this financial resource should not be spent on graduation activities because he found it as unnecessary. Aksoy's (2018) research suggests that school principals should attend in-service training about the administration of school budget. Another issue was saving. Participants emphasized the quality of products, conservation of public properties at the school. They proposed educational activities to parents and students for saving and protecting public properties. They thought that teachers are responsible for controlling students for saving and protecting public properties at the school. The findings of Aydoğan (2006) reveal that there are some problems about effectiveness of school-environment interaction in school plans. In this context, new investigations can be done on the effects of principals' planning skills for school-environment interaction.

Findings of the research showed that the income sources of the school budget were based on national education ministry, donors, parents, the board of school-parent partnership, teachers. According to the findings; principals had some problems estimating budget because the amount of donation could not be predicted before. Therefore, this situation could give rise to problems for school budget planning. Aslanargun & Bozkurt (2012) found that the amount of money collected under donations were not enough to handle school services. The current research reached that especially schools in poor environments in terms of social and economic face difficulties in terms of finding donors and persuading parents for donations.

When we look at the opinions about the reasons of donors choosing the school for donations, the opinions of "there are donors having social responsibility awareness", "there are donors not giving importance to recognition by people" and "there are people donating because of the poor economic situation of the student" are important for humanitarian values. These findings were overlapped by the past studies of Matsuba *et al.*, (2007); Penner *et al.*, (2005); Yavas & Riecken, (1985). There were also some donors having selfish intentions (Drezner, p.48). The current research also reached some findings such as "there are donors who competitive with peers", "there are donors wanting to advertise their workplaces", "there are donors voicing unfair expectations about the academic achievement of students", "there are donors willing to employ school graduates" and "some donors give importance of hanging their pictures at school". These could be accepted as selfish. The current research also states that

As a result, in the present study, the opinions of the school principals and members of the board of the school-parents partnership were determined regarding the administration of the school economy. In this context, in relation to administration of the school economy, how qualifications of school principals and members of the board of the school-parents partnership should be, how the current national education policies should be, how the planning of the school budget should be, how saving and protecting state property in school should be and donations to the school are the themes of the study. The research concluded that school principals or members of the board of school-parent partnership have an effective environment, they should be successful in communication and persuasion skills and be sociable; school principals need new regulations to meet the urgent needs of school; the importance of the usefulness of school buildings and therefore paying attention opinions of school principals and teachers in the building process of the schools will lead to the reduction of the school principals' workload in the future and so they allocate time and efforts for improving the academic success of students; reasons that affect donation to the school can be regarding with selfish or unselfish intentions; ways persuading donors such as being honest and keeping words, the power of motivation, producing projects in school.

References

- Akbaşlı, S. ve Kavak, Y. (2008). Ortaöğretim okullarındaki okul aile birliklerinin görevlerini gerçekleştirme düzeyleri. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (19), 1-21.
- Aksoy, H. (2018). *Ailelerin eğitim harcamaları*. Tezsiz yüksek lisans projesi: Pamukkale Üniversitesi.
- Aslanargun, E., Bozkurt, S. ve Bozkurt, A. T. L. (2012). Okul müdürlerinin okul yönetiminde karşılaştığı sorunlar (Problems that principals face in school). *Gaziantep Üniversitesi Sosyal Bilimler Dergisi*, 11(2), 349-368.
- Aydoğan, D. (2006). İlköğretim okullarında okul-çevre ilişkilerinin düzeyi. *Sosyal Bilimler Araştırmaları Dergisi*, (2), 121-136.
- Bursalıoğlu, Z. (2002). Okul yönetiminde yeni yapı ve davranışlar. 15.Baskı. Ankara: Pegem A.
- Dinçer, (2018). *Liselerin gelir kaynakları ve harcama alanları*. Tezsiz yüksek lisans projesi: Pamukkale Üniversitesi.
- Drezner, Noah D. (2008). *Cultivating a culture of giving: An exploration of institutional strategies to enhance African American young alumni giving*. United States Pennsylvania: University of Pennsylvania (Ph.D. dissertation).
- Genç, S. Z. (2005). İlköğretim 1. kademedeki okul-aile işbirliği ile ilgili öğretmen ve veli görüşleri. *Türk Eğitim Bilimleri Dergisi*, 3(2), 227-243.
- Hoy, W. K., ve Miskel, C. G. (2015). Eğitim yönetimi: Teori, araştırma ve uygulama (çev. edit.: S. Turan). Ankara: Nobel.
- Husu, J., & Tirri, K. (2003). A case study approach to study one teacher's moral reflection. *Teaching and Teacher Education*, 19(3), 345-357.
- Matsuba, M., Hart, D. ve Atkins, R. (2007). Psychological and social-structural influences on commitment to volunteering. *Journal of Research in Personality*, 41, 889-907.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

- Millî Eğitim Bakanlığı (MEB). (2012). Millî eğitim bakanlığı okul-aile birliği yönetmeliği. *Resmî Gazete*: 28199,
<http://mevzuat.meb.gov.tr/html/okulailebirligi/yonetmelik.pdf>
- Özbaş, M. ve Badavan, Y. (2009). İlköğretim okulu yöneticilerinin okul-aile ilişkileri konusunda yapmaları gereken ve yapmakta oldukları işler. *Eğitim ve Bilim*, 34(154).
- Penner, L., Brannick, M. T., Webb, S., & Connell, P. (2005). Effects on Volunteering of the September 11, 2001, Attacks: An Archival Analysis1. *Journal of Applied Social Psychology*, 35(7), 1333-1360.
- Pollock, K., Wang, F., & Hauseman, D. C. (2015). Complexity and volume: An inquiry into factors that drive principals' work. *Societies*, 5(2), 537-565.
- Ryan, R. L., Kaplan, R., & Grese, R. E. (2001). Predicting volunteer commitment in environmental stewardship programmes. *Journal of Environmental Planning and management*, 44(5), 629-648.
- Sargut, S. (2015). *Lider yöneticinin benliğine yolculuk*. İstanbul: Beta Yayıncılık.
- Taymaz, H. (2003). İlköğretim ve ortaöğretim okul müdürleri için okul yönetimi. Ankara PegemA Yayıncılık.
- Turan, S., Yıldırım, N. ve Aydoğdu, E. (2012). Okul müdürlerinin kendi görevlerine ilişkin bakış açıları. *Pegem Eğitim ve Öğretim Dergisi*, 2(3), 63-76.
- TÜİK (Türkiye İstatistik Kurumu), (2008). Tüketim harcamaları, yoksulluk ve gelir dağılımı, sorularla resmi istatistikler dizisi – 6.
- Wood, D. J., & Gray, B. (1991). Toward a comprehensive theory of collaboration. *The Journal of Applied Behavioral Science*, 27(2), 139-162.
- Yavas, U. ve Riecken, G. (1985). Can volunteers be targeted? *Journal of the Academy of Marketing Science*, 13(1-2), 218-228.
- Yıldırım, A., & Şimşek, H. (2006). *Sosyal bilimlerde nitel araştırma yöntemleri*. Seçkin Yayıncılık.
- Yılmaz, T. ve Sarpkaya, R. (2016). *Eğitim ekonomisi (Eleştirel bir yaklaşım)*. Ankara: Anı Yayıncılık.

The Investigation of Predictors of Cyberbullying and Cyber Victimization in Adolescents

Bünyamin Ateşⁱ

Erzincan Binali Yıldırım University

Alican Kayaⁱⁱ

Ağrı İbrahim Çeçen University

Erhan Tunçⁱⁱⁱ

Gaziantep University

Abstract

In this study, subjective well-being and perceived social support from family, friends, and teachers, were examined to determine how effective on the levels of cyber victimization and bullying in adolescents. The research was conducted on the basis of the relational screening model. The sample group of this study is created by high school students that continue education at the high school level in Erzincan and Ağrı provinces in 2017-2018 academic year, they have chosen by unselected sampling method, as determined by 416 (53.7%) are male and 358 (46.3%), including girls, are a total of 774 adolescents. The Cyber Victim and Bullying Scale (Çetin, Yaman & Peker, 2011), Adolescent Subjective Well-Being Scale (Eryılmaz, 2009), Perceived Social Support Scale (ASLÖ-R) (Yıldırım, 1997, 2004), and Personel Information Form was used as the data collection tools in the study. The data obtained in the study were analyzed by stepwise regression analysis method from multiple linear regression analysis. According to research findings; subjective well-being in adolescents, perceived social support from family, friends, and teachers variables reveal significance at the level of cyber victimization and bullying.

Keywords: Adolescents, cyber bullying, cyber victimization, perceived social support, subjective well-being.

DOI: 10.29329/ijpe.2018.157.9

ⁱ **Bünyamin Ateş**, PhD, Erzincan Binali Yıldırım University, Faculty of Education, Department of Psychological Counselling and Guidance, Erzincan/Turkey.

ⁱⁱ **Alican Kaya**, Ağrı İbrahim Çeçen University, Faculty of Education, Department of Psychological Counselling and Guidance, Ağrı/Turkey.

Correspondence: akaya@agri.edu.tr

ⁱⁱⁱ **Erhan Tunç**, PhD, Gaziantep University, Faculty of Education, Department of Psychological Counselling and Guidance, Gaziantep/Turkey.

Introduction

Human is a social entity has the potential to establish and maintain positive relations with other people, while at the same time it can enter into negative experiences such as bullying or exposure to bullying. Bullying is defined as an ongoing violence by an individual or group against a defenceless person at the same time with physical or psychological consequences (Olweus, 1993). Bullying can take place in the form of a single individuals practice, as well as in the form of a group of bullying (Fitzgerald, 1999). According to Olweus (1993), bullying occurs in two forms; direct bullying that manifests itself in verbal and physical attacks, indirect bullying in the form of social exclusion, or inter-personal bullying. Both individuals, who are exposed either directly or indirectly to the bullying, negatively affect the psychological structure of the individual by creating traumatic effects on the individual (Rigby & Cox, 1996; Cardoso *et al.* 2018; Tokunaga, 2010; Woodruff, Template, Adams & Yost, 2017).

The development of technology and the emergence of new means of communication have led to a rapid increase in the number of people who communicate using modern technologies (Privitera & Campbell, 2009; Eryaman, 2007). Although technological advances have made their lives easier in a variety of ways, it has brought to new problems in the field of psychology. As a reflection of these, it has now begun to be seen in the virtual space by changing the form of bullying and exposure to bullying behavior (Raskauskas & Stoltz, 2007). Individuals may be exposed to cyberbullying by someone else from miles away with mass media such as the internet, or they may bully someone else, or physically.

A current problem and concept, cyber-victimization, is defined as the situation in which one or more individuals are exposed to harmful behavior personally or individuals experience it as legal entity through communication technologies (Arıcak, 2011). Cyber bullying; by a group or individual, with computer or mobile phone, etc. is defined as an aggressive, intentional harmful behavior carried out by means of communication (Smith *et al.* 2008). Cyber bullying or cyber victimization can be seen in various forms. Some of those; online fighting, harmful activities, libel, identity change, unauthorized use of information, provocation, cyber harassment and exclusion (Willard, 2007). Unlike real victimization and bullying, there is no physical interaction between the cyber victim and the cyber bully. In this regard, cyber victimization and bullying have become an international problem (Antoniadou & Kokkinos, 2015; Ayas & Horzum, 2012; Bhat, 2008; Boronenko, Menshikov & Marzano, 2013; Keith & Martin, 2005).

The impact of cyber bullying on the victim can be more damaging for a few reasons. The first one can be more damaging than the attacker that keeps his identity hidden. Second, because there is no direct relationship with the victim, the attacker may tend to feel less empathy or regret. Third, Mass media can reach a large audience in a short time. Finally, adult control is limited because the number of adults using the internet is less (Dempsey, Sulkowski, Nichols & Storch, 2009; Kokkinos, Antoniadou & Markos, 2014; Smith & Slonje, 2010).

Individuals exposed to bullying or bullying others, were found to be 2.5 times more likely to be bullied or bullying (Hinduja & Patchin, 2008). It is seen that the cyber bullies and the cyber victims are affected from the related situations. It is found that those who exposed to cyber bullying has Suicidal ideation and depression (Bauman, Toomey & Walker, 2013; Hinduja & Patchin, 2010; Ybarra & Mitchell, 2004), decline in school achievement (Schneider, O'Donnell, Stueve & Coulter, 2012), lack of motivation (Beran & Li, 2005), sadness and anger (Mishna, Saini & Solomon, 2009), loneliness, problems in social interaction (Tokunaga, 2010). As can be understood from the results of the study, both exposure to bullying and bullying others lead to various negative effects on the mental health and lives of the individuals.

It is thought that it is important to know the factors that are related to the current and new problem of cyber bullying which expose individuals to such behaviors and direct individuals to these behaviors. It can be said that it is important that such situations related to cyberbullying are predictable

before they occur, especially considering the fact that preventive work is more important in recent times. Although protective mental health studies are important for these situations, it is thought to be more important in terms of the adolescence period, known as a critical period, in which successful and unsuccessful periods can lead to serious effects for later periods. In this study, cyber bullying cases of adolescents were examined and variables of subjective well-being and perceived social support were considered as one of the variables that could be related to and influenced by these variables.

Subjective well-being has been used as synonymous with the concept of happiness (Diener, 1984). It is defined as the assessment of a person's own life in terms of cognitive and emotional aspects. These assessments may be directed towards short-lived life situations as well as long-term life situations (Diener, Lucas, Oishi & Suh, 2002). Subjective well-being can be defined as frequent positive affect, rare negative affect, and high life satisfaction as a whole. Subjective well-being consists of affect (positive and negative affect) and cognitive (life satisfaction) components (Diener, Suh, Lucas & Smith, 1999). While the affective component reflects positive emotions, joy, excitement, interest, emotions, alertness and trust, together with positive emotions; negative feelings defined as subjective distress and dissatisfaction reflect situations such as anger, fear, sadness, guilt, disdain and disgust (Ben-Zur, 2003). The cognitive component, on the other hand, reflects life satisfaction for evaluating one's own life according to the subjective standards (Schimmack *et al.* 2002). Subjective well-being involves frequent and high level of positive emotions, less frequent and low levels of negative emotions, and a high level of life satisfaction (Diener, Lucas, Oishi & Suh, 2002; Diener & Tov, 2007). The first two include emotional evaluation, and life satisfaction involves cognitive appraisal (Diener & Tov, 2007).

Subjective well-being is based on the individual's self-assessment, and this is differentiated from traditional clinical psychology. It is more important the person's own beliefs about the well-being. Evaluating an individual's life according to their own point of view can cause a serious problem for someone, even though they are not aware of it. Subjective well-being is not sufficient alone to define mental health. Because people can have a mental problem while they are happy. So subjective well-being is not synonymous with psychological well-being. The life satisfaction of a person with delusions can be overjoyed and happy but this person's mental health can not be considered to be intact. Likewise, a person who is functional in many ways in his life may be equally unhappy. Perhaps it can be said that subjective well-being constitutes only one dimension of psychological well-being (Diener, Suh & Oishi, 1997).

Another variable thought to be related to cyber victimization and bullying is social support. The concept of social support has attracted the attention of researchers since the mid-1970s (Zimet, Dahlem, Zimet & Farley, 1988). Social support is defined as information that emerges depending on the belief that the individual is loved, appreciated, and valued by others in a social network (Cobb, 1976). According to another definition, social support includes a range of assistance provided by an individual as a result of social interaction with other individuals (Cooke, Rossmann, Mccubbin & Patterson, 1988). Perceived social support is defined as the perception of the help the individual receives from the environment (Brausch & Decker, 2014). Perceived social support resources were identified as family, friends, teachers and other important people (Yıldırım, 1997, 2004; You & Lu, 2014; Zimet, Dahlem, Zimet & Farley, 1988). In the context of this information, perceived social support can be defined as a situation in which a person perceives the level of support provided by various sources of social support. In this context, there may also be differences between the support provided by the source of social support and the perception of that support. A person may underestimate or on the contrary, overestimate it, while receiving a genuine strong support from social support resources.

Two models of social support have been put forward. One of them is a buffer model and the second is a main effect model. According to the buffer model, social support has a function that protects a individual from the effects of stressful events. Social support protects a individual from the harm of stress by eliminating the harmful effects of stress. In this regard, social support serves as a buffer. The basic effect model argues that whether or not the individual is stressed, the social support

has a positive and beneficial effect on an individual. According to this model, there is a direct relationship between social support and the health of the individual. Social support has a positive impact on an individual's health (Cohen & Syme, 1985; Cohen & Wills, 1985). In addition, it is known that social support has a protective function against various problems (depression, anxiety, alcohol addiction) (Cobb, 1976)

When these variables are considered as a whole, it is thought that if the adolescence has a healthy period, it can have positive effects for this period and for the later periods of adolescents. It can be said that one of the factors that can be effective in the adolescence period is to protect the adolescents not only from the real environment but also from the virtual environment and to increase their awareness. At this point, it is thought that it is important for individuals in adolescence to be exposed to cyberbullying and to determine the variables related to the cyber bullying behaviors and to have knowledge on this subject. In this study, subjective well-being and perceived social support (from family, friends and teachers), which may be related to cyber bullying situations and which may be influential on their bullying, are examined. The main idea in determining these variables is that adolescents with a high level of subjective well-being, positive affect, a low affection, a high level of life satisfaction and a high level of social support from the social environment, will experience less cyberbullying and less cyberbullying. within the light of the previous researches or studies, it is aimed to investigate the effects of subjective well-being and perceived social support (family, friends, teachers) in cyber victimization and bullying levels of adolescents. In short, the question below is tried to be answered, " Is it possible to predict cyber bullying and cyber victimization levels of adolescents from the subjective well-being and perceived social support (family, friends, teachers) variables?"

Method

Research Models: This research was conducted based on the relational screening model. This model is a research model for determining the presence or degree of mutual exchange between two or more variables (Karasar, 2016).

Sample Group: The study group consisted of 774 high school students (adolescents), 416 (53.7%) male, 358 (46.3%) female, who continue to education at high school level in Erzincan and Ağrı province in 2017-2018 academic year. The distribution is given in Table 1. The age range of the research group was 13-18; the mean age was 15.25.

Table 1. Distribution of Research Groups by Gender

Gender	N	%
Male	416	53.7
Female	358	46.3
Total	774	100

Data Collection Tools:

Cyber Victim and Bullying Scale (CVBS)

The scale was developed by Çetin, Yaman & Peker (2011). The scale consists of two parallel forms, one of which is cyber victimization (CVS) and the other is cyber bullying (CBS), the 22 items, the quintile rating and the three subscales (cyber linguistic bullying/victimization "CLB", identity concealment "IC" and cyber counterfeiting, "CC". The increase in scores in CVS indicates exposure to bullying, and the increase in scores in CBS indicates that bullying situations increase. Internal consistency reliability coefficient was found as .89 for CVS. In addition, internal consistency coefficients of CVS were .86 for CC subscale, .80 for CLB subscale and .68 for IC subscale. The internal consistency coefficient of the CBS was .89. Internal consistency coefficients of the subscales

of CBS were .83 for CC, .81 for CLB and .69 for IC. Within the scope of this study; the Cronbach Alpha reliability coefficient is .88 for the scaly victimization scale, and .89 for the cyber bullying form. To determine the criterion-related validity of the scale, the Turkish version of the Aggression Scale was used. The correlation coefficients between VCBS and Aggression scale were found to be .27 for CVS and .36 for CBS. The correlation coefficients between the Aggression Scale and subscales of CVS were .27 for CC and .20 for CLB and IC. The correlation coefficients between the subscales of CBS were .40 for CC, .22 for CLB and .26 for IC. In the confirmatory factor analysis, the fit indices of the model are; The compliance index values of CVS were RMSEA = .058, NFI = .94, CFI = .96, IFI = .94, RFI = .93, GFI = .90 and NNFI = .96. The compliance indices of CBS were RMSEA = .056, NFI = .95, CFI = .97, IFI = .95, RFI = .94, GFI = .91 and NNFI = .97 (Çetin, Yaman & Peker, 2011).

Adolescent Subjective Well-Being Scale

The scale was developed by Eryılmaz (2009) with the aim of measuring the subjective well-being of adolescents between 14-18 years of age. The scale is a quartile rating scale consisting of 15 items and four dimensions (Satisfaction with family relationships, important satisfaction with others, life satisfaction and positive emotions). The higher the score on the scale, the higher the level of subjective well-being. Factor analysis of the scale revealed that four factors accounted for 61.64% of the total variance. 35.79% of the explained variance was explained by satisfaction with family relations, 9.70% with satisfaction with significant others, 8.69% with life satisfaction and 7.44% with positive affective subscales. Substance factor loads range from .63 to .79. The Cronbach alpha internal consistency reliability coefficients were .86 for all dimensions, .83 for satisfaction with family relationships, .73 for satisfaction with significant others, .81 for life satisfaction, and .66 for positive emotions. Spearman Brown reliability coefficients were found to be .83 for satisfaction with the scale, .83 for satisfaction with family relationships, .61 for satisfaction with significant others, .79 for life satisfaction, and .54 for positive feelings. The test-retest reliability coefficient of the scale was .83. In this study, Cronbach Alpha reliability coefficient was determined to be .95 for the whole scale.

Perceived Social Support Scale (PSSS-R)

The scale was developed by Yıldırım (1997) and then revised in 2004 (PSSS-R). The scale consists of 50 items, triple grading, three sub-dimensions, perceived social support from family (PSF), perceived social support from friends (PSFr.) and perceived social support from teachers (PST). There are 3 negative expressions on the scale (17. 29. and 44.). The scale is scored in the sub-dimensions as well as in the total. Increasing the score from the scale means that the individual has more social support. Alpha reliability coefficient, test retest (rxx) results were examined to determine the reliability level of the scale. Alpha = .93, rxx = .91 for all PSSS-R; Alpha 0.94, rxx =.89, for PSF; Alpha for PSFr.= .91, rxx =.85; Alpha =.93, rxx =.86 for PST. In this study, the Cronbach Alpha reliability coefficient for the whole scale was .98, .98 for PSF, .96 for. PSFr, .96 for PST. The KMO coefficient for all PSSS-R is .933 and Bartlett test was found significant. The common factor variance is between .389 and .695. It has been determined that PSSS-R has a general factor and the total score can be used in the analyzes. There are 20 items in the PSF subscale of PSSS-R. KMO coefficient for PSF subscale .935 and Bartlett test was found significant. The common variance of the factors is between .350 and .641. The PSFr. subscale has 13 items. The KMO coefficient for the PSFr. subscale is .940 and Bartlett test was found significant. The common variance of the factors is between .354 and .614. There are 17 items in the PST subscale. The KMO coefficient for PST is .950 and Bartlett test was found significant. The common variance of the factors varies between .402 and .653 (Yıldırım, 2004).

Personal Information Form

In order to learn the personal information of the adolescents constituting the research group, this research was based on the principle of confidentiality.

Collection of the Data:

After receiving the permission for the research, the sample group has been determined. A simple random sampling method was used in the study group and the volunteering of adolescents was also taken into consideration. In the data collection process, necessary explanations were made about the research to students. After that, data collection tools were applied in groups to the research group. The data collection time lasted approximately 45 minutes.

Analysis of Data:

In the analysis process, the data obtained firstly were based on normality and linearity analyses were done. The distances between the extreme values that strengthen normality (multivariate) and linearity assumptions were examined in terms of the distance between the mahalanobis distance (18.47), cook's (Cook' <1) and Leverage Values (.000 - .020). Data sets were also examined for kurtosis, skewness values, scatter and histogram graphs. As a result of these examinations, 18 data gathered from students were extracted from the analysis process because they constitute an extreme value problem that would affect the data analysis. The number of sampling was found to be appropriate, provided that the number of variables involved in the analysis process was taken into account. Another assumption of the multiple linear regression analysis is that there is no high correlation coefficient between the predictor variables. In previous studies carried out, it is necessary to have a correlation value of more than .80 to indicate that there are multiple links between the predictor variables. (Table 3), the tolerance values were higher than .20, the VIF values were less than 10 and the CI values were less than 30. The Durbin-Watson values were examined to examine the independence of faults; values are between 1 and 3 and it was not found that there was not a problem. It was determined that the obtained data were suitable for multiple linear regression analysis. The data obtained in the study were analyzed by stepwise regression analysis method from multiple linear regression analysis. The significance level of .05 was taken into account in the study (Akbulut, 2010, Büyüköztürk, 2011, Can 2013, Seçer, 2015).

Findings

Mean and standard deviations of the study group in terms of variables were given in Table 2.

Table 2. Mean and Standard Deviations in Terms of Variables

	N	X	SS
Cyber Victim (C.V.)	774	41.86	29.14
Cyber Bullying (C.B.)	774	40.86	29.68
Adolescent Subjective Well-Being (A.S.W.)	774	42.68	13.42
Perceived Social Support from Family (P.S.F.)	774	38.95	15.42
Perceived Social Support from Friends (P.S.Fr.)	774	25.33	9.28
Perceived Social Support from Teachers (P.S.T.)	774	34.08	11.82

When the results of Table 2 were examined, it was found that the mean of the research group in terms of variables was as follows: Cyber victimization ($\bar{X} = 41.86$), Cyber bullying ($\bar{X} = 40.86$), adolescent subjective well-being ($\bar{X} = 42.68$), perceived social support from family ($\bar{X} = 38.95$) perceived social support from friends ($\bar{X} = 25.33$) and perceived social support from teachers ($\bar{X} = 34.08$). The relationship between adolescents' cyber victim cyber bullying, subjective well-being and perceived social support from teachers, family, friends, variables was examined by simple correlation analysis method and the results are given in Table 3 below.

Table 3. Simple Correlation Analysis Coefficients in Terms of Variables

	C.V.	C.B.	A.S.W.	P.S.F.	P.S.Fr.	P.S.T.
C.V.	1	-	-.506**	-.456**	-.393**	-.410**
C.B.	-	1	-.427**	-.418**	-.363**	-.380**
A.S.W.			1	.288**	.207**	.205**
P.S.F.				1	.665**	.617**
P.S.Fr.					1	.585**
P.S.T.						1

**P<.01

According to Table 3, there is a significant negative correlation between cyber victimization, cyber bullying and subjective well-being, perceived social support from family, teachers, and friends. It has also been found that there is a significant level of positive relationship between subjective well-being and perceived social support (family, friends, teachers) and sub-dimensions of social support. Finally, it is also seen that there is no correlation value over the .80, which can be defined as multiple-link between predictor variables. When the ANOVA results that test the meaningfulness of the degree of explanatory variable for the relation between the predictive variables for regression analysis and the predicted variance of predicted variance were examined, it was found that the explained variance or regression model was statistically significant ($p < .01$). F values for ANOVA results are given in Tables 4 and 5. Table 4, ($F_{1/772}=266.04$; $F_{2/771}=217.73$; $F_{3/770}=159.67$; $F_{4/769}=122.12$; $p < .01$); table 5 shows, ($F_{1/772}=171.73$; $F_{2/771}=147.70$; $F_{3/770}=108.81$; $F_{4/769}=83.26$; $p < .01$). From these results, it can be said that the predicted variables are successful in the procedure. The results of the stepwise regression analysis of the multiple linear regression analysis for the prediction of the cyber victimization and bullying in adolescents are presented in tables 4 and 5. When tables 4 and 5 were examined, it was seen that subjective well-being and perceived social support (family, friends and teachers) in adolescents significantly are related to, cyber victim and bullying; so they are included in the process of multiple linear regression analysis (stepwise). There is a significant negative correlation between the variables of cyber victim and bullying and subjective well-being, perceived social support (family, friends and teachers), both according to beta and correlation values. Subjective well-being in adolescents and the perceived social support from family, friends and teachers are variables about 39% ($R = .623$; $R^2 = .388$; $P < .01$) of the total variance for the cyber victim and this result also accounts for approximately 30% ($R = .550$; $R^2 = .302$; $P < .01$) of the total variance for the cyberbullying.

Table 4. Multiple Linear Regression Analysis (Stepwise) Results Regarding Prediction of Cyber Victimization

Model	U.C.		S.C.		Correlations					
	B	Std. Error	Beta	t	Zero-Order	Partial	R	R ²	F	df
1 (Constant)	88.78	3.01		29.44**						
A. S. W.	-1.09	.067	-.506	-16.31**	-.506	-.506	.506 ^a	.256	266.04**	1/772
2 (Constant)	104.62	3.13		33.40**						
A.S.W.	-.888	.065	-.409	-13.60**	-.506	-.440	.601 ^b	.361	217.73**	2/771
P.S.F.	-.638	.057	-.338	-11.23**	-.456	-.375				
3 (Constant)	111.59	3.34		33.34**						
A.S.W.	-.876	.064	-.403	-13.64**	-.506	-.441	.619 ^c	.384	159.67**	3/770
P.S.F.	-.418	.069	-.221	-6.02**	-.456	-.212				
P.S.T.	-.471	.089	-.191	-5.31**	-.410	-.188				
4 (Constant)	113.47	3.41		33.18**						
A.S.W.	-.874	.064	-.402	-13.65**	-.506	-.442	.623 ^d	.388	122.12**	4/769
P.S.F.	-.327	.078	-.173	-4.18**	-.456	-.149				

P.S.T.	-.402	.093	-.163	-4.34**	-.410	-.155
P.S.Fr.	-.310	.124	-.099	-2.49*	-.393	-.090

(U.C.)Unstandardized Coefficients ; (S.C.) Standardized Coefficients (**P<.01; *P<.05)

The subjective well-being variance was examined in the first step of the multiple linear regression analysis process for predicting the cyber victimization is -.506 in the prediction of cyber victimizations of adolescents (Beta coefficient). The t test results for the significance of the beta coefficient were significant ($t = -16.31$; $P < .01$). The subjective well-being variant selected alone accounts for about 26% of the cyber victims of adolescents. ($R = .506$; $R^2 = .256$).

In the second step of the stepwise regression analysis, the perceived social support from family variable of the subjective well-being variable was also added in model. When other variables affecting cyber victimization in adolescents were held constant, subjective well-being and perceived social support from family variables together account for about 36% of the cyber victimization ($R = .601$; $R^2 = .361$). Beta coefficient of subjective well-being variable in adolescents when other variables in the model were kept constant is -.409; the Beta coefficient of the variable of social support perceived from family is -.338. The t test results for the significance of the beta coefficient were found significant ($t_{ASW} = -13.60$; $t_{PSF} = -11.23$; $P < .01$).

In the third step of the stepwise regression analysis, the perceived social support from teachers was added to subjective well-being and perceived social support from family variables. When other variables affecting cyber victimization in adolescents were held constant, subjective well-being, perceived social support from teachers and family together account for about 38% of the cyber victimization ($R = .619$; $R^2 = .384$). When other variables in the model are kept constant, Beta coefficient of subjective well-being variable and perceived social support from family variable respectively are -.403 and -.221. the Beta coefficient of the perceived social support from teachers variable is also -.191. The t test results for the significance of the beta coefficient were found significant ($t_{ASW} = -13.64$; $t_{PSF} = -6.02$; $t_{PST} = -5.31$; $P < .01$).

In the fourth step of the stepwise regression analysis, social support variable perceived from friends was added to subjective well-being variable and social support from family and teachers. When other variables affecting cyber victimization are held constant in adolescents, subjective well-being, social support variables perceived from family, teachers, and friends together account for approximately 39% of cyber victimization ($R = .623$; $R^2 = .388$). When other variables in the model are kept constant, Beta coefficient of subjective well-being variable in adolescents is -.402; the Beta coefficient of the perceived social support from family variable is -.173, the Beta coefficient of the perceived social support from teachers variable is -.163, and the Beta coefficient of the perceived social support from friends variable is -.099. The t test results for the significance of the beta coefficient were found significant ($t_{ASW} = -13.65$; $t_{PSF} = -4.18$; $t_{PST} = -4.34$; $P < .01$; $t_{PSFr} = -2.49$; $P < .05$).

In the fourth step, subjective well-being, perceived social support variables from family, friends and teachers, were found to be significant predictors of cyber victimization in adolescents when the beta coefficients of the variables entering the model and the t test results of the significance of the beta coefficients were taken into consideration. According to Beta values, the best predictors of cyber victimization in adolescent are respectively "subjective well-being", "perceived social support from family", "perceived social support from teachers" and "perceived social support from friends". From this point of view, the order of importance of the predictive variables over the cyber victimization is subjective well-being, perceived social support from family, perceived social support from teachers and social support from perceived friends.

Table 5. Multiple Linear Regression Analysis (Stepwise) Results Regarding Cyber Bullying Prediction

Model	U.C.		S.C.		Correlations					
	B	Std. Error	Beta	t	Zero-Order	Partial	R	R ²	F	df
1(Constant)	81.12	3.22		25.19**						
A.S.W.	-.943	.072	-.427	-13.10**	-.427	-.427	.427 ^a	.182	171.73	1/772
2(Constant)	96.50	3.39		28.44**						
A.S.W.	-.738	.071	-.334	-10.44**	-.427	-.352	.526 ^b	.227	147.70	2/771
P.S.F.	-.619	.062	-.322	-10.06**	-.418	-.341				
3(Constant)	103.29	3.63		28.39**						
A.S.W.	-.726	.070	-.329	-10.41**	-.427	-.351	.546 ^c	.298	108.81	3/770
P.S.F.	-.405	.076	-.210	-5.36**	-.418	-.190				
P.S.T.	-.459	.096	-.183	-4.76**	-.380	-.169				
4(Constant)	105.12	3.72		28.26**						
A.S.W.	-.725	.070	-.328	-10.41**	-.427	-.351	.550 ^d	.302	83.26	4/769
P.S.F.	-.317	.085	-.165	-3.72**	-.418	-.133				
P.S.T.	-.393	.101	-.157	-3.90**	-.380	-.139				
P.S.Fr.	-.300	.135	-.094	-2.22*	-.363	-.080				

(U.C.)Unstandardized Coefficients ; (S.C.) Standardized Coefficients

(**P<.01; *P<.05)

In the first step of the multi-linear regression analysis process for the prediction of the cyber bullying, Beta coefficient of the subjective well-being variability examined is -.427. The t test results for the significance of the beta coefficient were found significant ($t=-13.10$; $P<.01$). The subjective well-being variant explains about 18% of cyber bullying of adolescents when singly included in the process($R=.427$; $R^2=.182$).

In the second step of the stepwise regression analysis, the perceived social support from family variable of the subjective well-being variable added to process. When other variables affecting cyber bullying held constant, subjective well-being and perceived social support from family variables together account for about 23% of cyber bullying($R=.526$; $R^2=.227$). Beta coefficient of subjective well-being variable in adolescents when other variables in the model are kept constant is -.334; the Beta coefficient of the variable of perceived social support from family also is -.322. The t test results for the significance of the beta coefficient were found significant ($t_{ASW}=-10.44$; $t_{PSF}=-10.06$; $P<.01$).

In the third step of the stepwise regression analysis, subjective well-being and the perceived social support from family variables added to the perceived social support from teachers in model. When other variables in adolescents affecting cyber bullying kept constant, subjective well-being, social support perceived from family and teachers variables together account for about 30% of the cyberbullying($R=.546$; $R^2=.298$). When other variables in the model are kept constant, Beta coefficient of subjective well-being variable in adolescents -.329; the Beta coefficient of the perceived social support from family variable is -.210 and the Beta coefficient of the perceived social support from teachers variable is -.183. The t test results for the significance of the beta coefficient were found significant ($t_{ASW}=-10.41$; $t_{PSF}=-5.36$; $t_{PST}=-4.76$; $P<.01$).

In the last step of the stepwise regression analysis, subjective well-being, perceived social support from friends and family, and perceived social support from friends variables were added simultaneously. When other variables affecting cyber bullying in adolescents are kept constant subjective well-being, perceived social support from family, teachers, and friends variables together account for about 30% of cyber bullying($R=.550$; $R^2=.302$). When other variables in the model are kept constant, Beta coefficient of the subjective well-being variable in adolescents -.328; Beta coefficient of the perceived social support from the family variable is -.165, Beta coefficient of the perceived social support from teachers variable is -.157, and Beta coefficient of the perceived social support from friends variable is -.094. The t test results for the significance of the beta coefficient were found significant ($t_{ASW}=-10.41$; $t_{PSF}=-3.72$; $t_{PST}=-3.90$; $P<.01$; $t_{PSFr}=-2.22$; $P<.05$).

In the last step, subjective well-being, social support variables perceived from family, friends, and teachers were found to be significant predictors of cyber bullying in adolescents when the beta coefficients of the variables entering the model and the t test results regarding the significance of the beta coefficients were taken into account. According to the beta values, it has been found that cyber bullying of the adolescents showed a significant level of "subjective well-being" in the first place, "social support perceived from family" in the second place, "social support perceived from teachers" in the third place and "social support perceived from friends" in the last place.

Conclusion, Discussion and Suggestions

As a result of the research; There was a significant negative correlation between cyber bullying and subjective well-being, perceived social support from family, perceived social support from teachers, and perceived social support from friends. In other words, the levels of subjective well-being and perceived social support (from family, friends, teachers) of adolescents increase as the levels of cyber victimization and bullying decrease. In addition to this result, subjective well-being in adolescents, perceived social support from family, friends and teachers variables found to be one of the predictor of cyber victimization and bullying. Variables of subjective well-being in adolescents and perceived social support from family, friends and teachers together account for about 39% of the total variance for the cyber victim in adolescents and account for about 30% of the total variance associated with bullying. Cyber victim and bullying in adolescents found to be significantly predictors of "subjective well-being" in the first place, "perceived social support from family" in the second place, "perceived social support from teachers" in the third place, and "perceived social support from friends" in the third place.

Depending on the results above, there is a positive set of technology results, as well as negative consequences such as cyber bullying and cyber criminality. The rapid development of technology and the diversification of information communication tools have led to the introduction of a social being into new experiences. As a result of this, the concepts of cyber bullying and victimization emerged as a current problem.

As a result of the research, it was observed that there was a negative correlation between cyber-victimization in adolescents and cyber bullying, subjective well-being occurrence, and that subjective well-being in adolescents was first ranked in cyber victimization and bullying. The results of these findings suggest that adolescents with low subjective well-being levels may exhibit more cyber bullying behaviors. In other words, individuals who has negative emotions and has very low life satisfaction can make more cyber bullying and more cyber victimization. The results of the study supporting this finding in the field are very limited, and result of the study is consistent with the findings of study conducted by Navarro, Ruiz-Oliva, Larrañaga & Yubero (2015). This study also concluded that there was a significant negative correlation between bullying and subjective well-being. It has been determined that cyber bullying and victimization in the field lead to serious negativities on the lives of individuals. The level of well-being of individuals who received positive feedback on virtual communication platforms was increased, while those who received negative feedbacks were found to have low self-esteem and well-being (Valkenburg, Peter & Schouten, 2006). When the results of this study considered as a whole, it can be said that one way of protecting adolescents against cyber victims and cyberbullying is increase in their subjective well-being. Thus, the chances of experiencing cyberbullying for those who have positive emotions and life satisfaction may be reduced to the most extreme.

Perceived social support is a situation in which individual support from different sources, such as family, friends and teachers, is perceived as personal. In this study, it was observed that the perceived social support from family in adolescents was in the second place of cyber-victimization and bullying and that there was a significant negative correlation between them. Research findings supporting these results were found in the field literature survey. (Fanti, Demetriou & Hawa, 2012; Peker & Eroğlu, 2015). In addition to these findings, it has been found that the monitoring strategies

and rules of the families on appropriate or inappropriate sites reduce the risk of children becoming victims of cyber attacks (Mesch, 2009). Similarly, it has found that individuals who use electronic technology with family control and rules share less personal information (Navarro, Serna, Martinez & Ruiz-Oliva, 2013).

Individuals who thought they were receiving social support were less likely to use the internet and in addition. It was found that internet usage habits of them and goals are differed from each others (Sezer & İşgör, 2017). Considering these situations, it is understood that perceived social support is an important function of family and family's perceptions of cyber victimization and bullying. When the studies are evaluated as a whole, it can be said that there is a protective function of the social support perceived from the family at a high level in cases of cyber victimization and bullying. Otherwise, it can be said that the people who can not receive or support the high level of support from their families try to gain it from the virtual environment and as a result the use of virtual communication tools as uncontrolled, it may cause to increase the cases of cyber victimization and bullying. In this context, to protect adolescents against cyber victimization and bullying, families can be more aware of this issue and provide more support for their children.

As a result of the research, it was determined that perceived social support from teachers is a predictor of cyber bullying and victimization in adolescents and bullying is in the third rank. In addition to that, there was a meaningful relationship between them in the negative direction. In the previous studies, it has been seen that cyber victimization and cyberbullying are handled and examined with different variables; however, it hasn't been found any studies of the perceived social support from teachers, cyber victimization and the cyber-bullying are discussed together. In this context, it can be said that school life and teacher influence are not taken into consideration because cyberbullying and victimization are performed in the virtual environment (Eroğlu, 2014). However, it is known that adolescents spend a large majority of their time in school, and that teachers are important in the development of adolescents (Eccles & Roeser, 2003). It has been determined that the awareness of the cyberbullying by the teachers who work in school is so important and that the problems experienced by the victims lead to various problems such as; decline in study duration, academic achievement and suicidal thoughts (Akbiyık & Kestel, 2016; Beran & Li, 2008), depression (Landoll *et al.* 2015) and low self esteem (Özdemir, 2014). When these results are evaluated together, it can be said that the perceived social support from teachers is important for adolescents and also supporting adolescent with high level social support from teachers are protective especially in the case of cyber victimization and bullying. At this point, it is possible for teachers to increase their awareness in this regard against victim and bullying situations in adolescents to give more support to adolescents.

As a result of the research, it was determined that perceived social support from friends was predictor in the last order and there was a meaningful relationship between them in the negative direction. When the general characteristics of adolescence are taken into consideration, it can be said that the friends of the adolescent in their social life and the perceived social support from them are important in this healthy turnover. In this period, it is considered that adolescents who perceive social support from friends at upper level will be exposed to less virtual bullying. while social environment and perceived social support which are essential for maintaining a compatible life protect adolescent against victimization, at the same time they have protective effect not to bully others by the adolescents in any way. In this context, it can be said that perceived social support from friends is significant in terms of eliminating the victimization and bullying situations or reducing them to minimum level. In the investigations, exposure to bullying is known to cause a variety of psychosomatic problems on the victims (Yen *et al.* 2014; Chang *et al.* 2015; García-Moya, Suominen & Moreno, 2014; Sumter & Baumgartner, 2017). In another studies conducted at this point, it was determined that the social support obtained from friends decreased the stress because of being exposing cyberbullying on the victim and was effective in creating a sense of belonging and social loyalty in the individual (Naslund, Aschbrenner, Marsch & Bartels, 2016; Tokunaga, 2010). Cyberbullying is known to be associated with peer rejection (Wright & Li, 2013).

Especially in adolescence, it can be said that adolescents tend to share their experiences of cyberbullying with friends rather than their parents, and compared to their parents, their peers can better understand some of the virtual issues (Sasson & Mesch, 2014). People who are exposed to bullying are in demand for support and help from friends and family and teachers as well as from accessible sources (Jenkins, Fredrick & Wenger, 2018). It can be said that perceived social support may reduce the level of the individual becoming a cyber bully and a cyber victim. In other words, if social support diminishes, it can be said that individuals can enter into undesirable experiences. In such cases of social support diminishment, individuals seek this support they need in cyber environments, and as a result of the rapid and uncontrolled access provided by the internet, adolescents may enter into negative experiences such as cyber bullying and cyber victimization. At the end of this study, the following suggestions were made:

- The population and sample groups in which the research is carried out can be changed in order to understand better the cases of cyberbullying and cyber victimization and to close the gaps of literature.
- The predictive power of these variables can be investigated by choosing other variables instead of subjective well-being, perceived social support from family, friends and teachers.
- It is possible to prevent or reduce these and other adverse experiences by increasing the support provided from individuals as a result of understanding predicting effect of the social support of the individuals on the negative experiences.
- Educational institutions can be informed and educated about cyber victimization and bullying situations and students can be warned about of these situations.

References

- Akbıyık, C., & Kestel, M. (2016). Siber zorbalığın öğrencilerin akademik, sosyal ve duygusal durumları üzerindeki etkisinin incelenmesi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 12(3), 844-859.
- Akbulut, Y. (2010). *Sosyal Bilimlerde SPSS Uygulamaları*. İstanbul: İdeal Kültür Yayıncılık.
- Antoniadou, N., & Kokkinos, C. M. (2015). Cyber and school bullying: Same or different phenomena? *Aggression and Violent Behavior*, 25, 363-372.
- Arıcak, O. T. (2011). Siber zorbalık: Gençlerimizi bekleyen yeni tehlike. *Kariyer Penceresi*, 2(6), 10-12.
- Ayas, T., & Horzum, M. B. (2012). İlköğretim öğrencilerinin sanal zorba ve mağdur olma durumu. *İlköğretim Online*, 11(2), 369-380.
- Bauman, S., Toomey, R. B., & Walker, J. L. (2013). Associations among bullying, cyberbullying, and suicide in high school students. *Journal of Adolescence*, 36(2), 341-350.
- Ben-Zur, H. (2003). Happy adolescents: The link between subjective well-being, internal resources, and parental factors. *Journal of Youth and Adolescence*, 32(2), 67-79.
- Beran, T., & Li, Q. (2008). The relationship between cyberbullying and school bullying. *The Journal of Student Wellbeing*, 1(2), 16-33.
- Beran, T., & Li, Q. (2005). Cyber-harassment: A study of a new method for an old behavior. *Journal of Educational Computing Research*, 32(3), 265-277.

- Bhat, C. S. (2008). Cyber bullying: Overview and strategies for school counsellors, guidance officers, and all school personnel. *Journal of Psychologists and Counsellors in Schools*, 18(1), 53-66.
- Boronenko, V., Menshikov, V., & Marzano, G. (2013). Topicality of cyberbullying among teenagers in Russia and Latvia. *Social Sciences Bulletin*, 1(16), 84-104.
- Brausch, A. M., & Decker, K. M. (2014). Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. *Journal of Abnormal Child Psychology*, 42(5), 779-789.
- Büyüköztürk, Ş. (2011). *Sosyal bilimler için veri analizi el kitabı*. (15. Baskı). Ankara: Pegem Akademi Yayıncılık.
- Can, A. (2013). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi*. Ankara: Pegem Akademi Yayıncılık.
- Cardoso, J. B., Szlyk, H. S., Goldbach, J., Swank, P., & Zvolensky, M. J. (2018). General and ethnic-biased bullying among Latino students: exploring risks of depression, suicidal ideation, and substance use. *Journal of Immigrant and Minority Health*, 20(4), 816-822.
- Chang, F. C., Chiu, C. H., Miao, N. F., Chen, P. H., Lee, C. M., Huang, T. F., & Pan, Y. C. (2015). Online gaming and risks predict cyberbullying perpetration and victimization in adolescents. *International Journal of Public Health*, 60(2), 257-266.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Cohen, S., & Syme, S. L. (1985). Issues in the study and application of social support. *Social Support and Health*, 3, 3-22.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357.
- Cooke, B. D., Rossmann, M. M., Mccubbin, H. I., & Patterson, J. M. (1988). Examining the definition and assessment of social support: A resource for individuals and families. *Family Relations*, 37(2), 211-216.
- Çetin, B., Yaman, E., & Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computer&Education*, 57(4), 2261-2271.
- Dempsey, A.G., Sulkowski, M.L., Nichols, R. & Storch, E.A. (2009). Differences between peer victimization in cyber and physical settings and associated psychosocial adjustment in early adolescence. *Psychology in the Schools*, 46(10), 962-972.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575.
- Diener, E., & Tov, W. (2007). Subjective well-being and peace. *Journal of Social Issues*, 63(2), 421-440.
- Diener, E., Lucas, R. E., Oishi, S., & Suh, E. M. (2002). Looking up and looking down: Weighting good and bad information in life satisfaction judgments. *Personality and Social Psychology Bulletin*, 28(4), 437-445.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302.

- Diener, E., Suh, E., & Oishi, S. (1997). Recent findings on subjective well-being. *Indian Journal of Clinical Psychology*, 24, 25-41.
- Eccles, J. S., & Roeser, R. W. (2003). Schools as developmental contexts. In G.R. Adams & M. D. Berzonsky (Eds). *Blackwell handbook of adolescence* (pp. 129-148), Malden: Blackwell Publishing.
- Eroğlu, Y. (2014). *Ergenlerde siber zorbalık ve mağduriyeti yordayan risk etmenlerini belirlemeye yönelik bütüncül bir model önerisi*. Yayınlanmamış doktora tezi, Uludağ Üniversitesi, Eğitim Bilimleri Enstitüsü, Bursa.
- Eryaman, M. Y. (2007). Examining the characteristics of literacy practices in a technology-rich sixth grade classroom. *The Turkish Online Journal of Educational Technology (TOJET)* 6(2), 26-41.
- Eryılmaz, A. (2009). Ergen öznel iyi oluş ölçeğinin geliştirilmesi. *Türk Eğitim Bilimleri Dergisi*, 7(4), 975-989.
- Fanti, K. A., Demetriou, A. G., & Hawa, V. V. (2012). A longitudinal study of cyberbullying: Examining risk and protective factors. *European Journal of Developmental Psychology*, 9(2), 168-181.
- Fitzgerald, D. (1999). *Bullying in our schools-understanding and tackling the problem: A guide for schools*. Dublin: Blackhall Publishing.
- García-Moya, I., Suominen, S., & Moreno, C. (2014). Bullying victimization prevalence and its effects on psychosomatic complaints: can sense of coherence make a difference?. *Journal of School Health*, 84(10), 646-653.
- Hinduja, S., & Patchin, J. W. (2008). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior*, 29(2), 129-156.
- Hinduja, S., & Patchin, J. W. (2010). Bullying, cyberbullying, and suicide. *Archives of Suicide Research*, 14(3), 206-221.
- Jenkins, L. N., Fredrick, S. S., & Wenger, J. (2018). Peer victimization and social-emotional outcomes: The role of teacher and peer support. *Aggressive Behavior*, 44(2), 176-184.
- Karasar, N (2016). *Bilimsel araştırma yöntemi*, (31. Basım) Ankara: Nobel Akademik Yayıncılık.
- Keith, S., & Martin, M. E. (2005). Cyber-bullying: Creating a culture of respect in a cyber world. *Reclaiming Children and Youth*, 13(4), 224-228.
- Kokkinos, C. M., Antoniadou, N., & Markos, A. (2014). Cyber-bullying: An investigation of the psychological profile of university student participants. *Journal of Applied Developmental Psychology*, 35(3), 204-214.
- Landoll, R. R., La Greca, A. M., Lai, B. S., Chan, S. F., & Herge, W. M. (2015). Cyber victimization by peers: Prospective associations with adolescent social anxiety and depressive symptoms. *Journal of Adolescence*, 42, 77-86.
- Mesch, G. S. (2009). Parental mediation, online activities, and cyberbullying. *Cyberpsychology & Behavior*, 12(4), 387-393.
- Mishna, F., Saini, M., & Solomon, S. (2009). Ongoing and online: Children and youth's perceptions of cyber bullying. *Children and Youth Services Review*, 31(12), 1222-1228.

- Naslund, J. A., Aschbrenner, K. A., Marsch, L. A., & Bartels, S. J. (2016). The future of mental health care: Peer-to-peer support and social media. *Epidemiology and Psychiatric Sciences*, 25(2), 113-122.
- Navarro, R., Ruiz-Oliva, R., Larrañaga, E., & Yubero, S. (2015). The impact of cyberbullying and social bullying on optimism, global and school-related happiness and life satisfaction among 10-12-year-old schoolchildren. *Applied Research in Quality of Life*, 10(1), 15-36.
- Navarro, R., Serna, C., Martínez, V., & Ruiz-Oliva, R. (2013). The role of internet use and parental mediation on cyberbullying victimization among Spanish children from rural public schools. *European Journal of Psychology of Education*, 28(3), 725-745.
- Olweus, D. (1993). Bully/victim problems among schoolchildren: Long-term consequences and an effective intervention. In S. Hodgins (Ed.), *Mental disorder and crime* (pp. 317-349). Thousand Oaks, CA: Sage Publications.
- Özdemir, Y. (2014). Cyber victimization and adolescent self-esteem: The role of communication with parents. *Asian Journal of Social Psychology*, 17(4), 255-263.
- Peker, A., & Eroğlu, Y. (2015). Ergenlerde algılanan sosyal destek ve siber zorbalığa eğilim arasındaki ilişkiler: Arkadaştan ve öğretmenden algılanan sosyal desteğin aracı rolü. *Turkish Studies*, 10(3), 759-778.
- Privitera, C., & Campbell, M. A. (2009). Cyberbullying: The new face of workplace bullying? *CyberPsychology & Behavior*, 12(4), 395-400.
- Raskauskas, J., & Stoltz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology*, 43(3), 564-575.
- Rigby, K., & Cox, I. (1996). The contribution of bullying at school and low self-esteem to acts of delinquency among Australian teenagers. *Personality and Individual Differences*, 21(4), 609-612.
- Sasson, H., & Mesch, G. (2014). Parental mediation, peer norms and risky online behavior among adolescents. *Computers in Human Behavior*, 33, 32-38.
- Schimmack, U., Radhakrishnan, P., Oishi, S., Dzokoto, V., & Ahadi, S. (2002). Culture, personality, and subjective well-being: Integrating process models of life satisfaction. *Journal of Personality and Social Psychology*, 82(4), 582-593.
- Schneider, S. K., O'donnell, L., Stueve, A., & Coulter, R. W. (2012). Cyberbullying, school bullying, and psychological distress: A regional census of high school students. *American Journal of Public Health*, 102(1), 171-177.
- Seçer, İ. (2015). *SPSS ve LISREL ile pratik veri analizi*. (2. Baskı) Ankara: Anı Yayıncılık.
- Sezer, F., & İşgör, İ. Y. (2017). Life style and social support: The role of computer/internet use. *International Online Journal of Educational Sciences*, 9(2), 356-369.
- Smith, P. K., & Slonje, R. (2010). Cyberbullying: The nature and extent of a new kind of bullying, in and out of school. In S. Jimerson, S. Swearer, & D. Espelage (Eds), *The international handbook of school bullying* (pp. 249-262). New York: Routledge.
- Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry*, 49(4), 376-385.

- Sumter, S. R., & Baumgartner, S. E. (2017). Psychosomatic complaints in adolescence: Untangling the relationship between offline and online peer victimization, psychosomatic complaints and social support. *European Journal of Developmental Psychology*, 14(4), 399-415.
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior*, 26(3), 277-287.
- Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, 9(5), 584-590.
- Willard, N. E. (2007). *Cyberbullying and cyberthreats: Responding to the challenge of online social aggression, threats, and distress*. Champaign, IL: Research Press.
- Woodruff, B., Temkit, M. H., Adams, J., & Yost, K. (2017). Association between affective symptoms and school bullying experiences in adults with autism spectrum disorders *Neurology*, 88(16 Supplement), P4-156.
- Wright, M. F., & Li, Y. (2013). Normative beliefs about aggression and cyber aggression among young adults: A longitudinal investigation. *Aggressive Behavior*, 39(3), 161-170.
- Ybarra, M. L., & Mitchell, K. J. (2004). Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry*, 45(7), 1308-1316.
- Yen, C. F., Chou, W. J., Liu, T. L., Ko, C. H., Yang, P., & Hu, H. F. (2014). Cyberbullying among male adolescents with attention-deficit/hyperactivity disorder: prevalence, correlates, and association with poor mental health status. *Research in Developmental Disabilities*, 35(12), 3543-3553.
- Yıldırım, İ. (1997). Algılanan Sosyal Destek Ölçeğinin Geliştirilmesi Güvenirliliği ve Geçerliği, *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 13, 81-87.
- Yıldırım, İ. (2004). Algılanan sosyal destek ölçeğinin revizyonu. *Eğitim Araştırmaları-Eurasian Journal of Educational Research*, 17, 221-236.
- You, J., & Lu, Q. (2014). Sources of social support and adjustment among Chinese cancer survivors: gender and age differences. *Supportive Care in Cancer*, 22(3), 697-704.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.

The Correlation between Speech Self-Efficacy and Communication Skills of Pre-Service Turkish Teachers

İlhan Erdemⁱ
İnönü University

Abstract

In the present study, the presence of a correlation between the communication skills and the speech self-efficacy of pre-service Turkish teachers was investigated. Associational survey model was adopted in the research. Research data were collected with two instruments which aimed to measure the communication skills and speech self-efficacy levels of junior students attending the Turkish Language Education departments of five universities in different regions in Turkey. The study findings demonstrated that there were moderate and large positive significant correlations between the speech self-efficacy perceptions (SSES) and communication skills (CSS) of pre-service Turkish teachers based on total scores and the subscale scores. Based on the findings it was recommended that pre-service teachers should be provided with more opportunities to develop their speech skills to ensure their command in active and healthy communications in the educational processes.

Keywords: Communication skills, pre-service Turkish language teachers, speech self-efficacy.

DOI: 10.29329/ijpe.2018.157.10

ⁱ **İlhan Erdem**, Assoc. Prof. Dr., İnönü University, Department of Turkish Education, Malatya/Turkey.

Correspondence: ilhan.erdem@inonu.edu.tr

Introduction

The desire to communicate is one of the most important requirements for humans. Individuals need to establish healthy and effective communications to cohabit in several social realms such as family, work, social life, etc. In several sources, communication was described using several definitions and these definitions indicated that communication was a psychosocial process based on the mutual desires of at least two individuals to share their emotions, ideas and experiences via different channels (Cüceloğlu, 2002; Kaya, 2014; Oğuzkan, 1974).

Communication is based on a source and a recipient. The topics that individuals desire to share are communicated using various channels. Different desires and needs force people to communicate in all areas of life. The need to get to know others, to acquire new knowledge, and to learn and teach lead individuals to active communication. At the center of the contemporary education system is the requirement of individuals to learn and to teach. The main determinant of the success of the communication process that aims learning and instruction is generally the teacher. Because, in the process of educational communication, teacher is the determinant of all relevant elements (Gökdağ, 2010: 92).

In the educational communication process, the teacher is the resource. In order to acquire an active and healthy process, the teacher should possess certain qualifications. Certain qualifications that the teacher should possess are the qualifications that all teachers possess and are the requirements of the profession. Others are the competencies that the source should possess in the communication process (Gökdağ, 2010: 92). Dilekmen, Başçı and Bektaş (2008: 223) stated that active communications skills are indispensable for teachers and it is important for the pre-service teachers to acquire the internal dynamics of communication skills and their significance in education during training. Because, the individual should acquire adequate listening and speech habits for proper self-expression and comprehension of others. Good communication skills are the most significant professional criteria for effective teaching in teaching occupation, which is based on communications. In the learning-instruction process, it can be claimed that the most frequently used communications channel is speech in the classroom environment. Therefore, a teacher who can speak effectively and accurately in the classroom would ensure the effectiveness of the instruction and would provide a role model for the students. In college education, pre-service teachers should acquire competency in speech skills and their self-efficacy perceptions should be promoted in speech skills and their self-esteem should be improved (Katrancı and Melanlıoğlu, 2013: 653). Only then, the teachers could be role models and the targeted educational level could be achieved (Eryaman, at all, 2013).

A pre-service teacher with speech self-efficacy should be a good speaker. A good speaker can speak comfortably without voicing sound such as "uh/ah," without looking at her or his notes, and without guidance of others in front of an audience. A good speaker could make others listen and should have good command of the subject. A good speaker supports the speech with an adequate body language. A good speaker commands the intonation to speak effectively. A good speaker uses adequate salutations. A good speaker speaks fluently and respects the rules of courtesy during speech. A good speaker selects the words and phrases at the right time during speech. A good speaker could use accents, tones and pauses at appropriate points during speech. A good speaker establishes eye contact with the audience. A good speaker utilized an audible tone. A good speaker peruses adequate gestures during speech. A good speaker could determine the method and technique adequate for the objective of the speech. A good speaker could use ideas to help emphasize the main idea of the speech. A good speaker uses relevant proverbs and idioms during the speech. A good speaker could use experiences to add charm to the speech. A good speaker could answer the questions that the audience might have. A good speaker could summarize and assess her or his speech (Katrancı and Melanlıoğlu, 2013).

Individuals with good communication skills based on "communication principles and basic skills" always accept others as they are. They listen to others without prejudice and express their

understanding in a proper manner. Individual with good communication skills speak with a calm voice, respect the special areas of others during communication, do not force individuals to have conversation with her or him, help those who need her or his input on any subject, share their experiences when they think they would be of help to others, could articulate their ideas and emotions when it is necessary to express these, ask questions about things they would not understand during interaction. Their speech and body language are consistent during active listening and non-verbal communication. They attempt to understand others instead of thinking about their own response while listening to others and expresses their understanding properly. They pay attention to the harmony between the narrative and gestures and body language of the speaker. While listening to others, they understand the emotions behind the words of the speaker. They could share own experiences with others verbally and using body language and is willing to communicate. They are interested in others. They could initiate conversations easily in any environment. They would spare time for those they communicate with when they need help. They compliment others sincerely (Korkut Owen and Bugay, 2014).

Since the aim of the education-instruction process is to train generations with communication skills, it is necessary to determine the factors that would improve these skills. The idea that since speech skills are an important factor in the communication process, the development of these skills would have a positive impact on the communication skills was the starting point of the present study. Communication skills are also among the skills that all pre-service teachers should acquire. Since Turkish language teachers are required to improve the skills associated with direct communication skills such as speaking and listening, they are instructed how to improve these skills in their educational life. Determination of the correlation between the speech self-efficacy and the communication skills of the students who attend these courses could provide an idea about training generations with good communication skills. The aim of the present study was to determine the correlation between the speech self-efficacy perceptions and communication skills of pre-service Turkish teachers.

This study attempted to answer the following research questions: “Is there a significant correlation between speech self-efficacy and the communication skills of pre-service Turkish language teachers? Is the communication skill of pre-service Turkish language teachers with high speech self-efficacy perceptions are high as well?”

Methodology

Research Model

The present study that aimed to determine the correlation between the communication skills and speech self-efficacy of pre-service Turkish teachers was conducted with the relational screening model. Relational screening models aim to determine the presence and/or degree of the correlation between two or more variables (Karasar, 2010: 81). In the present study, a associational survey was conducted. The study investigated whether the communication skills and speech self-efficacy perceptions were correlated and in the presence of the correlation, the study attempted to determine the type of the correlation.

Population and the Sample

According to Undergraduate Atlas published by The Council of Higher Education (YOK, 2018), 64 public universities have Turkish Teaching Programs in Turkey. However, 4 universities recently started active education. Thus, the study population included junior students attending Turkish Language Teaching Programs at 60 public universities during the spring semester of 2017-2018 academic year. When the study sample was determined, it was planned to include at least one public university from each region in Turkey. However, the researcher could only reach the juniors attending İnönü University, Nevşehir Hacı Bektaş Veli University, Adıyaman University, Sakarya

University and Giresun University Turkish Language Teaching Programs. Thus, the study sample included the junior students attending these five universities during the spring semester of 2017-2018 academic year. The study was limited to junior year students because these students attended the "Speech Education" course in that semester.

Table 1. Demographic Information on the Pre-Service Teachers Included in the Sample

University		N	%
İnönü University	Female	40	74,1
	Male	14	25,9
	Total	54	100
Nevşehir Hacı Bektaş Veli University	Female	15	71,4
	Male	6	28,6
	Total	21	100
Adıyaman University	Female	27	52,9
	Male	24	47,1
	Total	51	100
Sakarya University	Female	33	63,5
	Male	19	36,5
	Total	52	100
Giresun University	Female	37	61,7
	Male	23	38,3
	Total	60	100
Total	Female	152	63,9
	Male	86	36,1
	Total	238	100

Data Collection Instrument

The "Speech Self-Efficacy Scale for Pre-Service Teachers (SSES)" and the "Communication Skills Scale" (CSS) were applied to the sample group. "Speech Self-Efficacy Scale for Pre-Service Teachers" was developed by Katrancı and Melanlıoğlu (2013). The scale that includes 25 items is a 5-point Likert-type scale. The scale has five sub-dimensions including Speaking in Front of an Audience (TOK) (7 items), Active Speech (6 items), Implementing Speech Rules (5 items), Organizing Speech Content (4 items) and Evaluating the Speech (KD) (3 items). The scale items had factor loadings ranging between .46 and .77, explaining about 54.33% of the total variance. For the total scale, the Cronbach Alpha reliability coefficient was determined as .92 by the researchers. The scale reliability coefficient based on the study data was .93. These figures indicated that the scale was highly reliable.

The "Communication Skills Scale," developed by Korkut Owen and Bugay (2014), includes 25 items and four sub-dimensions. The scale is a 5-point Likert-type scale (never, rarely, seldom, often, and always). The scale has 5 items in Communication Principles and Basic Skills (ICT) subscale, 4 items in Self Expression (KIE) subscale, 6 items in Active Listening (EDSOI) subscale, 6 items in Non-Verbal Communication subscale, and 5 items in Willingness to Communicate (IKI) subscale. The scale items had factor loadings ranging between .308 and .714, explaining about 46% of the total variance. For the total scale, the Cronbach Alpha reliability coefficient was determined as .88 by the researchers. The scale reliability coefficient was .89 based on the study data. These figures indicated that the scale was reliable.

Data Analysis

In order to test whether the distribution of the total scores the sample received previously on SSES and CSS met the basic assumptions of the parametric tests, the data were examined based on the arithmetic mean, median, mode, skewness and kurtosis coefficients.

Table 2. Descriptive Statistics for SSES and CSS Total and Sub-Scale Scores

Scale	N	\bar{X}	Median	Mode	Skewness	Kurtosis
TÖK	238	24,76	24,36	24	-,12	-,13
EK	238	24,14	24	27	-,38	-,34
KKU	238	19,95	20	20	-,36	,13
KİD	238	15,23	15	15	,12	-,35
DD	238	12,43	12	12	-,48	,16
SSES	238	96,53	95,10	93	,07	-,42
İİTB	238	40,96	41	42	-,31	-,04
KİE	238	16,16	16	16	-,45	-,20
EDSOİ	238	24,53	24	24	-,37	,08
İKİ	238	19,16	19	19	-,15	-,15
CSS	238	100,82	100,19	110	-,16	-,23

Table 2 demonstrates that the skewness and kurtosis coefficients varied between +1 and -1, which suggests acceptable deviance from normal distribution (Büyüköztürk, 2006). Thus, parametric tests were used in data analysis. A simple linear correlation analysis was conducted to determine the correlation between the speech self-efficacy perceptions and communication skills of pre-service Turkish teachers. The normality, linearity and covariance assumptions were checked with preliminary analysis.

Findings

The findings of the analysis conducted to respond the questions “Is there a correlation between speech self-efficacy and the communication skills of pre-service Turkish language teachers? Is the communication skills of pre-service Turkish language teachers with high speech self-efficacy perceptions are high as well?” are presented in Table 3.

Table 3. Pearson Product-Moments Correlation between Speech Self-Efficacy and Communication Skill Measurements

		ÖKÖ	r ²	TÖK	r ²	EK	r ²	KKU	r ²	KİD	r ²	KD	r ²
İİTB	r	,43**	,19	,27**	,07	,45**	,20	,32**	,10	,41**	,16	,47**	,22
	p	,00		,00		,00		,00		,00		,00	
	N	238		238		238		238		238		238	
KİE	r	,52*	,27	,42**	,18	,44**	,19	,51**	,26	,39**	,15	,37**	,13
	p	,00		,00		,00		,00		,00		,00	
	N	238		238		238		238		238		238	
EDSOİ	r	,57**	,32	,40**	,16	,56**	,31	,49**	,24	,50**	,25	,48**	,23
	p	,00		,00		,00		,00		,00		,00	
	N	238		238		238		238		238		238	
İKİ	r	,55**	,30	,39**	,15	,50**	,25	,55**	,30	,46**	,21	,42**	,17
	p	,00		,00		,00		,00		,00		,00	
	N	238		238		238		238		238		238	
İBÖ	r	,63**	,40	,44**	,19	,61**	,37	,56**	,31	,54**	,29	,55**	,30
	p	,00		,00		,00		,00		,00		,00	
	N	238		238		238		238		238		238	

** p < .01

According to Cohen (1988, as cited in Pallant, 2016: 150), when $r = .10 - .29$, the correlation is weak; when $r = .30 - .49$, the correlation is moderate; when $r = .50 - .1.0$, the correlation is strong. Table 3 demonstrated that there were mostly moderate and strong positive correlations between speech self-efficacy perceptions (SSES) and communication skills (CSS) of pre-service Turkish teachers based on both total and subscale scores.

A detailed analysis of the Table 3 demonstrated a significant, strong and positive correlation between self-efficacy perceptions and communication skills ($r = .63$, $p < .00$). Furthermore, the determination coefficient (r^2 = squared correlation coefficient) showed that the speech self-efficacy perception explained 40% of the variation in the scores of the participants in Communication Skills Scale (CSS).

Analysis of the SSES and CSS sub-scale scores led to the following findings:

It can be suggested that there was a significant and moderate correlation between the self-efficacy perceptions (SSES) and communication principles and basic skills (IITB) of pre-service teachers ($r = .43$, $p < .00$) and the speech self-efficacy perception of the participants explained 19% of the variance in the IITB subscale scores of the participants in CSS based on the r^2 value.

It can be suggested that there was a significant and strong correlation between the self-efficacy perceptions (SSES) and self-expression (KIE) of the pre-service teachers ($r = .52$, $p < .00$) and the speech self-efficacy perception of the participants explained 27% of the variance in the KIE subscale scores of the participants in CSS based on the r^2 value.

It can be suggested that there was a significant and strong correlation between the self-efficacy perceptions (SSES) and active listening and non-verbal communication (EDSOI) of the pre-service teachers ($r = .57$, $p < .00$) and the speech self-efficacy perception of the participants explained 32% of the variance in the EDSOI subscale scores of the participants in CSS based on the r^2 value.

It can be suggested that there was a significant and strong correlation between the self-efficacy perceptions (SSES) and willingness to communicate (IKI) of the pre-service teachers ($r = .55$, $p < .00$) and the speech self-efficacy perception of the participants explained 30% of the variance in the IKI subscale scores of the participants in CSS based on the r^2 value.

It can be suggested that there was a significant, positive and weak correlation between the speaking in front of an audience subscale of SSES and communication principles and basic skills subscale of CSS ($r = .27$, $p < .00$) and TOK scores of the pre-service teachers explained 7% of the variance in their scores in IITB based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the speaking in front of an audience subscale of SSES and self-expression subscale of CSS ($r = .42$, $p < .00$) and TOK scores of the pre-service teachers explained 18% of the variance in their scores in KIE based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the speaking in front of an audience subscale of SSES and active listening and non-verbal communication subscale of CSS ($r = .40$, $p < .00$) and TOK scores of the pre-service teachers explained 16% of the variance in their scores in EDSOI based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the speaking in front of an audience subscale of SSES and willingness to communicate subscale of CSS ($r = .39$, $p < .00$) and TOK scores of the pre-service teachers explained 15% of the variance in their scores in IKI based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the speaking in front of an audience subscale of SSES and CSS ($r = .44$, $p < .00$) and TOK scores of the pre-service teachers explained 19% of the variance in their scores in CSS based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the effective speech subscale of SSES and communication principles and basic skills subscale of CSS

($r=.45$, $p<.00$) and EK scores of the pre-service teachers explained 20% of the variance in their scores in IITB based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the effective speech subscale of SSES and self-expression subscale of CSS ($r=.44$, $p<.00$) and EK scores of the pre-service teachers explained 19% of the variance in their KIE scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the effective speech subscale of SSES and active listening and non-verbal communication subscale of CSS ($r=.56$, $p<.00$) and EK scores of the pre-service teachers explained 31% of the variance in their EDSOI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the effective speech subscale of SSES and willingness to communicate subscale of CSS ($r=.50$, $p<.00$) and EK scores of the pre-service teachers explained 25% of the variance in their IKI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the effective speech subscale of SSES and CSS ($r=.61$, $p<.00$) and EK scores of the pre-service teachers explained 37% of the variance in their CSS scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the application of the rules of speech subscale of SSES and communication principles and basic skills subscale of CSS ($r=.32$, $p<.00$) and KCU scores of the pre-service teachers explained 10% of the variance in their scores in IITB based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the application of the rules of speech subscale of SSES and self-expression subscale of CSS ($r=.51$, $p<.00$) and KCU scores of the pre-service teachers explained 26% of the variance in their scores in KIE based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the application of the rules of speech subscale of SSES and active listening and non-verbal communication subscale of CSS ($r=.49$, $p<.00$) and KCU scores of the pre-service teachers explained 24% of the variance in their EDSOI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the application of the rules of speech subscale of SSES and willingness to communicate subscale of CSS ($r=.55$, $p<.0$) and KCU scores of the pre-service teachers explained 30% of the variance in their IKI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the application of the rules of speech subscale of SSES and CSS ($r=.56$, $p<.00$) and KCU scores of the pre-service teachers explained 31% of the variance in their CSS scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the organization of the speech content subscale of SSES and communication principles and basic skills subscale of CSS ($r=.41$, $p<.00$) and KID scores of the pre-service teachers explained 16% of the variance in their KID scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the organization of the speech content subscale of SSES and self-expression subscale of CSS ($r=.39$, $p<.00$) and KID scores of the pre-service teachers explained 15% of the variance in their KIE scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the organization of the speech content subscale of SSES and active listening and non-verbal communication subscale of CSS ($r=.50$, $p<.00$) and KID scores of the pre-service teachers explained 25% of the variance in their EDSOI scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the organization of the speech content subscale of SSES and willingness to communicate subscale of CSS ($r=.46$, $p<.00$) and KID scores of the pre-service teachers explained 21% of the variance in their IKI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the organization of the speech content subscale of SSES and CSS ($r=.54$, $p<.00$) and KID scores of the pre-service teachers explained 29% of the variance in their CSS scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the evaluation of the speech subscale of SSES and communication principles and basic skills subscale of CSS ($r=.47$, $p<.00$) and KD scores of the pre-service teachers explained 22% of the variance in their IITB scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the evaluation of the speech subscale of SSES and self-expression subscale of CSS ($r=.37$, $p<.00$) and KD scores of the pre-service teachers explained 3% of the variance in their KIE scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the evaluation of the speech subscale of SSES and active listening and non-verbal communication subscale of CSS ($r=.48$, $p<.00$) and KD scores of the pre-service teachers explained 23% of the variance in their EDSOI scores based on the r^2 value.

It can be suggested that there was a significant, positive and moderate correlation between the evaluation of the speech subscale of SSES and willingness to communicate subscale of CSS ($r=.42$, $p<.00$) and KD scores of the pre-service teachers explained 17% of the variance in their IKI scores based on the r^2 value.

It can be suggested that there was a significant, positive and strong correlation between the evaluation of the speech subscale of SSES and CSS ($r=.55$, $p<.00$) and KD scores of the pre-service teachers explained 30% of the variance in their CSS scores based on the r^2 value.

Conclusion and Discussion

Communication skills of teachers should be good to establish active and healthy communications with students and parents. One of the important factors that lead to active and healthy communications is speech skills. Therefore, it is expected that all teachers, especially the native language teachers should have good speech skills. Thus, courses such as Effective Communication and Speech Education are provided for pre-service teachers in Turkish Language Teaching Programs in faculties of education. The objective of the present study was to determine the correlation between the speech self-efficacy perceptions and communication skills of pre-service Turkish language teachers attending the above-mentioned courses. Thus, the present study attempted to respond to the question "Is the communication skill of pre-service Turkish language teachers with high speech self-efficacy perceptions are high as well?"

The study findings demonstrated that there was a strong positive correlation between the speech self-efficacy perceptions (SSES) and communication skills (CSS) of pre-service Turkish teachers. In other words, it can be suggested that the communication skills of pre-service Turkish teachers with high self-efficacy perceptions were also high.

There was a significant, positive and strong correlation between the total speech self-efficacy perception scores and communication skills scale subscales of the communication self-efficacy perceptions of pre-service Turkish teachers except “communication principles and basic skills” subscale (the correlation with this dimension was moderate). This finding demonstrated that pre-service Turkish teachers with a high speech self-efficacy perception also had high self-expression, active listening, non-verbal communication skills and they were willing to communicate.

Correlations between SSES and CSS subscales demonstrated that the pre-service Turkish teachers who considered that they can speak effectively also had high active listening, non-verbal communication and willingness to communicate skills. Because there was a significant, positive and strong correlation between the related subscales. It can be suggested that the candidates who considered that they were good following the rules of speech were also good in self-expression and willing to communicate, since there was a significant, positive and strong correlation between the implementation of the rules of speech subscale and self-expression and the willingness to communicate subscales. There was a significant, positive and strong correlation between organization of the speech content subscale and active listening and non-verbal communication subscales. Thus, it can be suggested that these skills influenced each other.

Furthermore, there was a significant, positive and strong correlation between the SSES subscales except speaking in front of an audience (moderate correlation) and total CSS scores. Thus, it can be suggested that the pre-service Turkish teachers who perceived that they had high effective speech, implementation of the rules of speech, organization of the speech content, and evaluation of the speech skills would also have high level communication skills. Similar studies on speech in front of an audience reported that the speaking in front of an audience skills of individuals were low due to factors such as the sarcastic behavior of the audience and the teachers, lack of knowledge and self-confidence, fear of providing false or incomplete information, shy temperament, not being accustomed to talking before an audience, lack of mastery in Turkish, feeling uncomfortable, stammering, trembling, etc. (Akkaya, 2012; Arslan, 2012; Katrancı, 2014). In the present study, it was observed that there was a moderate correlation between the speaking before an audience subscale and total CSS and subscale scores. In fact, the present study findings were consistent with the results of the above-mentioned study since the correlation between speaking in front of an audience and communication principles and basic skills was weak.

The study findings demonstrated that the strong correlation between speech self-efficacy perceptions and communication skills was obvious. Akın (2016) investigated various self-efficacy beliefs among pre-service Turkish teachers based on various variables and reported that the pre-service Turkish teachers had high level of speech self-efficacy perceptions. In a study where Çetinkaya (2011) aimed to determine the views of pre-service Turkish teachers on their communication skills, it was reported that pre-service Turkish teachers’ view on their communication skills were positive. Thus, the results of the above-mentioned research were consistent with the present study findings. However, it was considered adequate to inform the pre-service teachers about the correlation between their speech skills and general communication skills before they become active in their jobs life and training should be provided for the pre-service teachers on how to develop these skills. Because, in a study by Ulper and Bağcı (2012, p. 1118) where the professional self-efficacy perceptions of pre-service Turkish teachers were measured, it was also found that self-efficacy perceptions of the pre-service teachers might change over time and those who start their jobs with a high self-efficacy perception could lose this level of perception due to factors such as work, office conditions, etc., and pre-service teachers, who are the teachers of the future, should prepared for such cases in advance. Thus, pre-service teachers should be provided with more opportunities to develop their speech skills (seminars, events, etc.) in order to ensure their command in active and healthy communications in the educational process.

Since the results of the study were limited with the sample group, the study can be applied to the research population for generalization of the findings.

References

- Akın, E. (2016). Turkish teacher candidates' speech self efficacy levels in the aspect of different variables (siirt university example). *Route Educational and Social Science Journal*, 3(1), pp. 75-90.
- Akkaya, A. (2012). The opinions of teacher candidates about speech problems. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9(20), 405-420.
- Arslan, A. (2012). Some opinions of the university students related to “giving a speech in front of public” (Ağrı İbrahim Çeçen University sample). *Turkish Studies*, 7(3), 221-223.
- Büyüköztürk, Ş. (2006). *Veri Analizi El Kitabı* (6. Baskı) [Data Analysis Manual (6th Edition)]. Ankara: PegemA Yayıncılık.
- Cüceloğlu, D. (200). *Yeniden insan insana* (27. Basım) [Human to human again (27th edition)]. İstanbul: Remzi Kitabevi
- Çetinkaya, Z. (2011). Identifying turkish pre-service teachers’ views related to communication skills. *Kastamonu Education Journal*, 19(2), pp. 567-576.
- Dilekmen, M., Başçı, Z. and Bektaş, F. (2008) Eğitim fakültesi öğrencilerinin iletişim becerileri [Communication competences of Education faculty students]. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21(2), ss. 223-231.
- Eryaman, M. Y., Kocer, O., Kana, F. & Yagmus Sahin, E. (2013). A Transcendental Phenomenological Study of Teachers' Self-efficacy Experiences. *CADMO: Giornale italiano di Pedagogia sperimentale*. 11(2) 9-33.
- Gökdağ, D. (2010) Etkili iletişim. (Ed. Uğur Demiray). Etkili İletişim. (3. Baskı) [Effective Communication (Ed. Ugur Demiray). Effective Communication (3rd edition)]. Ankara: Pegem Akademi Yayınları, pp. 75-107.
- Katrancı, M. (2014). Pre-service teachers’ self-efficacy perception of their speaking skills. *Bartın University Journal of Faculty of Education*, 3(2), pp. 175-195.
- Katrancı, M. and Melanlıoğlu, D. (2013). An investigation into the validity and reliability of speaking self-efficacy scale for pre-service teachers. *International Journal of Social Science*, 6(6), pp. 651-665.
- Kaya, A. (2014). İletişime giriş: temel kavramlar ve süreçler. (Editör A. Kaya) Kişilerarası İlişkiler ve Etkili İletişim (6. baskı) [Introduction to Communication: fundamental concepts and processes (Editor A. Kaya) Interpersonal relationships and effective Communication (6th edition)]. Ankara: Pegem Akademi Yayıncılık, pp. 1-29.
- Korkut Owen, F. and Bugay, A. (2014). Developing a Communication Skills Scale: Validity and Reliability Studies. *Mersin University Journal of the Faculty of Education*, 10(2), pp. 51- 64.
- Oğuzkan F. (1974). Eğitim terimleri sözlüğü [Dictionnary on Education Terms]. Ankara: Türk Dil Kurumu Yayınları
- Pallant, J. (2016). *SPSS kullanma kılavuzu SPSS ile adım adım veri analizi* (çev. S. Balcı and B. Ahi) [Spss Survival Manual: A step by step guide to data analysis using SPSS (trs. S. Balcı and B. Ahi)]. Ankara: Anı Yayıncılık. (Original book was published in2015).

Ülper, H. ve Bağcı, H. (2012). Self efficacy perceptions of Turkish teacher candidate. *Turkish Studies*, 7(2), pp. 1115-1131.

YÖK (2018) Lisans atlası. [Undergraduate map] <https://yokatlas.yok.gov.tr/lisans-bolum.php?b=10215> Retrieved on 09.08.2018

Instructors' Views on the Assessment and Evaluation of the Speaking Skill in Turkish as a Foreign Language (TFL) Classes

Ahmet Akkayaⁱ

Adıyaman University, Adıyaman, Turkey

Mehmet Yalçın Yılmazⁱⁱ

İstanbul University, İstanbul, Turkey

Gülnur Aydınⁱⁱⁱ

Adnan Menderes University, Aydın, Turkey

Abstract

Speaking is viewed as a skill more often used in communication and interaction in particular. However, the speaking skill is measured in various ways. The aim of this study is, therefore, to determine the views of Turkish as a Foreign Language (TFL) instructors (lecturers and teachers) on measuring and evaluating speaking skills. To this end, the research data were obtained with the help of 51 TFL instructors who volunteered to fill out a semi-structured interview form titled "Instructors' Views on the Assessment and Evaluation of the Speaking Skill in Turkish as a Foreign Language" created as a Google Docs form. The obtained data were then analyzed through content analysis technique, which revealed that the instructors perform their speaking skill assessments on basis of the criteria including grammar rules, pronunciation/ articulation, fluency, vocabulary knowledge, starting/sustaining dialogues, meaning construction, consistency, self-expression, language learning level, level of achieving outcomes, using phrases, style, length of speech, individual differences, exemplification, chronological narration, avoiding repetition, stress-intonation, body language, rate of speech, and effective use of time. It can be concluded that assessing and evaluating the Turkish speaking skill with a rubric to be developed based on these criteria will help minimize any potential rater subjectivities involved in such measurement and evaluation.

Key words: Assessment and evaluation, lecturers, speaking skill, teachers, Turkish as a foreign language (TFL), views.

DOI: 10.29329/ijpe.2018.157.11

ⁱ **Ahmet Akkaya**, Assoc. Prof. Dr., Adıyaman University, Faculty of Education, Department of Turkish Education, Adıyaman/Turkey.

Correspondence: ahmet23akkaya@gmail.com

ⁱⁱ **Mehmet Yalçın Yılmaz**, Assist. Prof. Dr., İstanbul University, Research Institute of Turkology, Department of Turkish Language and Literature. İstanbul/Turkey

ⁱⁱⁱ **Gülnur Aydın**, Assist. Prof. Dr., Aydın Adnan Menderes University, Faculty of Education, Department of Turkish Education, Aydın/Turkey.

Introduction

Each of the language skills is important in itself for foreign language learning. However, beyond just mastering the language rules, since the speaking skill is directly observable during interaction/communication with other people, it must be paid utmost attention, as pointed out by Alperen (1991) that “language is mostly learned by speaking” (p.60). Recognition of the vowels and consonants of a language, vocabulary knowledge level, grammar rules, meaning construction, stress-intonation, and even body language are all directly related to the competence in speaking skills. Asserting that the primary objective of language teaching is ensuring communication, İşısağ and Demirel (2010, p. 193), underscore the speaking skill as the most important skill among all four language skills.

In addition, speaking is a physical and mental process in which a commonly shared and agreed-upon set of signs and sounds turn into meanings and messages in the minds of the interlocutors using them (Erdem, 2013, p. 181). In other words, “speaking is the way of conveying, explaining and expressing emotions, thoughts, and wishes through visual and auditory elements” (Taşer, 2000, p. 27). Whether for native Turkish speakers or for foreigners learning Turkish, “the main purpose of teaching speaking is to enable someone to express his/her feelings and ideas before a person or community with or without preparation” (Temizyürek, 2007, p. 121). However, it is also stated that students find speaking as the most difficult skill to master where they have the slowest progress (Köksal and Dağ-Pestil, 2014, p. 315). It is obvious that TFL learners have serious problems in improving their speaking skill, and some steps need to be taken to remedy the inadequacies they experience.

The collective action required by the globalization has brought certain standards in language teaching, and when measuring and evaluating foreign language competencies, the criteria in "Common European Framework of Reference for Languages" (CEFR), as an international standard focusing on communicative approach, should be taken into account (Demirel, 2004; Köse, 2007; Özdemir, 2011; Yağmur-Şahin and Aydın, 2014). This can also lay the groundwork for national partnerships as well as internationalization. Indeed, an analysis of the TFL activities in Turkey reveals that the current assessment instruments and practices vary quite extensively. Increasing the efficiency of the instructional process and the quality of learning requires taking time to implement systematic assessment.

In education, *assessment* is defined as “observing a quality and expressing the result of the observation with numbers or other symbols” (Turgut, 1986, p. 3); and *evaluation* is described as “judging a student’s success by comparing measurements against a criterion or criteria” (Tan, 2005, p. 180). Kavcar, Oğuzkan and Sever (2004, p. 103) emphasize that assessment and evaluation aim not only to give grades, but also to identify and remedy students’ shortcomings. Thus, language teaching assessment should create meaningful feedback to determine the level of instructional attainment, that is, to find out whether the targeted learning outcomes have been achieved. Written tests, short-answer tests, pairing tests, multiple-choice tests and oral exams can be used for this purpose. According to Demir (2015, p. 323), oral exams are the ideal measurement tools that can be used to assess general language or speaking subskills. Such exams, which can be carried out in the form of independent speaking, and dialogues or interviews with the examiner, must be planned well when measuring the TFL speaking skill. Göçer (2014) also states that cognitive, emotional and kinetic outcomes must be taken into account in the evaluation of the speaking skill.

The CEFR classifies the speaking skill into two types: participation in a conversation and performing uninterrupted speech. Correspondingly, Köse (2008, p. 40) categorizes the oral exams as dialogues and verbal expressions. The CEFR (Telc, 2013, p. 33) also focuses on variety/domain, accuracy, fluency, interaction and consistency to assess oral performance. However, our analysis of the related literature has revealed that some studies (Çerçi, 2015; Hamzadayı and Dölek, 2017) focus on assessing Turkish native speakers’ speaking skill. Although some research on TFL learners’ speaking skill (İşısağ and Demirel, 2010; Sallabaş, 2012a; Sallabaş, 2012b; Göçer, 2015a; Kurt, 2017;

Kurudayıoğlu and Güngör, 2017) exists, the number of studies regarding the assessment of this skill is very limited, two of which focus on scale development (Aksu-Kurtoğlu and Eken, 2011; Arıcı, Sallabaş and Başaran, 2017), and one (Göçer, 2015b) makes theoretical suggestions only. By determining a more rigorous criteria set to assess TFL speaking, the current study aims to make a contribution by filling this extant gap in the literature.

Purpose of the research

This study aims to find out the views of TFL instructors (lecturers and teachers), about the assessment and evaluation of the speaking skill. As part of this general objective, answers to the following research questions were sought:

1. Do the instructors perform assessment and evaluation of the speaking skill?
2. How much time do instructors spend to assess and evaluate the speaking skill?
3. What are the criteria instructors use to assess and evaluate the speaking skill?
4. According to instructors, what are the things to be aware of when assessing and evaluating the speaking skill?
5. What are the problems encountered by instructors in assessing and evaluating the speaking skill?

Method

Research design

In line with the nature of the research purpose, this study was designed as a *descriptive qualitative study*. “Qualitative research is an approach that aims to create theories and to investigate and understand social phenomena in the environment they are part of. ... This requires the researcher to be flexible, to reshape the research process according to collected information, and to follow an approach that is based on the research design and an inductive approach in analyzing the collected data” (Yıldırım, 1999, p. 10). Qualitative descriptive studies are quite helpful in elaborating on the multivariate assessments of the sample within its real-life context. In the current study, the activities and practices for "evaluating and assessing learners' speaking skills in Turkish as a foreign language" are described under sub-headings classified according to the questions in the forms filled by the instructors (lecturers and teachers).

Participants

This study was carried out with the participation of 51 TFL instructors from various organizations between August 4 and 10, 2018, who completed a Google Docs form via web-based virtual office. In selecting the research participants, *convenience sampling* as a purposive sampling method was used. In convenience sampling, the researcher identifies the sample to be studied by considering variables such as cost, time and easy accessibility (Cohen, Manion & Morrison, 2007, p. 109). The characteristics of the volunteering instructors contributing to the research are as follows:

Table 1. Characteristics of the participants

		f	%
Gender	Female	26	50.98
	Male	25	49.02
	Total	51	100
Age group	22-25	2	3.92
	26-30	24	47.06
	31-35	13	25.49
	36-40	7	13.73
	41-45	4	7.84
	46+	1	1.96
	Total	51	100
Work Organization	Adıyaman University TÖMER	5	9.80
	Aydın Adnan Menderes University TÖMER	2	3.92
	İstanbul Aydın University TÖMER	1	1.96
	Çanakkale Onsekiz Mart University TÖMER	1	1.96
	Harran University TÖMER	1	1.96
	İstanbul University Language Center	20	39.22
	Kızılay Education Camp	2	3.92
	Ministry of National Education (MEB)	1	1.96
	Nevşehir Hacı Bektaş Veli University TÖMER	1	1.96
	RET International	9	17.65
	UNICEF	1	1.96
	Yunus Emre Institute	1	1.96
	Presidency for Turks Abroad and Related Communities	2	3.92
	Yuva Association	4	7.84
	Total	51	100
Experience in teaching TFL	1-5 years	34	66.66
	6-10 years	15	29.41
	11-15 years	2	3.92
	Total	51	100

When Table 1 is examined, it can be seen that 26 of the participants are female and 25 of them are male. Two of these are aged 22-25, 24 are in the 26-30 age group, 13 are in the 31-35 age group, 7 are in the 36-40 age group, 4 are in the 41-45 age group, and one is 46+ years old. Of the participants from 14 different workplaces, 34 reported that they have been teaching Turkish as a foreign language between 1 and 5 years, 15 of them 6-10 years, and two reported 11-15 years of teaching experience. Patton (2014, p. 244) states that there is no rule for determining the sample size in qualitative research, and that the sample size depends on what the researcher aims to know, the purpose of the research, what is on the agenda, what is useful, what is credible and what can be done with the time and resources available.

Our study required that the participants included in the survey had to have taken part in the TFL exams before they could make accurate assessments. The information about the exams that the participants reported to have played a role in are as follows:

Table 2. The Turkish tests in which the participants played a role

Test type	f
Placement test	32
Level completion (achievement) test	48
Turkish proficiency test	37
End-of-unit tests	31
Quizzes	36

Looking at Table 2, 32 participants can be seen to have involved in the preparation and administration of a placement test, 48 in a level completion test, 37 in a Turkish proficiency test, 31 in an end-of-unit test, and 36 in quizzes.

Data Collection

In the present study, a semi-structured interview form prepared on the Google Docs web-based virtual office was used as the data collection tool. In studies carried out in the field of social sciences, especially when considering limitations on time and material resources, the ability to collect data from an online application offers significant advantages for researchers.

During the creation of the interview form, first, the relevant literature was reviewed, and then aligning it with the theoretical framework, a draft form with two subsections was created. The form was then revised in the light of the feedback given by three experts who are specialized in TFL. Finally, a pilot study was conducted with six volunteer instructors to finalize the form, increasing its content validity.

The first section of the form titled “Instructors’ Views on the Assessment and Evaluation of the Speaking Skill in Turkish as a Foreign Language” includes demographical information about the participants (*gender, age, workplace organization, TFL teaching experience and involvement in the preparation and administration of TFL tests*), and the second section covers two yes/no questions regarding the views and comments on the assessment and evaluation of TFL speaking skill (*whether or not the participant was involved in speaking skill assessment and evaluation, and if the response was negative, why such an assessment and evaluation was not performed*), and four open-ended questions (*the time allotted for the assessment and evaluation of the speaking skill, by what criteria the participants scored student performance, what needs to be paid attention during the assessment, the problems encountered in the assessment and evaluation*). The form was then sent to the TFL instructors between August 4 and 10, 2018, and thus the research data were obtained.

Data analysis

The data obtained from the research were analyzed by content analysis. “Content analysis is defined as a systematic, replicable technique in which certain words of a text are summarized with smaller content categories using codes based on certain rules” (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2012, p. 240). Such content analysis includes the steps of (i) coding the data, (ii) identifying emerging themes, (iii) organizing the codes and the themes, (iv) describing and interpreting the results (Yıldırım and Şimşek, 2006). Accordingly, the interview forms were carefully analyzed, and various meaningful statements were identified and coded. This process was independently performed for each form by each of the three researchers. In this way, by identifying and evaluating the items on which the researchers of the study agreed and disagreed, inter-rater reliability was ensured. The formula ($\text{Reliability} = \frac{\text{agreement}}{[\text{agreement} + \text{disagreement}]} \times 100$) proposed by Miles & Huberman (1994) was used to calculate the coding reliability of the researchers and inter-rater reliability was found to be 87%. Since a rate of 70% and higher inter-rater reliability is generally accepted as adequate, the coding reliability in this study can be viewed as quite high. In the next step, categories/themes were identified and classified according to the similarities or differences among the previously identified codes. Each category was tabulated with the frequency values, and the Tables were further supported by quotations taken directly from the views reported by the research participants.

Results

Firstly, the instructors were asked whether or not they had participated in the assessment and evaluation of the speaking skill as part of TFL test preparation and/or administration.

Table 3. Instructors' experience in speaking skill assessment and evaluation

Assessment and evaluation	f
Yes	50
No	1
Total	51

Table 3 shows that only one of the 51 instructors participating in the study (Participant 15) stated that she did not perform assessment and evaluation of the speaking skill. In the justification (for why not) part of this question, the participant reported that this was because such assessment was “*a challenging process*”. The findings of the study were thus based on the data from the remaining 50 participants who reported having performed speaking skill assessment and evaluation.

Instructors reported the amount of time they spend on measuring and evaluating the speaking skill in the following way:

Table 4. The time spent by the instructors for speaking skill assessment and evaluation

Duration/process	Participants	f
1-5 min.	P4, P8, P23, P27, P28, P29, P32, P39, P40, P51	10
6-10 min.	P2, P3, P12, P17, P30, P33, P34, P35, P36, P38, P41, P42, P43, P47, P48, P49	16
11-20 min.	P1, P5, P6, P7, P9, P10, P11, P13, P14, P18, P22, P24, P44, P45, P50	15
30 min.	P21	1
60 min.	P26, P31, P37, P46	4
Process-oriented	P19, P20, P25	3
Total		49

Table 4 demonstrates that only one (Participant 16) among the 50 instructors failed to indicate the amount of time allowed for assessing the speaking skill, and the remaining 49 participants gave answers as shown in the Table. Thus, of these instructors, 10 spend 1-5 minutes, 16 of them 6-10 minutes, 15 spend 11-20 minutes, 1 spends 30 minutes, 4 spend 60 minutes, and 3 have a process-oriented approach. Some answers given by the instructors are as follows:

“I spend 10 minutes per student” (P3)

“A minimum of 15 minutes for each student...” (P5)

“Two hours a day...” (P19)

“5 minutes for each student...” (P23)

“Half an hour.” (P21)

“1 hour.” (P46)

When the data obtained through the open-ended questions in the data collection form of the study are examined, it is obvious that since most of the instructors reported multiple views on a certain question item, an instructor is shown as a participant for several items on a Table. Thus, the criteria reported to be applied by the instructors for speaking skill assessment and evaluation are as follows:

Table 5. The criteria used by instructors for speaking skill assessment and evaluation

Criteria	Participants	f
<i>Grammar rules</i>	P2, P4, P7, P9, P10, P12, P13, P16, P19, P20, P22, P24, P28, P29,	32
<i>Pronunciation / Articulation</i>	P2, P4, P5, P6, P8, P10, P12, P13, P16, P20, P22, P24, P28, P29, P32,	27
<i>Fluency</i>	P2, P4, P6, P7, P12, P13, P28, P32, P33, P34, P35, P37, P38, P39,	24
<i>Vocabulary knowledge</i>	P2, P4, P7, P8, P10, P11, P13, P22, P28, P33, P38, P39, P40, P41,	22
<i>Meaning construction</i>	P2, P5, P6, P11, P12, P13, P22, P23, P26, P28, P37, P39, P40, P42,	15
<i>Starting/sustaining dialogues</i>	P1, P2, P4, P10, P14, P23, P33, P34, P38, P41, P43, P44, P47, P49.	14
<i>Consistency</i>	P4, P28, P34, P35, P39, P41, P43, P44, P47, P48, P49, P50	12
<i>Self-expression</i>	P1, P5, P6, P8, P9, P14, P23, P27, P29, P31, P37, P46	12
<i>Language proficiency level</i>	P21, P24, P44, P48, P50, P51	6
<i>Level of achieving outcomes</i>	P3, P18	2
<i>Using phrases</i>	P24, P25	2
<i>Style</i>	P25, P49	2
<i>Length of speech</i>	P42	1
<i>Individual differences</i>	P3	1
<i>Exemplification</i>	P24	1
<i>Chronological narration</i>	P26	1
<i>Avoiding repetition</i>	P26	1
<i>Stress-intonation</i>	P10	1
<i>Body language</i>	P10	1
<i>Rate of speech</i>	P46	1
<i>Effective use of time</i>	P49	1
<i>Total</i>		179

When the instructors' criteria for speaking assessment are analyzed, 47 instructors were found to have provided valid responses, and three instructors (P17, P30, P36) were found to have given invalid answers. Regarding frequency values, the instructors mostly emphasized the "grammar rules" (f: 32), "pronunciation/ articulation" (f: 27), "fluency" (f: 24), "vocabulary knowledge" (f: 22), "starting/sustaining dialogues" (f: 14), "meaning construction" (f: 15), "consistency" (f: 12), "self-expression" (f: 12) and "language proficiency" (f: 6) items. Regarding the high-frequency items in particular, some answers given by the instructors are as follows:

"I score according to some criteria such as correct use of the grammar, elocution, fluency, sustaining a dialogue, vocabulary knowledge, and listening comprehension." (P2)

"Listening comprehension, ability to express self, pronunciation." (P6)

"Fluency, consistency, a high level of vocabulary knowledge, using the labguage accurately, fluent speaking, correct pronunciation, giving logical answers to the questions asked." (P28)

"The words used, meaning and context framework, fluency, pronunciation, consistency, language knowledge." (P39)

"Grammar knowledge, vocabulary knowledge, fluency, ability to communicate, consistency in pronunciation..." (P41)

"First of all, I take into account which level (language structures in the proficiency level) the student is at." (P21)

"Self-expression, grammar, fluent speaking" (P46)

In addition to searching for the criteria used by the TFL instructors in the speaking exams, the answer to the question “What are the things to be aware of when assessing and evaluating the speaking skill?” was also sought, and determining the ideal assessment and evaluation according to the instructors was another aim of the study. The views given by the instructors on this item are as follows:

Table 6. Instructor views regarding the things to be aware of when assessing and evaluating the speaking skill

Views	Participants	f
<i>Grammar rules</i>	P2, P5, P9, P10, P13, P29, P32, P34, P35, P37, P40, P41,	19
<i>Proficiency level</i>	P3, P4, P19, P21, P22, P24, P28, P32, P34, P35, P38, P39,	18
<i>Fluency</i>	P5, P6, P10, P12, P13, P28, P33, P35, P37, P39, P41, P42,	17
<i>Vocabulary knowledge</i>	P2, P8, P10, P39, P40, P41, P42, P43, P45, P48, P49, P50,	13
<i>Meaning construction</i>	P2, P5, P6, P11, P12, P13, P17, P34, P35, P37, P39, P40,	13
<i>Pronunciation</i>	P5, P6, P12, P13, P14, P16, P28, P29, P33, P39, P40, P42	12
<i>Self-expression</i>	P5, P6, P9, P11, P29, P33	6
<i>Student's test anxiety</i>	P2, P21, P23, P24, P27, P38	6
<i>Starting/sustaining dialogues</i>	P4, P21, P41, P43, P49	5
<i>The structural, contextual, and gradual</i>	P1, P21, P22, P24, P28, P38	5
<i>Individual differences</i>	P1, P3, P19, P38	4
<i>Giving enough time</i>	P1, P7, P28, P49	4
<i>Behaviors of the examiner</i>	P1, P28, P31	3
<i>Consistency</i>	P28, P49, P50	3
<i>Scoring according to a specific rubric</i>	P24, P28	2
<i>Student's approach to language learning</i>	P25, P48	2
<i>Rate of speech</i>	P14, P48	2
<i>Visual reading</i>	P30, P36	2
<i>Length of speech</i>	P27, P42	2
<i>Avoiding repetition</i>	P26	1
<i>Prepared-unprepared speech</i>	P2	1
<i>Intelligibility</i>	P35	1
<i>Level of achieving outcomes</i>	P3	1
<i>Body language</i>	P10	1
<i>Characteristics of the test environment</i>	P23	1
<i>Style</i>	P49	1
<i>Stress and intonation</i>	P14	1
<i>Free speech</i>	P29	1
<i>Total</i>		147

46 instructors provided their views on the question of what needs to be paid attention during the assessment and evaluation of the speaking skill. The remaining 3 instructors (P15, P20, P44) did not answer this question, and 1 instructor (P18) gave an invalid answer. In terms of frequency values, the instructors highlighted the “grammar rules” (f: 19), “language proficiency” (f: 18), “fluency” (f: 17), “vocabulary knowledge” (f: 13), “meaning construction” (f: 13), “pronunciation” (f: 12), “self-expression” (f: 6), “student’s test anxiety” (f: 6), “starting/sustaining dialogues” (f: 5), “formal, contextual, gradual character of questions” (f: 5), “individual differences” (f: 4) and “giving enough time” (f: 4) items in their responses. Especially concerning the high-frequency items, some responses provided by the instructors are as follows:

“Proper sentence construction, use of words, and body language are important. Also, it should be a bit smoother without making intermittent speaking by making sounds like hmmm, erm...” (P10)

“Questions need to be based on dialogues. For this, speaking subjects need to be taken from topics that students are interested in. However, students should feel comfortable and not feel under pressure. Most importantly, whatever level of speaking skill is to be measured while preparing the questions, language structures outside of that level should not be included. ” (P21)

“Comprehension and self-expression, making sentences that are proper for the structure of the Turkish language, using the affixes of Turkish as an agglutinative language correctly, pronunciation, speaking fluently and accurately.” (P5)

“Can he/she pronounce the words correctly? Is his/her answer relevant? Is there continuity? Does he/she use vocabulary and grammar that are proper to his/her proficiency level? These should be noted. ” (P40)

“Whether there are communication problems and (the scope of) vocabulary knowledge should be paid attention to.” (P43)

“Negative situations arising from the personality of the assessed student, test anxiety, incompatibility of the native language phonetics with Turkish, or from his/her own speech impairments (stutter, lisp etc.) must be noted during the assessment. These factors should not be negatively reflected in the assessment. Care should be taken to ensure that students are asked level-appropriate questions that progress from easier to harder to help alleviate their test anxiety.” (P38)

Instructors' views regarding the problems they experienced during the speaking skill assessment and evaluation are as follows:

Table 7. Problems experienced by instructors during the speaking skill assessment and evaluation

Views		Participants	f
Learner-related problems	Test anxiety	P4, P7, P8, P18, P21, P23, P24, P27, P28, P29, P31, P34, P35, P37, P39, P41, P48, P49, P50, P51	20
	Pronunciation inadequacy	P1, P5, P6, P9, P19, P39, P40, P42, P43, P48	10
	Vocabulary knowledge inadequacy	P5, P6, P11, P16, P35, P39	6
	Memorized speaking	P24, P25, P35, P39, P40, P41	6
	Giving short answers	P23, P24, P27, P28, P39	5
	Grammar inadequacy	P5, P7, P35, P46	4
	Failure to build meaning	P5, P6, P14, P26	4
	Failure to express self	P5, P6, P14	3
	Failure to adjust voice tone	P14, P23, P48	3
	Individual differences	P5, P43, P49	3
	Failure to speak fluently	P5, P39	2
	Remaining silent/irresponsive	P23, P28	2
	Failure to participate in dialogues	P34, P48	2
	Using informal language	P40	1
	Fatigue resulting from speaking being the final skill being measured	P4	1
	Speaking Turkish out of school	P29	1
	Failure to speak in a logical order	P26	1
	Failure to adjust the rate of speech	P14	1
	Failure to use body language	P14	1
	Total		76
Instructor- and learning environment-related problems	Lack of any standard/objective measurement instrument	P2, P3, P45	3
	Inadequacy in instructors' knowledge and behavior	P3, P12	2
	Inadequacy of speaking courses and activities	P2, P37	2
	Overcrowded classrooms	P29, P38	2
	Inadequacies in question/subject quality	P34, P49	2
	Lack of standardization in test practices	P3	1
	Teaching students at different language levels together	P29	1
	Inadequacy of time devoted to assessment	P32	1

<i>and evaluation</i>		
<i>Undeservedly transferring students to one higher level despite their failure</i>	P49	1
<i>Total</i>		15

Regarding the problems they encountered during the speaking skill assessment and evaluation, six instructors (P13, P15, P17, P20, P22, P44) did not respond, one instructor (P33) gave an invalid answer, and three instructors (P10, P30, P36) reported that they did not encounter any problems. The remaining 40 instructors' views were analyzed in two parts: "learner-related problems" and "instructor- and learning environment-related problems." When considered in terms of frequency values, in the "learner-related problems" part, instructors emphasized the "test anxiety" (f: 20), "pronunciation inadequacy" (f: 10), "vocabulary knowledge inadequacy" (f: 6), "memorized speaking" (f: 6), "giving short answers" (f: 5), "grammar inadequacy" (f: 4) and "failure to build meaning" (f:4) items. As for the "instructor- and learning environment-related problems" section, the instructors underlined the "lack of standard/ objective measurement instruments" (f: 3), "inadequacy in instructors' knowledge and behavior" (f: 2), "inadequacy of speaking courses and activities" (f: 2), "overcrowded classrooms" (f: 2) and "inadequacies in question/subject quality" (f: 2) questionnaire items. Some answers from the instructors, especially about the high frequency items, can be exemplified as follows:

"When students make mistakes, they lose their motivation, they do not use the tenses and the topics taught properly. " (P7)

"Students feel pressured and accordingly students do not speak comfortably." (P21)

"Fluency and pronunciation problems, as well as not wanting to say complicated sentences, not being able to speak according to the context, preferring simple words and phrases, being hesitant to talk due to psychological reasons, students' reluctance to speak." (P39)

"The basic problem is that the speaking skills of the students are weak according to the level they are in, that they get overly nervous when they are speaking with a different teacher and they do not talk. They answer every question with a short answer like "yes" or "no." They memorize answers related to the most common topics for the speaking exam (money or health, harms and benefits of internet usage, etc.)" (P24)

"Unavailability of adequate measuring instruments, not having standard exams, lecturers' not being interested or concerned about measuring the speaking skill, not giving adequate assessment training to the lecturers." (P3)

"Overcrowded classrooms, having mixed-level students together in the same classroom, students' reluctance to talk in the presence of their classmates, students' preference for keeping silent due to their fear of making mistakes, students' not speaking Turkish much outside the school and their lack of exposure to Turkish." (P29)

"Students' anxiety, the questions asked to the students not being interesting to them, students' failure in their own native languages." (P49)

Discussion and Conclusion

The increasing internationalization, globalization along with the growing awareness of different cultures has made communication skills much more important than ever before, and communication is primarily performed through putting speaking skills into use. In addition to performing regular course activities by following particular syllabi, effective teaching of such speaking skills depends on determining the level of achievement of the targeted outcomes as well as eliminating the identified deficiencies, which requires accurate assessment and evaluation.

Of the 51 instructors, 50 reported performing assessment and evaluation by particularly focusing on the speaking skill, and one instructor reported not testing speaking because it is “a challenging process”. Based on their research on the TFL curriculum, Kan, Sülüşoğlu and Demirel (2013) report that lecturers and students agree that skill-specific tests are required to measure each language skill separately, indicating a consensus and supporting the instructor views in our own study.

When the time that the instructors devoted to measuring-evaluating the speaking skill was examined, it was found that 16 instructors spent 6-10 minutes, 15 instructors 11-20 minutes, 10 instructors 1-5 minutes, and 8 instructors spent more than 20 minutes on the speaking exam. The answers to the longer-term or process-oriented assessment were limited. Çerçi (2015) found that Turkish teachers generally agreed that the time allowed for measuring the speaking skill was insufficient. Göçer (2015b) points out the necessity of using the process approach in evaluating the speaking skill. However, there is a similarity between the fact that there is a 20-minute limit for speaking skills in examinations where English proficiency is measured such as TOEFL (<https://www.ets.org/tr/toefl/ibt/about/content>) and the common view expressed by the instructors that the time given for speaking skill assessment in the Turkish proficiency tests should not be more than 20 minutes.

The criteria used by the instructors in performing speaking skill assessment and evaluation include “grammar rules”, “pronunciation/ articulation”, “fluency”, “vocabulary knowledge”, “starting/sustaining dialogues”, “meaning construction”, “consistency”, “self-expression”, “language proficiency”, “level of achieving outcomes”, “using phrases, “style”, “length of speech”, “individual differences”, “exemplification”, “chronological narration”, “avoiding repetition”, “stress-intonation”, “body language”, “rate of speech”, and “effective use of time.” Arhan (2007) found that nearly all of the Turkish teachers were doing “assessment and evaluation” of speaking subskills with non-scientific criteria. Hamzadayı and Dölek (2017) found that Turkish teachers paid more attention to the speaking outcomes that required low-level cognitive processing such as gesture-mimicry, voice adjustment, pronunciation, and correct and proper use of words. However, the CEFR (2013) focuses on variety/domain, accuracy, fluency, interaction and consistency to assess the oral performance. It is clear that there is an agreement between these instructor views and the CEFR.

Regarding what they should be careful about when assessing the speaking skill, the instructors mostly focused on “grammar rules”, “language proficiency”, “fluency”, “vocabulary knowledge”, “meaning construction”, “pronunciation”, “self-expression”, “student’s test anxiety”, “starting/sustaining dialogues”, “formal, contextual, gradual character of questions”, “individual differences” and “giving enough time.” It is important to standardize these views, which are quite diverse in terms of the criteria they use in measuring and evaluating speaking skills as well as the points to be considered, so that a consensus can be reached. To do so, the Common European Framework of Reference for Languages (CEFR) can serve as starting point. Köse (2007) emphasized that the CEFR enriches the curriculum and assessment and evaluation methods and makes them more effective in terms of ensuring student achievement and achieving the specified goals. İşisağ and Demirel (2010) concluded that using the CEFR is effective in achieving a positive attitude toward speaking and maintaining success. Göçer (2015a) further stressed the importance of preparing an experiential learning environment for Turkish learners to allow them to learn by doing and thus helping them speak successfully by effectively using the speaking skill, and underscored the benefits to be gained from communicative and task-based language learning practices in achieving targeted speaking skill outcomes.

Problems experienced by the instructors in assessment and evaluation related to speaking skills identified some “problems with learners” and “problems with the instructor and learning environment”. As for the problems related to the learners, the instructors especially emphasized the “student test anxiety”, followed by “pronunciation inadequacy”, “vocabulary knowledge inadequacy”, “memorized speaking”, “short answer” and “grammar inadequacy”. As regards the problems with the instructor and learning environment, “lack of any standard/ objective measurement instruments”, “inadequacy in instructors’ knowledge and behavior”, “inadequacy of speaking courses and activities”,

“high number of students” and “inadequacies in question/subject quality” were highlighted. Suggesting that scoring is an important challenge in oral tests, Demir (2015) points out that scoring and scorer bias is highly likely in testing speaking, and emphasizes the need to use detailed rubric or well-described criteria to minimize the risk of such bias. Köksal and Dağ-Pestil (2014) emphasize the importance of language as true to life in speaking classes and the connection of subjects to the students and their lives.

Suggestions

Based on the findings of the current study, the following suggestions can be made:

- What is missing in this study focusing on TFL instructors’ views on the assessment and evaluation of the speaking skill, is not including a research question on what type of assessment tools the instructors use. Other researchers can design a future study that fills this gap in our study.
- In the assessment of TFL speaking subskills, detailed criteria can be defined by field experts based on the language level descriptors of the CEFR, which then can be used at the national level.
- Instructors’ shortcomings in speaking skill assessment and evaluation can be solved by various pre-service and in-service training courses.
- A rubric can be developed by revising and arranging the items in the findings identified by the current study.

References

- Aksu-Kurtoğlu, Ö. & Eken, N. T. (2011). Development of an analytical rubric to determine the ability of Turkish conversational speech at A2 level. Leyla Uzun, Ümit Bozkurt (Ed.). In *Theoretical and applied research on Turkish language teaching* (pp. 533-544). Essen: Die Blue Eule.
- Alperen, N. (1991). Turkish eloquence, reading, and writing teaching guide. İstanbul: MEB.
- Arhan, S. (2007). *Speaking education at the second level of elementary schools according to teachers' opinions* (Unpublished master’s thesis). Gazi University Institute of Educational Sciences, Ankara.
- Arıcı, A. F., Sallabaş, M. E. & Başaran M. (2017). B2 level speaking skills of Turkish as a foreign language learners: A rubric development study. *International Online Journal of Educational Sciences*, 9(2), 516-526.
- Büyüköztürk, Ş., Çakmak, E., Akgün, Ö., Karadeniz, Ş. & Demirel F. (2012). *Scientific research methods* (11th Edition). Ankara: Pegem Akademi.
- Cohen, L., Manion, L. & Morrison, K. (2007). *Research methods in education* (6th Edition). London: Routledge.
- Çerçi, A. (2015). Opinions of Turkish teachers on the assessment and evaluation of students' speaking skills. *International Social and Educational Sciences Journal*, 2(4), 186-204.

- Demir, E. (2015). Exam preparation in Turkish as a foreign language teaching. Arif Sariçoban (Ed.) In *Teaching Turkish as a foreign language methodology* (pp. 288-331). Ankara: Pegem Akademi.
- Demirel, Ö. (2004). *Foreign language teaching, language passport, language biography, language file*. Ankara: Pegem Akademi.
- Erdem, İ. (2013). Speaking education. Abdurrahman Güzel, Halit Karatay (Ed.), In *Turkish teaching manual* (pp. 181-220). Ankara: Pegem Akademi.
- Göçer, A. (2014). *Assessment and evaluation in Turkish education*. Ankara: Pegem Akademi.
- Göçer, A. (2015a). Equipping learners with the ability to speak Turkish as a foreign language. *Trakya University Social Sciences Journal*, 17(2), 21-36.
- Göçer, A. (2015b). Determining the development status of speaking skills in teaching Turkish as a foreign language. *Erzincan University Social Sciences Institute Journal*, ÖS-II, 47-56.
- Hamzadayı, E. & Dölek, O. (2017). Approaches of Turkish language teachers to evaluating speaking skills. *Journal of Language Education and Research*, 3(3), 135-151.
- İşisağ, K. U. & Demirel, Ö. (2010). Use of the Common European Framework of Reference for languages in the development of speaking skills. *Education and Science*, 35(156), 190-204.
- Kan, M. O., Sülüsoğlu, B. & Demirel, Ö. (2013). Evaluation of the views of students and lecturers about Turkish curriculum as a foreign language. *Mustafa Kemal University Social Sciences Institute Journal*, 10(24), 29-42.
- Kavcar, C., Oğuzkan, F. & Sever, S. (2004). *Teaching Turkish* (7th Edition). Ankara: Engin.
- Köksal, D. & Dağ-Pestil, A. (2014). Teaching Turkish as a foreign language speaking. Abdullah Şahin (Ed.), In *Teaching Turkish as a foreign language* (pp. 294-316). Ankara: Pegem Akademi.
- Köse, D. (2007). The effect of teaching Turkish in accordance with the CEFR on success and attitude. *Manas University Social Sciences Journal*, (18), 107-118.
- Köse, D. (2008). Preparation and administration of exams in Turkish language teaching. *Language Journal*, (139), 36-47.
- Kurt, B. (2017). Turkic students' speaking in Turkey Turkish analysis according to the "conversational skills assessment scale": The Gagauz sample. *Journal of History Culture and Art Research*, 6(2), 358-384.
- Kurudayıoğlu, M. & Güngör, H. (2017). An analysis of the speech self-efficacy of Turkish language learners by various variables. *International Journal of Turkish Literature Culture Education*, 6(2), 1105-1121.
- Miles, B. M. & Huberman, A. M. (1994). *Qualitative data analysis*. London: Sage.
- Özdemir, O. (2011). A study on the application of CEFR for Languages at B1 level in the teaching of Turkish as a foreign language. *Journal of Turkish Language Education and Teaching Research*, (1), 234-245.
- Patton, M. Q. (2014). *Qualitative research and evaluation methods* (Translation Editors: Mesut Bütün, Selçuk Beşir Demir). Ankara: Pegem Akademi.

- Sallabaş, M. E. (2012a). Evaluation of the speech self-efficacy of those who learn Turkish as a foreign language. *Turkish Journal of Social Research*, 16(2), 269-290.
- Sallabaş, M. E. (2012b). Evaluation of the speaking anxiety of those who learn Turkish as a foreign language. *Turkish Studies International Periodical for the Languages, Literature and History of Turkish or Turkic*, 7(3), 2199-2218.
- Tan, Ş. (2005). *Planning and evaluation of teaching*. Ankara: Pegem Akademi.
- Taşer, S. (2000). *Speaking training*. İstanbul: Papirüs.
- Telc Language Tests (2013). *Common European Framework of Reference for Languages* (Second Edition). Frankfurt: telc GmbH. (retrieved from https://www.telc.net/fileadmin/user_upload/Publikationen/Diller_iain_Avrupa_Ortak_oneriler_AEeraevesi.pdf on 11.06.2018).
- Temizyürek, F. (2007). Developing speaking skills at the second level of primary education. *Ankara University Journal of Educational Sciences Faculty*, 40(2), 113-131.
- TOEFL IBT Examination Content (retrieved from <https://www.ets.org/tr/toefl/ibt/about/content> on 28.06.2018).
- Turgut, F. (1986). *Assessment and evaluation methods in education*. Ankara: Saydam.
- Yağmur-Şahin, E. & Aydın, G. (2014). Common European Framework of Reference for Languages. Abdullah Şahin (Ed.), In *Teaching Turkish as a foreign language* (pp. 455-472). Ankara: Pegem Akademi.
- Yıldırım, A. (1999). Basic characteristics of qualitative research methods and their importance in educational research. *Education and Science*, 23(112), 7-17.
- Yıldırım, A. & Şimşek, H. (2006). *Qualitative research methods in social sciences*. Ankara: Seçkin.

The Effects of Q Matrix Misspecification on Item and Model Fit

Seçil Ömür Sünbülⁱ
Mersin University

Semih Aşireⁱⁱ
Mersin University

Abstract

In this study it was aimed to evaluate the effects of various factors such as sample sizes, percentage of misfit items in the test and item quality (item discrimination) on item and model fit in case of misspecification of Q matrix. Data were generated in accordance with DINA model. Q matrix was specified for 4 attributes and 15 items. While data were generated, sample sizes as 1000, 2000, 4000, s and g parameters as low and high discrimination index were manipulated. Three different misspecified Q matrix (overspecified, underspecified and mixed) was developed considering the percentage of misfit items (%20 and %40). In the study, S-X2 was used as item fit statistics. Furthermore absolute (abs(fcor), max(X2)) and relative (-2 log-likelihood, Akaike's information criterion (AIC) and Bayesian information criterion (BIC)) model fit statistics were used. Investigating the results obtained from this simulation study, it was concluded that S-X2 was sufficient to detect misfit items. When the percentage of misfit items in the test was much or Q matrix was both underspecified and overspecified, the correct detection of both abs(fcor) and max(X2) statistics was approximately 1 or 1. In addition, the correct detection rates of both statistics was high under other conditions, too. AIC and BIC were successful to detect model misfit in the cases where the Q matrix underspecified, whereas, they were failed detect model misfit for other cases. It can be said that the performance of BIC was mostly better than other relative model fit statistics to detect model misfit.

Key Words: Cognitive diagnostic assessment, item fit, model fit, misspecification of Q matrix

DOI: 10.29329/ijpe.2018.157.12

ⁱ Seçil Ömür Sünbül, Assist. Prof. Dr., Mersin University, Measurement and Evaluation at Education, Mersin/Turkey.

ⁱⁱ Semih Aşire, Mersin University, Science of Education, Measurement and Evaluation at Education, Mersin/Turkey.

Correspondence: ahmet23akkaya@gmail.com

Introduction

Cognitive Diagnostic Models (CDMs) are latent discrete models which enable to recognize the presence (mastery) or absence (nonmastery) of many skills or processes which are required to solve the problem in a test (de la Torre, 2009). Generally, CDM put on the attributes and latent skills which the examinee must have to respond the item correctly (DiBello, Roussos, & Stout, 2007; Rupp & Templin, 2008). Attributes refer to various latent characteristics such as cognitive processes, skills (Dimitrov & Atanasov, 2012).

The DINA Model (deterministic-input, nosiy-and-gate) is the most common and known model of CDM. The DINA model is a non-complementary and has a conjunctive condensation rule (Rupp, Templin, & Henson, 2010). In the DINA model, examinees are classified into two different mastery classes which the examinee masters the all attributes and examinee does not masters at least one required attribute for an item. Examinee is deemed sufficient if only he has mastered all attributes which are specified for an item in Q matrix (Rupp, Templin, & Henson, 2010). However, it is assumed that the examinee will give wrong responses to the item when examinee has not mastered at least one required attribute.

Equation of DINA model has three basic components (Rupp, Templin, & Henson, 2010). The first component is latent variable (η_{ic}) which is defined for item i and examinees in latent class c . This latent variable indicates that whether examinees in latent class c have mastered ($\eta_{ic} = 1$) all attributes for item i or not ($\eta_{ic} = 0$)

$$\eta_{ic} = \prod_{k=1}^K \alpha_{ck}^{q_{ik}} \quad (1)$$

The examinees with $\eta_{ic} = 1$ will give correct response to an item as long as there is no slipping. For this reason, the probability of giving correct response to the item equals to probability of not slipping ($1 - s_i$). If $\eta_{ic} = 0$, examinees will give incorrect response to the item, therefore, the probability of giving correct response to the item will equal to guessing parameter. The probability that examinees in latent class c respond the item i correctly is given in Equation 2

$$\pi_{ic} = P(X_{ic} = 1 | \eta_{ic}) = (1 - s_i)^{\eta_{ic}} g_i^{1-\eta_{ic}} \quad (2)$$

If the examinee has mastered all required attribute for the item, $\eta_{ic} = 1$. Then, the probability that examinees in latent class c respond the item i correctly (π_{ic}) is given by $(1 - s_i)^{\eta_{ic}} g_i^{1-\eta_{ic}} = (1 - s_i)^1 g_i^{1-1} = (1 - s_i)$. If the examinee has not mastered at least one required attribute, $\eta_{ic} = 0$ and the probability that examinees in latent class c respond the item i correctly (π_{ic}) is given by $(1 - s_i)^{\eta_{ic}} g_i^{1-\eta_{ic}} = (1 - s_i)^0 g_i^{1-0} = g_i$.

Q Matrix and Misspecification of Q matrix

In cognitive diagnostic assessment, one of the most important steps is specification of Q matrix. Q matrix associate the attributes and items in the test. (Li, 2016; Rupp & Templin, 2008; Tatsuoka, 1983). The diagnostic power of the CDM is based on the specification of Q matrix which is supported empirically (Lee ve Sawaki, 2009). CDM could estimate latent attribute vectors for each examinee in observed data with specified Q matrix. In Q matrix composed of items listed in row and attributes listed in column. If test has k attributes and i items, Q matrix consists of $i \times k$ 1-0 data. If item i requires attribute k , i . row and k . column of Q matrix is 1, otherwise, it is 0. If it is known which attributes are required for each item and which attributes are mastered by examinees, responses of examinees to items are estimated.

The Q matrix can be developed more accurately if attributes are well-defined and valid and the items are constructed along with these attributes. However, Q matrix can be misspecified due to many

different reasons such as underspecification, overspecification or both under and overspecification (mixed) of Q matrix (Rupp & Templin, 2008). In underspecified Q matrix, at least one 1 is inaccurately specified 0 in matrix whereas at least one 0 is specified 1 incorrectly under the overspecified Q matrix. Estimation of parameters can be insufficient due to these misspecifications of Q matrix. Furthermore, more than enough attributes could be specified in Q matrix and these attributes are separated into many more detailed categories. Hence, it can be needed large sample size to estimate of item parameters. If required attributes are not specified in Q matrix, it will cause to low score and fail to diagnose other attributes (Li, 2016).

Model-Data and Item Fit

One of the main problems in CDMs is model-data fit. Rupp and et al. (2010) stated that when model-data fit was weak, statistical inferences are not significant. Model-data fit in CDMs is evaluated in two different approaches; absolute and relative. Both relative and absolute model fit statistics were examined in this study.

Absolute model fit statistics evaluate the misfit between model and data. In this study, absolute value of the deviations of Fisher transformed correlations (abs(fcor)) and maximum of all X2 (max(X2)) as absolute model fit statistics were used. Equation of abs(fcor) statistic is given by

$$|Z[Corr(X_j, X_{j'})] - Z[Corr(\hat{X}_j, \hat{X}_{j'})]| \quad (3)$$

where X_j is observed response of item j, \hat{X}_j is estimated response of item j, Corr; Pearson correlation coefficient and Z; Fisher transformation. As abs(fcor) value is close to 0, the model-data fit increases (Chen et al., 2013).

Max(X2) statistic is the maximum value of all X2 of all item pairs. Max(X2) is defined as:

$$\chi^2_{jj'} = \sum_{k=0}^1 \sum_{k=0}^1 \frac{(n_{jj',ll'} - e_{jj',ll'})^2}{e_{jj',ll'}} \quad (4)$$

where k is attribute k^{th} , $n_{jj',ll'}$ is observed frequency and $e_{jj',ll'}$ is expected frequency.

Relative model fit statistics enable to select the model fits better to data. Although absolute model fit statistics are often preferred in CDM studies, relative model fit statistics should be used as the first step by eliminating possible models before conducting absolute model fit statistics. -2 log-likelihood, Akaike's information criterion (AIC) and Bayesian information criterion (BIC) relative model fit statistics were used in this study. -2 log-likelihood statistic is defined as $-2LL = -2\ln(ML)$. In equation ML refers to maximum likelihood value. Rupp et al. (2010) stated that the most commonly used relative fit statistics were AIC and BIC. The general equation for both AIC and BIC is as follows:

$$\text{information criteria} = -2\ln(L) + ki \quad (5)$$

In equation 5, L is log-likelihood of the model, i is the number of items and k is total number of structural parameters in model. Both statistics differ according to k. Always $k=2$ is for AIC so that AIC is given $AIC = -2\ln(L) + 2i$. For BIC, $k=\ln(n)$ so that, BIC is calculated by $BIC = -2\ln(L) + \ln(n)i$. It is desired that the value is small for both AIC and BIC.

S-X2 statistic developed by Orlando and Thissen (2000) was used as item fit statistic in this study. using X2 statistic. The observed and expected responses obtained from the summed score are compared using X2 statistic. S-X2 statistic is computed as follows:

$$S - \chi_j^2 = \sum_{s=1}^{I-1} N_s \frac{(O_{is} - E_{is})^2}{E_{is}(1 - E_{is})} \sim \chi^2(I - 1 - m) \quad (6)$$

In this equation, i , denote the number of the items, s is group score, N_a is the number of the examinees in groups, O_{is} and E_{is} are observed and estimated responses of item i corresponding to group s .

There have been few research studies in the literature on item fit in CDMs Wang, Shu, Shang & Xu, 2015; Sorrel, Olea, Abad, de la Torre, & Barrada, 2017; Sinharay & Almond, 2007; Oliveri & von Davier, 2011; Kunina-Habenicht, Rupp, & Wilhelm, 2012; Choi, Templin, Cohen, & Atwood, 2010). Wang et al. (2015) noted that item fit analysis was not studied satisfactorily and they developed item fit statistic for DINA model. Classic fit index based on EM algorithm and PPMC (posterior predictive model checking) method based on MCMC estimation were evaluated for model fit in their studies. As a result of Wang et al.'s (2010) study, classic item fit index had higher fit detection rate than PPMC method. Sorrel et al. (2017) used inferential item fit statistics such as S-X2, likelihood ratio, Wald test and Lagrange multiplier in their study. In the study, the factors item quality (0.40, 0.60 and 0.80), sample sizes (500, 1000) correlational structure (unidimensional, bidimensional), test length (12, 24, 36) and generated model (DINA, ACDM, DINO) were manipulated to evaluate the performances of the item fit statistics. The number of attributes is 4 and fixed. They concluded that S-X2 statistic had sufficient Type I error rate but the power ratio was insufficient. Furthermore, it was stated that likelihood ratio and Wald test were more preferable than the LM test in terms of Type I error and power ratios. In addition, it was reported that all item fit statistics were influenced by item quality and the Type I error and power ratios of the item fit statistics were acceptable with few exceptions only if item quality was high. Sinharay and Almond (2007) used Bayesian residual plots and chi-square statistics to evaluate item fit statistics in their study using real data. They pointed out that Bayesian residual plots were simple but powerful to detect model-data misfit, beside this, item fit plots were quite good at detecting misfit items. Oliveri and von Davier (2011) used RMSEA statistic to evaluate the item fit by fitting PISA data to general diagnostic models (GDM). Kunina-Habenicht et al. (2012) examined the type I error and power ratios of MAD and RMSEA item fit statistics by conducting simulation study. As a result of Kunina-Habenicht et al.'s (2012) study, classification accuracy was significantly reduced when the Q matrix was incorrectly specified. Furthermore, they concluded that item fit statistics were more sensitive in overspecification of Q matrix than with underspecification of Q matrix and AIC and BIC relative fit statistics were sufficiently sensitive in both overspecification and underspecification of Q matrix.

In this study, it is aimed to evaluate the effect of various sample sizes, percentage of misfit items in the test and item discrimination levels on item and model fit with misspecification of Q matrix. Investigating the relevant literature, it was studied that the effect of sample size and number of misfit items in the test on the performance of item fit (Wang, Shu, Shang, & Xu, 2015; Lai, Gierl, Cui, & Babenko, 2017; de la Torre & Lee, 2013) and model fit (Chen, de la Torre, & Zhang, 2013; Hu, Miller, Huggins-Manley, & Chen, 2016; Galeshi & Skaggs, 2014; Kunina-Habenicht, Rupp, & Wilhelm, 2012; Liu, Tian, & Xin, 2016) statistics in case of misspecification of Q matrix. It is foreseen that item quality (item discrimination) could affect the performance of item and model fit statistics in case of misspecification of Q matrix. Therefore, both different factor levels were considered and the item quality was included and manipulated and the effects of these factors on item and model fit statistics were evaluated together. Accordingly, it is expected that this study will contribute to the field.

Method

Simulation Design

Sample Size (N): Sample sizes of 1000, 2000 and 4000 were used in this study.

Number of Attributes and Items: Number of attributes was fixed at 4 and number of items was set at 15 accordingly.

Levels of s and g parameters: In the study, s and g parameters were generated as item quality was low and high. While g and s parameters were generated from uniform distribution U(0.10, 0.20) and U(0.10, 0.40) for low quality items, both g and s parameters were generated from uniform distribution U(0.05, 0.10) for high quality items.

Percentage of misfit items: The percentage of misfit item was set at %20 and %40

Misspecification of Q Matrix: Misfit in CDM is mostly due to the nature of the attributes, construct of the attribute, Q matrix or selected cognitive diagnostic model (Chen, de la Torre and Zhang, 2013). In this study, only misfit source due to Q matrix misspecification was examined. Specification of Q matrix mostly criticized because of subjective (Rupp and Templin, 2008). Therefore, Q matrix misspecification is one of the possible misfit sources. In the study, Q matrix was misspecified in different three ways: underspecification, overspecification and mixed. Correctly specified Q matrix, misspecified Q matrix and misfit items used in this study are presented in Table 1

Table 1: Correctly specified Q matrix, misspecified Q matrix and misfit items used in this study

	Specified				Underspecified				Overspecified				Mixed			
Item	k1	k2	k3	k4	k1	k2	k3	k4	k1	k2	k3	k4	k1	k2	k3	k4
1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
3	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
4	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
5	1	1	0	0	1	0	0	0	1	1	1	0	0	1	1	0
6	1	0	1	0	0	0	1	0	1	1	1	0	0	1	1	0
7	1	0	0	1	1	0	0	0	1	1	0	1	1	0	1	0
8	0	1	1	0	0	1	0	0	0	1	1	1	0	1	0	1
9	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
10	0	0	1	1	0	0	0	1	0	1	1	1	0	1	0	1
11	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0
12	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1
13	1	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1
14	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

When Q matrix was underspecified and if the percentage of misfit item was %20, one attribute of 5.,10. and 14. items and if the percentage of misfit item was %40, one attribute of 5., 7., 8., 10., 13., and 14. items were transformed from 1 to 0. When Q matrix was overspecified, one attribute of same items was transformed from 0 to 1. When Q matrix was both underspecified and overspecified, one attribute was translated from 1 to 0 and another attribute was translated from 0 to 1 but number of measured attributes didn't change.

Manipulated factors and their levels in this study are presented in Table 2.

Table 2. Manipulated factors and their levels in this study

Factor	Factor levels	Values
Sample size	3	1000,2000,4000
item quality	2	Low and high
Percentage of misfit items	2	%20, %40
Q matrix misspecification	3	Underspecification, overspecification, mixed

Data Generation

In this study, it was aimed to evaluate the effect of different sample sizes, percentage of misfit items in the test and level of item discrimination (item quality) on item and model fit in case of misspecification of Q matrix in cognitive diagnostic models. Data were generated in accordance with the DINA model and the Q matrix were defined for 4 attributes and 15 items. In data generation, g and s parameters were manipulated to produce low and high-quality items. For low quality items, g and s parameter were generated from U(0.10, 0.20) and U(0.10, 0.40) uniform distribution and for high quality items, both g and s parameters were generated from U(0.05, 0.10) uniform distribution. In the study, sample sizes of 1000, 2000 and 4000 were used. Q matrix was misspecified in three different way (underspecification, overspecification and mixed) by considering the percentage of misfit items (%20(3 items) and %40 (6 items))

Data Analysis

In the study, S-X2 was used as item-fit statistic due to having better performance than other statistic in previous studies. Correct detection rate for related items was calculated to evaluate the performance of model-fit and item-fit statistics. To calculate the correct detection rate, when number of misfit item was three, if p value of misfit items was less than 0.05, the value of detection was assigned 0, if it was larger than 0.05, it was assigned 1. This process replicated 100 times and value of detection was summed for each replication. Lastly, it was averaged of total value of detection. Similar process was applied when misfit item was six

Absolute and relative model-data fit statistics was used to evaluate the fit of generated data to model. In the study, maximum of all X2 (max (X2)) and absolute value of the deviations of Fisher transformed correlations abs(fcor) statistics were used as absolute model-fit statistics and -2loglike, AIC and BIC were used as a relative model fit statistic. The correct detection rate was calculated to evaluate model fit. When Q matrix was misspecified, if the p value of max (X2) and abs(fcor) statistics was less than 0.05, it was assigned 0 to detection value, if it was larger than 0.05, it was assigned 1 to detection value for 100 replication and in each replication, detection value was added total detection value. Lastly, it was averaged of total detection value. In calculation of relative model fit, -2LL, AIC and BIC fit statistics of GDINA and DINA model were calculated and compared to each other.

Findings

Evaluation of Item Fit Statistic for Q Matrix Misspecification

The results of correct detection rates of S-X2 statistic for misspecified Q matrix are shown in Table 3.

Table 3: Correct detection rates of S-X2 statistic for Q matrix misspecification.

Statistic	IQ	N	3 item			6 item		
			u	o	m	u	o	m
S-X2	LQ	1000	0,15	0,15	0,25	0,08	0,07	0,09
		2000	0,36	0,39	0,58	0,11	0,08	0,12
		4000	0,68	0,71	0,89	0,23	0,13	0,22
	HQ	1000	0,90	0,87	0,99	0,42	0,39	0,75
		2000	1,00	1,00	1,00	0,72	0,61	0,92
		4000	1,00	1,00	1,00	0,90	0,80	0,99

Note. N = sample size; IQ = Item Quality; LQ = Low Quality; HQ = High Quality; u = under-specified; o = over-specified; m = mixed

Investigating Table 3 shows that as sample size increased, the correct detection rate of S-X2 statistic increased across all conditions. In addition, It can be seen in Table 3 that S-X2 had larger correct detection rate when the item quality was higher than when the item quality was low for all Q matrix misspecification (underspecification, overspecification, mixed). This difference was extremely too much when sample size was small. As the percentage of misfit items in the test increased, the correct detection rate of S-X2 statistic decreased. As is shown in Table 3, was when sample size was 1000, item quality was low, percentage of misfit items was %40 and Q matrix was overspecified, S-X2 had the lowest correct detection rate. Furthermore, it can be said that when item quality was high, S-X2 had the lowest correct detection rate with overspecified Q-matrix. Correct detection rate with mixed misspecified Q matrix was higher than When Q <matrix was under or over misspecified in all conditions.

Evaluation of Model-Data Fit for Q Matrix Misspecification

The results of correct detection rates of model-data fit of absolute model fit statistics for misspecified Q matrix are presented in Table 4.

Table 4: Correct detection rates of absolute model fit statistics for Q matrix misspecification.

Model	IQ	N	3 item			6 item		
			u	o	m	u	o	m
MAX(X2)	LQ	1000	0,87	0,94	1,00	1,00	1,00	1,00
		2000	0,94	0,97	1,00	1,00	1,00	1,00
		4000	0,96	0,98	1,00	1,00	1,00	1,00
	HQ	1000	1,00	1,00	1,00	1,00	1,00	1,00
		2000	0,91	0,96	1,00	1,00	1,00	1,00
		4000	0,95	0,98	1,00	1,00	1,00	1,00
ABS(fcor)	LQ	1000	0,72	0,84	0,99	0,98	0,96	1,00
		2000	0,83	0,92	1,00	0,99	0,98	1,00
		4000	0,89	0,94	1,00	0,99	0,99	1,00
	HQ	1000	1,00	1,00	1,00	1,00	1,00	1,00

2000	0,81	0,89	0,99	0,99	0,97	1,00
4000	0,86	0,93	1,00	0,99	0,98	1,00

Note. N = sample size; IQ = Item Quality; LQ = Low Quality; HQ = High Quality; u = under-specified; o = over-specified; m = mixed; MAX(X2) = maximum X2; ABS(fcor) = Absolute deviation of Fisher transformed item pair correlation

According to Table 4, as the percentage of misfit item increased, the correct detection rate of both max(X2) and abs(fcor) statistics increased. Furthermore, max (X2) statistics had higher correct detection rates than abs(fcor) statistic in most cases. It can be seen in Table 4 that when the percentage of misfit items was %40, max(X2) statistic detected model misfit correctly almost in all conditions. When the percentage of misfit items was 20 and item quality was low with under and over misspecified Q matrix, as sample size increased, correct detection rates of both of two statistics increased. However, when item quality was high and sample size was 1000, the correct detection rate decreased. When Q matrix was mixed misspecified, correct detection rate of max(X2) and abs(fcor) was approximately 1 or 1.

The results of correct detection rates of model-data fit of relative model fit statistics for misspecified Q matrix are presented in Table 5.

Table 5: Correct detection rates of relative model fit statistics for Q matrix misspecification.

Model	IQ	N	3 items			6 items		
			u	o	m	u	o	m
-2LL	LQ	1000	0,00	0,00	0,00	0,00	0,00	0,00
		2000	0,00	0,00	0,00	0,06	0,00	0,00
		4000	0,01	0,00	0,00	0,28	0,00	0,00
	HQ	1000	0,16	0,00	0,00	0,52	0,00	0,00
		2000	0,67	0,00	0,00	0,64	0,00	0,00
		4000	0,97	0,00	0,00	0,79	0,00	0,00
AIC	LQ	1000	1,00	0,00	0,00	0,98	0,00	0,00
		2000	0,90	0,00	0,00	0,95	0,00	0,00
		4000	0,90	0,00	0,00	0,96	0,00	0,00
	HQ	1000	0,99	0,00	0,00	0,90	0,00	0,00
		2000	0,98	0,00	0,00	0,86	0,00	0,00
		4000	0,98	0,00	0,00	0,90	0,00	0,00
BIC	LQ	1000	1,00	1,00	1,00	1,00	1,00	0,83
		2000	1,00	1,00	0,77	1,00	0,02	0,00
		4000	1,00	0,00	0,00	1,00	0,00	0,00
	HQ	1000	1,00	0,00	0,02	1,00	0,00	0,00
		2000	1,00	0,00	0,00	1,00	0,00	0,00
		4000	1,00	0,00	0,00	1,00	0,00	0,00

Note. N = sample size; IQ = Item Quality; LQ = Low Quality; HQ = High Quality; u = under-specified; o = over-specified; m = mixed; AIC = Akaike's information criterion; BIC = Bayesian information criterion; -2LL = $-2 \log\text{-likelihood}$

Investigating Table 5, AIC and BIC statistics detected relative misfit at high rates in all conditions when Q matrix was underspecified. The correct detection rates of -2LL statistic was approximately 0 or 0 when item quality was low with underspecified Q matrix whereas the correct detection rate of -2LL increased as the sample size increased when item quality was high with underspecified Q matrix. However, these rates were lower compared to detection rates of AIC and BIC. It can be seen in Table 5 that when Q matrix was underspecified, BIC statistic had the highest

detection rates. As is shown in Table 5, correct detection rates of AIC and BIC statistic was approximately 0 and 0 when Q matrix was over or mixed specified. It is clear from the Table 5 when item quality was low and sample size was 1000, the detection rate of misfit model for BIC was high.

Discussion, Conclusion and Recommendation

In this study, it was aimed that investigating the effect of factors such as sample sizes, percentage of misfit items in the test and item quality, on performance of model-data and item fit statistics with Q matrix misspecification. For this purpose, simulation study was conducted and results of this simulation study were analyzed.

The main condition in this study is Q matrix misspecification. Specification of Q matrix is one of the most important steps in cognitive diagnostic assessment. However, specification of Q matrix is subjective so that it can be specified in many different ways. In the study, when Q matrix was misspecified, the effects of various factors on item fit was examined first. S-X2 was used as a item-fit statistic in this study. The correct detection rate of misfit items for S-X2 was high as sample size and item quality increased and percentage of misfit items in the test decreased. Similarly, Sorel and et al. (2017) reported that Type I error of S-X2 was sufficient however power of this statistic was poor. These results are identical to the findings from this study. S-X2 statistic had the lowest correct detection rate when Q matrix was over misspecified and item quality was high. This may be due to the fact that it is easier to detect misfit items because of small number of estimated parameters in cases where Q matrix was under or mixed misspecified.

In the second part of the study, the effect of the factors in the study on model data fit was investigated when Q matrix was misspecified. For this purpose, it was examined both relative and absolute model-data fit. The AIC, BIC and -2LL statistics were used to determine the relative model-to-data fit. When the Q matrix was underspecified, the AIC and BIC statistics detected almost all of the relative model data misfit correctly, however these statistics tended to select GDINA when Q matrix was over or mixed misspecified along with especially high item quality and large sample size. Chen et al. (2013) pointed out that AIC and BIC statistics tend to select the saturated model between saturated model (i.e., the G-DINA) and a misspecified reduced model (i.e., the DINA) regardless of which Q matrix was used. . In this regard, this result is consistent with Chen et al. (2013). Hu et al. (2016) suggested using the AIC and BIC statistics for the DINA model in case of Q matrix underspecification. Furthermore, Hu et. al (2016) reported that when Q matrix was underspecification and also overspecification along with small sample size and small number of misfit items in the test, BIC had high correct detection rates. Conversely, when the Q matrix was overspecified along with large sample size and the number of misfit items i, the BIC statistic could not almost detect the correct model. The results from the studies of the results from the studies of are parallel with the results of this study. Similarly, when Q matrix was specified correctly, the relative model fit statistics had high detection rate in both studies. Unlike other studies, the factor used in this study is the item quality. According to the findings of this study, as item quality increased, correct detection rates of relative model fit statistics for DINA model decreased. Galeshi and Skaggs (2014) stated that detection rate of AIC and BIC statistics increased as sample size increased for CRUM model. However, in this study, there was no significant change in performance of AIC and BIC statistics as the sample size increased. In addition, Galeshi and Skaggs (2014) concluded that AIC and BIC had a similar performance however when Q matrix was overspecified with small sample size BIC had more accurate results. The findings from studies of Galeshi and Skaggs (2014) are similar to findings of this study.

In the last part of study, Absolute model-data fit was examined. Abs(fcor and max(X2) were used as absolute model fit statistics. In the study, as the number of misfit items increased, the correct detection rates of both statistics was increased. Hu et al. (2016) stated that when Q matrix was specified correctly, both statistics selected the correct model (DINA). Similar to this finding of Hu et al. (2016), both statistics selected the correct model (DINA) in this study. Moreover, Hu et al. (2016) abs(fcor) and max(X2) statistics mostly detected the misspecified Q matrix except for the small

samples. Similarly, in this study, when item quality was low, correct detection rate of both statistics was high and increased as sample size increased. When item quality was high, the correct detection rates of both statistics higher across all sample size.

Ultimately, it can be said that S-X2 succeeds in detecting misfit items when item quality is high, sample size is large and the number of misfit items are small. One conclusion from this study which is consistent with other research is that AIC and BIC, relative model fit statistics, detect the misfit when Q matrix is underspecification and they fail to detect misfit when Q matrix is mixed or overspecification. Absolute model fit statistics are successful to detect misspecified Q matrix. These statistics are more successful when sample size is large and numbers of misfit items is much. However max(X2) had higher detection rates than abs(fcor) in almost all conditions. Therefore, max(X2) is more preferable than abs(fcor).

In this study, some factors such as sample size, item quality and percentage of misfit item were used at various levels to examine the effect of these factors on the model-data and item fit with Q matrix misspecification. The same study could be repeated at different levels for these factors. Moreover, different factors, such as correlation between attributes, test length and number of attributes could be included in further studies. In this study, only the S-X2 was used as item-fit statistic. Similar studies with different item fit statistics can be conducted. Beside this This study was constrained with DINA model. In further studies, different cognitive diagnostic models can be evaluated with CDM and Q matrix misspecification. There are not enough studies related to the effect of item quality on model-data and item fit in the literature. Therefore, it is recommended that same study can be repeated by using different item parameters or including different factors. Simulated data was generated for this study. Same study could be conducted with real data.

References

- Chen, J., de la Torre, J., & Zhang, Z. (2013). Relative and absolute fit evaluation in cognitive diagnosis modeling. *Journal of Educational Measurement*, 50, 123-140.
- Choi, H.-J., Templin, J. L., Cohen, A. S., & Atwood, C. H. (2010, April). The impact of model misspecification on estimation accuracy in diagnostic classification models. Paper presented at the meeting of the National Council on Measurement in Education (NCME), Denver, CO.
- De La Torre, J. (2009). A cognitive diagnosis model for cognitively-based multiple-choice options. *Applied Psychological Measurement*, 33, 163–183.
- De La Torre, J., & Lee, Y. S. (2013). Evaluating the Wald test for item-level comparison of saturated and reduced models in cognitive diagnosis. *Journal of Educational Measurement*, 50, 355-373.
- DiBello, L., Roussos, L. A., & Stout, W. F. (2007). Review of Cognitively Diagnostic Assessment and a Summary of Psychometric Models. In C. R. Rao & S. Sinharay (Eds.), *Handbook of Statistics*, 26, 979-1030.
- Galeshi & Skaggs (2014). Traditional fit indices utility in new psychometric model: cognitive diagnostic model. *International Journal of Quantitative Research in Education*, 2, 2.
- Kunina-Habenicht, O., Rupp, A. A., & Wilhelm, O. (2012). The impact of model misspecification on parameter estimation and item-fit assessment in log-linear diagnostic classification models. *Journal of Educational Measurement*, 49, 59-81.
- Lee, Y.W., & Sawaki, Y. (2009). Cognitive diagnostic approaches to language assessment: An overview. *Language Assessment Quarterly*, 6(3), 172-189. doi: 10.1080/15434300902985108

- Li, H. (2016). Estimation of Q-matrix for DINA Model Using the Constrained Generalized DINA Framework. (doctoral dissertation). Coulumbia University.
- Liu, Y., Tian, W., & Xin, T. (2016). An application of M2 statistic to evaluate the fit of cognitive diagnostic models. *Journal of Educational and Behavioral Statistics*, 41, 3-26.
- Oliveri, M. E., & von Davier, M. (2011). Investigation of model fit and score scale comparability in international assessment. *Psychological Test and Assessment Modeling*, 53, 315-333.
- Orlando, M., & Thissen, D. (2000). Likelihood-based item-fit indices for dichotomous Item Response Theory models. *Applied Psychological Measurement*, 24(1), 50–64.
- Robitzsch, A., Kiefer, T., George, A. C., & Uenlue, A. (2015). CDM: Cognitive Diagnosis Modeling (R package Version 6.4-23). Retrieved from <http://CRAN.R-project.org/package=CDM>
- Rupp, A. A., & Templin, J. L. (2008). Unique characteristics of diagnostic classification models: A comprehensive review of the current state-of-the-art. *Measurement*, 6(4), 219-262.
- Rupp, A. A., Henson, R. A., & Templin, J. L. (2010) *Diagnostic measurement : theory, methods, and applications*. Guilford Press
- Sinharay, S., & Almond, R. G. (2007). Assessing fit of cognitive diagnostic models: A case study. *Educational and Psychological Measurement*, 67, 239-257.
- Sorrel, Abad, Olea, de la Torre, & Barrada. (2017). Inferential Item-Fit Evaluation in Cognitive Diagnosis Modeling. *Applied Psychological Measurement*, 2017, 41, 614–631
- Sorrel, M. A., Olea, J., Abad, F. J., de la Torre, J., Aguado, D., & Lievens, F. (2016). Validity and reliability of situational judgement test scores: A new approach based on cognitive diagnosis models. *Organizational Research Methods*, 19, 506-532.
- Tatsuoka, K. K. (1983). Rule space: An approach for dealing with misconceptions based on item response theory. *Journal of Educational Measurement*, 20, 345-354.
- Wang, C., Shu, Z., Shang, Z., & Xu, G. (2015). Assessing item level fit for the DINA model. *Applied Psychological Measurement*, 39, 525-538.