EURASIAN JOURNAL OF EDUCATIONAL RESEARCH

Bimontly Peer-Reviewed Journal, Year: 19 Issue: 81 / 2019
İki Ayda Bir Yayımlanan Hakemli Dergi, Yıl: 19 Sayı: 81 / 2019

FOUNDING EDITOR / *Kurucu Editör*
Veysel Sönmez, *Hacettepe University, Ankara, TURKEY*

EDITOR IN CHIEF / *Baş Editör*
Şakir Çınkır, *Ankara University, Ankara, TURKEY*

EDITORS / *Editörler*
Ayşe Çiftçi, *Purdue University, IN, USA*
Şenel Poyrazlı, *Penn State University, PA, USA*
Laura M. Reid Marks, *University of Memphis, USA*
Alfiya R. Masalimova, *Kazan (Volga Region) Fedearl University, Kazan City, RUSSIA*
Hakan Atılgan, *Ege University, İzmir, TURKEY*
Joe O'Hara, *Dublin City University, Dublin, IRELAND*
Deha Doğan, *Ankara University, Ankara, TURKEY*
Gökhan Atik, *Ankara University, Ankara, TURKEY*
Nihan Demirkasımoğlu, *Hacettepe University, Ankara, TURKEY*
Işıl Kabakçı Yurdakul, *Anadolu University, Eskişehir, TURKEY*
Cevriye Ergül, *Ankara University, Ankara, TURKEY*
Kürşat Erbaş, *Middle East Technical University, Ankara, TURKEY*
Gülseren Karagöz Akar, *Boğaziçi University, İstanbul, TURKEY*
Arda Arıkan, *Akdeniz University, Antalya, TURKEY*
Ali Ersoy, *Anadolu University, Eskişehir, TURKEY*
Vesile Alkan, *Pamukkale University, Denizli, TURKEY*
Jale Çakıroğlu, *Middle East Technical University, Ankara, TURKEY*
Sedef Canbazoğlu Bilici, *Aksaray University, Aksaray, TURKEY*
Refika Olgan, *Middle East Technical University, Ankara, TURKEY*
Meral Hakverdi Can, *Hacettepe University, Ankara, TURKEY*
Mehmet Bekdemir, *Erzincan Binali Yıldırım University, Erzincan, TURKEY*

INTERNATIONAL EDITORIAL BOARD / *Uluslararası Editörler Kurulu*
Anthony Onwuegbuzie, *Sam Houston State University, USA*
Anita Pipere, *Daugavpils University, LATVIA*
Aslı Özgün Koca, *Wayne State University, USA*
Beatrice Adeara, *West Chester University, USA*
Birgit Pepin, *Sor-Trondelag University College, NORWAY*
Burke Johnson, *University of South Alabama, USA*
Corrine Glesne, *University of Vermont, USA*
Gerry McNamara, *Dublin City University, IRELAND*
Danny Wyffels, *KATHO University, Kortrijk, BELGIUM*
David Bridges, *Cambridge University, UK*
David L. Haury, *National Science Foundation, USA*
Ekber Tomul, *Mehmet Akif Ersoy University, Burdur, TURKEY*
Erdinç Duru, *Pamukkale University, Denizli, TURKEY*
Fatma Hazır Bıkmaz, *Ankara University, TURKEY*
Hasan Hüseyin Aksoy, *Ankara University, Ankara, TURKEY*
Iordanescu Eugen, *Lucian Blaga University of Sibiu, ROMANIA*
Joe O'Hara, *Dublin City University, IRELAND*
Sven Persson, *Malmö University, Malmö, SWEDEN*
Theo Wubbels, *Universtiy of Utrecht, NETHERLAND*
Ann-Katrin Sward, *Göteborg University, Göteborg, SWEDEN*
Okan Bulut, *Alberta University, Alberta, CANADA*

EURASIAN JOURNAL OF EDUCATIONAL RESEARCH

Bimontly Peer-Reviewed Journal, Year: 19 Issue: 81 / 2019
İki Ayda Bir Yayımlanan Hakemli Dergi, Yıl: 19 Sayı: 81 / 2019

PUBLISHING MANAGER / *Sahibi ve Yazı İşleri Müdürü*
Anı Publishing Education and Consultancy Advertisement Stationary Industry Trade Co. Ltd. in the name of
Anı Yayıncılık Eğitim ve Danışmanlık Reklam Kırtasiye Sanayi Ticaret Ltd. Şti. adına
Özer DAŞCAN

EDITORIAL PRODUCTION ADMINISTRATOR / *Yayın Yönetim*
Özgür GÜLER

HEADQUARTER / *Yönetim Merkezi*
Anı Yayıncılık, Kızılırmak Sokak 10/A
06640 Bakanlıklar Ankara, TURKEY
ejer.editor@gmail.com
Tel: +90 312 425 81 50 pbx Fax: +90 312 425 81 11

Printing Date / *Basım Tarihi:* 20.05.2019
Printing Address / *Matbaa Adresi:* Sözkesen Matbaacılık
İvedik OSB 1518. Sokak Mat-Sit İş Mrk. No: 2/40 Yenimahalle-ANKARA **P:** +90 312 395 21 10
Broadcast Type / *Yayın Türü:* Local Broadcast / *Yerel Süreli Yayın*
Cover Design / *Kapak Tasarımı:* Anı Publishing / *Anı Yayıncılık*
Composition / *Dizgi*: Göksel ÇAKIR

The ideas published in the journal belong to the authors.
Dergide yayınlanan yazıların tüm sorumluluğu yazarlarına aittir.

Eurasian Journal of Educational Research (Print ISSN 1302-597X, e-ISSN: 2528-8911) is a bimonthly (6 issues per year) peer-reviewed journal published by Anı Yayıncılık.

© 2019 ANI Publishing. All rights reserved.
© 2019 ANI Yayıncılık. Tüm hakları saklıdır.

Eurasian Journal of Educational Research/ **EJER** is abstracted and indexed in;

ESCI, *Emerging Sources Citation Index*
ERIC, *The Education Resources Information Center*
HERDC, *Higher Education Research Data Collection*
ERA, *Educational Research Abstracts*
SCOPUS *database*
EBSCO Host *database*
ULAKBİM *national index*
Social SciSearch
Journal Citation Reports / Social Sciences Edition

CONTENTS
İçindekiler

Critical Friends Group (CFG): Inquiry-Based Professional Development Model for Turkish EFL Teachers
Nafiye Cigdem AKTEKIN 1-20

Creative Thinking Patterns In Student's Scientific Works
Alfi SYAHRIN, DAWUD, Heri SUWIGNYO, Endah Tri PRIYATNI 21-36

Exploring the Relationship between Metavariables and Self-efficacy in Chemistry
Zubeyde Demet KIRBULUT.....37-56

School Leaders' Insights Regarding Beginning Teachers' Induction in Belgium, Finland and Portugal
Estela COSTA, Marta ALMEIDA, Ana Sofia PINHO, Joana PIPA 57-78

An Investigation into Examination-Type Preferences of Primary School Students in Relation to Various Variables
Halil TAS, Muhammet Baki MINAZ 79-98

The Correlation Between Critical and Creative Thinking Skills on Cognitive Learning Results
Jodion SIBURIAN, Aloysius Duran COREBIMA, IBROHIM, Mumi SAPTASARI.....99-114

Development of the Academic Stressors Scale for Bulgarian University Students
Liliya BABAKOVA 115-128

Top Managers' Organizational Change Management Capacity and Their Strategic Leadership Levels at Ministry of National Education (MoNE)
Omur COBAN, Servet OZDEMIR, John PISAPIA.....129-146

From Writing to Presenting and Publishing Research Articles: Experiences of Philippine Education Faculty-Researchers
Rudolf VECALDO, Jay Emmanuel ASUNCION, Mark ULLA 147-164

Investigation of Narrative Texts Used by Fourth Grade Primary School Students
Sultan Selen KULA, Ilkay ASKIN TEKKOL 165-188

REVIEWERS of the 81th ISSUE
81. Sayı Hakemleri

Arda Arıkan

Arif Bakla

Betül Gezgin

Deha Doğan

Erdem Aksoy

Funda Nayır

Gökhan Atik

Gülsüm Akyol

Hakan Atılgan

İbrahim Yurdakal

Jale Çakıroğlu

Kazım Çelik

Lindelani Mnguni

Mark Ulla

Mehmet Zorba

Nihan Demir Kasımoğlu

Özgül Keleş

Şenel Poyrazlı

Sibel Demir Kaçan

Tufan Aytaç

Vesile Alkan

Yasemin Taş

Eurasian Journal of Educational Research 81 (2019) 1-20

Eurasian Journal of Educational Research
www.ejer.com.tr

Critical Friends Group (CFG): Inquiry-Based Professional Development Model for Turkish EFL Teachers

Nafiye Cigdem AKTEKIN[1]

ARTICLE INFO

Article History:
Received: 25 Dec. 2018
Received in revised form: 14 Mar. 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.1

Keywords
professional learning communities, continuous professional development, critical friends group, sociocultural theory, protocols

ABSTRACT

Purpose: This study investigated the impact of a Critical Friends Group (CFG), an inquiry-based professional development model, on Turkish EFL teachers. It was acknowledged that short-term workshops did not provide opportunities for teachers to make connections between the theory presented and the implications that it had for classroom teaching. CFG model accompanied with protocols was thought to be a practical and efficient way of professional development.

Method: The research study was designed as a qualitative case study conducted at a Turkish state university and was aimed at exploring the impact of CFG as a tool to support professional teacher development. The methodology used was an inductive process using grounded theory. Data came from the journals, meeting transcripts, interviews and questionnaires, and from the researcher's notes.

Findings: The results of the study showed that teachers who worked in a CFG felt better prepared to continue engaging in their profession. CFG provided the opportunity to work collaboratively, to delve into classroom-based dilemmas, to focus on the teaching and learning of specific academic content, and build strong working relationships among teachers. **Implications for Research and Practice**: CFGs are proved to be a valuable professional development model as teachers are given opportunities to take the time to inquire into areas of their teaching that they believe need attention. The collaboration should be formalized by school administrations by providing time and space for these processes to take place. Further studies should be implemented to observe the effects and impacts of CFG on students' learning.

© 2019 Ani Publishing Ltd. All rights reserved

[1] Acibadem Mehmet Ali Aydinlar University, Foreign Languages Department, Kayisdagi Cad. No: 32, 34752, Atasehir, Istanbul, TURKEY, e-mail: nafiye.aktekin@acibadem.edu.tr, ORCID: https://orcid.org/0000-0003-0829-3744

Introduction

The ideas of alternative professional development structures that allow for self-directed, collaborative and inquiry-based learning that is directly relevant to teachers' classrooms have gained currency in recent years. As Evans (2019) points out professional development as an outcome is often understood in the narrow sense, as relating simply to practitioners' physical action, which is possibly visible. However, in her point of view, 'New' ideas or ways of thinking that have been embedded within people's consciousness may take time to become gradually integrated into their practice; and these ideas augment through interactions with countless other influences on practice (p.7). In professional practice, teachers are social beings that must interact in a broad spectrum of social context. The classroom, the school, the local community, the country, and the international community practitioners are working in are all layers of the social context teachers are a part of. That might be one of the reasons that over the past two decades, research on professional learning communities (PLCs) has flourished in the international literature on teacher development and school improvement. Although the concept of professional community has been difficult to define and measure because of the different theoretical perspectives on this notion and the complexity of its applications in the context of day-to-day practice (Stoll & Louis, 2007), studies on PLCs have a common ground. PLCs are believed to highlight teachers' collective efforts toward student learning and teacher development, and they encourage all professionals in schools to share and critically examine their practice in an ongoing, reflective, and growth-prompting way (Lomos, Hofman, & Bosker, 2011; Wang, 2015; Yin & Zhang, 2018). There are diverse types and means of implementing learning communities, and there is a whole spectrum of different terms used in connection with the concept. Critical Friends Group (CFG) will be the learning community referred in this study.

Professional Learning Communities

Although there is no universal definition of a professional learning community (PLC), it is commonly described as a group of teachers who are sharing and critically interrogating their practice in an on-going, reflective, collaborative, inclusive, learning-oriented and growth-promoting way (Stoll & Louis, 2007). According to Stoll et al. (2006), a professional learning community is a group of people, motivated by a shared learning vision, who support and work with each other, finding ways, inside and outside their community to explore their practice that in the end will enhance all pupils' learning (p.5). The most recent definition is that a PLC is a group of professionals working as a cohesive team to address specific learner needs arising from an analysis of data and evidence (Harris, 2014).

According to Clausen et. al (2009), the desire for a learning community format in schools is not a new one. For almost a hundred years, researcher/theorists from Dewey (1916) and Parsons (1959) to Fullan and Hargreaves (1991) have advocated that schools should look at themselves as social organizations (cited in Clausen et.al, 2009, p.444). During the eighties, Rosenholtz (1989) brought teachers' workplace factors into the discussion of teaching quality, maintaining that teachers who felt supported in

their own learning and classroom practice were more devoted and effective than those who did not receive such endorsement. McLaughlin and Talbert (2006) confirmed Rosenholtz's findings, suggesting that when teachers had opportunities for collaborative inquiry and learning related to it, they were able to develop and share a body of wisdom gathered from their experience. The team-teaching movement, from the late 1950s and through the 1960s, makes a good starting point for a learning community. There have been many initiatives since then. As Crandall (personal communication, July 11, 2012) has noted recently, referencing the recent research, educational institutions that align their performance goals to teachers' professional development through professional learning communities, i.e. groups of teachers who meet regularly to plan, problem-solve, and learn together- will achieve positive outcomes.

The professional learning community model comes out of the assumption that the principal mission of formal education is not simply to ensure that students are taught but to guarantee that they learn (DuFour, 2004). However, it is not easy in so many cases. The scenario DuFour represents is true for most of the schools: "A teacher teaches a subject to the best of his or her ability, but at the end of the instruction some students have not truly achieved the necessary outcomes. On one hand, the teacher would like to assist those students. On the other hand, the teacher feels obliged to move forward to "cover" the course content. If the teacher uses classroom time to help students who have not learned, the progress of students who have mastered the content will suffer; if the teacher continues with new units, struggling students will fall behind" (DuFour, 2004, p.2). In such situations, the teacher is left at her/his discretion. However, when educators work together in a professional learning community, they can move beyond 'What are we expected to teach?' to 'How will we know when each student has learned?'. They work collaboratively to analyse and improve their classroom practice. Teachers working in teams or groups, engaging in an on-going cycle of questions, can accomplish higher levels of student achievement. DuFour, Eaker and Dufour (2005) state:

> The use of PLCs is the best, least expensive, most professionally rewarding way to improve schools. Such communities hold out immense, unprecedented hope for schools and the improvement of teaching (p.136).

The collaborative inquiry model presented by CFG is grounded in the belief that teachers of all levels can mentor and support one another. Research examining pre-service teachers, novice teachers, and veteran teachers indicates that CFGs stimulate the development of the professional self (Key, 2006). Moreover, research into CFG work has demonstrated that teachers seem to grow both individually and collectively (Little, Gearhart, Curry, & Kafta 2003; Curry 2008; Nefstead, 2009). A CFG is a professional learning community that is guided by socio-cultural learning theories that an individual's role in shaping the community is just as important as the community's role in shaping the individual (Van Lare & Brazer, 2013). Additionally, Dunne, Nave and Lewis (2000) discovered that teachers involved in CFGs were more reflective about 'the connections among curriculum, assessment and pedagogy', which led to a 'shift from teacher-centred to student-centred instruction,' (p.10).

The theoretical foundation for CFG is that teachers learn to collaborate by participating in professional development activities, and this participation leads to greater reflection on teaching techniques supporting a change in practice aimed at improving student achievement (Vo & Nguyen, 2010). Consistent with a socio-cultural perspective, the CFG model seeks to create a contemplative space for teachers to engage in ongoing, in-depth, systematic, and reflective examination of teaching practices and student learning (Johnson, 2009). The CFG process recognizes the complex art of teaching while providing structures for teachers to improve skills by giving and receiving feedback (Bambino, 2002) and allowing members to examine each other's work and offer suggestions for change (Bloom, 1999). According to socio-cultural theory, enhanced teaching skills are best acquired through social interaction rather than mere transmission of knowledge. When a colleague in a CFG offers a critique of another teacher's work as a friend, the colleague acquires an important role in the group and improves the overall quality of the group.

A Sociocultural Perspective on L2 Teacher Education

From a sociocultural perspective, a teacher's skill in educating a class depends on the teacher's knowledge, understanding, and ability to participate in the sociocultural aspects surrounding the class and school situation. Additionally, Johnson (2009) notes that teacher learning and activities of teaching are born out of knowledge acquired through participation in the social practices in classrooms, and execution of the knowledge can be greatly subjective when knowledge of self, setting, students, curriculum, and community are considered.

Sociocultural theory (SCT) shifts the nature of L2 teacher education in three dramatic ways. First, it places emphasis on the development of education for L2 teachers as opposed to education of students. Proven methods and techniques are shared amongst colleagues in educational process. Next, sociocultural theory highlights the essential role of L2 teachers in the broader social context of the community (Johnson, 2009). Last, the theory incorporates benefits of group and professional interaction for the development of beneficial alternatives to traditional L2 teaching methodology. Sociocultural theory not only shapes how teachers think and act but also provides a medium for change. To be certain, socio-cultural theory is not the sole methodology or way to approach L2 teacher development, but instead is a way to focus and encourage current and future development of L2 teachers.

The Sociocultural Theory of mind is an appropriate theoretical lens for studying teacher development through CFG because it emphasizes the importance of mediated learning (Poehner, 2009). In other words, both SCT and CFG assume that learning is mediated by participation in social practices and therefore a good theoretical match.

Critical Friend Group (CFG) and Protocols

The critical friend group idea was developed in 1994 by the National School Reform Faculty (NSRF), a professional development program supported by the Annenberg Institute in the USA. They were originated in PreK-12 schools, but studies in higher education (Aktekin, 2013; Andreu et al. 2003; Bernaccio et al. 2007;

Constantino, 2010; Gunbay & Mede, 2017) have also been conducted. According to NSRF, CFGs are "communities that consist of 5-12 members who commit to improving their practice through collaborative learning and structured interactions (protocols),and meet at least once a month for about two hours" (NSRF, 2014). Protocols are used to guide teacher discussions to be meaningful, constructive, and helpful for their development. Consistent with NSRF (2014), all of the following features need to exist so that a CFG can be effective: (1) openness to improvement, (2) trust and respect, (3) a foundation in the knowledge and skills of teaching, (4) supportive leadership, and (5) socialization and school structures that prolong the school's mission (https://nsrfharmony.org/).

CFGs are designed to build a professional learning community, make teaching practice explicit by "talking about teaching", and help people involved in schools to work collaboratively in democratic, reflective communities. Additionally, they can establish a ground for sustained professional development based on a spirit of inquiry; provide a context to understand our work with students, our relationships with peers, and our assumptions and beliefs about teaching and learning. CFG participants bring to the table their students' work, lesson plans, case studies of students, classroom dilemmas, peer observation feedback, and prospective texts. Using structures called protocols to guide their discussion, CFG members help each other "tune" their teaching by analysing and critiquing observations and issues pertaining to their practice (CES, 2008). As "critical" in the name refers, the group exhibits the fact that others are critical or vital in their own learning.

CFGs use various protocols to look at adult work, dilemmas, student work, and materials, academic articles four of which were used in this study. The first type comprises looking at students' work, where a teacher comes with a sample and introduces it with a focusing question. The second type, problem-solving protocol, begins with the teacher asking a question about a specific dilemma. Other teachers then ask exploratory questions and discuss the problem among themselves. The presenter takes notes until the discussion is finished, at which point he/she shares the notes that might be of help for the dilemma. In another protocol, the group can explore an academic article, clarify their thinking, and have their assumptions and beliefs questioned in order to gain a deeper understanding of the issue (Smith, 2016). The last type of CFG protocol involves two teachers using a preset guideline and focus on observing each other's teaching (Franzak, 2002, p. 261).

In this study, CFG was used as a professional learning community model for teacher professional development at a university context for the first time in Turkey. This study aimed at understanding what teachers can learn and improve, and whether this transformation can be done effectively through CFG model. Understanding the learning processes going on in and around PLCs is vital because they exist, apparently, to facilitate learning (Horn & Little, 2010; Van Lare & Brazer, 2013). To this end, the study was designed and implemented in a Turkish context, taking experiences and reflections of NSRF into consideration.

The study presented here was conducted at a state university in Turkey with 6 EFL teachers working in a School of Foreign Languages. The research study was designed as a qualitative case study, aiming to explore the impact of CFG model on teachers' professional development. For the purpose of the study, two questions were asked:

1. In their own view, has participating in CFG functioned as a powerful site for the teachers' professional learning?
2. In what areas do teachers think they have improved after participating in CFG?

Method

Overall Research Design

This study consisted of two phases. In the first phase, an INSET (Inservice Teacher Training) programme was designed for all school instructors considering their needs. Needs analysis was conducted by the Professional Development Unit of the School, which was initiated by the researcher, and the Head of the School decided on the scholars to invite for the workshops. In the second phase, 6 volunteer instructors joined and collaborated in the CFG. This article aimed at reflecting the second phase of the study.

Mentioning briefly, at the first phase, the instructors were asked whether they needed any INSET programme designed for the school, and 82% of the participants wanted to join an INSET programme especially designed in accordance with their needs. Main issues raised in the written survey were about improving foreign language skills, mainly speaking; supporting student motivation for learning, promoting the use of computer and informative techniques, and introducing new methods and forms of teaching. Testing language skills and supporting teacher motivation were two other points that were raised. Participants believed that improving quality of education would be possible by supporting teacher development and motivation. Introducing new forms of teaching and techniques suitable for the needs of current students were highly welcomed. As for the expectations of the participants, they believed that the INSET could improve and renovate their existing knowledge, inform them about educational innovations, help them reflect on their teaching practices, and provide opportunities to exchange experience and views. Consequently, instructors believed that students' motivation and knowledge would improve. Six seminars were organized through two academic terms majored on motivation, classroom management, improving language skills, and using technology in language classes. After each seminar, all participants of the school were asked to evaluate the sessions by the institution through a questionnaire. It was a traditional professional development program done by others for or to teachers, and it was general rather than specific. Teachers listened, participated in the activities; however; the program did not have any provision for feedback or follow-up process. The researcher interviewed 10 instructors, volunteer teachers who did not participate in the CFG, after the programme was over to elicit their impressions of and reflections on the INSET.

In the second phase, the researcher organized the CFG meetings. The meetings took place as the INSET programme continued. 6 volunteer teachers joined the group

for about 8 months, participating one meeting in each month for about an hour. All the data driven form the needs analysis survey and interviews helped the researcher to organize the content of CFG meetings. Some of the meetings were planned just after INSET sessions, which also allowed the group to evaluate the session and exchange views before CFG discussions. The purpose of CFG meetings, however, was not to assess the INSET sessions but to take the most out of them as much as possible through discussion in the group and by applications in the class.

Research Sample

The 6 instructors in the group ranged in teaching experience from novice teachers with three-year experience to veteran teachers with over 15 years of experience. Two instructors had a master's degree. All instructors were female. They were new to CFG process. The group coach was the researcher herself for each meeting; however, the teachers directed and created their own learning as they brought issues to be discussed collaboratively. The group members, therefore, were provided with opportunities to reflect beyond surface classroom issues to deep dilemmas that were at the root of their practice. Protocols were used to guide the conversations.

Research Instrument and Procedure

One of the central purposes of CFG is to "make teaching practice explicit and public by 'talking about teaching' and providing a context to understand our work with students." Protocols are the tools that serve for this purpose. According to NSRF, a protocol consists of agreed upon guidelines for a conversation. This type of structure permits much focused conversations to occur. Protocols set rules for who speaks, when, and about what, in essence framing the discourse. To this end, four types of protocols were used, the first being the 'Tuning Protocol'. It was developed primarily for the use of looking closely at student exhibitions. It was often used to keep the group meeting focused and within a specific time limit in two meetings. The second protocol was the 'Charrette Protocol'. The Charrette is a term and process borrowed from the architectural community. According to Juarez (2017), individuals or teams call for a Charrette when they are stuck. They bring their current ideas, or the actual work in progress, to the Charrette, and then ask the group to "work on the work" for them. The other protocol was the observation protocol. 'Classroom Observation Protocol' was used before and after the observations; and classroom observation checklist was also developed. In our last meeting, the 'Final Word Protocol' was used after reading an article about multiple intelligences. The purpose of this discussion format was to give each participant in the group a chance to shape their ideas, understandings, and perspectives enhanced by reading the article and hearing from others.

The data came from two sources, the participating teachers and the researcher. From the participating teachers, the first type of data was collected through CFG meeting interviews conducted by the researcher. The second type of data came from the journal the participants were asked to keep during the study, and their journals were collected with their approval and consent that they had given in the beginning

of the study as the study and ethical procedures were explained. The data that came from the researcher included field notes that she took during CFG meetings and after CFG meetings. Data concerning during-CFG-meetings included documentation of attendance, non-verbal behavior that the researcher found significant to explain, the comments the participants made. The data concerning after-CFG-meetings included reflections of the researcher and included records of impressions from the interviews, conversations and documents.

Data Analysis

All types of qualitative data collected during the study were analyzed according to the principles of "data theming" (Auerbach & Silverstein, 2003; DeSantis & Ugarriza, 2000; Rubin & Rubin, 2012). DeSantis and Ugarriza (2000) propose, "A theme is an abstract entity that brings meaning and identity to a recurrent [patterned] experience and its variant manifestations. As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole" (p. 362). In this way, through themes, we categorize a set of data into "an implicit topic that organizes a group of repeating ideas" (Auerbach & Silverstein, 2003, p. 38) and reach higher-level theoretical constructs when similar themes are observed. To Rubin and Rubin (2012), themes are statements qua (in the role of) ideas presented by participants during interviews that summarize what is going on, explain what is happening, or suggest why something is done the way it is (p. 118). These themes were then identified through a coding scheme. First, CFG meetings were transcribed and the transcripts were solo-coded for themes. They were read for several times by the researcher and by another independent researcher to understand the nuances of the language and patterns. Researcher's notes, as well as journals were also analysed and coded. Participants were asked to keep their journals under two predetermined headings, which were 'Interpretation' and 'Application'. These two headings were mainly about participants' self-reflection after classrooms. To evaluate the journals and the researcher's notes, meaning units were formed including the words and sentences related to each other in terms of content. Then, they were conceptualized and given a code. Once the codes were identified, they were grouped under specific categories. Finally, the categories were compared to one another and the related 'themes' and 'sub-themes' were introduced. The two researchers associated the main themes and sub-themes with the research questions with an attempt to seek answers and evidence from the data. Finally, to identify the degree of agreement between the two researchers regarding the development of themes, inter-rater reliability was calculated. As a result, inter-rater reliability was found to be .83 indicated close agreement between the two raters.

Results

In-service teacher education programmes, seminars, workshops, traditionally, have involved a relatively passive participation by teachers, while they listen to an "expert" pass on new ideas (Sparks, 1994). In the INSET programme organized and implemented by the institution, the teachers did not have the chance to evaluate seminars thoroughly, in other words no follow-up was facilitated. They were given a

short evaluation questionnaire just after each session was over, but the results of these forms were not shared. As the data from first phase of the study indicated, INSET helped teachers to reconsider the issues mentioned, look at them from different perspectives, and keep them on their agenda. However, since there was not any follow-up after each seminar, they believed that the INSET would not lead to any change in their practice. They did not have the chance to reflect on the topics discussed, or try out the suggested strategies and observe. One of the interviewees stated that the INSET seminars excited her, but they were like a 'flash in the pan'. After the seminar, she said she found herself back into usual classroom issues. Another comment was that during the seminars, the school functioned as a community of professionals, but it lasted when teachers walked out of the seminar room.

When we look at the second phase, similar to the findings (Aktekin, 2013; Constantino, 2010; Dunne & Honts, 1998; Gunbay & Mede, 2017; Moore & Carter-Higgs, 2014; Nave, 1998, 2000; Nefstead, 2009; Vo & Nguyen, 2010) in the literature, teachers were positive about the experience and attributed personal and professional growth to their involvement in the CFG. From the transcripts of the meetings, the journals kept and the researcher's notes, it can be inferred that participants found CFG process effective because it was an adaptable process where teachers decided what they wanted to focus on. The CFG work was on-going, not a one-shot experience which enabled teachers to concentrate more on what they were doing. They stated that CFG contributed to a change in their thinking and classroom practices; collaboration increased with support in a small group of trusted-colleagues within their own school. Voluntary participation to the study may have had an impact on this overall positive attitude, as in the studies of Guceri (2005) and Seker (2007). According to the participants, CFG model created a safe and comfortable environment to talk and share their classroom practices. The responses to reflective questions before and after the study and critical friends' journals indicated that CFG was regarded as an effective professional learning community to support and foster teaching and learning. As Snow-Gerono (2005) states professional learning communities created opportunities for dialogue which made it safe to ask questions and work in a community. She indicates that ''good conversations'' require ''safety, trust, and care'' as well as ''common ground,'' ''good content,'' and a sense of being voluntary (p.242). Participants of the study often mentioned the terms constructive, effective, reflective, democratic, comfortable environment for the CFG process. Teachers were content to join these meetings where they shared problems, searched for solutions, suggested and learned activities and tactics. Therefore, CFG created a culture of collaboration and collegiality within the participants and hopefully within the school in the future. Ultimately, participating in CFG functioned as a powerful site for the teachers' professional learning.

One other important point mentioned in one of the meeting was that CFG was like a therapy for teachers. This is in line with the theoretical framework underpinning CFGs, which is sociocultural learning theory. From a sociocultural perspective, the individual and the group context cannot be separated because learning does not occur in isolation. Rather, learning is socially constructed, dependent upon interactions, and

socially mediated (Moll, 2001; Vygotsky, 1986). When asked about the effects of CFG on their teaching performance, the teachers reported some affirmative results. After discussing reasons for students' demotivation and their lack of participation in classroom tasks, the participants offered some suggestions. Each participant in the group shared their favourite warm-up activities. In the following sessions, it was noticed that all participants experienced the instructional idea and had positive feedback from students.

"*Students found the drama activities fun and we all enjoyed during the lesson. After playing the dictation game, they now look for more games. As long as the syllabus allows, I will add such varieties in my lesson*" (a participant's comment from the researcher's note).

One of the participants indicated in her journal that applying variety of activities with her students after CFG meetings changed the atmosphere of her classroom. To her, students noticed that they could use the language they learned.

"*My experiences and the outcomes from these meetings have led me believe in more student-centred learning. The curriculum we follow is teacher-centred and test-oriented. We should give more responsibility to our students*." (Ece, pseudonym)

The participants also mentioned that being part of CFG heightened their motivation for teaching and helped them pay greater attention to students and to themselves, as in the study of Vo and Nguyen (2010).

"*Each time I meet with colleagues in the CFG, I get so inspired and motivated to try new things or approach something in a different way*." (Canan, pseudonym)

When the data from the CFG meetings and journals were coded, and after researcher's notes were evaluated, four themes were detected. These were motivation, institutional constraints, classroom atmosphere and examining students' progress. These topics were determined after in-depth exploration of each case. Table 1 shows the themes and relevant comments.

Table 1
Main Themes from the Meetings, Journals and Researcher's Notes

	Institutional Constraints	*Motivation*	*Classroom Atmosphere*	*Examining Student Progress*
Comments	Lack of support, understanding, no one listening	Demotivation, frustration, unwillingness	More integrated - skill courses	Portfolios, projects being part of the instruction
	Lack of encouragement	Students not taking active part in their learning	Interactive classrooms	Autonomous students
	Lack of teacher autonomy	Dense syllabus, only course book as a teaching source	Less teacher talking, more student participation	More productive activities, assignments
	Not taking part in decision making process (e.g. curriculum, books)	Lack of technological devices, programs	Target setting	Progress reports are essential

Participants in the CFG were primarily concerned about the motivation problem of both students and teachers. When the contents of meetings and journals were analysed, motivation was the first and the most significant subject bothering teachers. Participants agreed on the fact that when students are demotivated, it is inevitable for the teachers to be so. *Demotivation*, *lack of motivation*, *frustrating*, *unwilling*, *reluctant* were the phrases mostly encountered. One of the most important reasons for demotivation was said to be the stress to follow the syllabus for teachers and the impact of this on students, teaching for the exams, monotonous lessons, quality of the students, no level determination exams, and teachers teaching the same classroom for the whole academic year. The biggest challenge for teachers was that most of them shared similar thoughts, but they could not discuss the issue on a democratic, supportive environment except for the first time they did it in CFG meetings.

The atmosphere the CFG created enabled teachers to reveal their thoughts and concerns freely, which was the outstanding feature of this study. The friends supported each other, listened attentively, and provided constructive feedback whenever necessary. As mentioned in the literature, when teachers are provided professional support and guidance, they raise awareness on their professional applications, build confidence; and as a result, they are empowered and they may change (Christison & Stoller, 1997; Curry, 2008; Kelley, 2007). However, these cannot be achieved without the administrative support. Institutional impediments made its mark on most of the meetings. Teachers constantly indicated need of support from the institution. They mentioned that the management should consider arranging meetings like CFGs, and consult teachers' opinions about the curriculum, textbooks, syllabus, and exams. Teachers' motivation needs to be taken into consideration. Nave (1998) noted that CFGs did not thrive when a professional culture that supported teacher collaboration and collegiality was absent; therefore, this professional culture must be supported by the leaderships of the school. They believed that CFG has an impact of motivating participants by mutual respect and support.

Participants seemed to share similar feelings that they put too much emphasis on grammar. Teachers agreed that the course-book followed was satisfying and encouraged multi-skill instruction. However, they admitted that they liked teaching grammar and students were more content when they were taught so. Gamification of activities for all skills was discussed, and teachers indicated that they improved noteworthy on interactive classroom activities after participating in CFG. Final issues raised were about examining student progress. It was agreed on that the curriculum could be designed according to students' potential and background knowledge. From the outcome of the meetings, participants approved that assessment standards needed to be reconsidered. What assessment methods best enable students to demonstrate their achievement was thoroughly discussed. The discussions led participants to enrich their knowledge of assessment strategies and methods.

Being observed has always been stressful because teachers do not want to invite anyone into their classrooms where they feel comfortable and secure. Therefore, any intervention, even goodwill, can be regarded as an intrusion. So, when critical friends were asked to observe each other, they were uncommitted at first. Most of them had

never been observed by their colleagues. They got paired and scheduled their programs for the observation. The observation protocol was used by the participants along with the observation checklist. Pre and post observation sessions were held by the pairs. In the CFG meeting, overall observation process was evaluated. Reflections were also noted down in the journals. Critical friends' common thought about the observations was that it was difficult at first, but totally helpful experience at the end. Participants found the post observation feedback sessions constructive as well.

Discussion, Conclusion and Recommendations

Numerous professional development programmes currently provided focus on simply exposing teachers to the latest theories and initiatives without providing the conditions (e.g., opportunities to practice, available time, constructive feedback, etc.) required for them, which is actually the very heart of professional development. When teachers are to follow an intense program in the school or, when they worry about to keep up with the syllabus, they cannot benefit from these programmes thoroughly. Teachers generally consider that in-service training activities are planned with insufficient relevance to their particular classroom practices and realities of their classrooms (Atay, 2008; Bayrakci, 2009; Seker, 2007). Therefore, in-service training needs of teachers should be considered, and they should have opportunity to have a word in their own professional development. According to Clark (2001), some institutions are moving towards initiatives that provide a more dialogic and meaning-making view of teaching and learning, whereby teachers take a more active role in their own development, collaborating with others in their profession to address various pedagogical problems (p.172). CFG can provide an effective model by promoting teacher collaboration, which leads to continuous professional development.

In this study, a learning community modeled after the CFG framework was implemented at a state university in Turkey. It focused on CFGs as an opportunity for professional development by examining teacher collaboration and its influence on reflective practice and teaching. As Johnson (2009) stated, consistent with a socio-cultural perspective, CFG model seeks to create a mediational space for teachers to engage in on-going, in-depth, systematic, and reflective examinations of their teaching practices and their students' learning. The results showed that CFG model created a reflective and collaborative form of teachers' professional development.

The concept of professional development is moving away from the practice of attending courses and training days to the concept of lifelong learning and continuing learning today (Fraser et al., 2007). Therefore, in-service courses should be no longer perceived as short-term or one-shot programmes, given by a "professional" outside. These courses should be seen as a part of continuing education. We acknowledge that short-term workshops do not provide opportunities for teachers to make connections between the theory presented and the implications that it has for classroom teaching. These connections cannot be made without teachers taking direct role in structuring and investigating their practice. CFGs are, therefore, a valuable professional

development model as teachers are given opportunities to take the time to inquire into areas of their teaching that they believe needs attention.

Teachers are more likely to seek assistance and advice from other teachers than from resources in developing and enhancing their classroom practice (Poehner, 2009). As Bayrakci (2009) stated, giving teachers opportunities to guide their own professional development in a flexible system will enhance their professional approach and willingness to participate in in-service training activities. Voluntary participation should be encouraged. Similar to the 'Portfolio Group' study of Curtis et.al. (2013), the benefit of shared stories of individual and collaborative experiences in CFG is that teachers come to know from each other's successes and challenges. Hearing the stories of success from the colleagues in the group can help teachers to grow, and hearing the steps taken to overcome the challenges can help them to be courageous towards their own concerns. CFGs provide the opportunity to work collaboratively, to delve into classroom-based dilemmas, to focus on the teaching and learning of specific academic content, and build strong working relationships among teachers. Students are the beneficiaries of this model.

Impacts of the teachers' CFG participation on students can be also examined in future studies. According to Little et. al. (2003), teachers are usually alone when they examine student work and think about student performance. CFGs have enabled teachers to leave the isolation of their own classrooms and think together about student work in the broader contexts of school improvement and professional development. So, as for future studies, how examining student work by a group of teachers in a CFG affects students' performance could be investigated.

References

Aktekin, N. C. (2013). *The impact of in-service teacher education (INSET) programme on professional development of EFL teachers through the critical friends group (CFG)*. (Unpublished Doctoral Dissertation). Cukurova University, Adana, Turkey.

Andreu, R., Canos, L., de Juana, S., Manresa, E., Rienda, L., & Tari, J.J. (2003). Critical friends: a tool for quality improvement in universities. *Quality Assurance in Education*, *11*(1), 31-36.

Atay, D. (2008). Teacher research for professional development. *ELT Journal*, *62*(2), 139-147.

Auerbach, C. F., & Silverstein, L. B. 2003. *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.

Bambino, D. (2002). Critical friends. *Educational Leadership*, *59*(6), 25-27.

Bayrakci, M. (2009). In-service teacher training in Japan and Turkey: A comparative analysis of institutions and practices. *Australian Journal of Teacher Education*, *34*(1), 10-22.

Bernacchio, C., Ross, F., Washburn, K.R., Whitney, J., & Wood, D.R, (2007). Faculty collaboration to improve equity, access, and inclusion in higher education. *Equity & Excellence in Education*, *40*(1), 56-66.

Bloom, B. A. (1999). Critical friends groups: In pursuit of excellence. *Mt. Airy Times Express*. Retrieved November 1, 2016, from http://www.nsrfharmony.org/mtairy.html

Coalition of Essential Schools (CES) (2008). Oakland, CA. Retrieved May 3, 2016, from http://www.essentialschools.org

Christison, M. A., & Stoller, F. L. (Eds.) (1997). *A handbook for language program administrators*. Burlingame, CA: Alta Book Center Publishers.

Clausen, K.W., Aquino, A.M., & Wideman, R. (2009). Bridging the real and ideal: A comparison between learning community characteristics and a school-based case study. *Teaching and Teacher Education, 25*, 444-452.

Clark, C. (2001). Good conversation. In *C. M.* Clark (Ed.), *Talking shop: Authentic conversation and teacher learning*. New York, NY: Teachers College Press.

Costa, A., & Kallick, B. (1993). Through the lens of a Critical Friend. *Educational Leadership*, 51(2), 49-51.

Costantino, T. (2010). The Critical Friends Group: A Strategy for Developing Intellectual Community in Doctoral Education. *i.e.: Inquiry in Education, 1*(2), 1-12. Retrieved June 2, 2016, from http://digitalcommons.nl.edu/ie/vol1/iss2/5

Curry, M.W. (2008). Critical Friends Groups: The possibilities and limitations embedded in teacher professional communities aimed at instructional improvement and school reform. *Teachers College Record*, *110* (4), 733-774.

Curtis, G., Reid, D., Kelley, M., Martindell, P.T., & Craig, C.J., (2013). Braided lives: Multiple ways of knowing, flowing in and out of knowledge communities. *Studying Teacher Education*, *9*(2), 175-186.

DeSantis, L., & Ugarriza, D. N. (2000). The concept of theme as used in qualitative nursing research. *Western Journal of Nursing Research*, *22*(3), 351–72.

DuFour, R. (2004). What is a "professional learning community"? *Educational Leadership*, *61*(8), 6-11.

DuFour, R., Eaker, R. E., & DuFour, R. B. (2005). *On common ground: The power of professional learning communities*. Bloomington, IN: Solution Tree.

Dunne, F., & Honts, F. (1998). That group really makes me think! Critical friends groups and the development of reflective practitioners. Paper presented at the AERA Annual Meeting, San Diego, CA.

Dunne, F., Nave, B., & Lewis, A. (2000). Critical friends: Teachers helping to improve student learning. *Phi Delta Kappa International Research Bulletin*, *28*, 9-12.

Evans, L. (2019) Implicit and informal professional development: what it 'looks like', how it occurs, and why we need to research it. *Professional Development in Education*, *45*(1), 3-16, DOI: 10.1080/19415257.2018.1441172

Franzak, J. (2002). Developing a teacher identity: The impact of critical friends practice on the student teacher. *English Education*, *34*(4), 258-280.

Fraser, C., Kennedy, A., Reid, L., & McKinney, S. (2007). Teachers' continuing professional development (CPD): Contested concepts, understandings and models. *Journal of In-Service Education, 33*(2), 153-69.

Garet, M., Porter, A., Desimone, L. Birman, B., & Yoon, K. (2001). What makes professional development effective? Analysis of a national sample of teachers. *American Education Research Journal*, *38*(4), 915-945.

Guceri, M. 2005. *The impact of in-service teacher training on change agentry role of teachers and their contribution to school improvement*. (Unpublished Ph.D. dissertation). Middle East Technical University, Ankara, Turkey.

Gunbay, E., & Mede, E. (2017). Implementing Authentic Materials through Critical Friends Group (CFG): A Case from Turkey. *The Qualitative Report*, *22*(11), 3055-3074.

Harris, A. (2014). *Distributed leadership matters: Perspectives, practicalities, and potential*. Thousand Oaks, CA: Corwin.

Horn, I. S., & Little, J. W. (2010). Attending to problems of practice: Routines and resources for professional learning in teachers' workplace interactions. *American Educational Research Journal*, *47*(1), 181–217.

Johnson, K.E. (2009). *Second language teacher education: A sociocultural perspective*. New York: Taylor & Francis.

Juarez, K. (March 30, 2017). Charrette Protocol. Retrieved September 5, 2018, from: https://www.schoolreforminitiative.org/download/charrette-protocol/

Kelley, M. (2007). *Critical Friends Groups: Building teacher knowledge through collaboration and reflection*. NSRF Research Conference, Seattle.

Key, E. (2006). Do they make a difference? A review of research on the impact of Critical Friends Groups. A Paper Presented at the National School Reform Faculty Research Forum. Retrieved May 25, 2017, from http://www.nsrfharmony.org

Little, J., Gearhart, M., Curry, M., & Kafka, J. (2003). Looking at student work for teacher learning, teacher community, and school reform. *Phi Delta Kappan*, *85*(3), 185-192.

Lomos, C., Hofman, R. H., & Bosker, R. J. (2011). Professional communities and student achievement–a meta-analysis. *School Effectiveness and School Improvement*, 22(2),

121-148. Retrieved March 23, 2016, from https://doi.org/10.1080/09243453.2010.550467

McLaughlin, M. W., & Talbert, J. E. (2006). *Building school-based teacher learning communities: Professional strategies to improve student achievement*. NY: Teachers College Press.

Moll, L. C. (2001). Through the mediation of others: Vygotskian research on teaching. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 111–129). Washington, DC: American Educational Research Association.

Moore, J. A. and Carter-Hicks, J. (2014) "Let's Talk! Facilitating a Faculty Learning Community Using a Critical Friends Group Approach. *International Journal for the Scholarship of Teaching and Learning*, 8(2), Article 9. Retrieved May 3, 2016, from https://doi.org/10.20429/ijsotl.2014.080209

Nave, B. (1998). First year evaluation report to cohort 3 schools: Preliminary analysis of data from 1997- 1998 school visits. Providence, RI: Brown University. Retrieved October 5, 2014, from http://www.nsrfharmony.org

Nave, B. (2000). *Among critical friends: A study of critical friends groups in three Maine schools.* (Unpublished Ed.D. dissertation). Harvard University, Massachusetts, United States.

Nefstead, K.A. (2009). *Critical Friends Groups: A learning community's journey.* (Unpublished Ph.D. dissertation). Capella University, MN, USA.

National School Reform Faculty (NSRF) (2014). The Harmony Education Center, Bloomington, IN. Retrieved May 16, 2016, from http://www.nsrfharmony.org

Poehner, M.P. (2009). *Drafting a new chapter on critical friends groups: Exploring teacher learning from a Vygotskian perspective.* (PhD dissertation). Pennsylvania State University, USA. Retrieved from ProQuest Digital Dissertations database. (Publication No. UMI3374533).

Rosenholtz, S. (1989). *Teacher's workplace: the social organization of schools*. New York: Longman.

Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Thousand Oaks, CA: Sage.

Smith, L. (2016). Tailoring The Final Word Protocol to Develop Students' Critical Thinking. [Blog Post]. Retrieved April 30, 2018, from https://www.schoolreforminitiative.org/blog/tailoring-the-final-word-protocol-to-develop-students-critical-thinking/

Snow-Gerono, J. L. (2005). Professional development in a culture of inquiry: PDS teachers identify the benefits of professional learning communities. *Teaching and Teacher Education*, 21, 241-256.

Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change*, 7, 221-258

Stoll, L., & Louis, K. S. (2007). Professional learning communities: Elaborating new approaches. *Professional learning communities: Divergence, depth and dilemmas*, (1-13).

Seker, M. (2007). *Exploring effects of collaborative learning in enhancing teachers' development in teaching English to young learners*. (Unpublished Ph.D. dissertation). Cukurova University, Adana, Turkey.

Van Lare, M.D., & Brazer, S.D. (2013). Analyzing learning in professional learning communities: A conceptual framework. *Leadership and Policy in Schools*, 12(4), 374-396.

Vo, L.T., & Nguyen, H.T.M. (2010). Critical friends group for EFL teacher professional development. *ELT Journal,* 64 (2), 205-213.

Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: MIT Press.

Wang, T. (2016). School leadership and professional learning community: case study of two senior high schools in Northeast China, *Asia Pacific Journal of Education*, 36:2, 202-216, DOI: 10.1080/02188791.2016.1148849

Yin, H., & Zheng, X. (2018). Facilitating professional learning communities in China: Do leadership practices and faculty trust matter? *Teaching and Teacher Education*, *76*, 140-150. https://doi.org/10.1016/j.tate.2018.09.002

Kritik (Eleştirel) Arkadaş Grubu (CFG): İngilizce Öğretmenlerine Yönelik Sorgulamaya Dayalı Mesleki Gelişim Modeli

Atıf:

Aktekin, N. C. (2019). Critical friends group (CFG): Inquiry-based professional development model for Turkish EFL teachers. *Eurasian Journal of Educational Research,* 81, 1-20, DOI: 10.14689/ejer.2019.81.1

Özet

Bu çalışma sorgulamaya dayalı mesleki gelişim modeli olan "Kritik (Eleştirel) Arkadaş Grubu (Critical Friends Group-CFG)" uygulamasının Türk İngilizce öğretim görevlilerinin mesleki gelişimi üzerindeki etkisini araştırmaktadır.

Problem Durumu: Kısa dönemli yapılan eğitimlerin öğretmenlerin teorik bilgi ile sınıf içi uygulaması arasında ilişki kurmalarına yeterince olanak sağlamadığı bilinmektedir. Evans (2019) yeni fikirlerin ya da düşünme şekillerinin insanların uygulamalarına yansımasının yavaş yavaş olduğunu ve bu fikir ve bakış açılarının uygulama sırasında meydana gelen etkileşimlerle ve diğer etkenlerle geliştiğini söylemektedir. CFG modeli son zamanlarda sıkça uygulanan mesleki öğrenme topluluklarından birisidir ve bu çalışmada etkinliği araştırılmıştır. Mesleki öğrenme topluluğunun en güncel tanımlarından birini Harris (2014) şöyle yapmıştır: Veri ve kanıtları analiz ederek ortaya çıkan öğrenici ihtiyaçlarını dikkate alarak bir grup profesyonelin uyumlu bir şekilde çalışmasıdır. Grup içinde bulunan öğreticiler arasında ast-üst ilişkisi yoktur, tüm öğretmenler birbirlerine destek olur, mentörlük yapar. Dolayısıyla kısa süreli gerçekleştirilen ve bir eğitici tarafından bilgilerin aktarıldığı tek yönlü eğitimler yerine öğretmenlerin işbirliği içinde çalıştıkları ve kendilerini rahat hissttikleri, birbirlerinden öğrendikleri mesleki gelişim modellerinin daha faydalı olduğu savunulmaktadır. Bu çalışmada uygulanan CFG modelinin teorik temeli sosyo-kültürel theriye dayanmaktadır. Bu teoriyle uyumlu olarak CFG öğretmenlere devam eden, derinlemesine inceleme sağlayan ve yansıtıcı teknikler kullanabilmelerine olanak vermektedir ve sonuç olarak öğrenci başarısını arttırmayı hedeflemektedir.

Araştırmanın Amacı: Araştırma CFG modelinin öğretmenlerin mesleki gelişimi üzerindeki etkisini ölçmek amacıyla planlanmıştır. Öğretmenlerin bir grup halinde, hiyerarşik bir yapı olmaksızın çalışmalarını, beraber öğrenmelerini ve gelişmelerini amaçlamaktadır. Sınıfiçi zorlukları, kullanılan öğretme tekniklerin etkinliğini, farklı yöntem ve fikirlerin paylaşımını sağlayan CFG modelinin etkinliği bu çalışmayla araştırılmıştır. Bu doğrultuda iki araştırma sorusu sorulmuştur:

1. Kendi fikirleri dikkate alındığında, Kritik Arkadaş Grubu (CFG) modeli içerisinde yer almak öğretmenlerin mesleki geişimi için güçlü bir yöntem midir?
2. Öğretmenler bu model içinde yer aldıktan sonra hangi açılardan geliştiklerini düşünmektedirler?

Araştırma Yöntemi: Araştırma bir Türk devlet üniversitesinde uygulanmış nitel vaka çalışmasıdır. Brown Üniversitesi Annenberg Enstitüsü tarafından Okul Reformu kapsamında kurulmuş NSRF (National School Reform Faculty) tarafından geliştirilen CFG modeli uygulanmıştır. Grup aralarında ast-üst ilişkisi olmayan 6 öğretmenden oluşmuştur. Gruba bir öğretmen koçluk yapmıştır (bu çalışmada araştırmacı bu görevi üstlenmiştir). Belli konularda hazırlanmış protokoller toplantılarda kullanılmıştır. Bu protokoller sadece kılavuz görevi görmektedir, toplantıların planlı bir şekilde geçmesini sağlamaktadır. Grup modeli bir eğitim öğretim dönemi boyunca uygulanmıştır. Verilerin analizinde tümevarım analiz tekniği uygulanmıştır. Nitel araştırma deseni olarak gömülü teori, araştırma ve veri analiz yöntemi şeklinde kullanılmıştır. Verilerin kaynağı öğretmenlerin tutukları günlükler, yüz yüze görüşmeler, toplantı kayıtları ve araştırmacının notlarıdır. Öğretmenlerden olur formu alınmıştır. İsimler gizli tutulmuştur. Toplantı kayıtları ve yüz yüze görüşmeler yazıya

dökülmüştür; tüm verilerle beraber kodlama yöntemi ile incelenmiştir. İki araştırmacı tarafından kodlar belirlendikten sonra kategoriler oluşturulmuş ve bu kategoriler karşılaştırlmıştır. İlgili temalara ve alt-temalara karar verilmiştir. Son olarak değerbiçicilerarası güvenirlik hesaplanmıştır; bu sonuç .83 olarak bulunmuştur.

Araştırma Bulguları: Çalışmanın sonucu bu grupta çalışan öğretmenlerin mesleklerine devam ederken daha iyi hissettiklerini ve işlerine daha çok bağlandıklarını göstermiştir. Grup çalışması öğretmenlere işbirlikçi bir ortamda çalışma şansı sunmuş, sınıf içinde yaşanan çıkmazların üstesinden gelme ve belirli akademik içeriklerin öğrenilmesi ve öğretilmesi üzerinde yoğunlaşmayı sağlamıştır. Öğretmenler arasında güçlü bir mesleki bağ kurulmasına yardımcı olmuştur. CFG güvenli ve rahat hissedilen bir ortam yaratmıştır. Bu açıdan sonuçlar diğer çalışmalarla benzerlik göstermektedir ((Dunne & Honts, 1998; Nave, 1998, 2000; Nefstead, 2009; Vo & Nguyen, 2010; Constantino, 2010; Moore & Carter-Higgs, 2014; Gunbay & Mede, 2017). Yapıcı, etkili, yansımacı, demokratik, rahat terimleri sık sık kullanılmıştır. CFG toplantıları ve tutulan günlüklerden gelen verilere göre katılımcılar 4 temada fikirlerini dile getirmişlerdir. Bunlar motivasyon, kurumsal kısıtlar, bütünleşik beceri öğretimi ve sınıfiçi atmosfer, ve öğrencilerin gelişiminin takip edilmesidir. Hem öğrenci hem de öğretmenlerin motivasyonlarının arttırılmasına yönelik ortak düşünce üzerinde durulmuş ve paylaşılan fikirler grupta tartışılmıştır. Öğretmenlerin fikir alışverişi sonucunda ortaya çıkan uygulamaya yönelik yaklaşaımların olması katılımcıların özgüvenleri arttırmıştır. Bu uygulamaların yönetimle paylaşılması ve tüm okula yayılması düşüncesi benimsenmiştir.

Araştırma Sonuçları ve Önerileri: CFG modeli öğretmenlerin öğretim yöntemlerinde karşılaştıkları sorunların üzerine gitme ve iyileştirme açısından faydalı bir uygulama olmuştur. Çalışmanın gerçekleştirildiği kurumda süregelen mesleki gelişimin önemi farkedilmiş, bu ve benzer uygulamaların daha geniş çapta devam etmesinin önemi yönetimle paylaşılmıştır. Bu gibi gelişim modellerinin uygulanabilmesi için okul yönetimlerinin desteği ve işbirliği önemlidir ve gerçekleştirilmelidir. Bu grup çalışmasının öğrenci öğrenimine etkisi ilerleyen çalışmalarda araştırılmalıdır.

Anahtar Kavramlar: Öğretmenlerin mesleki gelişimi, Kritik Arkadaş Grubu modeli, Sosyokültürel teori, Mesleki öğrenme toplulukları, protokol

Eurasian Journal of Educational Research 81 (2019) 21-36

Eurasian Journal of Educational Research
www.ejer.com.tr

Creative Thinking Patterns In Student's Scientific Works

Alfi SYAHRIN[1], DAWUD[2], Heri SUWIGNYO[3], Endah Tri PRIYATNI[4]

ARTICLE INFO

Article History:

Received: 07 Jan. 2019

Received in revised form: 18 Feb. 2019

Accepted: 16 May 2019

DOI: 10.14689/ejer.2019.81.2

Keywords

patterns, creative thinking, writing, scientific work

ABSTRACT

Purpose: This study aimed to explain creative thinking patterns, including imaginative thinking, divergent thinking, and lateral thinking of students in scientific work. The scientific work studied was in the form of the Student Creativity Program at Malang State University, Indonesia.

Research Methods: This study used a qualitative approach with content analysis method. The data were in the form of sentences, sentence groups, paragraphs, paragraph clusters, and whole text. The data source of this research was the writing of student scientific work. The data were collected through surveys, documentation studies, and interviews. The process of data analysis was grouped into three stages, namely data reduction, data presentation, and conclusion drawing.

Findings: The findings of this study indicated that (1) the pattern of imaginative thinking in student scientific work appeared in the diversity of ideas based on experience and use of metaphorical language. Ideas were born through simple propositions in paragraph form. (2) Divergent thinking patterns in student scientific work could be seen from the diversity of ideas and techniques for problem solving. Criteria for markers of divergent thinking patterns were characterized by originality, flexibility or elaboration. (3) Lateral thinking patterns in student scientific work could be seen from the use of a variety of unique ideas according to the complexity of problem solving.

Implications for Research and Practice: Based on the results of the study, it can be concluded that creative thinking patterns of students in scientific work showed the use of various forms of ideas in accordance with the complexity of problem solving. The findings of this study contribute to our understanding of the importance of using creative thinking patterns in scientific writing. However, for further research it is recommended that we examine creative thinking patterns with different levels of objects so that the findings of this study appear more widely in various levels.

© 2019 Ani Publishing Ltd. All rights reserved

[1]Postgraduate Program, Universitas Negeri Malang, INDONESIA, e-mail: alfisyahrin745@gmail.com
ORCID: https://orcid.org/0000-0001-6356-029X
[2]Faculty of Letters, Universitas Negeri Malang, INDONESIA, e-mail: dawud.fs@um.ac.id
ORCID: https://orcid.org/0000-0002-1791-8649
[3]Faculty of Letters, Universitas Negeri Malang, INDONESIA, e-mail: heri.suwignyo.fs@um.ac.id
ORCID: https://orcid.org/0000-0002-7382-0398
[4]Faculty of Letters, Universitas Negeri Malang, INDONESIA, e-mail: endah.tri.fs@um.ac.i
ORCID: https://orcid.org/0000-0002-1454-9569

Introduction

Creative thinking is defined as a mental activity used to build ideas. Creative thinking is a thought process that creates new ideas widely and variedly (Hidayat et al, 2018). Creative thinking is a mental activity that is used by someone to develop new ideas fluently and flexibly. Lee (2005) states that creative thinking skills involve fluency, flexibility, originality, and elaboration while creative personality involves curiosity, independence, risk taking, and task commitment. Creative thinking contains measurable competencies in problem solving (Shabrina & Kuswanto, 2018). In creative problem solving it is necessary to increase the level of confidence (Liu et al, 2017). Problem solving requires creative thinking, including analyzing, clarifying and describing based on information or facts.

Rawlinson (1981, p.6) says that in creative thinking there are three patterns that must be considered, namely imaginative, divergent, and lateral. First pattern is imaginative. Imagination is a cognitive process which is a comlex mental activity in which the elements in mental activity are released from sensory sensations. Djojosuroto (2007, p.259) says that imagination is the power to form images or images (images) of mental concepts in the process of forming a certain picture. Imagination involves a synthesis that combines aspects of memory, memories or experiences into a mental construction that is different from the past, or which becomes a new reality. Second one is divergence. Divergent thinking is oriented towards finding answers or alternatives. Divergent thinking is a type of thinking ability that is often used in creative problem solving. Divergent thinking is the process of generating a number of ideas that allow providing the right solution for a particular problem (Lewis & Lovatt, 2013). Munandar (2004) explains that divergent thinking is a mental operation that demands the use of creative thinking skills, including fluency, flexibility, originality, and elaboration and collaboration. That is, it is said to think divergently if it meets several criteria, smooth thinking, flexibility, originality, and collaborating in finding new ideas. Third pattern is lateral. Lateral thinking is related to generating new ideas. There is a feeling of curiosity that the new idea is related to the discovery of the technique. This is a very small aspect of the problem. The new idea is an element of change and progress in all fields of science ranging from engineering to art, from politics to someone's happiness (de Bono, 1991, p.11).

In a communication, both oral and written, mastery of knowledge of creative thinking patterns is an important aspect. This knowledge includes the process of thinking in solving problems and developing ideas into new ideas. One of the activities implicating creative thinking patterns in written communication is writing student scientific work. Writing scientific papers is a form of writing containing objective ideas. The form of scientific work and the language used to present ideas must be scientific (Kusmana, 2012, p.9). Scientific language in general has systematic, logical, and objective characteristics in presenting scientific ideas.

The pattern of creative thinking in student scientific work allows to produce diverse ideas, thus from these ideas one can choose the most appropriate answer in

problem solving. Creative thinking is known to be in the cognitive realm. Anderson and Krathwohl (2001, p. 99) involve three types of knowledge, namely conceptual, procedural, and metacognitive with six cognitive processes in creativity, namely remembering, clarifying, distinguishing, applying, analyzing, and evaluating. Writing is known to be in the psychomotor realm and scientific work is in the affective domain. The integration of the three allows for a shift or development of the theory of creativity into a broader realm, from the cognitive domain to the affective domain or the cognitive and psychomotor domains or encompass cognitive, affective, and psychomotor domains. The cognitive domain focuses on thinking skills and knowledge as the basis for creative work. The cognitive domain emphasizes various aspects of mental abilities related to creativity. In other words, this research can provide theoretical benefits in the form of the birth of the theory of writing new scientific works and forms of creative thinking in writing scientific works, while the practical benefits, students gain practical experience in writing scientific work through creative thinking. The experience is expected to be beneficial for the development of individual intelligence and student social intelligence in writing scientific work. Scientific works that are written are able to produce credible arguments.

Scientific work presents scientific ideas or arguments based on facts. The idea of science must be trusted and accepted by the truth, so that it is necessary to present it correctly (Kusmana, 2012, p.3). Scientific writing is an essay that presents arguments using logical thinking correctly in problem solving. Discussion of the problem in scientific work is usually an important part, so that in this section the author uses the ability to think complex, namely linking between problems, facts, theories, and problem solving.

Creative thinking patterns are expected to reveal problem solving to determine the effectiveness of scientific writing with the reality faced. Creative thinking can contribute to writing, such as helping in building narratives (Lengelle et al, 2013). The complexity of creative writing requires the use of language to explore and express experiences in ways that are unique, imaginative, and appropriate in context (Vass, 2007). In the context of creative writing, productive outcome talks can be defined as expressions of experiences and ideas appearing according to circumstances.

Research on creative thinking has been done by (Lengelle et al, 2013). Lengelle et al examined the effects of creative writing. The research findings obtained are that the idea arises from the situation or information provided and knowledge possessed. Eckhoff and Urbach (2008) conducted research on understanding imaginative thinking (the socio-cultural conception of creativity and imaginative thinking). His research results show that it is based on understanding children's development in an effort to meet the needs of diverse students in each class. Just like early educators who pay attention to the cognitive and social needs of children, it is also important to foster children's creative needs. Lack of attention to developing imaginative thinking, basically not paying attention to the needs of all children. Through careful attention to the imaginative efforts of children, educators will empower children to develop

invaluable tools that can be part of their repertoire's contribution to understanding and contributing to their world.

The difference between this research and the mentioned research can be observed in terms of the focus studied and the subject being targeted for the study. This research seeks to gather information about creative thinking patterns in student scientific work. The difference illustrates that the topic of this research is a new topic that is worthy of research. Based on this context, this research study focused on creative thinking patterns in the writing of student scientific papers.

Method

Research Design

This study used a qualitative approach with the content analysis method. A qualitative approach to the method of content analysis is useful to gain an in-depth understanding of creative thinking patterns. This research approach is used to describe, explain, and explore students' creative thinking patterns in scientific work. Content analysis was used to find the existence of certain sentences, concepts, or paragraphs in texts or a series of texts. The pattern of creative thinking can be seen from the form of developing ideas and the use of cohesion. The activity was carried out to find out the reality of using creative thinking patterns in writing, based on this fact the analysis was carried out so that students' creative thinking patterns in writing could be concluded. The use of a qualitative approach is based on the nature and characteristics, namely having a natural background as a source to get data directly, is descriptive, and meaning is the main concern.

The research data was in the form of interagency relations in the text of the student's scientific work. Interagency relations were exposed in sentences, clusters of sentences, paragraphs and paragraph clusters. The interagency relationship was realized through creative thinking patterns that start from the excavation of ideas, the selection and formation of sentences as a vehicle for developing ideas, and the realization of propositions in a series of sentences in the form of paragraphs. Therefore, sentences, paragraphs, and paragraphs in student writing reflect creative thinking patterns in developing scientific writing ideas.

The data source of this research was the writing of student scientific work. Scientific writing has the characteristics of a model of persuasion in logical reasoning that is in accordance with the logic of thinking of scientific truth to be convincing. This paper contained many ideas, so that patterns of creative thinking in language activities or pouring ideas would appear. Scientific writings chosen as data sources were scientific writings written based on themes that were not determined and met the adequacy for analysis. The selection of scientific writing needs to be done with the intention that the scientific writing can be analyzed according to the focus of the problem under study.

Research Sample

The participants in this study were 15 students with various fields in Malang State University, Indonesia. This study examined the patterns of creative thinking of students in writing scientific papers. The scientific work studied was in the form of the Student Creativity Program in 2017 on a topic not determined by the subject of the study. This was based on the idea that the Student Creativity Program is one form of scientific work compiled using scientific procedures. Because the Student Creativity Program was the result of scientific thinking, and the theoretical foundation used as an analytical tool was a theory about the characteristics of scientific thinking.

Research Instruments and Procedures

The instrument of this study consisted of data collection instruments and data analysis guides. The data collection instrument was used to obtain data that was in accordance with the focus of the research, while the data analysis guide was used to analyze the data according to the problems in this study. This research, when viewed from the focus of the problem under study, actually only examined documents in the form of student scientific papers. To confirm the data that has been obtained from the student's writing, the researcher conducted an interview with the supervisor. In conducting interviews with lecturers interview guides containing questions related to the focus of the research problem were used.

Based on this explanation, the instruments developed as a tool for collecting data for researchers were of two types, namely surveys and data collection guidelines. Both types of instruments were used gradually in the process of conducting research. The data collection guide was used to collect data about creative thinking in writing student scientific papers. The guide was based on the focus of the research under study.

Collecting data about creative thinking in the development of paragraphs and paragraph groups in student scientific work directs observations in paragraph form. The form of the paragraph in question included (1) the pattern of developing ideas in paragraphs, and (2) the technique of exposing ideas in paragraphs. By using a few steps of the guide, the data needed can be captured more thoroughly and focused. When reading data sheets, researchers can mark the data found by coding the data. After reading the data sheet, the researcher moved the data on the data formatting sheet to be analyzed further.

Data Analysis

This research, when viewed from the focus of research, primarily aimed at reviewing documents in the form of student scientific papers. To confirm the data that has been obtained from the student's writing. The process of data analysis was grouped into three stages, namely data reduction, data presentation, and conclusion (Miles & Huberman, 2014, p. 16). (1) Data reduction in research is a form of analysis that sharpens, classifies, directs, and organizes data in such a way that final

conclusions can be taken accurately. (2) Presentation of data is an activity when a set of information is compiled, thus giving the possibility of drawing conclusions and taking action. The form of qualitative data presentation (a) narrative text, in the form of notes and (b) matrices, graphs, networks, and charts. These forms combine structured information in a form that is coherent and easily achieved, making it easier to see what is happening, whether the conclusions are correct or otherwise do the analysis again. (3) Efforts to draw conclusions are conducted continuously by researchers as long as they have not found new things from the study of creative thinking in the writing of student scientific papers.

Results

This section presents the results of research on creative thinking patterns in scientific work. Writing scientific papers is an activity that requires writers to produce writings with scientific conventions. The scientific conventions in question included the logic of thinking, systematics, and the style of language used. In this study, creative thinking patterns in student scientific works were presented based on three aspects, namely imaginative thinking, divergent thinking, and lateral thinking.

Based on the results of the research data analysis, there were 36 creative thinking patterns with data sources of 15 student scientific works. The results of grouping data on creative thinking patterns can be seen in the table 1.

Table 1

The Results of Grouping Data on Creative Thinking Patterns

Number of data sources	*Creative thinking patterns*	*Indicator*	*Number of sentences*
15 Scientific work	Imaginative	Ideas Based on Experience	2
		Use of Metaphorical Language	1
	Divergent	Development of Ideas	11
		Various Interpretations	10
	Lateral	Assumption	6
		Bringing Up a New Idea	6
Amount of data			36

Based on the table it can be seen that (a) imaginative thinking patterns had a total of 3 data consisting of ideas based on experience (2) and the use of metaphorical language (1), (b) divergent thinking patterns had a total of 21 data consisting of development of ideas (11) and various interpretations (10), and (c) lateral thinking patterns had a total of 12 data consisting of assumptions (6) and new ideas (6).

Based on the results of data analysis it can be seen that the creative thinking patterns that were dominantly used in student creativity programs were divergent and lateral thinking. However, all creative thinking patterns in writing student scientific papers complemented each other. Therefore, the creative thinking patterns will be described in more detail as follows.

First, imaginative thinking is able to generate new ideas, and help to look at things differently so that they can be explored and understood better. In scientific works, imaginative thinking can be seen in ideas that are poured out based on experience. This can be seen in the following example.

(1) There are still many teachers who do science learning in junior high school using conventional methods or teacher centered learning so that the majority of junior high school students feel that science subjects they learn include subjects whose concepts are too difficult to understand and are not fun to learn, so they are lazy to learn Science. Learning media that exist today also has not really attracted students to study science as a fun subject. (I (G.B.P) PKM Indah Aulia R.D)

(2) The problems that occur at this time, the local government is too dependent on the DAU allocation to finance capital expenditure and development without optimizing the potential of the region. This fact has led to asymmetrical behavior in the regional government. To see whether there is an indication of inefficiency in the transfer fund, it can be seen from the response of government expenditure known as Flypaper Effect. (I (G.B.P) PKM Wahyu Kurniana)

The paragraph in the data citation (1) above is a short paragraph that only consists of two sentences. The paragraph uses illustration techniques in explaining the ideas contained in paragraphs. In the paragraph, students intend to explain the idea that *Current teachers still use conventional teaching methods* to explain the idea, students explain with illustrations (a) *teacher-centered learning*, (b) *the concept is too difficult*, and (c) *learning media that are not interesting*.

Starting from the example of data (1), it can be stated that students have a distinctive use of illustration techniques in imaginative thinking. Illustration techniques in imaginative thinking patterns are ways to explain effective ideas. According to students, through illustrations, the ideas conveyed will be easily understood by others who read them. Moreover, the data was raised from the Student Creativity Program funded by the Directorate of Higher Education. Therefore, students must be able to really convince the reviewers. In example (1), it has been proven to be able to convince reviewers, because the scientific writing is funded by the Directorate of Higher Education.

Furthermore, in the sample data (1) the delivery of ideas is revealed based on experience, as in sentence (a) "*There are still many teachers who do science learning in junior high school in a conventional way ...*", (b) "*Learning media that exist today are not yet really attract students to learn science as a fun subject*". The idea is the author's experience in uncovering a problem.

Based on the description, it can be stated that the ideas in scientific works are developed by students based on experience. In the paragraph it appears to have one main idea. The main idea of a paragraph is a general statement which is the subject matter discussed in the paragraph based on experience. The statement manifested in the paragraph can occupy the preliminary position, literature review, and closing.

In data (2) the connection between the ideas of sentences a-c is evident through cohesion devices. Complaints in a text are very important so that readers can be sure

or can follow the author's ideas well so that what the author expects is the same as what is captured by the reader. In the student creativity program this is very important to convince reviewers. In addition, in data (2) the paragraph begins with revealing the problem, namely "*The problem that is currently occurring, the local government is too dependent on DAU allocation to finance capital expenditure and development without optimizing the potential of the regions*". This sentence is a form of the student's initial experience in raising a problem in writing a proposal.

Second, divergent thinking is a type of thinking ability that is often used in creative problem solving. That is, it is said to think divergently if it meets several criteria, smooth thinking, flexibility, originality, and collaborating in finding new ideas. This can be seen in the following example.

(3) Dictionary is a medium to facilitate the search for meaning / translation of a word. Conventional book-shaped dictionaries tend to be fixed, cannot be added, or changed, and require considerable time to do word searches. With Subsequent developments dictionary programs appear to have advantages faster in the search for word meanings, and can be updated so that the contents of the dictionary will always develop. On the contents of an Android-based dictionary besides being faster in search, it can also be accessed anywhere. This Indonesian Language dictionary application is based on Android which is intended for blind people so that an explanation on the dictionary is voiced and designed as minimal as possible so that it does not consume too much storage capacity. (D (P.G) PKM Imam Shafi'i)

(4) Distribution is a process of transferring goods from the place of origin to several destinations (Vandiko et al. 2013: 1), especially in the process of distribution from one area to another. This transfer is the reason why distribution is an important component in the sustainability of a business. Optimizing distribution costs will be able to increase profits from a business that has been done. To achieve the ideal use of transportation facilities, a model is needed, which can illustrate various problems in the field of distribution. In addition, a method or algorithm is needed to solve the problem model. By modeling the problem, it is hoped that it will facilitate the search for solutions. (D (M.P) PKM Rully Atus Soimah)

The paragraph in the sample data (3) consists of five sentences. Of the five sentences there are three sentences that contain elements of ideas. Every idea contains a novelty meaning. The sentence in question is (a) "*Conventional book-shaped dictionaries tend to be fixed, cannot be added, or changed, and require considerable time to do a word search*", (b) "*Further development comes with a dictionary program that has more advantages in word search meanings, and can be updated so that the contents of the dictionary will always develop*", and (c)" *This Indonesian Language dictionary application is based on Android which is intended for blind people so that an explanation in the dictionary is voiced and designed to a minimum so that it does not consume too much storage capacity*". The diversity of ideas appears several times in one paragraph so that creativity in expressing ideas is more visible.

Then, based on the sample data (3), it can be seen that the presentation of ideas in paragraphs is carried out chronologically, tiered, and generally into more detailed ones. Then the paragraph meets the criteria for divergent thinking. The details of the

interagency relationship in the sentences in data (3) show the development of ideas that have one main idea. Example (3) consists of five sentences, namely (a) the first sentence is a sentence that has a simple structure, and (b) the second, third, fourth, and fifth sentences are sentences that have a complex structure. In all these sentences, there is the word "*Dictionary*" which is an emphasis on developing important ideas. Judging from the repetition of the word "*Dictionary*" of each sentence, the sentences have a solid relationship in expressing ideas.

In data (3) the presentation of ideas looks tiered, that is, from more general things to more specific ones. Beginning with the meaning of the word "*Dictionary*" in the first sentence, and followed by the explanatory sentence in the second, third and fourth sentence, and the fifth sentence is more related to the application. The paragraph fulfills the completeness and completeness criteria of the paragraph because the information presented in the paragraph is complete. The paragraph can be categorized into paragraphs developed by explanatory techniques. Sentences explain each other.

Judging from the language exposure, in data (4) the sentence a-f contains explanatory sentences. The paragraph does not contain statement sentences. Each sentence in the paragraph has the same position. Among these sentences, there is no sentence that takes precedence over its position. In this case the students compose paragraphs prioritizing solutions or kinds of interpretations of the problem. However, overall the sentences in the paragraph are related to one another. In addition, in the example data (4) there appears a problem-solving technique such as in sentence (a) "*By optimizing distribution costs it will be able to increase profits from a business that has been done*" (b) "*In addition, methods or algorithms are needed to complete the model of the problem*". The ideas used in problem solving are quite common. The idea contains two arguments to support the main idea so that the elaboration aspects and aspects of originality appear.

Based on these explanations, it can be stated that the divergent thinking patterns of students in developing paragraphs appear in students' thinking abilities in using tiered ideas or from more general things to specific things. Thus, it can be stated that the divergent thinking patterns of students will appear from the development of ideas that have interalimic similarities in paragraphs.

Third, lateral thinking is related to generating new ideas. In this case it has a feeling of wanting to know that new ideas relate to the discovery of techniques. This can be seen in the following example.

(5) Genetic algorithms as one branch of the evolution algorithm are adaptive methods commonly used to solve a value search in an optimization problem. The mechanism in genetic algorithms is very simple, which only involves copying strings and exchanging string parts. The breeding cycle begins with making random sets of solutions called populations, wherein there are individuals called chromosomes. These chromosomes gradually undergo electoral iterations in a generation. During a generation, these chromosomes are evaluated, using formulas in the fitness function. (L (A.A) PKM Novinda Cahya Diyanti)

(6) To create the next generation with a new chromosome (called offspring) can be done by combining the two chromosomes that have been obtained previously by using a crossover operator or by modifying a chromosome using the mutation operator. A new generation before being evaluated again, then he goes through a selection process based on his fitness function. From this selection, the best chromosomes have a high probability of being selected. After several generations, the algorithm will experience convergence on a number of the best chromosomes, which have the optimum value of the problem being solved. (L (M.G.B) PKM Novinda Cahya Diyanti)

Data (5) written by these students can be grouped into paragraphs which are presented with techniques which give rise to assumptions. The main idea discussed in the paragraph is "*Genetic Algorithms*". To explain the "*Genetic Algorithm*", the idea in example (5) conveys several ideas, namely (a) "*Genetic algorithm mechanism*", (b) "*Breeding cycle*", and (c) "*evaluating method*". The three ideas presented in the paragraph provide an explanation that explains the ideas related to "*genetic algorithms*". Every idea expressed in a paragraph has the same position, there is no main idea.

Example (6) consists of four sentences, namely (a) "*To create the next generation with a new chromosome (called offspring) it can be done by combining the two chromosomes that have been obtained previously by using a crossover or with modify a chromosome by using a mutation operator*", (b) "*A new generation before being evaluated again, then he goes through a selection process based on his fitness function*", (c) "*From this selection, the best chromosomes have a high probability of being selected*", and (d) "*After several generations, the algorithm will converge on the best number of chromosomes, which have the optimum value of the problem being solved*". The sentence a - c functions as a cause related to the topic. The relationship between the arguments is so close that the flow of ideas becomes smooth. The smoothness of the idea appears in the existence of a link between statements, both function as causes (problems) and as a result (new solutions or ideas). New ideas arise because of problems. In data (6) it appears that the emergence of new ideas is based on causal techniques.

The complexity of problem solving in data (6) is carried out in an abstract manner, such as "*To create the next generation with a new chromosome (called offspring) it can be done by combining two chromosomes that have been obtained previously by using crossover operators or by modifying a chromosome using the mutation operator ...* ". The research data shows that students use more complex and abstract ways in developing their ideas about problems. With the use of this method students' thinking becomes more complex because students must consider the preparation of ideas carefully so that a paragraph that has coherence or combination is presented.

Based on this example, it can be seen that the new idea relates to the discovery of techniques to problems and raises new kinds of ideas about problems. The development of mindset in bringing up this idea shows that students present their creative ideas with their competencies.

Discussion, Conclusion and Recommendations

Creative thinking is a psychological phenomenon that is getting attention from various aspects of life, including education. Education that is currently developing is all based on creative thinking. Through creative thinking, all self-potential is valuable so ideas can be born. In teaching language, the element of creative thinking plays an important role, especially in regard to pouring ideas imaginatively, divergingly, and laterally. These three things are patterns of creative thinking. Rawlinson (1981, p.6) says that in creative thinking there are three patterns that must be considered, namely imaginative, divergent, and lateral.

First, imaginative thinking is a fundamental ability to connect experiences and build new knowledge (Chan, 2016). As an example (1) stated in the results section of the study, ideas in scientific works were developed by students based on experience. In the paragraph it appeared to have one main idea. The main idea of a paragraph is a general statement which is the subject matter discussed in the paragraph based on experience. The statement manifested in the paragraph can occupy the preliminary position, literature review, and closing.

To fill in the ideas related to the information to be conveyed and the means of ideas relating to the language tools were used in accordance with the problem. In this case language is seen as truth, without language there is no truth (Djojosuroto, 2007, p.261). Language is used for idea activities that give an understanding of the symptoms that explain the problem. The problems described in the scientific work are clear and complete to help the reader understand the starting point of the overall problem of a problem raised in scientific writing (Kusmana, 2012, p.37). The problems revealed in data (2) have been clearly described. The main problem becomes the basis for the birth of an argument in scientific writing.

Presentation of the problem by describing it through the disclosure of comparative sentences will further clarify a problem for the reader. The questions asked will help if there are questions raised in the scientific writing. As in the data (2) of this study, the authors uncovered the problem with comparative and correlational sentences so as to convince the difficulties for the reviewer on the student creativity program. Then, the objectivity of the problem in scientific work is very necessary to avoid the wrong interpretation. In describing its revolution, writers are sometimes dragged into the presentation colored by the author who is not subjective (Suyitno, 2012, p. 4). Therefore, the author needs to discuss the matter of writing before revealing the opposition. Responding or revealing to a problem in scientific work can be done by evaluating conclusions, reconsidering the evidence provided by the author, evaluating the argument, and proposing alternative ideas (Sultan et al, 2017a).

In data (1 and 2) ideas were born through propositions in the form of simple paragraphs. In pouring ideas, students equip themselves with ethical knowledge or rules about scientific writing. Knowledge of the rules of writing will be part of the competence in writing scientific in general and more specifically in writing student creativity programs. To be able to strengthen its competence students need to

prepare several previous studies to continue to develop these competencies. Previous research was needed to obtain information and ideas that were revealed as a process of building competencies. Learning activities train students in the process of building competencies by directing them to be able to investigate the meaning and message behind language choices, information, and arguments found in previous research texts (Sultan et al, 2017b).

The research findings on imaginative thinking patterns in student scientific writing are represented in the form of diversity of ideas based on experience and use of metaphorical language. In the data (1 and 2) the meanings of ideas were not using the real meanings of words, but rather as figures of speech based on equality and comparison. Based on these findings, it can be concluded that the diversity of ideas based on experience and use of metaphorical language in student scientific work shows creative thinking with imaginative patterns.

Second, in divergent thinking the presentation of ideas in paragraphs was carried out chronologically, tiered, and generally into more detailed ones as shown in the sample data (3 and 4). Rawlinson (1989, p. 7) says divergent creative thinking patterns start from a description of the problem then spread to be able to produce various kinds of ideas for problem solving. The ideas poured are original, not similar to previous ideas. Although the idea has already been there, in creative thinking one tries to renew it into a new idea. Divergent thought patterns often lead to originality, and originality is the center of the feature of creativity (Runco & Acar, 2012).

In creating the originality of scientific work, the method that can be taken is to conduct a study which is a recommendation from a similar study, or study that has been carried out by another party (Kusmana, 2012, p. 84). Therefore, the authors of scientific works must be able to find the gaps of scientific arguments that are still neglected. That is, various limitations of the previous studies can be used as a point of departure in compiling scientific arguments. The scientific work needs to reveal fundamental differences. The difference is essential scientific ideas, so that the originality of scientific work can be maintained.

The ability of divergent thinking involves the capacity to generate ideas (fluency), the capacity to produce unusual associations (originality) and fluency, and the capacity to change the category of flexibility (Runco, 1986). The ideas outlined in data (3) fall into the criteria of fluency in thinking. The measure of fluency does not limit ideas for originality, flexibility or elaboration. Divergent thinking groups have the highest scores on measures of fluency and originality compared to groups that do not involve divergent thinking (Yi et al, 2015). One reason why divergent thinking can improve quality is because it detaches itself from the established mindset (Lewis & Lovatt, 2013). Therefore, the tendency of open individuals to provide ideas from a broader frame of reference (Batey et al., 2009). In divergent thinking, previous ideas have less influence, because the next idea has greater weight (Yagolkovskiy & Kharkhurin, 2016).

The findings of divergent thinking patterns in accordance with idea Rawlinson (1981, p. 7) suggests is that divergent thinking patterns are initiated from a

description of the problem then spread to be able to produce various kinds of ideas for solving problems or providing various possible answers to the problem. In divergent thinking, one can produce ideas in large numbers. From these ideas one can choose the answer that is most appropriate in accordance with the indicators of the problem under study. The findings in the study of divergent thinking are ideas in this pattern which can be seen from the number of ideas set forth in scientific work. The idea is inseparable from the combination of ideas, and there shouk-ld be a single main idea in a paragraph. Based on these findings, it can be concluded that the diversity of ideas and techniques for developing sentences in paragraphs is a marker of creative thinking in student scientific work.

Third is lateral thinking. Idea alternatives appeared as if they do not have a contribution to the problem and have nothing to do with the problem at hand, as shown in the sample data (5 and 6). In the data (5 and 6) the problems faced require new innovations that are creative in nature. Needs that continue to change over time (requires lateral thinking to be fulfilled), rather than pre-existing patterns and rules (Waks, 1997). Markers of lateral thinking patterns are raising new kinds of ideas on new problems and ideas related to the discovery of techniques to problems. Student achievement in problem solving depends on lateral thinking (Arsad et al, 2012). That is, lateral thinking plays an important role in producing quality student resources. More competitive, more creative and innovative thinking is very important in getting the best results from the ideas that are poured.

Lateral thinking patterns have contributed to the development of the ability to write scientific works ranging from the development of language elements to the development of the ability to carry out the stages of the creative process. The creative process is able to decipher alternative problem solving with various delivery styles. Achieving various solutions to problems is presented in an abstract manner, so that it is easily understood by the reader or reviewer.

Decomposition of problem solving alternatives in data fragments (5) is carried out in an abstract manner, with previously expressing the solution in principle. The description of the solution is expressed in an abstract about optimization problems. Abstract problem solving requires the reader to think abstractively or use abstract frameworks in understanding problems, but it does not mean that the problems expressed are irrational because abstracts do not mean they are irrational (Kusmana, 2012, p. 35). Clarity of a solution to the problem will be very helpful if the author reveals the position of alternative problem solving or the main problem solving presented in the writing he made in a few paragraphs. Even so, in presenting problem solving in scientific works can also be done by using a combination of ways of deduction by induction so that the clarification of the problem description is easier to understand.

Findings about creative thinking patterns in line with opinions (de Bono, 1991) suggest that lateral thinking is more a way of generating ideas in new ways to present a new idea. The findings of this study concerning lateral thinking, namely the selection of ideas based on creative thinking that considers the authenticity of

ideas poured out on problems. Then, the idea is in accordance with the topic and the suitability of the sentence and the interalimat. Based on these findings, it was concluded that the lateral thinking patterns of students in scientific papers were represented in the use of various ideas that were in accordance with the complexity of problem solving.

In general, the findings of this study about creative thinking patterns in student scientific work, showed that creative thinking patterns lie in the form of ideas used. Writing scientific papers is a creative thinking process that prioritizes the ability of students to develop and organize ideas, and pour them into written language. Therefore, the form of ideas in scientific work is a representation of student creativity in developing ideas in writing. The form of ideas is able to combine them into diverse, detailed, and unique forms. However, for further research it is recommended that we examine creative thinking patterns with different levels of objects so that the findings of this study appear more widely in various levels.

The implication of creative thinking patterns in student scientific works raises several things, namely (1) through understanding creative thinking patterns, various ideas become more directed and structured. In writing scientific papers organizing a text is an activity of representing ideas into a text. In terms of structure, scientific work has a complex structure. The intended structure includes the opening part, the contents section, and the closing section. Each part has its own peculiarities which can be obtained from understanding creative thinking patterns (imaginative patterns, divergent patterns, and lateral patterns), (2) disclosure of ideas are able to convince readers or reviewers and the use of language more effectively and easily understood. Creativity in expressing ideas appears in the type of development of ideas involving inductive and deductive techniques, the use of experience to enter new information, and the presentation of various problem-solving techniques supported by a foundation of thinking.

References

Adair, J. (2007). *The art of creative thinking: How to be innovative and develop great ideas*. London: Great Britain.

Arsad, N., Sanusi, H., Majid, R. A., Ali, M. M., & Husain, H. (2012). Lateral thinking through black box experiment among engineering students. *Procedia - Social and Behavioral Sciences*, *60*, 14–20. https://doi.org/10.1016/j.sbspro.2012.09.340

Batey, dkk. (2009). Intelligence and personality as predictors of divergent thinking: The role of general, fluid and crystallised intelligence. *Journal Thinking Skills and Creativity, 4*, 60–69.

Chan, Z. C. Y. (2016). Student peer reviewers' views on teaching innovations and imaginative learning. *Nurse Education Today*, *39*, 155–160. https://doi.org/10.1016/j.nedt.2016.02.004

Djojosuroto, K. (2007). *Filsafat bahasa.* Yogyakarta: Pustaka Book Publisher.

de Bono, E. (1970). *Lateral thinking.* New York: Harper & Row.

Hidayat, T., Susilaningsih, E., & Kurniawan, C. (2018). The effectiveness of enrichment test instruments design to measure students' creative thinking skills and problem-solving. *Thinking Skills and Creativity*, *29*, 161–169. https://doi.org/10.1016/j.tsc.2018.02.011

Kusmana, S. (2012). *Merancang karya tulis ilmiah.* Bandung: Remaja Rosdakarya.

Leonhardy. (1962). *Introductory college mathematic.* New York: John Wiley & Sans.

Lengelle, R., Meijers, F., Poell, R., & Post, M. (2013). The effects of creative, expressive, and reflective writing on career learning: An explorative study. *Journal of Vocational Behavior*, *83*(3), 419–427. https://doi.org/10.1016/j.jvb.2013.06.014

Lewis, C., & Lovatt, P. J. (2013). Breaking away from set patterns of thinking: Improvisation and divergent thinking. *Thinking Skills and Creativity*, *9*, 46–58. https://doi.org/10.1016/j.tsc.2013.03.001

Liu, W., Pan, Y., Luo, X., Wang, L., & Pang, W. (2017). Active procrastination and creative ideation: The mediating role of creative self-efficacy. *Personality and Individual Differences*, *119*, 227–229. https://doi.org/10.1016/j.paid.2017.07.033

Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives*. London: Corwin Press.

Munandar, U. (2004). *Pengembangan kreativitas anak berbakat.* Jakarta: Gramedia.

Paul, R., & Linda, E. (2008). *Critical and creative thinking.* Dillon Beach: Foundation for Critical Thinking Press.

Poespoprodjo, W., & Gilarso, E. T. (2017). *Logika ilmu menalar: dasar-dasar berpikir tertib, logis, kritis, analitis, dan dialektis.* Bandung: Pustaka Grafika.

Rawlinson, J. G. (1981). *Creative thinking and brainstorming*. London*:* Gower Publishing Company.

Runco, M. A., & Selcuk, A. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal*, 24 (1), 1–10.

Runco, M. A. (1986). Divergent thinking and creative performance in gifted and nongifted children. *Educational and Psychological Measurement*, 375-384.

Solso, R., Maclin, O., & Maclin, M. K. (2008). Translated by Mikael Rahardanto & Kristianto Batuadji. 2008. *Psikologi Kognitif.* Jakarta: Erlangga.

Shabrina, & Kuswanto, H. (2018). Android-assisted mobile physics learning through indonesian batik culture: improving students' creative thinking and problem solving. *International Journal of Instruction*, *11*(4), 287-302. https://doi.org/10.12973/iji.2018.11419a

Sultan, Rofiuddin, A., Nurhadi, & Priyatni, E. T. (2017a). The development of a critical reading learning model to promote university students' critical awareness. *New Educational Review, 48*(2), *76–86,* https://doi.org/10.15804/tner.2017.48.2.06

Sultan, Rofiuddin, A., Nurhadi, & Priyatni, E. T. (2017b). The effect of the critical literacy approach on pre-service language teachers' critical reading skills. *Eurasian Journal of Educational Research*, 71, 159–174. https://doi:10.14689/ejer.2017.71.9

Vass, E. (2007). Exploring processes of collaborative creativity—The role of emotions in children's joint creative writing. *Thinking Skills and Creativity*, *2*(2), 107–117. https://doi.org/10.1016/j.tsc.2007.06.001

Waks, S. (1997). Lateral thinking and technology education. *Journal of Science Education and Technology*, Vol. 6, No. 4, 245-255.

Yagolkovskiy, S. R., & Kharkhurin, A. V. (2016). The roles of rarity and organization of stimulus material in divergent thinking. *Thinking Skills and Creativity*, *22*, 14–21. https://doi.org/10.1016/j.tsc.2016.08.001

Yi, X., Plucker, J. A., & Guo, J. (2015). Modeling influences on divergent thinking and artistic creativity. *Thinking Skills and Creativity*, *16*, 62–68. https://doi.org/10.1016/j.tsc.2015.02.002.

Eurasian Journal of Educational Research 81 (2019) 37-56

Eurasian Journal of Educational Research
www.ejer.com.tr

Exploring the Relationship between Metavariables and Self-efficacy in Chemistry

Zubeyde Demet KIRBULUT[1]

ARTICLE INFO

Article History:
Received: 11 Nov. 2018
Received in revised form: 12 Dec. 2018
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.3

Keywords
metacognition, meta-affect, self-efficacy, canonical correlation analysis

ABSTRACT

Purpose: Self-efficacy plays a crucial role in achievement; and thus, it is important to determine the factors affecting self-efficacy. It has been known that one's reflections and evaluations of their thoughts, emotions, and behaviors are of paramount importance in the development of self-efficacy. Therefore, the aim of this study was to investigate the relationship between metavariables and self-efficacy in the context of chemistry.

Method: A total of 369 high school students participated in this study. Meta-Affective Trait Scale, Metaconceptual Awareness and Regulation Scale, and High School Chemistry Self-Efficacy Scale were administered to the students. Canonical correlation analysis was employed to examine the relationship between metavariables and self-efficacy.

Findings: The results of this study showed that there was a positive relationship between metavariables and self-efficacy variables except for the variable of affective awareness. Precisely, students who had high scores on the metavariables were likely to believe in their ability to use cognitive skills in chemistry and to accomplish chemistry laboratory tasks.

Implications for Research and Practice: A number of implications and recommendations for future research are given. Chemistry teachers could use instructional innovations to integrate metavariables and self-efficacy into their teaching. Teacher education programs could give importance to meta-level and self-efficacy constructs in educating teachers. Researchers could conduct studies to investigate the relations among metavariables, self-efficacy, and academic achievement.

© 2019 Ani Publishing Ltd. All rights reserved

[1] Corresponding Author, Harran University, TURKEY, e-mail: demetkirbulut@yahoo.com, ORCID: https://orcid.org/0000-0002-8972-048X

Introduction

Cognitive variables and its relation to achievement have rendered much attention in science education with little consideration of affective variables (Ferrell, Phillips, & Barbera, 2016; Fortus & Vedder-Weiss, 2014). However, cognition and affect play a prominent role in learning (Efklides, 2016). Self-efficacy, for example, has been demonstrated to influence academic achievement (Pajares, 1996; Ramnarain & Ramalia, 2018). Researchers acknowledged that self-efficacy is related to cognition and affect (Bandura, 1997; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). Few studies have focused on the association between metacognition and self-efficacy (Gourgey, 2001). However, to our knowledge, no study has considered the relationship among metaconceptual and meta-affective variables and self-efficacy. The sources of self-efficacy require one's reflections and evaluations of their thoughts, emotions, and behaviors (Bandura, 1997) and indeed, the self-efficacy concept houses judgments of one's capability to perform a task in itself. Collectively, this highlights the importance of metavariables in this process. Therefore, in this study, the relationship between metavariables and self-efficacy was investigated. The following sections present conceptual framework for self-efficacy, metacognition, and meta-affect.

Self-efficacy

Self-efficacy is a psychological construct that has received a lot of attention in student learning. Self-efficacy refers to "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy is a domain-specific construct in nature (Bandura, 1997; Pajares, 1996). For example, a student might have high self-efficacy in chemistry, but have low self-efficacy in mathematics. In the current study, student self-efficacy beliefs were considered in the context of chemistry. Enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological reactions are the four major sources of self-efficacy beliefs (Bandura, 1997). Success experiences lead to increase in self-efficacy beliefs, while failure experiences affect reversely (enactive mastery experience). Students develop self-efficacy beliefs by observing others (vicarious experience) and persuaded significant others showing that they possess the capability to master a task (verbal persuasion). Self-efficacy beliefs are also influenced by emotional arousal (physiological reactions). Generally, negative emotions like anxiety diminish self-efficacy beliefs, while positive emotions like happiness increase self-efficacy beliefs. It is acknowledged that self-efficacy beliefs play an important role in cognition, affect, behavior, self-regulation, and achievement (Bandura, 1989; Pajares & Urdan, 2006). Efficacious people persevere long enough in the face of difficulties, put much effort on a task and sustain it (Bandura, 1997). It has been revealed that self-efficacy beliefs are crucial determinants of science achievement (Bartimote-Aufflick, Bridgeman, Walker, Sharma, & Smith, 2016; Hwang, Choi, Lee, Culver, & Hutchison, 2016; Pajares, 1996; Ramnarain & Ramalia, 2018; Villafañe, Xu, & Raker, 2016). Social cognitive theory emphasized the value of self-reflection in the perceptions of self-efficacy (Bandura, 1997). Self-efficacious students tend to use more metacognitive learning strategies than others (Wolters & Pintrich, 1998). Self-efficacy also connected

with the domain of emotion (Bandura, 1997). Self-efficacy is of great importance in managing emotions. For example, students high in self-efficacy have more positive emotions (Bandura, 1997; Caprara et al., 2008).

Metacognition

"Metacognition" has first defined by Flavell (1976) as "to one's own knowledge concerning one's own cognitive processes and products or anything related to them" (p. 232). Brown (1987) referred to metacognition as "one's knowledge and control of [one's] own cognitive system" (p. 66). Nelson (1996) defined metacogniton as meta-level of cognition. It is the fact that metacognition is a multifaceted concept (Efklides, 2008). Despite the complexity of metacognition, common points shared by the definitions are awareness, monitoring, and control of cognition (Thomas, 2012). In line with its definition, there is no common understanding for the components of metacognition; however, scholars alluded two components basically: knowledge of cognition and regulation of cognition (Brown, 1987; Efklides, 2008; Schraw, 2001). Knowledge of cognition includes task, person, and strategy variables (Flavell, 1979). It also houses awareness meaning one's awareness of her/his own cognitive system (Brown, 1987). Regulation of cognition refers to planning, monitoring, and evaluation (Brown, 1987; Van der Stel & Veenman, 2010). There is agreement that metacognition has a meaningful impact on students' learning (Azevedo, Mudrick, Taub, & Wortha, 2017; Gascoine, Higgins, & Wall, 2017; Vosniadou 2003; Yuruk, Beeth, & Andersen, 2009). By considering the role of metacognition in learning, Thorley (1990) proposed the term 'metaconceptual' referring to one's knowledge and control of her/his own conceptual system. In this study, the term 'metaconceptual' was preferred since it was investigated how students could notice, monitor, and evaluate their ideas in the context of chemistry.

Meta-affect

Like metacognition, meta-affect is defined as "affect about affect, affect about and within cognition that may again be about affect, the monitoring of affect, and affect itself as monitoring" (Goldin, 2002, p. 62). Here, it should be noted that affect, emotion, and mood are used interchangeably in the educational literature (Linnenbrink & Pintrich, 2003). While emotions have a specific stimulus, moods are unspecific and enduring affective states. Even, moods are stated as low intensity emotions (Pekrun, 2006). Affect is a superordinate term including emotions and moods (Goldin, 2002). Researchers emphasized the two components of meta-affect: awareness of affect and regulation of affect (DeBellis & Goldin, 2006; Goldin, 2002; Gottman, Katz, & Hooven, 1996). The focus of this study is these two components. Awareness of affect is self-awareness of one's emotions, while regulation of affect is monitor and control of one's own emotions. Affect, cognition, and self-efficacy are interrelated (Hannula, 2011; Malmivuori, 2001). Affect is intertwined with cognition and cognition plays a vital role in meta-affect (DeBellis & Goldin, 2006). Ciompe (1991) used the terms "affect logic" and "affective-cognitive schemata" for this relationship considering Piaget's theory, and asserted that successful applications of scheme to a new situation generate more knowledge on the affective scheme and by this way meta-affect ensues.

The Current Research

A number of review studies on self-efficacy show that self-efficacy is a strong predictor of academic achievement (Honicke & Broadbent, 2016; Hwang et al., 2016; Pajares, 1996). Also, self-efficacy is an important construct in accounting for success in chemistry (Ramnarain & Ramalia, 2018; Villafañe et al., 2016). Therefore, it is important to determine the factors affecting self-efficacy. It has been acknowledged that cognition and affect are interwoven with self-efficacy beliefs (Bandura, 1986). There is a growing body of research showing the relationship between metacognition and self-efficacy beliefs (Gourgey, 2001; Uzuntiryaki-Kondakci & Capa-Aydin, 2011). Self-efficacy plays an important role in emotional experiences. It has been shown that students who had high self-efficacy beliefs also had positive emotions, and the opposite is true for those who had low self-efficacy beliefs (Linnenbrink & Pintrich, 2003; Pekrun & Perry, 2014). However, it has not yet been found any study examining the relationships among metaconception, meta-affect, and self-efficacy in the context of chemistry. Consequently, the following research question guided this study:

To what extent can students' self-efficacy beliefs in chemistry be predicted by metavariables (metaconceptual awareness, metaconceptual regulation, affective awareness, and affective regulation)?

Method

Research Design

This study aimed to investigate the relation between metavariables and self-efficacy variables. To realize this aim, explanatory correlational research design was employed. In explanatory correlational research, the relationships among several variables are examined without any manipulation (Fraenkel, Wallen, & Hyun, 2012).

Research Participants

The participants of the study (n = 369) were 12th grade Anatolian High School students (187 females, 155 males, and 27 non-respondents) with a mean age of 17.05 (SD = 0.33) from 12 different schools in the central part of Turkey. Participants were selected via convenience sampling. There are different types of public schools in formal secondary education. These are Anatolian High Schools, Anatolian Teacher High Schools, Fine Arts High Schools, Science High Schools, Social Sciences High Schools, Sport High Schools, and Vocational and Technical High Schools. Admission to Anatolian High Schools is based upon the scores on a competitive national exam called Transition from Elementary Education to Secondary Education Examination. Before secondary education, students attend eight years of compulsory primary education. Then, they complete four years of compulsory secondary education to continue to higher education. Eighth grade students take national exam in transition from elementary education to secondary education for high-quality schools. In this exam, students are responsible for Foreign Language, Mathematics, Religious Culture and Moral Knowledge, Science, Turkish, and Turkish Republic Revolution History

and Kemalism courses. Students are asked multiple-choice questions from these courses in line with the 8th grade national curriculum. For the participants of this study, placement was applied through the score comprising 70% of this exam score and %30 of the GPA averages of the 6th, 7th, and 8th grades. It should be noted that currently, there have been changes in the application of this exam. Twelfth grade Anatolian High School students pursuing heavily math- and science-based courses were included in this study since they completed advanced level courses in chemistry. These students received education in accordance with 2013 national chemistry curriculum during secondary education. They took elementary level chemistry course two-hour a week at the 9th and 10th grades, and completed 144-hour chemistry course at these grades in total. Then, they attended advanced level chemistry course four-hour a week through the 11th and 12th grades completing 288-hour chemistry course in total. The chemistry course topics for 12th grade were "Chemistry and Electricity", "Introduction to Carbon Chemistry", "Organic Compounds", and "Chemistry in Everyday Life".

Research Instruments and Procedures

High School Chemistry Self-Efficacy Scale (HSCS). Students' self-efficacy beliefs in chemistry were measured via the HSCS developed by Capa Aydin and Uzuntiryaki (2009). The HSCS comprises 16 items on a 9-point scale from 1 (very poorly) to 9 (very well) covering two dimensions: Chemistry Self-Efficacy for Cognitive Skills (CSCS, 10 items) and Self-Efficacy for Chemistry Laboratory (SCL, 6 items). The CSCS dimension reflects students' beliefs in their ability to use cognitive skills in chemistry (e.g., To what extent can you explain chemical laws and theories?). The SCL dimension refers to students' beliefs in their ability to use necessary skills in performing chemistry laboratory (e.g., How well can you interpret data during the laboratory sessions?). Cronbach's alpha reliabilities were given as .84 for the CSCS and .94 for the SCL by Capa Aydin and Uzuntiryaki (2009). In this study, confirmatory factor analysis (CFA) results revealed that the two-dimension scale showed a good fit to the data (CFI = .93; RMSEA = .076; 90% CI = .066, .085; SRMR = .063). Cronbach's alpha values for the CSCS and SCL were .87 and .90, respectively.

Metaconceptual Awareness and Regulation Scale (MARS). The MARS (Kirbulut, Uzuntiryaki-Kondakci, & Beeth, 2016) covering 10 items on a 6-point rating scale from 1 (never) to 6 (always) was administered to the students to assess the extent to which students can notice, monitor, and evaluate their ideas in the context of chemistry. It has two dimensions: metaconceptual awareness, which refers to students' awareness of their conceptions (4 items, e.g., I know what I did not understand about a chemistry topic) and metaconceptual regulation, which reflects students' monitoring and evaluating of their conceptions with a new concept (6 items, e.g., While learning a chemistry topic, I compare my prior knowledge with the new knowledge). Kirbulut et al. (2016) reported Cronbach's alpha values as .71 and .75 for the metaconceptual awareness and metaconceptual regulation, respectively. In the present study, the fit indices of the CFA indicated an acceptable model fit (CFI = .94; RMSEA = .064; 90% CI

= .047, .082; SRMR = .050). Cronbach's alpha values were calculated as .70 for metaconceptual awareness and .75 for metaconceptual regulation.

Meta-Affective Trait Scale (MATS). The MATS (Uzuntiryaki-Kondakci & Kirbulut, 2016) is a self-report instrument designed to assess students' meta-affective inclinations about their emotions in chemistry. It includes 17-item on a 6-point rating scale, from 1 (never) to 6 (always). It comprises two dimensions: affective awareness, which probes into students' awareness of their emotions during taking chemistry course (10 items, e.g., If I get bored while studying, I notice that feeling), and affective regulation that involves students' monitoring, evaluating, controlling, and altering their emotions in the context of chemistry (7 items, e.g., When I have to learn a topic that I am not interested in, I try to find ways to make it interesting). Uzuntiryaki-Kondakci and Kirbulut (2016) documented Cronbach's alpha values as .82 for affective awareness and .76 for affective regulation. In the current study, the two-dimension scale presented satisfactory fit indices (CFI = .90; RMSEA = .063; 90% CI = .054, .073; SRMR = .057). Cronbach's alpha values were .84 for affective awareness and .74 for affective regulation.

Procedure. Before data collection, first, permission from the ethics committee of the university was taken. Then, necessary permissions were obtained from the Ministry of National Education. The scales were administered during school time. The students participated in the study voluntarily. Informed consent forms were obtained from the students and parents/guardians. The students and parents/guardians were ensured for the confidentiality of their data. The total amount of time needed to complete the scales was about 20 minutes.

Data Analysis

In the current study, the CFA was performed for the assessment of the scales' dimensionality and validity using Lisrel 9.2 for Windows. The following fit indices with the given cut-off values in the parentheses were used in the evaluation of the model fit: root mean square error of approximation (RMSEA ≤ .08), comparative fit index (CFI ≥ .90), and the standardized root mean square residual (SRMR ≤ .08) (Browne & Cudeck, 1993; Kline, 1998). Canonical correlation analysis (CCA) was conducted to investigate the relationship between metavariable set (metaconceptual awareness, metaconceptual regulation, affective awareness, and affective regulation as independent variables) and self-efficacy variable set (CSCS and SCL as dependent variables). The CCA was performed using SPSS 20.0 for Windows with the MANOVA command. The CCA is a multivariate statistical analysis differing from multiple linear regression in that it predicts a set of multiple dependent variables from a set of multiple independent variables (Sherry & Henson, 2005; Tabachnick & Fidell, 2007). The suggested sample size for canonical analysis is 20 times the number of variables (Stevens, 2009). There are six variables in this study and the sample size (n = 369) exceeds this criterion (20x6 = 120).

Results

Preliminary Results

Before performing analyses, missing values in the data set were inspected. Missing data were less than 5% and handled by using Expectation Maximization (EM) method (Enders, 2010). Data were checked for univariate outliers by using z scores. Cases with z scores in the excess of ± 3.29 are potential outliers. Mahalanobis distance values using $p < .001$ for the corresponding $\chi 2$ value were computed to identify multivariate outliers (Tabachnick & Fidell, 2007). There were no univariate and multivariate outliers detected in the data.

Normality, linearity, homoscedasticity, and absence of multicollinearity assumptions were assessed (Tabachnick & Fidell, 2007) and no violation was observed. Table 1 shows evidence for normality of each variable. Skewness and kurtosis values ranged from -0.70 to 0.02 and -1.07 to 0.10, respectively, which were within the range of normal distribution (Finney & DiStefano, 2006). Pairs of canonical variates were plotted against each other and these scatterplots indicated linear relationship, normality, and homoscedasticity. In addition, scatterplots between residuals and predicted variables were used for screening homoscedasticity of residuals. It was seen that the residuals were nearly rectangularly distributed along the center showing that normality, linearity, and homoscedasticity assumptions were met (Tabachnick & Fidell, 2007). For multicollinearity, variables in each set and across sets should not be highly correlated (correlations up around .80 and .90), Variance Inflation Factor (VIF) should be below 10, and tolerance value should be above 0.1 (Field, 2005). Table 1 displays that all correlations between variables are below .80. VIF and tolerance values ranged from 1.31 to 1.60 and 0.63 to 0.77, respectively. Therefore, there was no multicollinearity in the data.

Table 1

Bivariate Correlations of Study Variables and Descriptive Statistics

Variables	*1*	*2*	*3*	*4*	*5*	*M*	*SD*	*Skewness*	*Kurtosis*
1. Metaconceptual awareness						4.57	0.87	-0.51	-0.12
2. Metaconceptual regulation	.42**					3.79	0.90	-0.06	-0.36
3. Affective awareness	.52**	.26**				4.95	0.78	-0.70	-0.31
4. Affective regulation	.45**	.40**	.49**			3.96	0.89	-0.21	-0.46
5. Chemistry self-efficacy for cognitive skills	.41**	.45**	.20**	.39**		5.33	1.36	-0.30	0.10
6. Self-efficacy for chemistry laboratory	.15**	.28**	-.04	.23**	.49**	4.33	2.14	0.02	-1.07

** indicates significant relationship at $p < .01$

The Results of Canonical Correlation Analysis

The CCA showed that the full canonical model was significant with a Wilks's Lambda of .67, F(8, 726) = 20.27, p<.001. 1-Wilks's Lambda represents the effect size of the full model in an R^2 metric (Sherry & Henson, 2005). In this study, by taking 1 - .67, the overall effect was found as .33, which could be considered as a medium effect size (Cohen, 1992). The analysis resulted in two canonical functions (see Table 2). While determining the number of functions to interpret, three criteria were used: i) statistical significance of the canonical functions, ii) practical significance based on the squared canonical correlation (R_c^2), and iii) practical significance based on the redundancy index of the dependent variable set (Hair, Anderson, Tatham, & Black, 1998; Tabachnick & Fidell, 2007). In terms of statistical significance criterion, the results of dimension reduction analysis (see Table 2) showed that the two canonical functions were significant with a Wilks's Lambda of .67, F(8, 726) = 20.27, p<.001 for the first function, and a Wilks's Lambda of .95, F(3, 364) = 6.12, p<.001 for the second function.

Table 2

Dimension Reduction Analysis Results

Canonical Functions	*Wilk's λ*	*F Value*	*Hypothesis DF*	*Error DF*	*Significance of F*
1 to 2	.67	20.27	8.00	726.00	.000
2 to 2	.95	6.12	3.00	364.00	.000

However, according to the second criterion (see Table 3), the first canonical correlation for the first function was .55 (see also Figure 1) with 30% overlapping variance (R_c^2 = .30), and the second canonical correlation for the second function was .22 with 5% overlapping variance (R_c^2 = .05). That is, only the first canonical function was noteworthy to report based on the R_c^2 values.

Table 3

Canonical Correlations and Squared Canonical Correlations for Each Function

Canonical Function	Canonical Correlation (R_c)	Squared Canonical Correlation (R_c^2)
1	.55	.30
2	.22	.05

Furthermore, regarding the redundancy index of the dependent variable, which is the amount of variance in the dependent variable set explained by the independent variable set, criterion, it was found that the redundancy index of the dependent variable set for the first canonical function was .20, while it was .02 for the second canonical function. In other words, 20% of the variance in the dependent variable set was accounted for by the independent variable set for the first canonical function. However, only 2% of the variance in the dependent variable set was explained by the independent variable set for the second canonical function. Therefore, only the first canonical function merited consideration.

Consequently, the first canonical function was interpreted in the current study. Figure 1 depicts the canonical structure coefficients and the canonical correlation between the dependent variable set (CSCS and SCL variables) and independent variable set (metaconceptual awareness, metaconceptual regulation, affective awareness, and affective regulation variables) for the first canonical function.

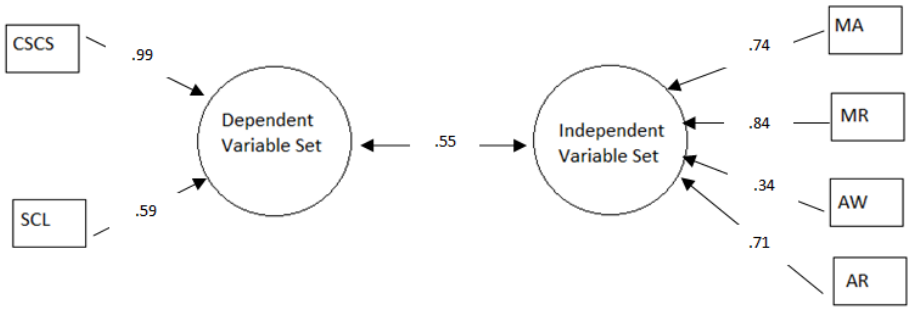


Figure 1. Canonical structure coefficients and the canonical correlation for the first canonical function

CSCS = chemistry self-efficacy for cognitive skills; SCL = self-efficacy for chemistry laboratory; MA = metaconceptual awareness; MR = metaconceptual regulation; AW = affective awareness; AR = affective regulation

In interpreting the canonical functions, canonical coefficients (canonical weights) and structure coefficients (structure correlations) are used. Canonical coefficients represent the magnitude of the contribution of the dependent or independent variables to the related canonical variate (dependent or independent variable set). However, since canonical coefficients are subject to multicollinearity, structure coefficients, which refer to bivariate correlation between an observed variable in the dependent or independent variable set and the related canonical variate, are considered more valid (Hair et al., 1998; Sherry & Henson, 2005; Tabachnick & Fidell, 2007). Table 4 presents the standardized canonical coefficients, structure coefficients, and squared structure coefficients for the first canonical function. Conventionally, structure coefficients above .45 are considered as significantly contributing variables to the related variate (Sherry & Henson, 2005). Thus, to emphasize, structure coefficients above .45 were underlined in Table 4. Looking at the standardized coefficients, it was seen that among the independent variables, metaconceptual regulation had the highest standardized coefficient, while affective awareness had the lowest standardized coefficient. For the dependent variables, the CSCS was the primary contributor to the dependent variate. This conclusion was also supported by the structure coefficients (see also Figure 1). With the exception of affective awareness, all variables contributed to the related variate significantly. Among the independent variables, metaconceptual regulation had the highest structure coefficient (r_s = .84), and thus, it had the highest squared structure coefficient (r_s^2 = 71%). Regarding the dependent variables, the CSCS had higher structure coefficient (r_s = .99) and squared structure coefficient (r_s^2 = 98%) than

the SCL had (r_s = .59 and r_s^2 = 35%). Besides, all of these significant contributors' signs of structure coefficients were positive indicating that they were all positively related. That is, students who have high scores on the metavariables, with the exception of affective awareness, are likely to believe in their ability to use cognitive skills in chemistry and to accomplish chemistry laboratory tasks.

Table 4

Canonical Analysis Results for the Relationship between Self-Efficacy and Meta-Level Variates

	1st Canonical Function		
Variables	*Standardized Coefficients*	*Structure Coefficients (r_s)*	*Squared Structure Coefficient (r_s^2) (%)*
Independent			
MA	.45	.74	55
MR	.55	.84	71
AW	-.24	.34	12
AR	.41	.71	50
R_c^2			30
Dependent			
CSCS	.93	.99	98
SCL	.13	.59	35

Note: Structure coefficients (r_s) greater than |.45| are underlined. CSCS = chemistry self-efficacy for cognitive skills; SCL = self-efficacy for chemistry laboratory; MA = metaconceptual awareness; MR = metaconceptual regulation; AW = affective awareness; AR = affective regulation

Discussion, Conclusion and Recommendations

This study sought to address the relationship between metavariables and self-efficacy variables in the context of chemistry. The results of this study provided an evidence for the positive relationship between metavariables, except for affective awareness, and self-efficacy variables. High scores on metaconceptual awareness, metaconceptual regulation, and affective regulation reflected students' self-efficacy for cognitive skills and chemistry laboratory. Simply put, students who are aware, monitor and evaluate their conceptions, and who reflect, control, and adapt their emotions are likely to believe their ability to use cognitive skills in chemistry, and to utilize necessary skills in implementing chemistry laboratory. A considerable amount of research has emphasized the importance of self-efficacy for students' achievement in chemistry (Dalgety & Coll, 2006; Ramnarain & Ramalia, 2018; Uzuntiryaki-Kondakci & Senay, 2015; Villafañe et al., 2016). In this respect, it is important to increase students' self-efficacy in chemistry. The findings of this study highlighted the metavariables as significant factors in facilitating self-efficacy in the context of

chemistry. There are a few studies showing the relationship between metacognition and self-efficacy (Crippen & Earl, 2007; Nietfeld, Cao, & Osborne, 2006). For example, Nietfeld et al. (2006) studied with undergraduate educational psychology students and illustrated that the use of metacognitive activities in educational psychology course influenced students' self-efficacy. However, to our knowledge, no prior studies have considered metaconceptual variables in examining the relation with self-efficacy. This study showed that metaconceptual variables were influential on self-efficacy. One of the sources of self-efficacy is the psychological state. According to Bandura (1997), students judge their ability based on their emotions. A number of studies have also suggested that there is an association between self-efficacy and emotions (Caprara et al., 2008; Pekrun & Perry, 2014). The current study provided support for this relation and went beyond the literature by examining this relationship considering metavariables and chemistry as a context. Among the metavariables, metaconceptual regulation and affective regulation were primary contributors to the independent variate; however, affective awareness did not make any contribution. That is, when students monitor and evaluate their conceptions and control their emotions, they have increased self-efficacy in chemistry. As aforementioned, meta-level variables are multifaceted and several mechanisms enact these processes (Efklides, 2016). Therefore, more research is required to understand the roles of awareness and regulation dimensions in self-efficacy. In terms of dependent variate, the CSCS variable contributed to the variate with a very high structure coefficient compared to the SCL. One plausible explanation for this result could be insufficient teaching of chemistry laboratory. As has been previously reported in the literature, in Turkey, teachers who teach science courses generally prefer traditional teaching and use laboratory in teaching rarely due to lots of reasons such as inadequate instruction materials and facilities, university exam, crowded classrooms, and incompetence in the use of laboratory (Balbag, Leblebicier, Karaer, Sarikahya, & Erkan, 2016; Yazici & Ozmen, 2015).

This study has its limitations. First, the CCA was employed in this study and this does not provide evidence for causation. Second, self-report measures were used to represent metavariables and self-efficacy variables. Therefore, care should be taken in using these results since off-line methods could not be sufficient to manifest all aspects of the constructs that were investigated. Third, the findings of this study are limited by sample size and the context studied.

Despite its limitations, the current study has several implications and recommendations for future research. Chemistry teachers could integrate metavariables and self-efficacy beliefs into their teaching. Metacognitive approaches such as self-explanation prompts could be utilized to increase self-efficacy in chemistry (Crippen & Earl, 2007). Instructional innovations such as intelligent tutoring systems (Azevedo et al., 2017) could be used to integrate cognition and affect into teaching and learning. Chemistry teachers could also help their students to control their emotions, which in turn may lead to increase their students' self-efficacy. Teacher education programs could be aware of the effect of metaconceptual and meta-affective constructs on self-efficacy, and give importance to them in educating teachers. In this study, self-

report measures were used to detect the relationship between metavariables and self-efficacy. Researchers could employ on-line methods in addition to off-line methods to give a more comprehensive perspective on these relations. Since self-efficacy is a domain-specific construct, investigations of these relations could be carried out within other subject areas such as biology and physics. Besides, scholars could employ research designs to investigate the relationship among metavariables, self-efficacy, and academic achievement in related disciplines.

Acknowledgements

I would like to thank Prof. Dr. Esen Uzuntiryaki-Kondakci for her support of this research and constructive comments on the earlier versions of this manuscript.

References

Azevedo, R., Mudrick, N., Taub, M., & Wortha, F. (2017). Coupling between metacognition and emotions during STEM learning with advanced learning technologies: A critical analysis, implications for future research, and design of learning systems. *Teachers College Record, 119*(13). Retrieved from http://www.tcrecord.org/Content.asp?ContentId=21922.

Balbag, M. Z., Leblebicier, K., Karaer, G., Sarikahya, E., & Erkan, O. (2016).Türkiye'de fen eğitimi ve öğretimi sorunları [Science education and teaching problems in Turkey]. *Egitim ve Ogretim Arastırmaları Dergisi, 5*(3), 12-23.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*(9), 1175-1184. doi: 10.1037/0003-066X.44.9.1175

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child Development, 74*(3), 769-82. doi: 10.1111/1467-8624.00567

Bartimote-Aufflick, K., Bridgeman, A., Walker, R., Sharma, M., & Smith, L. (2016). The study, evaluation, and improvement of university student self-efficacy. *Studies in Higher Education, 41*(11), 1918-1942. doi: 10.1080/03075079.2014.999319

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

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.

Capa Aydin, Y., & Uzuntiryaki, E. (2009). Development and psychometric evaluation of the high school chemistry self-efficacy scale. *Educational and Psychological Measurement, 69*(5), 868-880. doi: 10.1177/0013164409332213

Caprara, G. V., Di Giunta, L., Eisenberg, N., Gerbino, M., Pastorelli, C., & Tramontano, C. (2008). Assessing regulatory emotional self efficacy in three countries. *Psychological Assessment, 20*(3), 227-237. doi:10.1037/1040-3590.20.3.227

Ciompi, L. (1991). Affects as central organising and integrating factors. A new psychological/biological model of the psyche. *The British Journal of Psychiatry, 159*(1), 97-105. doi: 10.1192/bjp.159.1.97

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159. doi:10.1037/0033-2909.112.1.155

Crippen, K. J., & Earl, B. L. (2007). The impact of web-based worked examples and self-explanation on performance, problem solving, and self-efficacy. *Computers & Education, 49*(3), 809-821. doi: 10.1016/j.compedu.2005.11.018

Dalgety, J., & Coll, R. K. (2006). Exploring first-year science students' chemistry self-efficacy. *International Journal of Science and Mathematics Education, 4*(1), 97-116. doi: 10.1007/s10763-005-1080-3.

DeBellis, V. A., & Goldin, G. A. (2006). Affect and meta-affect in mathematical problem solving: A representational perspective. *Educational Studies in Mathematic, 63*(2), 131-147. doi: 10.1007/s10649-006-9026-4

Efklides, A. (2008). Metacognition: Defining its facets and levels of functioning in relation to self-regulation and co-regulation. *European Psychologist, 13*(4), 277-287. doi: 10.1027/1016-9040.13.4.277

Efklides, A. (2016). Metamemory and affect. In J. Dunlosky & U. Tauber (Eds.), *The Oxford handbook of metamemory* (pp. 245-267). New York, NY: Oxford University Press.

Enders, C. K. (2010). *Applied missing data analysis.* New York: Guilford.

Ferrell, B., Phillips, M. M., & Barbera, J. (2016). Connecting achievement motivation to performance in general chemistry. *Chemistry Education Research and Practice, 17*, 1054-1066. doi: 10.1039/c6rp00148c

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Thousand Oaks, California: Sage.

Finney, S. J., & DiStefano, C. (2006). Non-normal and categorical data in structural equation modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: A second course* (pp. 269-314). Greenwich, CT: Information Age.

Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Eds.), *The nature of intelligence* (pp. 231-235). Hillsdale, NJ: Erlbaum.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist, 34*(10), 906-911. doi:10.1037/0003-066X.34.10.906

Fortus, D., & Vedder-Weiss, D. (2014). Measuring students' continuing motivation for science learning. *Journal of Research in Science Teaching, 51*(4), 497-522. doi: 10.1002/tea.21136

Fraenkel, J., Wallen, N., & Hyun, H. (2012). *How to design and evaluate research in education* (8th ed.). Columbus: McGraw-Hill Higher Education.

Gascoine, L., Higgins, S., & Wall, K. (2017). The assessment of metacognition in children aged 4-16 years: A systematic review. *Review of Education, 5*(1), 3-57. doi: 10.1002/rev3.3077

Goldin, G. A. (2002). Affect, meta-affect, and mathematical belief structures. In G. C. Leder, E. Pehkonen, & G. Torner (Eds.), *Beliefs: A hidden variable in mathematics education?* (pp. 59-72). Dordrecht, the Netherlands: Kluwer Academic Publishers.

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10*(3), 243-268. doi: 10.1037/0893-3200.10.3.243

Gourgey, A. F. (2001). Metacognition in basic skills instruction. In H. J. Hartman (Eds.), *Metacognition in learning and instruction* (pp. 17-32). Netherlands: Kluwer Academic Publishers.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hannula, M. (2011). The structure and dynamics of affect in mathematical thinking and learning. In M. Pytlak, T. Rowland, & E. Swoboda (Eds.), *Proceedings of the Seventh Congress of the European Society for Research in Mathematics Education* (pp. 34). Rzeszów, Poland: University of Rzeszów.

Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review, 17*, 63-84. doi: 10.1016/j.edurev.2015.11.002

Hwang, M. H., Choi, H. C., Lee, A., Culver, J. D., & Hutchison, B. (2016). The relationship between self-efficacy and academic achievement: A 5-year panel analysis. *Asia-Pacific Educational Research, 25*(1), 89-98. doi: 10.1007/s40299-015-0236-3

Kirbulut, Z. D., Uzuntiryaki-Kondakci, E., & Beeth, M. E. (2016). Development of a metaconceptual awareness and regulation scale. *International Journal of Science Education, 38*(13), 2152-2173. doi:10.1080/09500693.2016.1230791.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford.

Linnenbrink, E. A., & Pintrich, P. R. (2003). The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading &Writing Quarterly, 19*(2), 119-137. doi: 10.1080/10573560308223

Nelson, T. O. (1996). Consciousness and metacognition. *American Psychologist, 51*(2), 102-116. doi: 10.1037/0003-066X.51.2.102

Nietfeld, J. L., Cao, L., & Osborne, J. W. (2006). The effect of distributed monitoring exercises and feedback on performance, monitoring accuracy, and self-efficacy. *Metacognition and Learning, 1*, 159-179. doi: 10.1007/s10409-006-9595-6

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66*(4), 543-578. doi: 10.3102/00346543066004543

Pajares, F., & Urdan, T. (2006). Foreword. In F. Pajares, & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. ix-xii). Greenwich, CT: Information Age Publishing.

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review, 18*(4), 315-341. doi: 10.1007/s10648-006-9029-9

Pekrun, R., & Perry, R. P. (2014). Control-value theory of achievement emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 120-141). New York: Routledge.

Ramnarain, U., & Ramalia, S. (2018). The relationship between chemistry self-efficacy of South African first year university students and their academic performance. *Chemistry Education Research and Practice, 19*(1), 60-67. doi: 10.1039/c7rp00110j

Schraw, G. (2001). Promoting general metacognitive awareness. In H. J. Hartman (Ed.), *Metacognition in learning and instruction* (pp. 3-16). Netherlands: Kluwer Academic Publishers.

Sherry, A., & Henson, R. (2005). Conducting and interpreting canonical correlation analysis in personality research: A userfriendly primer. *Journal of Personality Assessment, 84*(1), 37-48. doi: 10.1207/s15327752jpa8401_09

Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). New York, NY: Routledge.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, NY: Allyn and Bacon.

Thomas, G. P. (2012). Metacognition in science education: Past, present and future considerations. In B. J. Fraser, K. Tobin, & C. J. McRobbie (Eds.), *Second international handbook of science education* (pp. 131-144). Dordrecht: Springer.

Thorley, N. R. (1990). *The role of the conceptual change model in the interpretation of classroom interactions*. (Unpublished doctoral dissertation). University of Wisconsin-Madison, Wisconsin, USA.

Uzuntiryaki-Kondakci, E., & Capa-Aydin, Y. (2011). Predicting critical thinking skills of university students through metacognitive self-regulation skills and chemistry self-efficacy. *Educational Sciences: Theory and Practice,13*(1), 666-670.

Uzuntiryaki-Kondakci, E., & Kirbulut, Z. D. (2016). The development of meta-affective trait scale. *Psychology in the Schools, 53*(4), 359-374. doi:10.1002/pits.21910.

Uzuntiryaki-Kondakci E., & Senay A. (2015). Predicting chemistry achievement through task value, goal orientations, and self-efficacy: A structural model. *Croatian Journal of Education, 17*(3), 725-753. doi: 10.15516/cje.v17i3.1555

Van der Stel, M., & Veenman, M. V. J. (2010) Development of metacognitive skillfulness: A longitudinal study, *Learning and Individual Differences, 20*(3), 220-224. doi:10.1016/j.lindif.2009.11.005

Villafañe, S. M., Xu, X., & Raker, J. R. (2016). Self-efficacy and academic performance in first-semester organic chemistry: Testing a model of reciprocal causation. *Chemistry Education Research and Practice, 17*(4), 973-984. doi: 10.1039/c6rp00119j

Vosniadou, S. (2003). Exploring the relationships between conceptual change and intentional learning. In G. M. Sinatra & P. R. Pintrich (Eds.), *Intentional conceptual change* (pp. 377-406). Mahwah, NJ: Erlbaum.

Wolters, C. A., & Pintrich, P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms. *Instructional Science, 26*(1-2), 27-47. doi: 10.1023/A:1003035929216

Yazici, E. K., & Ozmen, H. (2015). Fen ve teknoloji öğretim programında yer alan deney ve etkinliklerin uygulanabilirliğine ilişkin öğretmen görüşleri [The view of teachers about applicability of activities and experiments found in science and technology curriculum]. *Amasya Universitesi Egitim Fakultesi Dergisi, 4*(1), 92-117.

Yuruk, N., Beeth, M. E., & Andersen, C. (2009). Analyzing the effect of metaconceptual teaching practices on students' understanding of force and motion concepts. *Research in Science Education, 39*(4), 449-475. doi:10.1007/s11165-008-9089-6

Kimyada Üstkavram ve Üstduyuşun Özyeterlik ile İlişkisinin İncelenmesi

Atıf:

Kirbulut, Z. D. (2019). Exploring the relationship between metavariables and self-efficacy in Chemistry. *Eurasian Journal of Educational Research,* 81, 37-56, DOI: 10.14689/ejer.2019.81.3

Özet

Problem Durumu: Fen eğitiminde akademik başarının bilişsel değişkenlerle olan ilişkisi üzerine birçok çalışma olduğu halde duyuşsal değişkenlerle ilişkisini inceleyen çalışmalar azdır. Ancak öğrenmede biliş ve duyuş birlikte çok önemli bir rol oynar. Özyeterlik, biliş ve duyuşla ilişkili önemli bir değişkendir. Özyeterlik, kişilerin belli bir performansa ulaşabilmelerini sağlayacak eylemleri örgütleme ve sergileme becerileriyle ilgili yargıları olarak tanımlanmaktadır. Özyeterlik alana özgüdür. Örneğin, kimya dersinde yüksek özyeterliğe sahip bir öğrenci, matematik dersinde düşük özyeterliğe sahip olabilir. Özyeterlik, kişinin duygu, düşünce ve davranışları ile ilgili özyansıtma ve değerlendirmelerde bulunmasını gerektirir. Bu durum, özyeterlikle üstbiliş arasındaki ilişkiyi yansıtır. Üstbiliş karışık bir kavram olup alanyazında birçok tanımı bulunmaktadır. Bu tanımların ortak noktaları, üstbilişin, kişinin bilişsel sisteminin farkında olması, izlemesi ve kontrol etmesi olduğu üzerinedir. Aynı şekilde, üstbilişin boyutları üzerinde de tartışmalar olmakla birlikte üstbilişsel farkındalık ve üstbilişsel düzenleme ortak boyutlardandır ve bu çalışmada da bu boyutlara odaklanılmıştır. Üstbilişin tanımı ve boyutları hakkında farklı görüşler olmasına rağmen, üstbilişin öğrenme üzerindeki olumlu etkisi, üzerinde hemfikir olunan bir durumdur. Üstbiliş birçok süreç ve beceriyi içeren kapsayıcı bir kavram olduğundan kişinin kendi kavramsal sistemini bilmesi ve kontrol edebilmesi bağlamında "üstkavram" terimi kullanılmaktadır. Bu çalışmada da öğrencilerin kimya bağlamındaki kavramlarının farkında olmaları, izlemeleri ve değerlendirmeleri anlamında "üstkavram" üzerine odaklanılmıştır. Özyeterlik duyguların yönetilmesinde de önemlidir. Genellikle endişe gibi olumsuz duygular özyeterliği azaltırken, coşku gibi olumlu duygular özyeterliği arttırır. Buradan hareketle bu çalışmada üstduyuş kavramı üzerinde durulmuştur. Üstduyuş, duyuş hakkında duyuş, biliş hakkında duyuş ve duyuşun izlenmesi anlamına gelmektedir. Üstduyuşta öne çıkan ve bu çalışmada da kullanılan iki boyut; duyuşun farkındalığı ve duyuşun düzenlenmesidir. Özyeterliği yüksek olan kişiler güçlüklere karşı azimlidirler ve bir ödev üzerinde daha fazla çaba sarf ederler. Özyeterliğin akademik başarıyı etkileyen önde gelen değişkenlerden olduğu ortaya konulmuştur. Bu anlamda özyeterliği etkileyen faktörleri belirlemek önemlidir. Özyeterliğin üstbiliş ve duyguyla ilişkisine yönelik çalışmalar vardır ancak üstkavram ve üstduyuş özelinde çalışmalarla karşılaşılmamıştır. Dolayısıyla, özyeterlik ile üstbiliş ve üstduyuş arasındaki ilişkiyi ortaya koyacak çalışmaların bu alanda yol gösterici olacağı düşünülmektedir.

Araştırmanın Amacı: Bu çalışmada özyeterlik ile üstbiliş ve üstduyuş arasındaki ilişki kimya bağlamında incelenmiştir. Bu anlamda aşağıdaki araştırma sorusu bu çalışmaya rehberlik etmiştir:
Lise öğrencilerinin kimya dersindeki üstkavramsal farkındalık, üstkavramsal düzenleme, duyuşsal farkındalık ve duyuşsal düzenleme düzeyleri kimya özyeterlik inançlarını ne derecede yordamaktadır?

Araştırmanın Yöntemi: Bu çalışmada keşfedici ilişkisel araştırma deseni kullanılmıştır. Çalışmaya 12. sınıfta öğrenim gören 369 Anadolu Lisesi öğrencisi (187 kız, 155 erkek ve 27 yanıt vermeyen öğrenci) katılmıştır. Veriler, Lise Kimya Özyeterlik Ölçeği (LKÖÖ), Üstkavramsal Farkındalık ve Düzenleme Ölçeği (ÜFDÖ) ve Üstduyuşsal Özellik Ölçeği (ÜÖÖ) kullanılarak toplanmıştır. LKÖÖ, öğrencilerin kimya özyeterlik inançlarını, ÜFDÖ, öğrencilerin kimya ile ilgili kavramlarının ne kadar farkında olduklarını, izlediklerini ve değerlendirdiklerini ve ÜÖÖ de öğrencilerin kimyadaki duygularıyla ilgili üstduyuşsal yönelimlerini ölçmek için kullanılmıştır. Bu çalışmada özyeterlik ile üstbiliş ve üstduyuş arasındaki ilişki kanonik korelasyon analizi (bağımsız değişken seti; üstkavramsal farkındalık, üstkavramsal düzenleme, duyuşsal farkındalık ve duyuşsal düzenleme ve bağımlı değişken seti; bilişsel beceriler kimya özyeterliği ve kimya laboratuvarı özyeterliği) ile incelenmiştir. Kanonik korelasyon analizi, en az iki değişken içeren bağımlı ve bağımsız iki değişken seti arasındaki ilişkiyi inceleyen çok değişkenli bir analizdir.

Araştırmanın Bulguları: Kanonik korelasyon analizi sonucunda özyeterlik ile üstbiliş ve üstduyuş arasındaki ilişkiye dair iki kanonik fonksiyon elde edilmiştir. Anlamlı kanonik fonksiyonların belirlenmesinde üç kriter kullanılmıştır. Bunun için kanonik fonksiyonların istatistiki anlamlılığı, kanonik korelasyon katsayılarının karesine (R_c^2) dayalı pratik anlamlılığı ve bağımlı değişken seti gereksizlik (redundancy) indeksine dayalı pratik anlamlılığı değerlendirilmiştir. İstatistiki anlamlılık için kanonik fonksiyonların Wilks's Lambda değerleri kullanılmış ve bu değerler her iki fonksiyonun da istatistiksel olarak anlamlı olduğunu göstermiştir (birinci fonksiyon için Wilks's Lambda .67, $F(8, 726) = 20.27$, $p<.001$; ikinci fonksiyon için Wilks's Lambda .95, $F(3, 364) = 6.12$, $p<.001$). Kanonik korelasyon katsayılarının karesine bakıldığında ilk fonksiyon için .30 ve ikinci fonksiyon için .05 olduğu bulunmuştur. Buna göre ilk fonksiyon bağımlı ve bağımsız değişken seti arasındaki varyansın daha çoğunu açıklamıştır. Gereksizlik indeksi kriterine göre, birinci fonksiyon için hesaplanan bağımlı değişken seti gereksizlik indeksi .20 iken, ikinci fonksiyona ait değer .02'dir. Yani ikinci fonksiyonla kıyaslandığında, birinci fonksiyonda bağımlı değişken setindeki varyansın daha fazlası bağımsız değişkenler tarafından açıklanmıştır. Bu kriterlere göre birinci fonksiyonun açıklanması daha anlamlıdır. Birinci fonksiyon için kanonik yapı katsayıları incelendiğinde bağımsız değişkenler içinde üstkavramsal düzenleme ($r_s = .84$) en büyük katsayıya sahipken, duyuşsal farkındalık ($r_s = .34$) en düşük değere sahiptir. Üstkavramsal farkındalık ve duyuşsal düzenleme kanonik yapı katsayıları ise sırasıyla .74 ve .71 olarak bulunmuştur. Bağımlı değişkenler açısından ise bilişsel beceri kimya özyeterliği kanonik yapı katsayısı ($r_s = .99$), kimya laboratuvarı özyeterliği ($r_s = .59$) için bulunan değerden daha büyüktür. Bir değişkenin kanonik fonksiyona anlamlı katkı yapabilmesi için kanonik yapı katsayısının .45'ten büyük olması beklenir. Buna göre duyuşsal farkındalık hariç tüm değişkenler pozitif ilişkili olarak birinci kanonik fonksiyona anlamlı katkıda bulunmuştur.

Araştırmanın Sonuçları ve Önerileri: Bu çalışma duyuşsal farkındalık hariç üstkavramsal farkındalık, üstkavramsal düzenleme ve duyuşsal düzenleme ile özyeterlik değişkenleri arasında pozitif bir ilişki olduğunu göstermiştir. Yani öğrencilerin kimya dersindeki üstkavramsal farkındalıkları, üstkavramsal düzenlemeleri ve duyuşsal düzenlemeleri arttıkça kimyadaki bilişsel beceri ve laboratuvar özyeterliklerinin de arttığı söylenebilir. Alanyazında yapılan çalışmaların özyeterliğin öğrencilerin akademik başarıları üzerinde en etkili değişkenlerden biri olduğunu gösterdiği düşünüldüğünde, özyeterliği etkileyen faktörlerin açığa çıkarılmasının önemi daha iyi anlaşılmaktadır. Bu çalışma da kimya özyeterliğini etkileyebilecek üst-düzey (meta-level) değişkenleri işaret etmektedir. Alanyazında, üstkavramsal ve üstduyuşsal değişkenlerin özyeterlik üzerindeki etkisi anlamında bir çalışmayla karşılaşılmadığından bu çalışma bu anlamda alanyazına yeni bir katkı sağlamaktadır. Çalışmadaki üst-düzey değişkenler arasından bağımsız değişken setine en önemli katkıyı üstkavramsal ve duyuşsal düzenleme yapmıştır. Ancak duyuşsal farkındalık anlamlı bir katkı sağlamamıştır. Üstkavram ve üstduyuş çok boyutlu ve karmaşık kavramlardır. Dolayısıyla farkındalık ve düzenleme boyutlarının özyeterlik üzerindeki etkilerinin nasıl gerçekleştiğinin belirlenmesine yönelik nitel ve nicel çalışmalara ihtiyaç vardır. Bağımlı değişken setine bakıldığında ise bilişsel beceri kimya özyeterliği, laboratuvar özyeterliğine göre daha büyük katkı sağlamıştır. Bunun muhtemel sebebi öğretmenlerin sınav sistemi ve malzeme yetersizliği gibi nedenler dolayısıyla daha az laboratuvar kullanmalarından olabilir. Bu çalışmanın sonuçlarına göre kimya öğretmenleri derslerinde özyeterlik için üst-düzey değişkenleri dikkate alabilirler. Bunun için zeki öğretim sistemleri gibi öğretimde yeni yaklaşımları dersleriyle bütünleştirebilirler. Ayrıca öğretmen eğitimi programları da üst-düzey değişkenlerin özyeterlik üzerindeki etkisini dikkate alabilirler.

Anahtar Kelimeler: üstbiliş, üstduyuş, özyeterlik, kanonik korelasyon analizi.

Eurasian Journal of Educational Research 81 (2019) 57-78

Eurasian Journal of Educational Research
www.ejer.com.tr

School Leaders' Insights Regarding Beginning Teachers' Induction in Belgium, Finland and Portugal

Estela COSTA[1], Marta ALMEIDA[2], Ana Sofia PINHO[3], Joana PIPA[4]

ARTICLE INFO

Article History:

Received: 20 Feb. 2019
Received in revised form: 26 Mar. 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.4

Keywords
school management, school principal; pedagogical leadership; new qualified teachers' induction; professional and organizational development

ABSTRACT

Purpose: Although new teachers' induction is a key issue of principals' work, there's still little research on this. Occurring within the frame of a EU project, the goal of the study was to perceive the main needs of principals to support beginning teachers in Belgium (Flanders), Finland and Portugal.

Research method: It built on a questionnaire applied to 1654 principals in three countries. 261 principals replied to the questionnaire. Descriptive statistics and exploratory factor analysis were used, and a comparative test involving the countries under analysis was performed.

Findings: The most relevant needs referred to professional/organizational development and pedagogical leadership, comprising implementation of supervisory devices and ICT integration in the classroom. Principals stressed the need to support new teachers to promote differentiated pedagogy, critical reflection and collaborative practices. Moreover, we found significant differences between countries: Belgians presented the highest scores in all dimensions, followed by the Portuguese and the Finish, respectively.

Conclusions: There's a consensus on the relevance of principals' action as pedagogical leaders, with a great focus on collaboration as a methodology of work among teachers, and reflection as an opportunity for professional growth and learning. Traditionally, this issue concerned only teachers. Currently, there seems to be a shift towards a commitment of principals to become more directly involved in driving teachers' practices and teaching processes. Nevertheless, this consensus is not total, as they value differently, in breadth and depth, the other dimensions, which must be analyzed in the light of the idiosyncrasies of each educational system.

© 2019 Ani Publishing Ltd. All rights reserved

[1] Unidade de Investigação e Desenvolvimento em Educação Formação (UIDEF), Instituto de Educação, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal. ecosta@ie.ulisboa.pt. Orcid: 0000-0003-1525-3433

[2] Unidade de Investigação e Desenvolvimento em Educação Formação (UIDEF), Instituto de Educação, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal. mialmeida@ie.ulisboa.pt Orcid: 0000-0003-3108-4289

[3] Unidade de Investigação e Desenvolvimento em Educação Formação (UIDEF), Instituto de Educação, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal. aspinho@ie.ulisboa.pt Orcid: 0000-0002-1814-1042

[4] Instituto de Educação, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal. pipa.joana@gmail.com Orcid: 0000-0001-7150-145X

Introduction

Despite there is wide recognition of the relevance of induction programs, only half of the European Union (EU) countries offer comprehensive, system-wide induction support to teachers after entering the profession (European Commission, 2012, p.11). The concept of induction is used here as a process of socialization (Angelle, 2002), through which beginning teachers have to simultaneously teach and learn to teach (Jensen, Sandoval-Hernandéz, & González, 2012), practicing and developing teaching skills under the umbrella of experienced teachers and principals (Cherian & Daniel, 2008).

Regarding the scientific production on induction of newly qualified teachers (henceforth, NQTs), the literature review carried out by Kutsyuruba, Godden, Covell, Matheson and Walker (2016) (Table 1) states that the highest production of scientific articles was produced in the United States of America (64 of the 113 papers). This mapping of empirical research makes evident a gap between the number of articles made in North America (USA/Canada) and in the United Kingdom vis-à-vis the other parts of the world.

Table 1

Research on Induction

Countries	*Nr papers*
USA	64
United Kingdom	15
Canada	12
Europe	8
Australia and New Zealand	6
The Middle East	6
Combined nations (more than one nation examined in one study)	2
Far East	1
Total	113

Source: Kutsyuruba et al. (2016)

Overall, the need to provide teachers with supportive systems seems to be consensual (Fantilli & McDougall, 2009; Marcelo, 2009), and induction is seen as especially relevant to "support new teachers in their transition to full teaching responsibilities before they obtain all the rights and responsibilities of full-time professional teachers" (Schleicher, 2012, p.73). Moreover, it appears to be relevant to prevent NQTs from leaving the profession, in the first three to four years after their initial training (Jones, 2003), due to stress, burnout, depression and other psychological symptoms, as has been highlighted by studies carried out in the UK (Smithers &

Robinson, 2003), Australia (Stoel & Thant, 2002), the USA (Ingersoll & Smith, 2003; Smith & Ingersoll, 2004), and other countries (OECD, 2005) (cf. Avalos, 2016; Kutsyuruba et al., 2016). Definitely, research reveals the importance of having support from the school management and colleagues in view of a positive job satisfaction (Avalos, 2016; Day, Sammons, Stobart, Kington, & Gu, 2007; Kessels, 2010).

School Leaders' Role on Induction

School leaders' qualities and skills are significant factors regarding the students' success (Cochran-Smith, 2006; Darling-Hammond, 2006; Rivkin, Hanushek, & Kain, 2005). They are responsible for exerting influence over teachers, helping "schools to develop visions that embody the best thinking about teaching and learning" (Leithwood & Rhiel, 2003, p. 5). Research shows that principals are the second most influential factor to students learning, only overtaken by classroom instruction (Leithwood, Louis, Anderson, & Wahlstrom, 2004). This effect happens through an encouragement conduct towards teachers, regarding their commitment and motivation, work conditions, and distribution of power (Leithwood, Day, Sammons, Harris, & Hopkins, 2006), or in the way principals shape school organizational culture (Robinson, Lloyd & Rowe, 2008; Wahlstrom, & Seashore-Louis, 2008).

Induction programs contribute to NQTs' well-being (Helsel DeWert, Babinski, & Jones, 2003; Kessel, 2010; Molner Kelley, 2004), enabling professional socialization and the acquaintance with the school culture (Marcelo, Burgos, Murillo, López, Gallego-Domínguez, Mayor, Herrera, & Jáspez, 2016). In a literature review about research on NQTs' professional learning and development, Avalos (2016) stresses the benefits of having support systems (e.g., mentoring), as the early phase career must be strengthened and NQTs should be supported within a context shaped by a learning culture (Sunde & Ulvike, 2014). In the same vein, Iordandides and Vryoni (2013), in their research with Cypriot primary school leaders, reveal the importance of principals offering NQTs a positive school climate. Notwithstanding the emerging evidence from the studies, schools don't take induction (Wischkaemper, 2005), and inaction regarding NQTs prevails seriously enough.

These issues have been of concern to international bodies. In a book for policymakers, the European Commission (EC) presents "practical information" on how to develop induction support for all NQTs along with "examples of measures to implement or improve such programs" (EC, 2010, p. 5). Among others, the EC agrees that "Efforts should be made to ensure that all NQTs receive sufficient and effective support and guidance during the first few years of their careers." (EC, 2010, p. 5). Similarly, the Organization for Economic Co-operation and Development (OECD) warns that "The stages of initial teacher education, induction and professional development need to be interconnected to create a lifelong learning framework for teachers." (Schleicher, 2012, p.70).

Therefore, new teachers' needs and support should be a key issue of principals' work (OECD, 2005; Rippon & Martin, 2006), as they can favour or inhibit NQTs

professional trajectory. By offering support systems, not only principals enhance speed of personal and professional development of NQTs (Bubb, 2003), but they also influence the sort of professionals these new teachers will become (Bubb, Earley, & Totterdell, 2005). And this is at the heart of the school work because teachers are considered the most powerful predictor of students' success (Barber & Mourshed, 2007).

Three main assumptions followed from the above: first, any efforts to improve students' achievement should focus primarily on teachers; second, leadership is central to improve students learning, and is indirect (Leithwood et. al, 2004), depending on organizational decisions and the ability to guide others toward common goals; third, principals have an important role regarding NQTs, by strengthening their self-confidence and professional development through the implementation of induction programs and supportive systems.

Research Problem

Notwithstanding the importance of principals in NQTs' induction and in their professional development, studies focusing on this subject are still scarce in Europe, and there are too few studies that combine more than one nation concerning induction and school leaders – too, according to Kutsyuruba and colleagues' literature review (2016). This study aims at contributing to the knowledge development about this topic in the European context. The following research question was put forward:

- What needs do school leaders elect as important to respond to beginning teachers' induction in Belgium (Flanders), Finland and Portugal?

Other sub-questions emerged from this main issue: Is it possible to conceptualize different types of needs depending on national contexts? How do they differ in this regard?

Method

Research Design

The study was guided by three dimensions – professional and organizational development, pedagogical leadership and work organization – which are inherent to the activity of principals in their relationship with NQTs, and are related to school administration and management, i.e., the coordination of the teaching work and the professional integration of NQTs. Next, we shall briefly consider each one.

Professional and Organizational Development

Professional development is adopted here as part of a dialectical approach, in which intrinsic and extrinsic dimensions comprise a set of factors that influence the decision-making and action processes of teachers, by affecting all the aspects of their personal and professional life (Almeida, 2014). In the literature, the influence of individual and contextual factors is emphasized since the beginning of professional

socialization (Cohen-Scali, 2003; Flores, 2004; Harland, & Staniforth, 2006). Accordingly, one cannot think of individuals' professional development without bearing in mind it occurs within/is mediated by institutions. Besides, teachers' professional development depends on the contexts in which they carry out their teaching activity (Avalos, 2016). Concurrently, it is not possible to understand organizational development without realizing how those who work there evolve and contribute to institutional change (Cruz, 2006; Day, 2004; Marcelo, 2009; Zabalza, 2004). Therefore, we highlight the existence of a reciprocal influence between professional and organizational development.

Pedagogical Leadership

Despite the different names it takes – instructional leadership (Blase & Blase, 2002), pedagogical leadership (Ärlestig, 2008), learning-centered leadership (Southword, 2005) – by pedagogical leadership we mean "the guidance and direction of instructional improvement" (Elmore, 2000, p.13). To influence teachers' practices inside the classroom, principals shall carry out different activities, such as planning and implementing change and searching for teachers' collaboration (Hopkins, 2003). Blase and Blase (2002) describe three primary elements of instructional leadership: (a) conducting instructional conferences (by making suggestions and offering feedback to teachers, asking them for advice/suggestions), (b) providing staff development (by supporting innovation and collaboration, making available required resources, and developing/promoting coaching relationships, etc.) and (c) favoring teacher reflection (by means of classroom observation and dialogue with teachers). Thus, the principals' closer look on the teaching and learning process facilitates teachers' professional development (Hallinger, 2005; Timperley, 2005), and the processes of induction as well.

Work Organization

Professional development must be systematic and comprise training, practice and feedback (Schleicher, 2012, p.18). To promote teachers' professional development, school leaders are expected to intervene in the organizational culture, and to use organization and culture for changing the didactic and pedagogical dimensions of the school (Leithwood et al., 2006). We follow Horng and Loeb (2010) to whom "Schools that improve student achievement are more likely to have principals who are strong organizational managers" (p.66). Thus, the Work organization dimension regards the way principals organize school to respond to the individual and collective needs of NQTs.

Research Context

Bearing the distinctiveness of each country in mind, it is essential to stress the uniqueness of the national contexts. Despite most European countries provide the 'induction phase' in addition to the compulsory professional training (teaching diploma), the countries under analysis have different characteristics in the development of induction programs and in how they qualify teachers, and provide support to NQTs (see Table 2).

Table 2

Newly Qualified Teachers' Support Systems in Belgium, Finland and Portugal

Features	*Belgium (Flanders)*	*Finland*	*Portugal*
Teacher qualification	-Bachelor's degree (180 ECTS) for pre-school, primary or first-grade secondary school teaching. -Post-graduate teacher education program (60 ECTS*) for teaching in a secondary school.	Master's degree. Takes 5 years.	Master's degree. Takes 4 to 5 years.
Pedagogical studies	30 ECTS pedagogy studies (in post-graduate teacher education programs).	60 ECTS pedagogical studies.	At least 18–21 ECTS pedagogical studies. Between 30–51 ECTS didactics.
Organizing institution of pedagogical studies	Universities.	Universities. Higher education institutions of vocational teacher education.	Universities. Polytechnics (only for primary school teaching degrees).
Teaching practice	30 ECTS (in post-graduate teacher education programs).	Several phases during the program a total of approx. 20 weeks.	Between 42–63 ECTS.
Mentoring for NQTs	-Voluntary for NQTs. -Schools are responsible for organizing the mentoring activities.	-No formal mentoring system. -Schools are responsible for organizing the mentoring activities.	-Mandatory for NQTs according to legislation. -Locally organized according to schools' mentoring programs.
The mentors	-Schools frequently ask mentors to follow mentor training. -Works in the same school as a mentee. -Not paid.	-Usually a more experienced teacher from the same or different school than a mentee. -Can have specific training for mentoring. -Rewards or compensations depend on a school.	-More experienced teacher with specific training for mentoring. -Works in the same school as a mentee. -Not paid.
Participation to mentoring	Mentoring is provided for almost 99% of NQTs.	High variations among schools if mentoring is organized.	The aim is that all NQTs are integrated in a mentoring program. Still some variation may occur in the ways mentoring is actually organized.

Source: Harju & Niemi (2016) (adapted)

Research Sample

Within the frame of the European research project Outstanding New Teachers Programme (ONTP)[5], a questionnaire was administered to a total of 1654 school leaders from all over Belgium (Flanders), Finland and Portugal. 261 school leaders replied to it (Table 3).

Table 3

Rate of Participation

	Nº of sent questionnaires	*Nº of respondents*	*Response rate*
Belgium	35	30	85,7%
Finland	906	106	11, 7%
Portugal	713	125	17,5%
Total	1654	261	15,7%

The final sample consisted in 261 respondents, of which 47.9% are Portuguese, 40% are from Finland and 11.5% are from Belgium. Most of the respondents were female (56.7%), a tendency that occurs in the global sample and in the Portuguese and Belgian cases, whereas in Finland the male representation was slightly higher (50.9%). Regarding the age group, the majority (67.4%) of the principals were over 50 years of age, a tendency that was observed in all the countries involved.

As for academic qualifications, more than 60% of the principals held a master degree. However, in the Portuguese case, the vast majority had only a bachelor degree, as opposed to the trend observed in the other two countries. It should be noted that a large majority of the subjects (86.2%) had some type of specific training in school administration and management, a tendency that was maintained when each country was analyzed per se. All the principals covered by the study had experience in the field, of which about 75% of them had been teaching for more than 20 years. In addition to the specific training for managerial positions, the vast majority had extensive experience as a teacher. As regards the experience in school management, we found a greater variability. Although almost 50% had more than 10 years of experience, more than a quarter of the respondents (28.4%) had from one to five years of experience only. In the Portuguese case, principals with less experience represented almost 30% of the respondents (29.6%), and in Belgium, they represented 40% of the respondents. Only in the Finnish case have we found a majority of subjects with more than 10 years of experience in management positions (54.7%).

Research Instrument and Procedures

[5] An Erasmus + KA2 – Cooperation and Innovation for Good Practices (2014-1-BE02-KA201-000474).

The instrument was an opinion questionnaire (Ghiglione & Matalon, 1997), based on a similar instrument already validated in a previous study (Harju & Niemi, 2016)[6] and in the literature review. Peer discussion was used for validation of the instrument's content and suitability to the contexts. It also included a set of open-ended questions that are not analyzed here. Carried out in electronic format, the questionnaire was sent to school principals by each country team. One of the study limitations was the difficulty in determining the exact number of subjects that made up the study population. A second difficulty was the access to their e-mail addresses.

In Portugal and Finland, school principals of public schools in the whole national territory were considered as population, and questionnaires were randomly sent to schools in a number that would guarantee representativeness. In both countries, the questionnaire was applied in a second phase, at random, to increase the response rate. Regarding Belgium, the questionnaire was administered only to schools in the area of influence of the Provinciaal Onderwijs Vlaanderen (POV)[7], which corresponds to the Flanders region.

Questionnaire Dimensions

The questionnaire was based on the dimensions described above: pedagogical leadership (14 items related to the ability to coordinate the educational work and to promote the adoption / deepening of certain practices among NQTs); professional and organizational development (19 items related to the principal's ability to promote practices favorable to professional development according to NQTs development needs); and work organization (9 items aiming to detect needs felt by principals, especially regarding the decisions/actions to be taken to integrate NQTs).

The instruction in the questionnaire was "we ask you to give your opinion about the areas you would like to get support (counselling, training, etc.)". The response scale ranges from 1 – nothing, to 5 – very much, where 1 means 'the need of no support' and 5 means 'high need of support'.

Validity and Reliability

Table 4 presents descriptive statistics for each dimension, the distribution of the dimensions according to skewness and kurtosis values and the Cronbach alpha of each dimension. As can be seen, the Cronbach's alpha presented values above .94 for all the dimensions, revealing high internal consistency of the instrument.

[6] The instrument was used in earlier studies, originally in surveys of Finnish student teachers (Niemi, 2012, 2014) and in comparative studies of Finnish and Turkish teacher education (Niemi, Nevgi, & Aksit, 2016).
[7] Pedagogical Guidance Service.

Table 4

Means, Standard Deviations, Skewness and Kurtosis for each dimension of the instrument

	Portugal				***Belgium***				***Finland***				
	M	***DP***	**S**	**K**	***M***	***DP***	**S**	**K**	***M***	***DP***	**S**	**K**	Chronbachs alpha
Professional Leadership	3.41	0.81	-0.08	0.71	3.07	0.97	-0.40	-0.59	3.19	0.89	-0.36	-0.41	.94
Work in Organizations	3.86	0.50	0.31	-0.147	3.81	0.78	-0.86	0.60	3.75	0.72	-0.74	0.53	.94
Professional and Organizational Development	2.71	0.67	-0.26	-0.04	2.33	0.67	-0.13	-0.81	2.53	0.67	-0.42	-0.26	.96

S=Skewness, K=Kurtosis

Data Analysis

Data was analyzed with Statistical Package for Social Sciences (SPSS, version 22). The analyses were performed to respond to the research questions. On the one hand, descriptive statistics were computed to explore the factors that principals consider the most relevant to respond to NQTs' needs. On the other hand, to understand context differences, a statistical test to analyze mean differences between the countries, regarding the dimensions assessed by the instrument, was computed. The distribution of subjects by each group was very unequal (Portugal n=125, Belgium n=30, Finland n=106), and the assumptions to compute parametric tests were not met. Therefore, we proceeded to the analysis of the differences between the groups through a nonparametric test for mean ranks. The significant value was set at $p<.05$.

Results

To address the main research question, two procedures were followed. First, descriptive statistics for each item based on the mean responses were used to describe the factors that principals elect as the most and less important to respond to NQTs' needs in the three contexts. Items with mean scores superior to 3.2 were identified as the more salient and items bellow 2.9 mean scores were identified to be the less salient. Second, an exploratory factor analysis was employed to organize the items in factors sharing the same conceptual framework, allowing a deeper understanding of the factors that principals view as more important to respond to NQTs' needs.

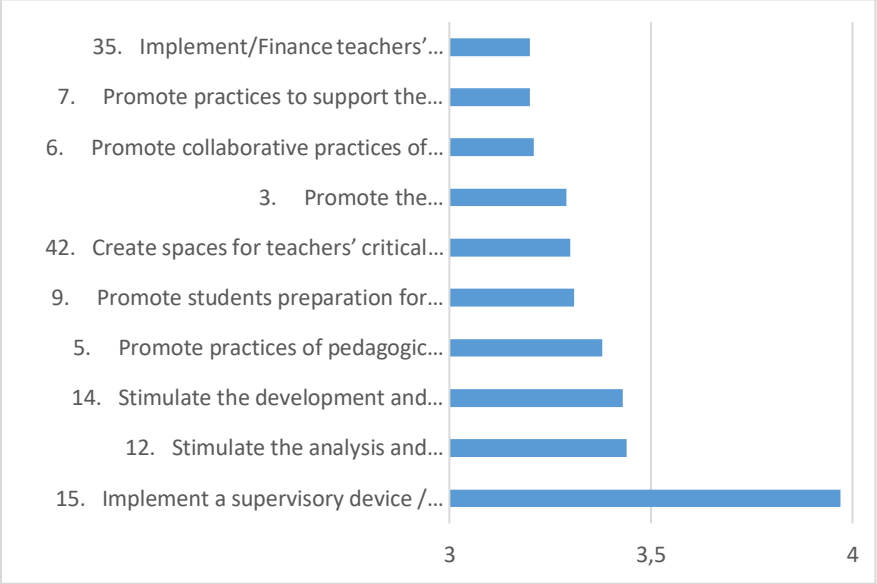


Figure 1. Items with the Highest Mean Scores

The results show that the need to implement supervisory devices was the item with the highest mean scores (*M*=3.97) (Figure 1). Also, the remaining items with the highest mean scores are related with the need to support pedagogical practices at classroom level, such as stimulate the analyses and improvement of the students' learning environments (item 12), stimulate the use of ICT as pedagogical resources (item 14), and promote practices of pedagogic differentiation (item 5). The importance of creating spaces for critical reflection (item 42), and promoting other collaborative practices (items 3 and 6) highlight the importance attached to these issues, which simultaneously contribute to the professional and organizational development. Only one of the items related to the work organization dimension arises in this first approach to principals' main needs: the financing of the continuous training (item 35).

In Figure 2, the items with the lowest mean scores were presented, reflecting the factors that principals perceive as less prominent to support NQTs. Giving support to teachers in administrative tasks outside the classroom was the item with the lower mean scores (*M*=2.62). Besides, the remaining items perceived as corresponding to the support measures NQTs need the least, were related to organizational dynamics. To further explore the factors that principals consider important to support NQT' needs, an exploratory factor analysis was conducted and the factors were retained based on eigenvalues superior to 1, on the variance explained by the factors and on the scree plot. Based on these features, five factors were found, explaining 72.25% of the variance and presenting eigenvalues ranged between 22.52 and 1.3.

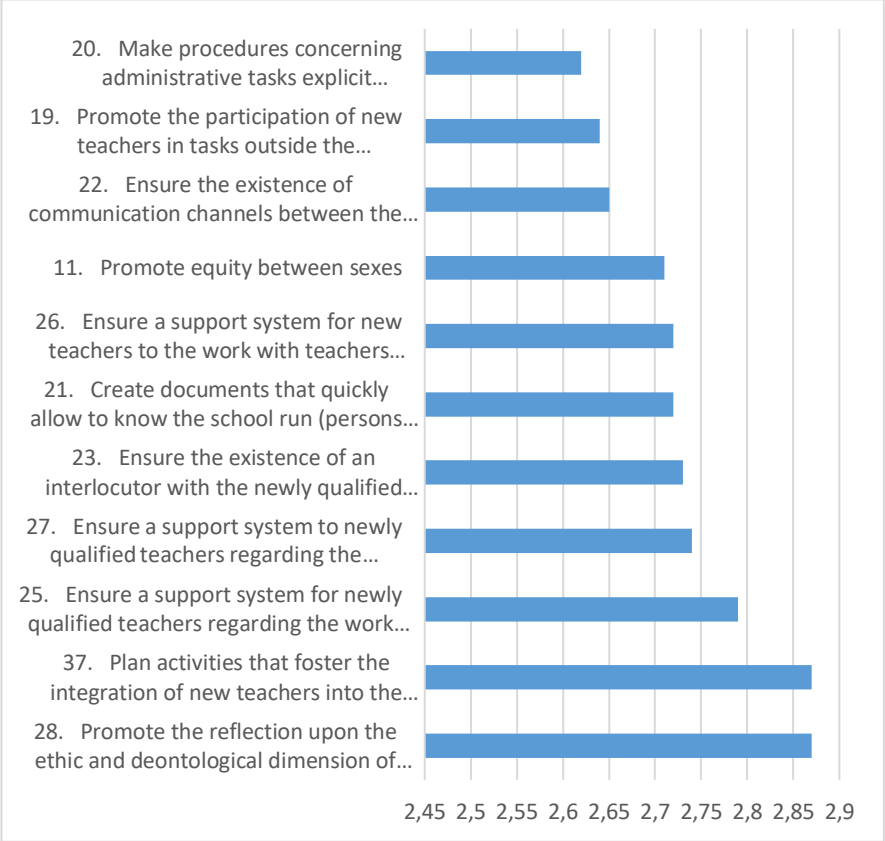


Figure 2. Items with the Lowest Mean Scores

In the structure found, the items were regrouped into five factors, i.e.: factor 1, that we called "Professional development centered in the context of the school" (aggregates items from the 'Professional and organizational development' dimension); factor 2, called 'Pedagogical leadership: personal and social dimension" (mainly constituted by items from the 'Pedagogical leadership' dimension); factor 3, identified as "Pedagogical leadership: instructional leadership dimension" (comprising items from the ' Pedagogical Leadership' dimension); factor 4, called "Work organization" (including items from the dimension with the same designation); and factor 5, specified as "Professional development centered on research and reflection on practice" (whose items belong to the 'PD dimension').

Table 5 presents the obtained factors, the correspondent descriptive statistics and internal consistency values. The factor with the highest mean level was 'Pedagogical leadership: instructional leadership dimension' (M=3.22) and reflects issues related to pedagogical competencies and classroom practices. The factor 'Pedagogical Leadership: personal and social dimension' was the second with the highest mean scores (M=3.12) and is associated with pedagogical practices in conflict resolution and

with ethical and deontological practices. The factor 'Professional development centered on research and reflection on practice' was the third in the rank of importance, and with a mean level of 3.07, thus showing a need to support beginning teachers to reflect upon their practices. The factor 'Professional development centered in the school context' is associated with teachers' school-centered support and communication networks, and showed mean scores of 2.95. The 'Work organization' factor has the lowest mean scores and is related to administrative tasks. The reliability of the factors was found to be good to excellent, with Cronbach's alpha values ranging between .87 and .96.

Table 5

Descriptive Statistics for Each Factor

	M	*SD*
Factor 1	2,95	0,966
33. Ensure the implementation of a continuing teacher education plan for the school	3,03	1,164
32. Implement a system of teachers' training needs identification and analysis	2,91	1,179
34. Create opportunities for professional development	2,97	1,22
36. Develop school-based teacher education	3,16	1,172
37. Plan activities that foster the integration of new teachers into the school culture	2,87	1,123
29. Promote knowledge and reflection about school guidance documents (e.g. educational project, regulations, etc.)	2,92	1,188
38. Include in the school activity plan activities leading to good relationships within the school community (teachers, personnel, parents, etc.)	2,94	1,186
22. Ensure the existence of communication channels between the newly qualified teachers and the school head	2,65	1,208
26. Ensure a support system for new teachers to the work with teachers and other school staff	2,72	1,153
31. Involve the newly qualified teachers in the monitoring and self-evaluation of the school	3,04	1,143
35. Implement/Finance teachers' continuing education	3,2	1,201
30. Promote the commitment to the school's mission and aims	3,19	1,161
27. Ensure a support system to newly qualified teachers regarding the articulated work with educational technicians (psychologists, social services, animators…)	2,74	1,034
Factor 2	3,12	0,830
13. Raise awareness of and promote media education	3,1	0,987
11. Promote equity between sexes	2,71	1,122
9. Promote students preparation for the future society	3,31	1,043
10. Promote intercultural education practices	3,04	1,034
14. Stimulate the development and use of ICT applications as a pedagogical resource	3,43	1,111
17. Inform of the procedures to follow in conflict situations (e.g. *bullying; mobbing*)	3,02	1,058
8. Foster effective practices for acting in conflict situations (e.g. *bullying; mobbing*)	3,16	1,081
12. Stimulate the analysis and improvement of the students' learning environments	3,44	1,054
28. Promote the reflection upon the ethic and deontological dimension of the profession	2,87	1,214

Table 5 Continue...

	M	*SD*
Factor 3	3,22	0,976
5. Promote practices of pedagogic differentiation	3,38	1,227
2. Promote knowledge and reflection on managing the interactions in the classroom	3,19	1,194
15. Implement a supervisory device / observation of the	3,97	0,99
6. Promote collaborative practices of planning teaching and learning among teachers	3,21	1,084
1. Promote the sharing of teaching methods	3,05	1,111
3. Promote the establishment/reflection on students assessment and classification systems	3,29	1,172
4. Coordinate the management of the curriculum	3,02	1,304
7. Promote practices to support the individual student growth	3,2	1,117
Factor 4	2,83	0,969
20. Make procedures concerning administrative tasks explicit (newsletters, reports, students' transfers to other groups or schools, working agendas)	2,62	1,155
21. Create documents that quickly allow to know the school run (persons in charge, facilities, services, basic procedures ...)	2,72	1,238
19. Promote the participation of new teachers in tasks outside the classroom (taking care of the students during the break, school parties, trips, meetings, etc.)	2,64	1,206
24. Ensure a support system for newly qualified teachers regarding the work to be developed with representatives of working life	2,93	1,073
23. Ensure the existence of an interlocutor with the newly qualified teachers	2,73	1,248
18. Make allocation of teachers' work based on pedagogical criteria (level of learning, special needs, ...)	3,03	1,151
16. Create schedules that allow joint work among teachers	3,12	1,239
Factor 5	3,07	0,868
41. Encourage the development of practice-based research processes	3,05	1,11
39. Promote the involvement in collaborative processes of action-research	3,06	1,111
42. Create spaces for teachers' critical reflection on their own work	3,3	1,173
25. Ensure a support system for newly qualified teachers regarding the work to be developed with representatives of the cultural life	2,79	1,031
40. Implement a support/monitoring system to newly qualified teachers (mentors/supervisors, etc.)	2,96	1,147

To answer the second research question, on whether principals perceive their NQTs' needs differently, and given the differences in the dimension of the groups, a Kruskall Wallis test was conducted to test the differences between the three participating countries in the factors obtained from the exploratory factor analysis.

The results showed significant differences between countries in all the dimensions considered in this test ($\chi^2_{KW}(2)=52.34$, $p<.001$ 'Professional development centered in the school context', $\chi^2_{KW}(2)=40.45$, $p<.001$ 'Pedagogical leadership: professional and social dimension', $\chi^2_{KW}(2)=94.72$, $p<.001$ 'Pedagogical leadership: instructional leadership dimension', $\chi^2_{KW}(2)=64.65$, $p<.001$ 'Work organization', $\chi^2_{KW}(2)=52.13$, $p<.001$ 'Professional development centered on research and reflection on practice'. The mean

ranks of the factors obtained for each country show that principals from Belgium present the higher scores in all dimensions, followed by Portuguese principals and the Finnish (Figure 3). The groups differ in almost all Factors, with the exception of the Belgium and Portugal comparisons in Factors 3 and 5, where no differences were found between these groups, considering p=.05 All the groups were statistically different considering p=0.05.

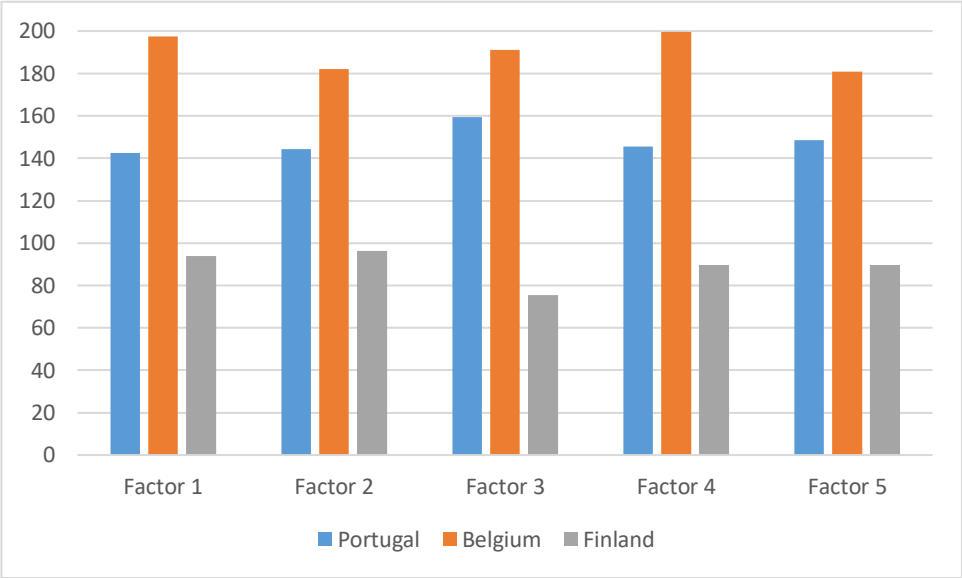


Figure 3. Mean Ranks for Each Dimension by Country

Discussion, Conclusion and Recommendations

This study was based on literature that proves the importance of the induction period in the future of NQTs (e.g. Avalos, 2016; Kessels, 2010; Kutsyuruba et al., 2016; Marcelo et al., 2016), and on Leithwood and colleagues (2004) research that confirms school leaders as the second most influential factor to students learning. Also, given the importance of principals' action to the quality of institutional practices, and since research on principals and NQTs induction is scarce, especially given the great lack of studies on NQTs induction and school leaders involving different countries, the goal of the study was then to perceive the main needs of principals to support NQTs in Belgium (Flanders), Finland and Portugal. Also, we intended to know the differences in the principal needs, depending on the national contexts in question.

Therefore, a questionnaire was applied, containing three dimensions: professional/ organizational development, pedagogical leadership and work

organization. Methodologically, descriptive statistics and exploratory factor analysis were used, as well as a comparative test involving the countries under analysis.

The research allowed a better understanding of principals' concerns about NQTs in the three countries inquired. The findings show the existence of a consensus oriented towards valuing new teachers' professional and organizational development. According to the results, pedagogical leadership is a matter of shared concern, with regard to instructional, personal and social issues, in line with what has been advocated by international organizations (e.g. OECD), which reinforces the importance of welcoming and supporting beginner teachers and establishing favorable conditions for their professional development. Likewise, there is a clear idea of what they wish to achieve: it should occur within schools, through reflection on practices and supported by senior teachers and school leaders (Cherian & Daniel, 2008).

Moreover, and in line with the recommended by several authors, that school leaders should have a role in giving feedback to teachers, and support them and their pedagogical practices (e.g. Blase & Blase, 2002), results confirm that principals see teachers' guidance and the classroom steering as their responsibility regarding beginning teachers.

Furthermore, principals declare a need to create opportunities for NQTs to work with peers collaboratively, and reflectively, rather than in isolation, which brings us back to the school-centered knowledge that can happen within a learning environment based on a shared responsibility and reflection (Cochran-Smith, 2004; Sunde & Ulvike, 2014).

The findings stress the heuristic potential of reflection that makes teachers more likely to intervene in organizational learning processes (Costa & Almeida, 2016). Indeed, there appears to be a collaborative teaching culture rationale underlying the results, since principals appreciate that teachers choose to work together and show a concern about fostering moments for critical reflection (on practices) and collaboration, in and out of the classroom, with peers, or broadened to different strands of the teacher work. Effectively, it is widely demonstrated in the literature that one learns to teach through a mixture of experiences and interactions, with colleagues and mentors, about problem situations (Feiman-Nemser, 2001). Avalos' (2016) literature review corroborates this idea, highlighting that collaborative learning structures and spontaneous dynamics may impact NQTs' teaching practice, and their ability to cope with pedagogical and contextual demands, tensions and constraints.

The results also highlight common patterns in the Belgian, Finish and Portuguese school leaders, who show their concern to play a larger role in supporting beginning teachers, placing a great focus on exercising a pedagogical leadership, and going beyond the scope of issuing prescriptions and guidelines to the new teachers. School leaders mostly declare a need to be more focused on pedagogical leadership, and promote NQTs confidence and engagement. Likewise, principals attach equal importance to the implementation of supervisory processes between peers and forms of support from more experienced teachers. Still highly valued is the need to

encourage NQTs to analyze students' learning environments, comprising reflection practices to a better understanding of what happens inside the classroom. Traditionally, this was an issue of concern to teachers only, i.e., almost as an exclusive matter of teacher's action. Moreover, pedagogical leadership, concerning personal and social dimension, is also valued, and is associated with pedagogical practices in conflict resolution and with ethical and deontological practices.

Through principals' need to influence NQTs, leadership appears as a sort of catalytic agency that makes the organization move forward. There seems to be a learning organization rationale underlying the measures that principals elect, concerning (new) teachers' work, such as to stimulate reflection and collaborative work. These are key issues in principals' mission concerning NQTs.

Of no less importance is the evidence that management issues, associated with bureaucratic and administrative aspects, are not valued by school leaders, except for the financing initiatives associated with continuous training, which is the only issue related to the work organization dimension that arises as a principal's main need. Hence, it can be deduced that school leaders mainly associate professional development with pedagogical leadership that supports their need to "enter – rethink - change" what goes on inside the classroom.

In short, the challenges and needs regarding the NQTs induction that these school leaders share in common, cannot but be associated with transnational regulation processes, either in the nature of processes to be undertaken within the school to promote NQTs professional development (e.g. OECD), or in how to enhance their role in developing and improving support for beginning teachers, as stated by the EU.

Currently, there seems to be a shift towards a commitment of principals to become more directly involved in driving teachers' practices and teaching processes. Nevertheless, this consensus is not total, as they value differently, in breadth and depth, the other dimensions, and this must be analyzed in the light of the idiosyncrasies of each educational system. As regards these differences, while it is not our aim to compare countries, it is worth noting the greater valorization of all questionnaire dimensions by Belgians, followed by Portuguese and Finish, respectively. As hypothesis, we can relate those dissimilarities to teachers' professional career status, and the characteristics of the existing NQTs support programs, in each country.

Therefore, in Belgium (Flanders), the school leaders' high levels of concern can be explained by the fact that despite the NQTs induction is not compulsory, most of NQTs have support. Furthermore, the greater need for support in all dimensions declared by the Belgians may be due: first, to contextual problems, as Belgian principals are worried about teachers' high dropout rates and there's a need to create teachers' support systems and to request support from the pedagogical guidance services; second, to the sample composition, as about 40% of the respondents had only a maximum of 5 years' experience in the management position and show a greater concern given their inexperience; third, to teachers qualification, which is the

bachelor's degree and one more year of pedagogical training in school. In the other two contexts, the professionalization is only granted at a master's level.

With regard to Portugal, there are many constraints to the entry into the formal career in the first years after the professional qualification. The probationary period is provided in legislation, but principals don't welcome many inexperienced teachers per year. Every year, they welcome mainly hired teachers with several years of experience. This is a big challenge for Portuguese principals as the mandatory system is exclusively for beginning teachers who enter the career, but those who really enter the career almost always have several years of experience. Therefore, as NQTs can only enter the career many years later, most of them are not covered by the probationary period.

As for Finland, results are not as significant in all dimensions. The lower scores may be due to the fact that NQT's support systems, while dependent on the way each school prepared it, already have some tradition, and they have very consolidated support practices. Thus, we may assume that, over time, Finnish principals have had the opportunity to mature these processes.

Based on the results of this research, it can be concluded that measures need to be taken to encourage and support school principals' professional development to act as facilitative and effective managers and pedagogical leaders, through strategic and planned action, with the objective of increasing support to beginning teachers.

In sum, all these clues lead us to further research avenues, such as studies with larger groups, to allow the application of more robust statistical tests, namely the accomplishment of a confirmatory factor analysis. More research could also be carried out by country to verify the extent to which other variables, such as the years of experience and the training for school management functions, interfere with school leaders' positioning about the induction of NQTs.

References

Almeida, M. (2014). Développement professionnel des enseignants de l'enseignement supérieur: la transition entre les profils d'orientation pédagogique. *La Recherche en Éducation*, (14), 42-78.

Angelle, P.S. (2002). Mentoring the beginning teacher: Providing assistance in differentially effective middle schools. *The High School Journal, 86*, 15-27.

Ärlestig, H. (2008). *Communication between principals and teachers in successful schools*. (Doctoral dissertation). Umeå/Sweden: FSC, Umeå University. Retrieved from www.diva-portal.org/smash/get/diva2:142460/fulltext03

Ärlestig, H., Day, C., & Johansson, O. (2016). *A decade of research on school principals: Cases from 24 countries*. Cham: Springer.

Avalos, B. (2016). Learning from Research on Beginning Teachers. In J. Loughran & L. Hamilton (Eds.), *International handbook of teacher education,* I, 487-522. Singapore: Springer. DOI: 10.1007/978-981-10-0366-0_13

Barber, M., & Mourshed, M. (2007). *How the world's best-performing schools come out on top*. London: McKinsey.

Blase, J. R., & Blase, J. (2002). Teachers' perceptions of principals' instructional leadership and implications. *Leadership and Policy in Schools*, *1*(3), 256-264.

Bubb, S. (2003) *A newly qualified teacher's manual. How to meet the induction standards*. London: David Fulton.

Bubb, S., Earley, P., & Totterdell, M. (2005). Accountability and responsibility: 'Rogue' school leaders and the induction of new teachers in England. *Oxford Review of Education, 31*(2), 255-272.

Cherian, F., & Daniel, Y. (2008). Principal leadership in new teacher induction: Becoming agents of change. *International Journal of Education Policy and Leadership, 3*(2), 1-11.

Cochran-Smith, M. (2004). Stayers, leavers, lovers, and dreamers. Insight about teacher retention. *Journal of Teacher Education*, *55*(5), 387-392.

Cochran-Smith, M. (2006). *Policy, practice, and politics in teacher education*. Thousand Oaks, CA: Corwin Press.

Cohen-Scali, V. (2003). The influence of family, social, and work socialization on the construction of the professional identity of young adults. *Journal of Career Development, 29*, 237-249. Retrieved from http://jcd.sagepub.com/cgi/content7refs/29/4/237.

Costa, E., & Almeida, M. (2016). Formação-ação e autoavaliação de escolas: um contributo para o desenvolvimento organizacional e profissional dos professores. *Educação, Sociedade & Culturas*, 47, 73-93.

Cruz, M.F. (2006). *Desarrollo profesional docente*. Granada: Grupo Editorial Universitário.

Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of Teacher Education Policy Analysis Archives*, *57*(3), 300-314.

Day, C. (2004) (Ed.). *International handbook on the continuing professional development of teachers*. Berkshire: McGraw-Hill.

Day, C., Sammons, P., Stobart, G., Kington A., & Gu, Q. (2007). *Teachers matter: Connecting lives, work and effectiveness*. Berkshire, UK: Open University Press - McGraw Hill Education.

Elmore, R. (2000). *Building a new structure for school leadership*. Washington, DC: The Albert Shanker Institute.

European Commission (2010). Commission Staff Working Document Developing coherent and system-wide induction programmes for beginning teachers: A handbook for policymakers. SEC (2010) 538 final.

European Commission (2012). *Commission staff working document. Supporting the teaching professions for better learning outcomes*. Strasbourg, 20.11.2012. SWD (2012) 374 final.

Fantilli, R. D., & McDougall, D. E. (2009). A study of novice teachers: Challenges and supports in the first years. *Teaching and Teacher Education*, *25*(6), 814–825.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, *103*(6), 1013-1055.

Flores, M.A. (2004). Os professores em início de carreira e o seu processo de mudança: influências e percursos. *Revista Educação, 12* (2), 173-190.

Ghiglione, R., & Matalon, B. (1997). *O inquérito: Teoria e prática.* 3ª ed. Oeiras: Celta.

Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to fade away. *Leadership and Policy in Schools Journal*, *4*, 1-20.

Harland, T., & Staniforth, D. (2006). Contrasting views of induction: The experiences of new academic staff and their heads of department. *Active Learning in Higher Education, 7*, 185. Retrieved from http://alh.sagepub.com/content/7/2/185.

Harju, V., & Niemi, H. (2016). Newly qualified teachers' needs of support for professional competences in four European countries. *CEPS journal*, *6*(3), 77-100. Retrieved from http://www.dlib.si

Helsel DeWert, M., Babinsky, L. M., & Jones, B. D. (2003). Safe passages. Providing online support to beginning teachers. *Journal of Teacher Education*, *54*(4), 311-320.

Horng, E., & Loeb, S. (2010). New Thinking about Instructional Leadership. *Phi Delta Kappan*, *92*(3), 66-69.

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, *60*(8), 30-33.

Iordandides, G., & Vryoni, M. (2013). School leaders and the induction of new teachers. *International Studies in Educational Administration*, *41*(1), p75-88.

Jensen, B., Sandoval-Hernandez, S., & González, J. (2012). *The experience of new teachers: results from TALIS 2008*. Paris: OECD.

Jones, M. (2003). Reconciling personal and professional values and beliefs with the reality of teaching: findings from an evaluative study of ten newly qualified teachers during their year of induction. *Teacher Development*, *7*(3), 385-402.

Kessels, C. C. (2010). *The influence of induction programs on beginning teachers' well-being and professional development*. ICLON, Leiden Netherlands: University Graduate School of Teaching.

Kutsyuruba, B., Godden, L., Covell, L., Matheson, I., & Walker, K. (2016). *Understanding the Contextual Factors within Teacher Induction and Mentoring Programs an International Systematic Review of Research*. Final Report. Canada: Faculty of Education - Queen's University & College of Education University of Saskatchewan.

Leithwood, K.A., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Seven strong claims about successful school leadership*. Nottingham: National College of School Leadership.

Leithwood, K.A., & Riehl, C. (2003). *What we know about successful school leadership*. Philadelphia, PA: Laboratory for Student Success, Temple University.

Leithwood, K.A., Seashore Louis, K., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning: A review of research for the learning from leadership project*. New York: The Wallace Foundation.

Marcelo, C. (2009). Políticas de inserción a la docencia: de eslabón perdido a puente para el desarrollo profesional docente. In C. Marcelo (Ed.), *El profesorado principiante. Inserción a la docencia* (pp. 7-57). Barcelona: Octaedro.

Marcelo, C., Burgos, D., Murillo, P., López, A., Gallego-Domínguez, C., Mayor, C., Herrera, B., & Jáspez, J. F. (2016). La inducción del profesorado principiante en la República Dominicana. El programa INDUCTIO. *Revista Ibero-americana de Educação, (71)*2, 145-168.

Molner Kelley, L. (2004). Why induction matters. *Journal of Teacher Education*, *55*(5), 438-448.

Niemi, H. (2012). Relationships of teachers' professional competences, active learning and research studies in teacher education in Finland. *Reflecting Education, 8*(2), 23-44.

Niemi, H., Nevgi, A., & Aksit, F. (2016). Active learning promoting student teachers' professional competences in Finland and Turkey. *European Journal of Teacher Education, 39*(4), 471-490, DOI: 10.1080/02619768.2016.1212835.

OECD (2005). *Attracting, developing and retaining effective teachers - final report: Teachers matter.* Paris: OECD Publications.

Rippon, J., & Martin, M. (2006). Call me teacher: The quest of new teachers. *Teachers and Teaching: Theory and Practice*, *12*(3), 305-324.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Variable definitions, data, and programs for 'teachers, students, and academic achievement'. *Econometrica Supplementary Material*, *73*(2).

Robinson, V. M., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, *44*(5), 635-674.

Schleicher, A. (2012). (Ed). *Preparing teachers and developing school leaders for the 21st century: lessons from around the world.* Paris: OECD. Retrieved from https://www.oecd.org/site/eduistp2012/49850576.pdf

Smith, T. M., & Ingersoll, R. M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, *41*(3), 681-714.

Smithers, A., & Robinson, P. (2003). *Factors affecting teachers' decisions to leave the profession*. Nottingham, UK: DfES.

Stoel, C. F., & Thant, T.-S. (2002). *Teachers' professional lives - A view from nine industrialized countries*. Washington, DC: Milken Family Foundation.

Sunde, E., & Ulvik, M. (2014). School leaders' views on mentoring and newly qualified teachers' needs. *Education Inquiry*, *5*, 285-299.

Timperley, H.S. (2005). Distributed leadership: Developing theory from practice. *Journal of Curriculum Studies*, 37(6), 395-420.

Wahlstrom, K. L., & Seashore Louis, K. (2008). How teachers experience principal leadership: The roles of professional community, trust, efficacy, and shared responsibility. *Educational Administration Quarterly*, *44*(4), 458-495.

Wischkaemper, K. A. (2005). *A comparative case study of the principal's role in new teacher induction*. (Doctoral Dissertation in educational leadership). Graduate Faculty of Texas Tech University.

Zabalza, M. (2004). *La enseñaza universitária. El escenario e sus protagonistas*. Madrid: Narcea.

Eurasian Journal of Educational Research 81 (2019) 79-98

Eurasian Journal of Educational Research
www.ejer.com.tr

An Investigation into Examination-Type Preferences of Primary School Students in Relation to Various Variables

Halil TAS[1], Muhammet Baki MINAZ[2]

ARTICLE INFO

Article History:
Received: 19 Feb. 2019
Received in revised form: 19 Mar. 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.5

Keywords
Primary school, Examination type, Assessment and evaluation, Exam anxiety

ABSTRACT

Purpose: Many teachers make assessment and evaluation without taking into account the preferences of the students. However, for a qualified assessment and evaluation activity, it is very important to take into account the individual differences, individual needs, and choice of exam types when determining the type of exam. This study seekeds to determine examination-type preferences of 4th grade primary school students and whether these differed depending on gender, and the location of the school, and to reveal the reasons of students' preferences related to examination types.

Methods: The study group of this relational research model was composed of 208 4th grade students. Convenience sampling was used to determine the study group. In this study, "Examination-Type Preference Questionnaire" was used to determine the examination types preferred by students while "Interview Form" was employed to find out the causes of their examination-type preferences. To collect the data of the study, quantitative and qualitative research methods were applied.

Findings: It was determined that students preferred multiple choice tests most whereas they preferred written examinations least. It was also determined that there was no significant relationship between examination types preferred and gender of students, and location of the school.

Implications for Research and Practice: Studies that will make use of other variables should be carried out related to examination-type preferences. In addition, a similar study on a larger sample can be used to determine alternative assessment and assessment competencies of classroom teachers.

© 2019 Ani Publishing Ltd. All rights reserved

[1] Corresponding Author, Ministry of National Education, Inspection Board, Ankara/Turkey, egitimci1@hotmail.com, Orcid ID: https://orcid.org/0000-0002-5219-1123

[2] Siirt University, Education Faculty, Siirt/Turkey, mbakiminaz@gmail.com, Orcid ID: https://orcid.org/0000-0002-0024-1854

Introduction

The determination of what levels of success have been achieved through education is important in that it can pilot future educational activities. The determination of which student has failed or which level of success has been achieved requires the assessment and evaluation of behavioural changes in the relevant student (Kilic & Cetin, 2018). To make the right decision about students, true value judgments should be made regarding student success. It is crucial to perform accurate observations or measurements via accurate assessment criteria to make true value judgments (Turgut & Baykul, 2015). It is possible to remark that success of the education system is influenced by not only activities but also assessment and evaluation instruments and approaches (Gultekin, 2011). It is of importance that teachers use examination types based on their positive as well as negative points in terms of assessment and evaluation. It is also essential for teachers as examiners to determine which examination types are preferred, and their reasons for students who are supposed to frequently confront examinations throughout their education (Tezbasaran, 2017).

For the purpose of satisfactorily providing knowledge, skills and values available in the curricula, it is indispensable to implement teaching approaches in which students can be active, choose learning environments and tools, monitor the process of acquiring skills, and which control the progress of students (Ministry of National Education, 2017). Therefore, learning and teaching process and assessment-evaluation activities should be coordinated and consistent. Assessment and evaluation are significant to determine to what extent students achieve targeted knowledge, skills and competences and to overcome shortcomings and things learned incorrectly. What is crucial in assessment and evaluation activities should be to reveal how students know what they learn, and what they can do rather than what they know. In this context, there should be an assessment and evaluation process that is oriented to provide continuous feedback and correction with the aim of monitoring students during the learning-teaching process, guiding them, identifying and resolving learning-related problems, and supporting meaningful learning (Ministry of National Education, 2015). In this case, teachers are supposed to perform not only result-oriented assessment and evaluation activities but also assessment and evaluation activities that centre the tendencies of the time and individual differences.

Assessment and evaluation are carried out to determine to what extent students achieve certain qualities, behaviours, knowledge, skills and abilities as a result of educational activities (Atilgan, 2017; Metin & Ozmen, 2010). It is essential to make use of assessment and evaluation methods and techniques accurately in education to develop the education system, determine existing deficiencies and provide sufficient feedback (Acar, 2018). The first measuring method that is primarily associated with the assessment of student success is generally exams such as classical exams, multiple choice tests, true-false questions, matching questions, homework, and oral examinations (Demir, 2012). Examination types in today's education system come in various forms such as written examinations, true-false questions, short answer questions, oral examinations, and multiple choice tests. Examination types employed in education have advantages as well as disadvantages depending on a great many

qualities such as relevance to the targets and behaviours assessed, the practicability of examinations, and the objectivity and reliability of the scoring (Atilgan, 2017; Turgut & Baykul, 2015).

During the education and training process, student success is frequently preferred to be evaluated via multiple choice tests, short answer questions, written and oral examinations, and the assessment and evaluation process is regarded as a separate activity from the education and training process (Ozdemir & Beyaztas, 2018). However, assessment and evaluation process is an indispensable part of the education and training process, which is performed at every single stage of the education and training process (Gelbal & Kelecioglu, 2007). This requires application of assessment and evaluation instruments, methods and approaches that enables monitoring of students' performances, knowledge, skills and attitudes along with conventional methods during the education and training process. Examination types and the quality of examination types can be influential in determining learning approaches of students (Brown & Wang, 2014).

According to Anil and Acar (2008), primary school teachers mostly make use of multiple choice tests as well as performance projects. Besides, teachers prefer to employ conventional assessment instruments due to reasons such as insufficient amount of time, crowded classes, and limited knowledge about employing these instruments. Kaya (2004) states that social sciences teachers generally prefer classical written examinations with less questions whose responses are long since they believe that a reliable examination requires expertise about which they feel inadequate. Ozenc and Cakir (2015) found in their study that teachers mainly employ conventional assessment and evaluation methods. Particularly, as being central examinations that enable students to proceed to a next level of education, multiple choice tests are the most preferred examination types by teachers as well as students (Onder, 2008; Pehlivan, 2011). Comprising products of the education life, the term learning is in fact a distinctive work that embodies distinctive methods for every individual. Expecting every single student to learn a subject via uniform methods means to totally ignore individual differences in education. Recent studies have focused on how individuals learn, and have consequently found out that students learn through different ways and follow particular strategies (Colak & Fer, 2007). It has also been determined from these studies that examination-type preferences have a relationship with their learning characteristics (Dogan & Kutlu, 2011).

Modern education systems take notice of students' learning characteristics, assessment perceptions and examination-type preferences through the convergence of education and assessment processes (Birenbaum, 1997). Every teacher certainly has an examination type which s/he thinks is easy to employ and in which s/he feels competent. However, assessment is far beyond preparing and employing an exam. Thus, it is thought that teachers ought to assess students bearing in mind underlying reasons of their examination-type preferences. And yet, teachers tend to be insistent on employing their own preferences of examination types though they are well-aware of students' examination-type preferences (Zoller & Ben-Chaim, 1998). Assessment and evaluation practices requiring various knowledge and experience are possibly

implemented poorly by teachers (Gocer, 2018). Kilic and Cetin (2018) identified the examination-type preferences of students and variables that affect these preferences, and revealed whether learning approaches and exam anxiety influenced students' preferences or not. Although there are a great many studies that have investigated the relationship between exam formats and performance (Bal, 2012; Birenbaum, 2007), there are a few studies focusing upon exam formats related to examination-type preferences (Birenbaum, 2007; Gharib & Phillips, 2013; Watering & Rijt 2006). It is also observed that studies related to examination-type preferences are mainly carried out by researchers other than Turkish researchers (Kilic & Cetin, 2018).

This study is significant in that it contributes to both active participation of students in the process, and the application of accurate assessment instrument through the determination of examination-type preferences of students. Furthermore, this study is expected to help teachers reduce negative effects of exam anxiety on students, and assess real performance of students by employing more than one examination type rather than focusing on a single examination type. This study is also expected to make a contribution to the field of education, decision makers and practitioners of the field of education in relation to paying attention to learners' individual differences, experiences, needs and examination-type preferences for an assessment and evaluation activity of quality, scrutinizing national as well as international exams and diversifying exams, developing an understanding of employing exams not for making judgments of students but for guiding students, parents and teachers along with a support for academic, social and cultural development, ensuring that the individual unearths, exercises and fosters his/her existing potentials, skills and capacity, and favouring the preference of examination types which are avant-garde, versatile that allow for evaluation activities over the preference of conventional tests.

This study seeks to determine examination-type preferences of primary school students and whether these differ depending on gender, and location of the school, and to reveal the reasons of students' preferences related to examination types. Following questions will be responded based on this purpose:

1. Which examination type is preferred by students most?

2. Is there a significant relationship between preferred examination type and gender of students?

3. Is there a significant relationship between preferred examination type and location of the school?

4. Why do students prefer a certain examination type more or less?

Method

Research Design

This study was a relational research model aiming to determine examination-type preferences of primary school students, and whether these differed depending on gender, and location of the school, and to reveal reasons of students' preferences related to examination types. Karasar (2016) states that the relationship between two or more variables is determined in relational research models, which is one of the general survey models.

Research Sample

The study group was composed of 208 4th grade primary school students enrolled at primary schools located in Altınordu and Gülyalı districts of Ordu province during the academic year 2018-2019. As student success is evaluated based on exam scores of the 4th grade of primary schools (Ministry of National Education, 2014), 4th grade students were taken into the scope of the study. Convenience sampling method was preferred to determine the study group. Being preferred by a majority of researchers in the literature, this method is used to select the easiest elements to form the sampling from the target population (Baltaci, 2018). This method is based on available and easily and quickly accessible elements (Patton, 2015). In addition, a diversity-place sampling was performed by giving preference to female and male students enrolled at schools both in the city centre and in districts and villages to determine the study group (Gray, Williamson, Karp & Dalphin, 2007). The study group was formed homogeneously in terms of age, academic achievement and grade levels. Participation in the study was on a voluntary basis. With the thought that it would not be ethical, real names of students were not used, and instead, names of participant students were coded as S1, S2,…S208 (in which "S" refers to the initial of the word "student" in English). Demographic characteristics of participants are given in Table 1.

Table 1

Information Related to the Demographic Characteristics of Participants

Variables		**N**	**%**
Gender	Female	93	44.71
	Male	115	55.29
Location of the school	City Centre	97	46.65
	District	74	35.57
	Village	37	17.78

Research Instruments and Procedures

In this study, "Examination-Type Preference Questionnaire" and "Interview Form" were used to determine students' examination-type preferences and the underlying reasons of them, respectively. Data collection tools were developed by the researchers of the study. This study includes most frequently used examination types

at schools which are written examinations, multiple choice tests, short answer questions, true-false questions, and matching questions (Tan, 2019).

Interviews were projected based on dimensions including preparation of the interview form, its testing, arrangement of the place and time of the interviews, and realization of interviews (Yildirim & Simsek, 2018). The interview draft, created by taking opinions of 3 lecturers that were experts in the field, was tested on 3 parents, 3 teachers and 5 students that did not take part in the sample but had things in common, and problems encountered were resolved with addition, exclusion of and changes in some of the questions.

Quantitative and qualitative research techniques were used to collect the data. As a quantitative data collection tool, the "Examination-Type Preference Questionnaire" was given to participants, and they responded it under the supervision of the researchers. Participants were given 5 to 8 minutes to respond. To determine the opinions of students related to examination types they prefered most and least, participants' responses given to questions "Why do you prefer this examination type more?" and "Why do you prefer this examination type less?" were recorded. Interviews of about 15 minutes were carried out in a room provided by the school administration and recorded with the consent of participants.

Data Analysis

To analyse the data obtained in the study, frequency, t-test, and One Way Variance Analysis were used. T-test and ANOVA were used to determine whether there was a significant relationship between the two groups by comparing the means of both groups, and to compare more than two groups ,respectively. First of all, frequencies and percentages related to the examination-type preferences of students were calculated through the data obtained from the questionnaire, and rates related to preferences were determined. Then, the reason why students preferred or did not prefer these examination types was determined. Content analysis technique was used to analyse the qualitative data obtained from the interviews with students. Being a technique that summarizes statements in the text within less content categories by coding with open rules (Weber, 1990), content analysis is to organize and interpret resembling data in a way to make them understandable for readers by integrating them under certain themes and terms (Yildirim & Simsek, 2018). Main themes were identified through the data obtained from quantitative and qualitative data collection tools, and some interviews with students were directly given.

The reliability of data in the study was carried out through participant conformation, corresponding expert analysis and inter-coder reliability processes (Boyatzis, 1998; Cresswell, 2013; Lincoln & Guba, 1985; Miles, Huberman & Saldana, 2018). The validity and reliability of the qualitative dimension of the study was tested in the light of cogency, transmissibility, consistency and approvability criteria (Yildirim and Simsek, 2018). In this study, data obtained were first described systematically, logically, consistently and clearly with direct quotations where necessary, and then descriptions made were explained, interpreted, compared, and examined regarding cause-effect relationship to reach a conclusion.

Results

Findings Related to the Most Preferred Examination-Types (Written Examinations, Multiple Choice Tests, Short Answer Questions, True-False Questions and Matching Questions)

Data related to the most preferred examination types are given in Table 2.

Table 2

Examination-Type Preferences of Students

Examination Types	*f*	%
Multiple choice Tests	147	70,67
True-False Questions	28	13,46
Short Answer Questions	17	8,17
Matching Questions	10	4,81
Written Examinations	6	2,88
Total	208	100

Table 2 highlighted that 70,67%, 13,46%, 8,17%, 4,81% and 2,88% of students preferred multiple choice tests, true-false questions, short answer questions, matching questions and written examinations, respectively.

Findings Related to Whether There Is a Significant Relationship Between the Preferred Examination Type and Gender of Students

Table 3 includes data related to whether there is a significant relationship between the preferred examination type and gender of students.

Table 3

T-Test Results Related to the Relationship Between the Preferred Examination Type and Gender of Students

Gender	**N**	**Mean**	**Standard Deviation**	**t**	**p**
Female	93	12.46	2.21	1.12	.15
Male	115	18.89	2.98		

Table 3 demonstrated that there was no significant difference between the preferred examination type and gender of students at a confidence level of .05 [$t_{(208)}=1.12$, $p>.05$].

Findings Related to Whether There Is a Significant Relationship Between the Preferred Examination Type of Students and Location of the School

Table 4 contains data related to whether there is a significant relationship between the preferred examination type of students and location of the school.

Table 4

Variance Analysis Results Related to the Preferred Examination Type and Location of the School

	SS	***df***	***MS***	***F***	***p***
Intergroup	98.82	4	9,12		
In-group	1422.24	84	19.36	.99	.09
Total	1563.29	88			

SS: Sum of Squares, ***df:*** Degrees of freedom, ***MS***: Mean Square

It was seen from Table 4 that there was no significant difference between the preferred examination type and location of the school at a confidence level of .05 [F=.98, P>.05].

Findings Related to the Reason Why Students Preferred a Certain Examination Type More or Less

Themes deducted from students' responses given to questions "Why do you prefer this examination type more?" and "Why do you prefer this examination type less?" to identify the reason why students preferred a certain examination type more or less as well as some of the interviews with students were presented below:

In the study, findings of the most preferred and least-preferred exams were listed under the themes of convenience, difficulty, precision and prevalence. While research findings were presented as themes and sub-themes, participant expressions were also included in order to better understand the sub-themes. The findings related to themes and sub-themes are presented in Table 5.

Table 5

Themes and Sub-Themes Related to the Most Preferred and Least Preferred Exams

Themes	***Sub-themes***	***f***
Convenience	The answer can be estimated in multiple choice tests.	145
	It's easier to work on multiple choice tests.	123
	In the multiple-choice tests, the answers remind the answer.	102
	More questions can be solved in multiple choice tests.	91
	Our hands do not get tired of multiple choice tests.	73
	Multiple choice tests are evaluated faster than teachers.	58
	Total	**592**

Table 5 Continue..

Themes	*Sub-themes*	*f*
Difficulty	It is difficult to work with the examinations.	135
	Written examinations need to write quickly to grow.	130
	Our hands are very tired in written examinations.	115
	Written examinations cause unsightly writing to be broken.	102
	It is not possible to predict the answer in written examinations.	82
	Written examinations take a lot of time.	68
	The correct answer in written examinations is not certain.	55
	In written examinations, teachers can make incorrect valuations.	26
	Total	**713**
Precision	In multiple choice tests, answers are final.	143
	Evaluation of multiple-choice tests is closed to teacher intervention.	131
	Students can calculate the score in multiple-choice tests.	96
	In multiple-choice tests, the teacher cannot make an incorrect.	38
	In multiple-choice tests, the teacher cannot take sides.	21
	Total	**429**
Prevalence	Written examinations are already in fashion.	152
	All books have multiple choice tests.	126
	The central examinations are not in the form of written examinations.	106
	All major exams are conducted in the form of multiple-choice tests.	97
	Multiple choice tests are performed in other countries.	83
	Total	**564**

It was seen from Table 5 that the views of the students on the theme of convenience were repeated 592 times, their views under the theme of difficulty 713 times, their views under the theme of difficulty 429 times, and their views under the theme of prevalence 564 times. The most repeated sub-theme under the theme of convenience was the sub-theme, "the answer can be predicted in multiple choice tests", the most repeated sub-theme under the theme of difficulty was the sub-theme, "it is difficult to work in written examinations", the most repeated sub-theme under precision was the sub-theme "answers are final in multiple choice tests", and it was observed that the most repeated sub theme under the current theme was the sub theme "written examinations are already out of fashion".

Theme 1. Convenience

S2. *Multiple choice tests are easier.*

S9. *It is more convenient to study for multiple choice tests.*

S24. *You can guess the answer in multiple choice tests*

S45. *Choices remind you the answer in multiple choice tests.*

S49. *The answer is already among the choices in multiple choice tests*

S126. *You can answer many questions in a short time in multiple choice tests.*

S132. *You can come up to the answer even if you are not sure of the answer in multiple choice tests.*

S204. *Teachers can announce the results faster in multiple choice tests.*

Theme 2. Difficulty

S5. *It is difficult to study for written examinations.*

S8. *You have to go over the whole book as you do not know the exact part of the book from which questions will be asked in written examinations.*

S49. *You have to act quickly to complete the exam in written examinations.*

S64. *If you do not have a good handwriting, teachers take point off in written examinations.*

S73. *Our hands are very tired in written examinations.*

S99. *It is impossible to guess the answer in written examinations.*

S135. *You cannot estimate your result as there is no such a definite correct answer in written examinations.*

S190. *Written examinations take much time.*

Theme 3. Precision

S51. *Multiple choice tests include precise answers.*

S74. *You can clearly identify correct answers in multiple choice tests.*

S94. *There is no need for the reading of teachers in multiple choice tests.*

S201. *Teachers do not take sides in multiple choice tests.*

S208. *You know what you do and what results you will get in multiple choice tests.*

Theme 4. Prevalence

S34. *Written examinations are obsolete.*

S66. *All books include multiple choice tests.*

S111. *Nobody employs written examinations anymore.*

S159. *Multiple choice tests are performed in other countries.*

S168. *All major exams are conducted in the form of multiple-choice tests.*

S200. *You need to answer very few questions in written examinations.*

S198. *Multiple choice tests are performed in other countries.*

S203. *Multiple choice tests are employed in all high-stakes tests.*

It was understood from the interviews with students that they preferred multiple choice tests as they were more convenient, had easy to guess answers, had precise answers, were close to the intervention of teachers' evaluation and common in local and central examinations employed in Turkey. On the other hand, it was clearly observed that students did not prefer written examinations as they believed they not only required much writing and lack of precise answers but also they were open to the intervention of teachers' evaluation and uncommon.

Discussion, Conclusion and Recommendations

It was determined in the study that that 70,67%, 13,46%, 8,17%, 4,81% and 2,88% of students preferred multiple choice tests, true-false questions, short answer questions, matching questions, and written examinations, respectively. According to the results of the study, it was observed that the most preferred examination type of students was multiple choice tests. Common use of multiple choice tests in a great many high-stakes tests (central or local examinations) in Turkey affected the preferences of students. The statement by a participant as "Multiple choice tests are employed in all high-stakes tests" proved the issue. The familiarity of students, who prepare for central and local exams with multiple choice tests, may also have an influence on students' preference. Furthermore, another reason of preferring multiple choice tests may be that class teachers mostly prefer multiple choice tests as part of their assessment and evaluation activities (Anil & Acar, 2008). Bal (2009) suggests that the most common assessment instruments are multiple choice tests and short answer questions. While teachers employ multiple choice tests most at secondary level, these are followed by written examinations and mixed examinations (Unlu, Ozturk & Taga, 2014). In this case, common use of multiple choice tests by teachers to assess student success may be another reason of such a preference by students. In the study by Akpinar and Canturk (2018), it was concluded that social sciences teacher candidates prefer multiple choice tests the most and that these preferences are affected by the desire to be successful in examination as well as by exam anxiety. In another study carried out by Tezbasaran (2017), it was determined that multiple choice tests are the most preferred examination types. Sarıgül (2009) states that students' favourite examination type preference is multiple choice tests from which they have high expectations for success while Eser (2011) points out that students prefer written examinations the least. On the other hand, while Cakan (2004) suggest that primary school teachers mostly employ multiple choice tests, Candur (2007) states that teachers employ multiple choice tests more as an assessment instrument.

It was concluded from interviews with students that they tended to prefer multiple choice tests. Content analysis was conducted to responses by students, and their opinions were collected under four themes as "convenience, challenge, precision and up-to-datedness". It was understood from the interviews with students that they preferred multiple choice tests as they were more convenient, had easy to guess answers, had precise answers, were close to the intervention of teachers' evaluation and common in local and central examinations employed in Turkey. On the other hand, it was clearly observed that students did not prefer written examinations as they believed they did not only require much writing and lack of precise answers but they were also open to the intervention of teachers' evaluation, and were uncommon. This was proved by the statements of students such as "Multiple choice tests are easier; you have to act quickly to complete the exam in written examinations; multiple choice tests include precise answers; written examinations are obsolete; multiple choice tests are employed in all high-stakes tests." The study by Ozcelik (2016) corroborates the findings of this study and concludes that the challenge of written expression negatively affects the validity of the written examination type. Furthermore, students express that written examinations cause exam anxiety (Tezbasaran, 2017). It was emphasized in studies along similar lines conducted with teacher candidates and students that students mainly prefer multiple choice tests due to achieving success with elimination or luck factor without even having a command of the subject as choices are available, overachievement with this examination type, guessing their results and common use of this examination type in national exams (Bal, 2009; Bayrak, 2007; Demir, 2012; Eser, 2011; Kilic, 2016; Sahin, Ozturk & Teker, 2015).

In this study, it was determined that there was no significant relationship between the preferred examination type of students and their gender. It was also determined by Gundogdu (2012) that there is no significant difference between female and male teachers in preferred assessment instrument. Cetin and Cakan (2010) found that there is no significant difference among points of female and male students in multiple choice tests, performance projects and written examinations. All students have preparatory studies such as studying excessively, question answering, taking pilot tests, and attending courses as education system is based on exams in Turkey. These vigorous efforts, studies and competitions lead to ruling out individual differences among students related to gender and other aspects. Students are perceived as exam-controlled individuals, as a result of which students are hampered from enjoying their individualities, exhibiting their individual differences and prioritizing their interests and abilities. While families show devotion to the exam success, education institutions also put in effort into immensely assisting students. As a consequence, evaluation of every single student via the same examination as an imposition of the exam-oriented system rules out individual differences, and blocks differences in examination-type preferences as well as other issues among students. What is taken into consideration in this case is not the gender of students but the number of questions answered by them or their correct answers. In fact, learning is a distinctive practice that embodies different methods for every individual. Individual differences are ignored where a certain subject is expected to be grasped in the same way for every individual (Colak & Fer, 2007). Giving prominence to individual differences in educational activities is

known to have impact on the examination-type preferences of students (Birenbaum & Rosenau, 2006; Dogan & Kutlu, 2011). In this study, it was found that there was no significant relationship between the examination-type preferences of students and their gender, and that examination-type preferences were connected with gender. It has also been concluded in some studies that multiple choice tests are preferred mostly by male students (Birenbaum & Feldman, 1998).

It was determined in this study that there was no significant relationship between examination-type preferences and location of the school. This possibly arises from the uniformity of examination types employed by class teachers at all schools. Besides, as the concern to pass exams and promote to higher levels of education institutions is common for the whole community, teachers and students who experience the same concern are expected to employ or prefer similar examination types. Test-oriented performance measurement behaviour of the exam-oriented education system is not only observed in schools located in city and districts but also in schools located in villages. Raising awareness of parents and students heads towards eliminating distinction among schools in cities, districts and villages. Furthermore, as teachers are insisting on employing their own examination types regardless of the location of the school or other factors (Zoller & Ben-Chaim, 1988), the location of the school underwhelms examination-type preference in this sense. Anil and Acar (2008) suggest that multiple choice tests are the most common tests used by class teachers. Particularly due to their overuse in central examinations that are employed to enable students to move up into higher levels of education, multiple choice tests are the most widely preferred examination types among teachers as well as students (Onder, 2008; Pehlivan, 2011). Therefore, it is taken for granted that individuals who were educated under an exam-oriented education system and then assigned as teachers under the very same system employ similar examinations and stimulate students to these examinations regardless of location. In fact, at this stage, it is also taken for granted that parents who are also educated and undertake the role of parenting expect a mainly exam-and-success-oriented educational activity regardless of location. As a result of similar views and concerns about the examination types, students may prefer their examination types under the influence of their teachers and parents as influential figures in their life.

This study shows that teachers and central examinations considerably affect the examination-type preferences of students. It was also concluded that examination-type preferences of students were affected by teachers' underuse of assessment and evaluation techniques such as portfolios, performance assessment, projects, self-assessment, peer-assessment, observations, interviews, mind maps, structured-grids, and diagnostic trees (Yesilyurt, 2012), and their overuse of conventional assessment and evaluation techniques such as multiple choice tests, true-false questions, short answer questions and written examinations (Ozenc & Cakir, 2015). Other studies have also demonstrated that conventional assessment and evaluation techniques are employed more frequently by teachers (Birgin, 2010; Gelbal & Kalecioglu, 2007; Gok & Sahin, 2009; Orhan, 2007; Watt, 2005).

Following recommendations can be given based on the findings of the study:

1. To carry out an assessment and evaluation activity of good quality, individual differences, experiences, needs and preferences of learners should be taken into consideration during the process of determining examination types.

2. Exam diversity should be ensured based on individual differences of students without ruling out the form and importance of national and international examinations.

3. Examinations should be employed not for making judgments of students but for guiding students, parents and teachers along with a support for academic, social and cultural development.

4. Studies that will make use of other variables should be carried out related to examination-type preferences. In addition, a similar study on a larger sample can be used to determine alternative assessment and assessment competencies of classroom teachers.

References

Acar, T. (2018). The impact of scoring method in written examinations on test and item statistics. *Elementary Education Online, 17*(2), 500-509.

Akpinar, M., & Canturk, A. (2018). Pre-service social studies teachers' views on choice of exam type and reasons and method of preparation for exams about learning. *Amasya Education Journal, 7*(2), 413-458.

Anil, D., & Acar, M. (2008). Elementary school theachers' views on issues they experience Through measurement and evaluation processes. *Yuzuncu Yil University Journal of Education, 5*(2),44-61.

Atilgan, H. (2017). Evaluation and grading. H. Atilgan (Ed.), *Measurement and evaluation in education* (pp.349-395). Ankara: Ani Yayincilik.

Bal, A. P. (2009). *The evaluation of measurement and evaluation approaches used in fifth grade mathematics instruction in terms of students and teachers' opinions.* (Unpublished doctoral dissertation). Çukurova University, Adana.

Bal, A. P. (2012). Assessment preferences of pre-service teachers about mathematics course. *The Journal of Turkish Educational Sciences, 10*(3), 459-479.

Baltaci, A. (2018). A conceptual review of sampling methods and sample size problems in qualitative research. *Journal of Bitlis Eren University Institute of Social Sciences, 7*(1), 231-274.

Bayrak, R. (2007). *The influence of assessment method on students' learning approaches.* (Unpublished masters dissertation), Karadeniz Technical University, Trabzon.

Birenbaum, M., & Feldman, R. A. (1998). Relationships between learning patterns and attitudes towards two assessment formats. *Educational Research, 40*(1), 90-98.

Birenbaum, M., & Rosenau, S. (2006). Assessment preferences, learning orientations, and learning strategies of pre-service and in-service teachers. *Journal of Education for Teaching, 32*(2), 213-225.

Birenbaum, M. (1997). Assessment preferences and their relationship to learning strategies and orientations. *Higher Education, 33*, 71-84.

Birgin, O. (2010). *Teachers' implementation level of assessment and evaluation approaches suggested by 4-5th grade mathematics curricula.* (Unpublished doctoral dissertation). Karadeniz Technical University, Trabzon.

Boyatsiz, R. E. (1998). *Thematic analysis and code development: transforming qualitative information.* Thousands Oaks, CA: Sage Publications.

Brown, G. T. L., & Wang, Z. (2014). Illustrating assessment: How Hong Kong university students conceive of assessment's purposes. *Studies in Higher Education, 39*(2), 1-20.

Cakan, M. (2004). Comparison of elementary and secondary school teachers in terms of their assessment practices and perceptions toward their qualification levels. *Ankara University Journal of Faculty of Educational Science, 37*(2), 99-114.

Candur, F. (2007). *Determining teachers' views about science and technology education, used student evaluation and assessment methods and their importance in the educational processes.* (Unpublished masters dissertation), Gazi University, Ankara.

Cresswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches.* Thousands Oaks, CA: Sage Publications.

Cetin, M.O., & Cakan, M. (2010). Different approaches to science and technology course achievements measurements and student opinions about these approaches. *Journal of Measurement and Evaluation in Education and Psychology, 1*(2), 93-99.

Demir, M. K. (2012). The study of primary school teacher candidates' opinions towards midterm and final examinations. *Ondokuz Mayıs University, Journal of Faculty of Educational Science, 31*(2), 193-21.

Dogan, C. D., & Kutlu, Ö. (2011). Factors related learning which effect preservice teachers' preference on alternative assessment methods. *Kastamonu Education Journal, 19*(2), 459-474.

Eser, M. T. (2011). *Examination of causes of some of the factors which affect students' exam type preference.* (Unpublished masters dissertation). Hacettepe University, Ankara.

Gelbal, S., & Kellecioğlu, H. (2007). Teachers' proficiency perceptions of about the measurement and evaluation techniques and the problems they confront. H. U. *Journal of Education,* (33), 135-145.

Gharib, A., & Phillips, W. (2013). Test anxiety, student preferences and performance on different exam types in introductory psychology. *International Journal of e-Education, e-Business, e-Management and e-Learning, 3*(1), 1-6.

Gocer, A. (2018). *Measurement and evaluation in Turkish education.* Ankara: Pegem Akademi Yayincilik.

Gok, B., & Sahin, A. E. (2009). The multiple uses of assessment methods in 4th and 5th grades and the competency levels of teachers. *Education and Science, 34*(153), 127-143.

Gray, P. S., Williamson, J. B., Karp, D. A., & Dalphin, J. R. (2007). *The research imagination: An introduction to qualitative and quantitative methods*. New York: Cambridge University Press.

Gultekin, S. (2011). *The evaluation based on Item Response Theory of the psychometric characteristics in multiple choice, constructed response and mixed format tests.* (Unpublished doctoral dissertation), Ankara University, Ankara.

Gundogdu, Y. B. (2012). Measurement tools religious culture and moral knowledge teachers preferred. *Journal of Faculty of Theology Istanbul University,* (27), 85-112.

Karasar, N. (2016). *Scientific research method.* Ankara: Nobel Akademik Yayincilik.

Kaya, B. (2004). *The measurement tools that are used by the social studies teachers of secondary level of primary education and the factors, which are effective on choosing these tools.* (Unpublished masters dissertation), Gazi University, Ankara.

Kilic, Z. (2016). *The relationship between students' examination type preferences and some variables.* (Unpublished masters dissertation), Hacettepe University, Ankara.

Kilic, Z., & Cetin, S. (2018). Investigation of students' examination type preferences in terms of some variables. *Elementary Education Online, 17*(2), 1051-1065.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Metin, M., & Ozmen, H. (2010). Prospective teachers' views about formative assessment. *Journal of National Education*, (187), 293-310.

Miles, M. B., Huberman, A. M., & Saldana, J. (2018). *Qualitative data analysis: A methods sourcebook.* Thousands Oaks, CA: Sage Publications.

Ministry of National Education. (2014). Ministry of National Education Regulation on Pre-School Education and Primary Education Institutions. Official Newspaper, 26 July 2014 date and 29072 number.

Ministry of National Education. (2015). *Social studies curriculum (4, 5, 6, 7 grades)*. Ankara: Publications of Ministry of National Education.

Ministry of National Education. (2017). *Social studies curriculum (Primary and secondary 4, 5, 6 and 7 grades)*. Ankara: Publications of Ministry of National Education.

Onder, O. (2008). *Influence of exam preparation with multiple choice and essay type questions on mathematics achievement and test anxiety levels.* (Unpublished masters dissertation), Marmara University, İstanbul.

Orhan, A. T. (2007). *Exploring the alternative assessment strategies by considering primary school pre-service teachers and students dimensions.* (Unpublished doctoral dissertation). Gazi University, Ankara.

Ozcelik, D. A. (2016). *Measurement and evaluation*. Ankara: Pegem Akademi Yayincilik

Ozdemir, B., & Beyaztas, D. İ. (2018). Prospective teachers` opinions about the reasons behind adopted learning approaches according to exam types. *Mehmet Akif Ersoy University Journal of Education Faculty,* (46), 363-385.

Ozenc, M., & Cakir, M. (2015). Exploring primary school teachers' competencies of alternative assessment and evaluation. *Elementary Education Online, 14*(3), 914-933.

Patton, M. Q. (2015). *Qualitative research and evaluation methods*. Thousands Oaks, CA: Sage Publications.

Pehlivan, E. B. (2011). *Investigation of answering behaviours to the items of multiple-choice Turkish test.* (Unpublished masters dissertation), Ankara University, Ankara.

Sahin, M. G., Ozturk, N. B., & Teker, G. T. (2015). Determining the pre-service teachers' measurement tool preferences for evaluation of their achievement. *Journal of Measurement and Evaluation in Education and Psychology, 6*(1), 95-106.

Tan, S. (2019). *Measurement and evaluation in teaching.* Ankara: Pegem Akademi Yayincilik.

Tezbasaran, E. (2017). Scaling types of test with the method of absolute judgement and assessing them with the students' views. *HAYEF: Journal of Education, 14*(27), 143-162.

Turgut, M. F., & Baykul, Y. (2015). *Measurement and evaluation in education*. Ankara: Pegem Akademi Yayincilik.

Unlu, S., Ozturk, H., & Taga, T. (2014). An evaluation on exams applied in Turkish course. *The Journal of Academic Social Science Studies,* (28), 513-523.

Watering, G., & Rijt, J. (2006). Teachers' and students' perceptions of assessments: A review and a study into the ability and accuracy of estimating the difficulty levels of assessment items. *Educational Research Review, 1*(2), 133-147.

Watt, H. M. G. (2005). Attitudes to the use of alternative assessment methods in mathematics: A study with secondary mathematics teachers in Sydney, Australia. *Educational Studies in Mathematics*, (58), 21–44.

Weber, R.P. (1990). *Basic content analysis.* London: Sage Publications

Yesilyurt, E. (2012). Measurement and assessment methods used at science and technology lesson and the difficulties encountered. *Turkish Studies, 7*(2), 1183-1205

Yildirim, A., & Simsek, H. (2018). *Qualitative research methods in the social sciences*. Ankara: Seckin Yayinlari.

Zoller, U., & Ben-Chaim, D. (1988). Interaction between examination type, anxiety state, and academic achievement in college science: An action-oriented research. *Journal of Research in Science Teaching, 26*(1), 65-77.

İlkokul Öğrencilerinin Sınav Türü Tercihlerinin Çeşitli Değişkenler Açısından İncelenmesi

Atıf:

Tas, H., & Minaz, M. B. (2019). An investigation into examination-type preferences of primary school students in relation to various variables. *Eurasian Journal of Educational Research, 81,* 79-98, DOI: 10.14689/ejer.2019.81.5

Özet

Problem Durumu: Çağdaş eğitim sistemleri, öğretim ile değerlendirme süreçlerinin yakınlaştırarak öğrencilerin öğrenme özelliklerini, değerlendirme algılarını ve sınav türü tercihlerini dikkate alır. Her öğretmenin uygulamasının kolay olduğunu ve kendisinin yeterli olduğunu düşündüğü sınav türü mutlaka vardır. Ancak değerlendirme, bir sınavı hazırlayıp uygulamaktan çok öte bir kavramdır. Bu nedenle öğretmenin, öğrencilerinin sınav türü tercihleri arkasında yatan sebepleri bilerek değerlendirme yapmaları önemlidir. Ancak öğretmenlerin öğrencilerinin sınav türü tercihlerinin farkında olmalarına rağmen öğrencilerine kendi tercih ettikleri test türlerini uyguladıkları söylenebilir. Halbuki nitelikli bir ölçme-değerlendirme etkinliği için, sınav türü belirlenirken öğrenenlerin bireysel farklılıklarının, deneyimlerinin, bireysel gereksinimlerinin ve sınav türü tercihlerinin dikkate alınması çok önemlidir. Öğretmenlerin tek sınav türüne odaklanmak yerine, birden fazla sınav türünü birlikte kullanarak, öğrenciler üzerindeki sınav kaygısının olumsuz etkilerini azaltmaları ve öğrencilerin gerçek performanslarını ölçmeleri daha doğru bir eğitimsel davranış olarak değerlendirilebilir.

Araştırmanın Amacı: Bu araştırma, ilkokul öğrencilerinin sınav türü tercihlerini ve bu tercihlerinin cinsiyet ve okulun bulunduğu yerleşim yeri değişkenine göre farklılık gösterip göstermediğini belirlemeyi ve öğrencilerin sınav türlerine ilişkin tercihlerinin nedenlerini ortaya çıkarmayı amaçlamaktadır.

Araştırmanın Yöntemi: İlkokul öğrencilerinin sınav türü tercihlerini ve bu tercihlerinin cinsiyet ve okulun bulunduğu yerleşim yeri değişkenine göre farklılık gösterip göstermediğini belirlemeyi ve öğrencilerin sınav türlerine ilişkin tercihlerinin nedenlerini ortaya çıkarmayı amaçlayan bu çalışma ilişkisel araştırma türünden bir araştırmadır. Bu araştırmanın çalışma grubunu, ilkokulda öğrenim gören 208 dördüncü sınıf öğrencisi oluşturmaktadır. Çalışma grubunun belirlenmesinde kolay ulaşılabilir durum örneklemesi yöntemi tercih edilmiştir. Ayrıca, araştırmada çalışma grubu belirlenirken hem il merkezindeki hem ilçe merkezindeki hem de köylerdeki okullarda öğrenim gören kız ve erkek öğrenciler tercih edilerek çeşitleme-yer örneklemesi yapılmıştır. Bu çalışmada, öğrencilerin sınav türü tercihlerini belirlemek için "Sınav Türü Tercih Anketi" ve öğrencilerin sınav türlerine ilişkin tercihlerinin nedenlerini ortaya çıkarmak için "Görüşme Formu" kullanılmıştır. Veri toplama araçları araştırmacılar tarafından geliştirilmiştir. Araştırmada, verilerin toplanmasında nicel ve nitel araştırma teknikleri kullanılmıştır. Nicel veri toplama aracı olan "Sınav Türü Tercih Anketi" katılımcılara dağıtılarak araştırmacının gözetiminde cevaplanması sağlanmıştır. Öğrencilerin en çok ve en az tercih ettikleri sınav türlerine ilişkin görüşlerini belirlemek için katılımcılara "Bu sınav türünü neden daha çok tercih ediyorsunuz?" ve "Bu sınav türünü neden daha az tercih ediyorsunuz?" soruları sorularak verilen cevaplar kayıt altına alınmıştır. Araştırmada elde edilen verilerin analizinde karma yöntem kullanılmıştır. Araştırmada, ulaşılan verileri analiz etmek için frekans, t-testi, tek yönlü varyans analizi (ANOVA) testi kullanılmıştır. Öğrencilerle yapılan görüşmeden elde edilen nitel verilerin analizinde içerik analizi tekniği kullanılmıştır.

Araştırmanın Bulguları: Araştırmada, öğrencilerin %70,67'sinin çoktan seçmeli test türünde yapılan sınavları, %13,46'sının doğru-yanlış test türündeki sınavları, %8,17'sinin kısa cevaplı test türündeki sınavları, %4,81'inin eşleştirmeli test türündeki sınavları ve %2,88'inin ise yazılı yoklama türünden sınavları tercih ettikleri tespit edilmiştir. Araştırma bulgularına göre öğrenciler tarafından en çok tercih edilen sınav türünün çoktan seçmeli testler olduğu tespit edilmiştir. Öğrencilerle yapılan görüşmelerde, öğrencilerin çoktan seçmeli testleri tercih etme eğiliminde oldukları belirlenmiştir. Araştırmada, öğrenciler tarafından tercih edilen sınav türü ile öğrencilerin cinsiyetleri ve okulun bulunduğu yerleşim yeri değişkenleri arasında anlamlı bir ilişki bulunmadığı belirlenmiştir. Yapılan görüşmelerden, öğrencilerin çoktan seçmeli testleri daha çok kolay olmalarından, cevapları tahmin etmeye olanak sağlamalarından, cevaplarının kesin olmasından, değerlendirmenin öğretmen müdahalesine kapalı olmasından, ülkede yapılan yerel ve merkezi sınavlarda çok sık kullanılıyor olmasından dolayı tercih ettikleri; yazılı yoklamaların ise çok yazma gerektirmesinden, cevapların kesin olmamasından, değerlendirme aşamasında öğretmen etkisine açık olmasından, yaygın olarak kullanılmıyor olmasından dolayı öğrenciler tarafından fazla tercih edilmediği tespit edilmiştir.

Araştırmanın Sonuçları ve Önerileri: Araştırmada, öğrencilerin en fazla çoktan seçmeli test türündeki sınavları, en az ise yazılı yoklama türündeki sınavları tercih ettikleri; tercih edilen sınav türü ile öğrencilerin cinsiyetleri ve okulun bulunduğu yerleşim yeri arasında anlamlı bir ilişki bulunmadığı sonucuna ulaşılmıştır. Yapılan çalışmada,

öğrencilerin sınav türü tercihleri üzerinde öğretmenlerin ve merkezi sınavların önemli oranda etkili olduğu söylenebilir. Öğretmenlerin portfolyo, performans değerlendirme, proje, öz değerlendirme, akran değerlendirme, gözlem, görüşme, kavram haritaları, yapılandırılmış grid, tanılayıcı dallanmış ağaç gibi ölçme ve değerlendirme tekniklerini az kullanmalarının ve buna karşın çoktan seçmeli test, doğru-yanlış test, kısa cevaplı test, eşleştirmeli test ve yazılı yoklama gibi geleneksel ölçme ve değerlendirme tekniklerini çok sık kullanmalarının öğrencilerin sınav türü tercihleri üzerinde etkili olduğu sonucuna ulaşılmıştır. Nitelikli bir ölçme-değerlendirme etkinliği için, sınav türü belirlenirken öğrenenler bireysel farklılıkları, deneyimleri, bireysel gereksinimleri ve tercihleri de dikkate alınmalıdır. Ulusal ve uluslararası düzeyde yapılan sınavların şekli ve önemi göz ardı edilmeden, öğrencilerin bireysel farklılıkları da dikkate alınarak sınav çeşitliliği sağlanmalıdır. Sınavlar öğrencileri yargılamak için değil; akademik, sosyal ve kültürel gelişimlerini destekleyerek öğrencilere, velilere ve öğretmenlere yol gösterecek bir faaliyet olarak yapılmalıdır. Sınavlar, sadece iyi bir okul kazanmak için değil; bireyde var olan gizil güçlerin, yeteneklerin, kapasitenin ortaya çıkarılması, kullanılması ve geliştirilmesi amacıyla da yapılmalıdır. Okullarda sadece akademik başarıyı ölçen sınavlar değil; hem öğrencilerin öz güvenlerini ve öz denetimlerini geliştirecek hem de onlara öğrenmeyi öğrenmenin yollarını açacak öz değerlendirme, akran değerlendirme ve grup değerlendirmeleri de yapılmalıdır. Sınav türü tercihleriyle ilgili olarak, farklı değişkenlerin kullanıldığı başka çalışmalar da yapılmalıdır.

Anahtar Kelimeler: İlkokul, sınav türü, ölçme ve değerlendirme, sınav kaygısı.

Eurasian Journal of Educational Research 81 (2019) 99-114

Eurasian Journal of Educational Research
www.ejer.com.tr

The Correlation Between Critical and Creative Thinking Skills on Cognitive Learning Results

Jodion SIBURIAN[1], Aloysius Duran COREBIMA[2], IBROHIM[3], Murni SAPTASARI[4]

ARTICLE INFO

Article History:

Received: 01 Feb. 2019

Received in revised form: 16 Apr. 2019

Accepted: 16 May 2019

DOI: 10.14689/ejer.2019.81.6

Keywords

critical thinking, creative thinking, cognitive learning results, and inquiry strategy

ABSTRACT

Purpose: A correlational research was conducted to reveal the correlation between critical thinking and creative thinking skills on students' cognitive learning results in inquiry learning strategy and to reveal the contribution of critical thinking skills and creative thinking skills to students' cognitive learning results. **Method:** The population of this research was students of Biology Education Study Program in the Education and Teacher Training Faculty of Jambi University, Indonesia in the semester of 2017/2018 academic year. The instrument used was an essay test to measure students' critical and creative thinking skills, and their cognitive learning results. The data were analyzed using multiple regression analysis with the assistance of SPSS version 16 for Windows program at 5% level.

Findings: The results showed that: (1) there was a significant correlation between critical thinking skills and creative thinking skills on cognitive learning results, (2) the contribution of critical thinking skills and creative thinking skills simultaneously to cognitive learning results was 72.80%, (3) the effective contribution of creative and critical thinking skills to cognitive learning results was 64.91% and 7.89% respectively.

Implications for Research and Practice: Lecturers can consider inquiry strategies as an alternative learning, especially for new students in universities to empower critical thinking skills and creative thinking skills, based on research results, that may have a big contribution to cognitive learning results.

© 2019 Ani Publishing Ltd. All rights reserved

[1]Postgraduate Student, Biology Department State University of Malang, Indonesia, e-mail: jodion.siburian@unja.ac.id, ORCID: https://orcid.org/0000-0001-7955-1996

[2] Corresponding Author: Biology Department State University of Malang, Indonesia, e-mail: durancorebima@gmail.com, ORCID ID: https://orcid.org/0000-0002-2632-9467

[3] Biology Department State University of Malang, Indonesia, e-mail: ibrohim.fmipa@um.ac.id, ORCID: https://orcid.org/0000-0002-9946-001X

[4] Biology Department State University of Malang, Indonesia, e-mail: murni.saptasari.fmipa@um.ac.id, ORCID: https://orcid.org/0000-0002-7582-9214

Introduction

The need for the 21st century in the curriculum of educational institutions is oriented to create productive, creative, innovative, and effective generations through the integration of attitudes, abilities and knowledge with life skills (Andrini, 2016; Kabeel and Eisa, 2016; Taghva, Rezael, Ghaderi, and Taghva, 2014). Higher education institutions have made various efforts to improve their quality, in order to produce professional students, because critical thinking education is a process that involves all levels of education (Unlu, 2018). Learning is effective when the learning strategy implemented bring about desired changes in students' behavior (Oghenevwede, 2010). The results of a meaningful learning will likely to be meaningful, both in the cognitive, effective, and psychomotor aspects (Corebima, 2006). One of the learning strategies that can create meaningful learning is the inquiry strategy.

Inquiry learning strategy gives opportunities for students to learn concepts, to develop investigation skills, and to gain understanding of science concepts (Bybee, 2002). According to Llewellyn (2013), the implementation of inquiry learning can explore and empower thinking skills. Inquiry strategy fosters a positive science attitude (Harlen, 2014) and triggers students' cognition (Breivik, 2016). The application of inquiry strategy has a significant effect on students' learning results (Llewellyn, 2013; Njoroge, Changeiywo, and Ndirangu, 2014; Olukayode, 2012; Opara, 2011), and it is recommended to be implemented in learning, in order that students are actively involved in the exploration process using logical and critical thinking skills.

Inquiry learning can effectively and significantly develop critical thinking skills (Avsec and Kocijancic, 2014; Azizmalayer, Jafari, Sharif, Asgari, and Omidi, 2012; Duran and Dökme, 2016; Kitot, Ahmad, and Seman, 2010; Smallhorn, Young, Hunter, and Da Silva, 2015); it can also train critical thinking skills (Michalopoulou, 2014; Prince and Felder, 2006; Zubaidah, Fuad, Mahanal, and Suarsini, 2017). Inquiry learning can improve creative thinking skills (Al-Jarf, 2009; Keleş, 2012; Michalopoulou, 2014; Şeyihoğlu and Kartal, 2010; Weinstein, 2014). Llewellyn (2013) recommended the implementation of inquiry learning in order that students were actively involved in the process of exploring and empowering their thinking skills. Thus, the inquiry learning strategy can create more meaningful and effective learning towards critical thinking skills and creative thinking skills.

Critical thinking is the most valuable skill that can be passed on by the school to its graduates and becomes a learning goal at all levels of discipline (Thompson, 2011). The development of critical thinking skills has become the focus of attention in meeting the needs of the labor market with social and complex challenges (Cruz, Payan-Carreira, and Dominguez, 2017). Critical thinking skills are needed by education graduates to solve increasingly complex life problems (Živković, 2016). Critical thinking skills are required to develop students' abilities (Hashemi, 2011); it is a generator to produce ideas and innovations both comparatively and competitively in global competition (Martincová and Lukešová, 2015).

Several research results have revealed the correlation between critical thinking skills and learning results, including the concept gaining. Critical thinking has a significant correlation with learning results, including concept gaining and cognitive ability (Alter, 2009; Chukwuyenum, 2013; Dehghani, Sani, Pakmehr, and Malekzadeh, 2011). Critical thinking has a correlation with high order thinking skills (Page and Mukherjee, 2006) such as analyzing, synthesizing and evaluating.

Another skill that needs to be developed is creative thinking skills. According to Hadzigeorgiou, Fokialis, and Kabouropoulou (2012), creative thinking skills are the foundation of science, which are very important for students (Baker and Rudd, 2001), is a form of expressing oneself in a unique way (Abraham, 2015). Several research results have a positive correlation with cognitive learning results (Lin and Wu, 2016; Nami, Marsooli, and Ashouri, 2014; Vasudevan, 2013; Yusnaeni, Susilo, Corebima, and Zubaidah, 2016). The optimization of thinking skills is very important, because it is a life skill that needs to be developed (Zubaidah, 2010), which is needed to overcome complex problems along with biological development.

The research on the effect of inquiry learning strategy on critical thinking skills, creative thinking skills and learning results has been widely conducted. The information on the correlation and contribution of critical thinking skills and creative thinking skills toward cognitive learning results using inquiry learning strategy has not been revealed. Therefore, it is essential to conduct a research to reveal the correlation between critical thinking skills and creative thinking skills toward cognitive learning results at the implementation of inquiry learning strategy and to find out the amount of the related contribution. Therefore, the research hypothesis is formulated as there is a correlation between critical thinking and creative thinking skills simultaneously toward cognitive learning results at the implementation of inquiry learning strategy. The contribution value is used as a basis of information and recommendations for the application of inquiry strategy to improve the quality of learning.

Method

Research Design

This research was classified into a descriptive-correlational research, using One-Group Pretest-Posttest Design (Arikunto, 2013, p.124; Sugiyono, 2016, p.74). This design included a pretest measure followed by a treatment and a posttest for a single group (Creswell, 2014) as presented in Table 1.

Table 1

The One Group Pretest-Posttest Design

Pretest	*Treatment*	*Posttest*
O_1	X	O_2

O_1 : The pretest score of the experiment class
X : Learning with an inquiry strategy
O_2 : The posttest score of the experiment class

Related to this research design an observation was carried out before the experiment (O1) called the pretest, and an observation was also carried out after the experiment (O2) called the posttest. This research is a correlational research which aims at revealing the correlation between critical thinking and creative thinking skills toward cognitive learning results at the implementation of inquiry learning strategy.

Research Sample

This research was conducted in 2017-2018 academic year. The population of this research was all under graduate students of Biology Education Study Program in Teacher Training and Education Faculty of Jambi University, Indonesia. The participants of this study were 52 undergraduate students consisting of 6 male students and 46 female students in Biology Education who took Environmental Science class.

Research Instruments and Procedures

The research data were obtained from the results of critical thinking skill test, creative thinking test, and cognitive learning result test in the form of pretest and posttest. The research instrument used to measure students' critical thinking skills, creative thinking skills, and cognitive learning results is an essay test, with a total number of 12 questions. The critical thinking skill rubric was adapted from the assessment rubric developed by Zubaidah, Corebima, and Mistianah (2015) with a scale of 0-5. The creative thinking skill test was adapted from Treffinger, Young, Selby, and Shepardson (2002). The data of cognitive learning result test with non-rubric assessment used 5 subscales. The assessment score obtained was converted to a score with a scale of 0-100. The data of critical thinking skills and creative thinking skills were used as the predictor variables, and the score of cognitive learning results was used as the criterion variable.

Validity and Reliability

The validity and reliability of the test instrument was obtained through a try out, conducted on 22 biology education students in the fourth semester of the 2017/2018 academic year who had passed the same course. The recapitulation of the instrument test item analysis based on the results of the try-out was analyzed with the assistance of Anates Ver. 4.0 because it was relatively easy to be used (Arif, 2014). The results showed that the XY correlation was 0.72, and the reliability test was 0.83. Thus, it could be concluded that all the instruments were valid (Widoyoko, 2014, p.180). The results of the reliability index of the test instrument showed that the Statistics Reliability score (Cronbach's Alpha) was 0.83, so it could be concluded that the instrument was reliable (Widoyoko, 2014, p.180).

Data Analysis

The research data were analyzed using multiple regression analysis to reveal the correlation between critical thinking skills and creative thinking skills toward students' cognitive learning results. The research data analyzed were the corrected data. Before the hypothesis testing was performed, a normality test and a

homogeneity test were initially done. The data were analyzed with the assistance of SPSS version 16.0 for windows at a significance level of 5%.

Results

Based on the results of the data normality test, the sig. values of critical thinking skills, creative thinking skills, and cognitive learning results were 0.789, 0.816 and 0.957 respectively. Thus, it can be concluded that the data were normally distributed. Based on the results of homogeneity test, the sig. values of critical thinking skills, creative thinking skills, and cognitive learning results were 0.554, 0.641 and 0.901 respectively. It can be concluded that the data were homogeneous. The results of the analysis on the correlation between critical thinking and creative thinking skills toward cognitive learning results at the implementation of inquiry learning strategy are presented in Table 2.

Table 2

Summary of Anova on The Correlation between Critical Thinking and Creative Thinking Skillstoward Cognitive Learning Results

Model		*SS*	*df*	*MS*	*F*	*Sig.*
1	Regression	1102.589	2	551.295	65.440	.000[a]
	Residual	412.799	49	8.424		
	Total	1515.388	51			

a. Predictors: (Constant), Creative Cor., Critical Cor.
b. Dependent Variable: Cognitive Cor.
SS: Some of Squares, *df*: Degrees of freedom, *MS*: Mean Square

Table 2 shows that the p value = 0.000 meaning that critical thinking and creative thinking skills have a strong correlation with cognitive learning results at the implementation of inquiry learning strategy.The regression coefficient of the correlation between critical thinking skills and creative thinking skills toward cognitive learning results at the implementation of inquiry learning strategy is presented in Table 3.

Table 3

Regression Coefficients of The Correlation between Critical Thinking Skill and Creative Thinking Skill toward Students' Cognitive Learning Results

Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	Std.Error	Beta		
1	(Constant)	15.261	3.251		4.694	.000
	Critical Thinking Cor	.139	.114	.123	1.218	.229
	Creative Thinking Cor	.733	.097	.765	7.550	.000

a. Dependent Variable: Cognitive Cor

The results of the multiple linear regression test (Table 3) found that the regression equation is $Y= 0,139X_1 + 0,733X_2 + 15,261$. The amount of the contribution of critical thinking skills and creative thinking skills toward cognitive learning results is presented in Table 4.

Table 4

The Summary of The Regression of The Correlation between Critical Thinking Skills and Creative Thinking Skillstoward Students' Cognitive Learning Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.853[a]	.728	.716	2.903

a. Predictors: (Constant), Creative Cor, Critical Cor
b. Dependent Variable: Cognitive Cor

The results of the multiple regression analysis show that the regression coefficient value (R) is 0.853 and the determination coefficient is (R^2) 0.728. This means that the contribution of critical thinking skill and creative thinking skill toward cognitive learning result is 72.80%, while the remaining as much as 27.20% is influenced by other variables. The amount of relative and effective contribution of the independent variables (predictors), toward the dependent variable (criterion), namely the cognitive learning results, is presented in Table 5.

Table 5

Contribution of Critical Thinking Skills and Creative Thinking Skillstoward Students' Cognitive Learning Results

Variable	RC (%)	EC (%)
X1 (Critical Thinking Skills)	10.84	7,89
X2 (Creative Thinking Skills)	89.16	64,91
Total	100	72,80

Description: RC = Relative Contribution; EC = Effective Contribution.

Table 5 shows that the relative contribution of critical thinking skills toward cognitive learning results is 10.84%, and the relative contribution of creative thinking skills toward cognitive learning results is 89.16%. The effective contribution of critical thinking skills toward cognitive learning results is 7.89%, and the effective contribution of creative thinking skills toward cognitive learning results is 64.91%. Thus, the total effective contribution is 72.80%. Therefore, it can be concluded that creative thinking skill has a bigger contribution toward cognitive learning results than the critical thinking skill does.

Discussion, Conclusion and Recommendations

The results of multiple linear regression analysis revealed that critical thinking skills and creative thinking skills can effectively improve cognitive learning results. This shows that there is a very strong correlation between critical thinking skills and

creative thinking skills toward cognitive learning results. The contribution of the critical thinking skills and creative thinking skills was 72.80%, and the remaining 27.20% was influenced by other variables not examined in the this research. The implementation of inquiry learning is proven having potential to give a significant contribution to critical thinking skills and creative thinking skills which eventually can improve cognitive learning outcomes.

The results of this research are in accordance with the research results by Alghafri and Bin Ismail (2014), reporting that there was a significant correlation between critical thinking and creative thinking skills toward cognitive learning results at the implementation of inquiry strategy. Inquiry learning is significantly effective in developing critical thinking skills (Avsec and Kocijancic, 2014; Duran and Dökme, 2016; Kitot et al., 2010; Prince and Felder, 2006; Smallhorn et al., 2015). Inquiry learning can explore and empower students' thinking skills (Llewellyn, 2013). Inquiry learning can train critical thinking skills (Prince and Felder, 2006).

The implementation of inquiry learning can improve creative thinking skills(Al-Jarf, 2009; Keleş, 2012; Michalopoulou, 2014; Seyihoğlu and Kartal, 2010; Weinstein, 2014). Llewellyn (2013) recommended the implementation of inquiry learning in learning, so that students are actively involved in the process of exploring and empowering their thinking skills. Inquiry learning can train students' creative thinking skills (Michalopoulou, 2014; Zubaidah et al., 2017). Inquiry-based learning is more effective for science learning (Crawford, 2007; Hmelo-Silver, Duncan, and Chinn, 2007; Minner, Levy, and Century, 2010). These statements proved that inquiry learning strategy is a meaningful and effective learning strategy. Inquiry strategy can also improve social activities, life culture and communication. Strength category in higher education strategies includes social activities, life culture, and communication (Cevher and Yuksel, 2015).

The implementation of inquiry strategy has a significant effect on learning results, learning achievement including students' concept gaining (Llewellyn, 2013; Njoroge et al., 2014; Olukayode, 2012; Opara, 2011). Students' learning achievement can be reflected in the process and cognitive dimensions of students (Krathwohl, 2002). Inquiry learning provides opportunities for students to develop their understanding and abilities (Bybee, 2002), to increase motivation and interest in the topic (Sadeh and Zion, 2012). The discussion in the inquiry strategy also raises cognitive conflict (Barrouillet, 2015). In this activity, students' discussion is based on the data collected to develop conceptual knowledge (Minner, Levy, and Century, 2010).

Based on the potential contribution in improving students' learning results in this research, it was found that the critical thinking skills have a smaller contribution than that of the creative thinking skills. This means that the contribution of the critical thinking skills as a predictor variable is less strong. This result is in line with the research results byAktaş and Ünlü (2013), Alghafri and Bin Ismail (2014), Birgili (2015), Taghva et al. (2014), stating that there was a moderate correlation, between critical thinking skills and students' learning achievement. This is supported byLujan and DiCarlo (2006) who recommended that teachers needed to focus more on active

learning, more specifically, as a solution for solving the low level of critical thinking skills. The development of critical thinking skills is needed because it provides a positive contribution toward students' learning results (Marzano, et al., 1988).

The effective contribution of critical thinking skills toward cognitive learning results is only 7.89%. At the beginning of this research, the students appeared to have difficulties and were not accustomed with empowering their critical thinking skills. This illustrates that the empowerment of critical thinking skills is also influenced by other factors such as habits and training. Critical thinking skills have a correlation with high-order thinking skills, such as analyzing, synthesizing and evaluating (Page and Mukherjee, 2006). In addition, the research results by Fuad, Zubaidah, Mahanal, and Suarsini (2017) reported that there were differences in critical thinking skills in relation with different learning models.

Students' critical thinking skills need to be optimized (Thompson, 2011). Developing thinking skills is the key to educational success (Alrubaie and Daniel, 2014); critical thinking skills can be developed through phenomenon observation training (Rabu, Aris and Tasir, 2013). These things apparently have been integrated in the syntax of the inquiry strategy (Llewellyn, 2013). Developing critical thinking skills can be done through the activities, such as organizing research, observing, formulating problems and solving problems, asking and answering questions, recording observations and making conclusions, as well as using scientific language (Vieira, Tenreiro-Vieira and Martins, 2011).

At the beginning of this research, students experienced difficulties in planning an inquiry-based activity. The students were accustomed with the learning type such as listening to explanations, and taking notes on lectures. According to Massa (2014), critical thinking skills are mental processes and strategies for analyzing and evaluating ideas, choices, and concepts to make decisions. This can be trained through the implementation of learning strategies. Inquiry strategy trains students to search evidence to make, revise and develop explanations based on the evidence which is found through critical and logical thinking. Finally, the learning process stimulates students to always empower their critical thinking. Through the training process, students develop as scientific observers that support their reasoning (Eberbach and Crowley, 2009). The training in the learning can finally result in contributing students' critical thinking (Prince and Felder, 2006) and contributing to students' cognitive learning results.

In this research, creative thinking variable also had a significant correlation with cognitive learning results, and it had bigger contribution than the critical thinking variable. This is in line with the research results by Lin and Wu (2016), Nami et al. (2014), Vasudevan (2013), Yusnaeni et al. (2016), stating that there was a positive correlation between the creative thinking skills and cognitive learning results. Creative thinking can improve students' academic achievement. Moreover, it can be seen that a change in creativity strategy related to content, process, product, and learning environment will increase students' academic achievement (Altintas and Özdemir, 2015).

Daskolia, Dimos, and Kampylis (2012) stated that creativity, as a theoretical approach, was viewed as a multi-component process, not only involving cognitive aspects but also affective, motivation, and other characteristics. Creative thinking skills can be increased through the implementation of inquiry learning strategy (Al-Jarf, 2009; Keleş, 2012; Michalopoulou, 2014; Seyihoğlu and Kartal, 2010; Weinstein, 2014), and it can also be improved through training (Michalopoulou, 2014; Zubaidah et al., 2017). This can affect the effective contribution toward cognitive learning results, as uncovered in this research. The results of creative thinking skills are different for different learning models (Zubaidah et al., 2017). Developing creative thinking skills is the key to educational success (Alrubaie and Daniel, 2014). Thus, empowering creative thinking skills has concrete benefits to increase students' concept understanding, which can eventually contribute to cognitive learning results.

The amount of the effective contribution of critical thinking skills and creative thinking skills toward cognitive learning results was 72.80%. These results prove that critical thinking skills and creative thinking skills simultaneously have a very significant and effective contribution toward students' cognitive learning results. The better the students' creative thinking skills and critical thinking skills are, the better their cognitive learning outcomes will be. This means that students' critical thinking skills still need to be empowered in learning in order to obtain more optimal results, while maintaining the consistency of students' creative thinking skills. Therefore, students' critical thinking skills and creative thinking skills need to be empowered in learning. Learning which is only oriented to cognitive learning results or scores will not give many benefits for students.

In this research, there was a strong correlation between critical thinking and creative thinking skills in improving students' cognitive learning results. This shows that while the students empower their creative thinking skills in learning, their critical thinking skills will also be involved in it, and vice versa. This is supported by the statement that creative thinking has a correlation with critical thinking (Aizikovitsh-Udi and Amit, 2011; Ülger, 2016). Critical thinking skills and creative thinking skills are integrated in learning (Chang, Li, Chen, and Chiu, 2015) and will be complementary to produce quality and sustainable innovation (Birgili, 2015), so that it needs to be empowered in learning. The thinking skills which are integrated at every stage of inquiry syntax ease the students to manage and to understand information effectively and systematically. The ability to manage and understand information is the key for achieving creative thinking and critical thinking aspects. Critical thinking and creative thinking have a central role in education (Iakovos, 2011). On the other hand, Baker and Rudd (2001) argued that creative thinking and critical thinking were both convergent. The results of this research prove that the implementation of inquiry learning strategy can empower and develop the critical thinking and creative thinking, complement to each other to produce quality and sustainable innovation, and contribute to students' cognitive learning results.

Based on the results and discussion of this research, it can be concluded that: (1) critical thinking skills and creative thinking skills simultaneously have a significant correlation with cognitive learning results at the implementation of inquiry learning

strategy, (2) the contribution of the correlation between critical thinking and creative thinking skills simultaneously toward cognitive learning results at the implementation of inquiry learning strategy is as much as 72.80%, and (3) the effective contribution of creative thinking skills toward cognitive learning results is greater (64.91%) than that of the critical thinking skills (7.89%) to cognitive learning outcomes.

Empowering critical thinking skills and creative thinking skills by using the right learning strategy should be the focus of attention of educators, researchers and educational developers. This is based on the research results that critical thinking skills and creative thinking skills have a big contribution toward cognitive learning results with the implementation of inquiry strategy. Lecturers can consider the inquiry strategy as an alternative learning strategy to empower students' critical thinking skills and creative thinking skills, especially for new students in universities. This research is limited yet to the new students in universities. The research may be more interesting if applied at all levels of lectures in relation with other thinking skills.

References

Abraham, A. (2015). Gender and creativity: An overview of psychological and neuroscientific literature. *Brain Imaging and Behavior, 10*(2), 609-618. doi:10.1007/s11682-015-9410-8

Aizikovitsh-Udi, E., & Amit, M. (2011). Developing the skills of critical and creative thinking by probability teaching. *Procedia-Social and Behavioral Sciences, 15*, 1087-1091. doi:10.1016/j.sbspro.2011.03.243

Aktaş, G.S., & Ünlü, M. (2013). Critical thinking skills of teacher candidates of elementary Mathematics. *Procedia-Social and Behavioral Sciences, 93*, 831-835. doi:10.1016/j.sbspro.2013.09.288

Alghafri, A. S., & Bin Ismail, H. N. (2014). The effects of ıntegrating creative and critical thinking on schools students' thinking. *International Journal of Social Science and Humanity, 4*(6), 518-525. doi:10.7763/IJSSH.2014.V4.410

Al-Jarf, R. (2009). Enhancing freshman students' writing skills with a mind mapping software. *Paper presented at the 5th International Scientific Conference, eLearning and Software for Education, Bucharest, April 2009.*

Alrubaie, F., & Daniel, E. G. (2014). Developing a creative thinking test for Iraqi physics students. *International Journal of Mathematics and Physical Sciences Research, 2*(1), 80-84.

Alter, F. (2009). Understanding the role of critical and creative thinking in Australian primary school visual arts education. *International Art in Early Childhood Research Journal, 1*(1), 1-12.

Andrini, V. S. (2016). The effectiveness of ınquiry learning method to enhance students' learning outcome: A theoritical and empirical review. *Journal of Education and Practice, 7*(3), 38-42.

Arif, M. (2014). Penerapan aplikasi anates bentuk soal pilihan Ganda [The ımplementation of anates application in the form of multiple choice questions]. *Jurnal Ilmiah Edutic, 1*(1), 1- 9.

Arikunto, S. (2013). *Prosedur Penelitian, Suatu Pendekatan Praktik[Research Procedure, A Practice Approach]*. Jakarta: Rineka Cipta.

Avsec, S., & Kocijancic, S. (2014). The effect of the use of an inquiry-based approach in an open learning middle school hydraulic turbine optimisation course. *World Transactions on Engineering and Technology Education, 12*(3), 329-337.

Azizmalayer, K., Jafari, E. M., Sharif, M., Asgari, M., & Omidi, M. (2012). The impact of guided inquiry methods of teaching on the critical thinking of high school students. *Journal of Education and Practice, 3*(10), 42-48.

Baker, M., & Rudd, R. (2001). Relationships between critical and creative thinking. *Journal of Southern Agricultural Education Research, 51*(1), 173-188.

Barrouillet, P. (2015). Theories of cognitive development: From Piaget to today. *Developmental Review, 38*, 1-12. doi:10.1016/j.dr.2015.07.004

Birgili, B. (2015). Creative and critical thinking skills in problem-based learning environments. *Journal of Gifted Education and Creativity, 2*(2), 71-80. doi:10.18200/JGEDC.2015214253

Breivik, J. (2016). Critical thinking in online educational discussions measured as progress through ınquiry phases: A discussion of the cognitive presence construct in the community of ınquiry framework. *International Journal of E-Learning & Distance Education, 32*(1), 1-15.

Bybee, R. W. (2002). *Learning science and the science of learning*. Arlington, Virgina: National Science Teachers Association.

Cevher, E., & Yuksel, H. (2015). In regards to higher education strategy, assessment of educational activities in public universities: The case of Turkey. *Eurasian Journal of Educational Research*, *61*, 237-256.

Chang, Y., Li, B.-D., Chen, H.-C., & Chiu, F.-C. (2015). Investigating the synergy of critical thinking and creative thinking in the course of integrated activity in Taiwan. *Educational Psychology, 35*(3), 341-360. doi:10.1080/01443410.2014.920079

Chukwuyenum, A. N. (2013). Impact of critical thinking on performance in mathematics among senior secondary school students in Lagos State. *IOSR Journal of Research & Method in Education (IOSR-JRME), 3*(5), 18-25.

Corebima, A. D. (2006). Pembelajaran Biologi yang memberdayakan kemampuan berpikir siswa [Biology learning which empowers students' thinking skills]. *Paper presented at Pelatihan Strategi Metakognitif pada Pembelajaran Biologi untuk Guru-guru Biologi SMA di Kota Palangkaraya, 23 Agustus.*

Crawford, B. A. (2007). Learning to teach science as ınquiry in the rough and tumble of practice. *Journal of Research in Science Teaching, 44*(4), 613-642. doi:10.1002/tea.20157

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. 4rd ed. Los Angeles, CA: Sage, Publicatios, Inc. Washington DC. Retrieved March 27, 2019 from: https://gul.gu.se/public/pp/public_file_archive.

Cruz, G., Payan-Carreira, R., & Dominguez, C. (2017). Critical thinking education in the portuguese higher education institutions: a systematic review of educational practices. *Revista Lusófona de Educação, 38*, 43-61. doi:10.24140/issn.1645-7250.rle38.03

Daskolia, M., Dimos, A., & Kampylis, P. G. (2012). Secondary teachers' conceptions of creative thinking within the context of environmental education. *International Journal of Environmental & Science Education, 7*(2), 269-290.

Dehghani, M., Sani, H. J., Pakmehr, H., & Malekzadeh, A. (2011). Relationship between students' critical thinking and self-efficacy beliefs in Ferdowsi University of Mashhad, Iran. *Procedia-Social and Behavioral Sciences, 15*, 2952-2955. doi:10.1016/j.sbspro.2011.04.221

Duran, M., & Dökme, İ. (2016). The effect of the inquiry-based learning approach on student's critical-thinking skills. *Eurasia Journal of Mathematics, Science & Technology Education, 12*(12), 2887-2908. doi:10.12973/eurasia.2016.02311a

Eberbach, C., & Crowley, K. (2009). From everyday to scientific observation: How children learn to observe the Biologist's World. *Review of Educational Research Spring 2009, 79*(1), 39-68. doi:10.3102/0034654308325899

Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. (2017). Improving junior high schools' critical thinking skills based on test three different models of learning. *International Journal of Instruction, 10*(1), 101-116. doi:10.12973/tused.10214a

Hadzigeorgiou, Y., Fokialis, P., & Kabouropoulou, M. (2012). Thinking about creativity in science education. *Creative Education, 3*(5), 603-611. doi:10.4236/ce.2012.35089

Harlen, W. (2014). Helping children's development of inquiry skills. *Inquiry in Primary Science Education (IPSE), 1*, 5-19.

Hashemi, S. A. (2011). The use of critical thinking in social science textbooks of high school: A field study of fars province in Iran. *International Journal of Instruction, 4*(1), 63-78.

Hmelo-Silver, C. E., Duncan, R. G., & Chinn, C. A. (2007). Scaffolding and achievement in problem- based and inquiry learning: A response to Kirchner, Sweller, and Clark (2006). *Educational Psychologist, 42*(2), 99-107.

Iakovos, T. (2011). Critical and creative thinking in the English language classroom. *International Journal of Humanities and Social Science, 1*(8), 82-88.

Kabeel, A. R., & Eisa, S. A.-M. (2016). The correlation of critical thinking disposition and approaches to learning among baccalaureate nursing student. *Journal of Education and Practice, 7*(32), 91-103.

Keles, Ö. (2012). Elementary teacher's‟ views on mind mapping. *International Journal of Education, 4*(1), 93-100. doi:10.5296/ije.v4i1.1327

Kitot, A. K., Ahmad, A. R., & Seman, A. A. (2010). The effectiveness of ınquiry teaching in enhancing students' critical thinking. *Procedia-Social and Behavioral Sciences, 7*(C), 264-273. doi:10.1016/j.sbspro.2010.10.037

Krathwohl, D. R. (2002). A revision of bloom's taxonomy: An overview. *Theory Into Practice, 41*(4), 212-218. doi:10.1207/s15430421tip4104_2

Lin, C.-S., & Wu, R. Y.-W. (2016). Effects of web-based creative thinking teaching on students' creativity and learning outcome. *Eurasia Journal of Mathematics, Science & Technology Education, 12*(6), 1675-1684. doi:10.12973/eurasia.2016.1558a

Llewellyn, D. (2013). *Teaching high school science through ınquiry and argumentation*. California: Corwin A Sage Company.

Lujan, H. L., & DiCarlo, S. E. (2006). Too much teaching, not enough learning: What is the solution? *Advances in Physiology Education, 30*, 17-22. doi:10.1152/advan.00061.2005

Martincová, J., & Lukešová, M. (2015). Critical thinking as a tool for managing ıntercultural conflicts. *Procedia-Social and Behavioral Sciences, 171*, 1255-1264. doi:10.1016/j.sbspro.2015.01.239

Marzano, R. J., Brandt, R. S., Jones, B. F., Presseisen, B. Z., Rankin, S. C., & Suhor, C. (1988). *Dimensions of thinkkig: A framework for curriculum and ınstruction*. Alexandria, Virgina: The Association for Supervision and Curriculum Development.

Massa, S. (2014). The development of critical thinking ın primary school: The role of teachers' beliefs. *Procedia-Social and Behavioral Sciences, 141*, 387-392. doi:10.1016/j.sbspro.2014.05.068

Michalopoulou, A. (2014). Inquiry-based learning through the creative thinking and expression in early years education. *Creative Education, 5*, 377-385. doi:10.4236/ce.2014.56047

Minner, D. D., Levy, A. J., & Century, J. (2010). Inquiry-based science ınstruction-what ıs ıt and does ıt matter? Results from a research synthesis years 1984 to 2002. *Journal of Research in Science Teaching, 47*(4), 474-496. doi:10.1002/tea.20347

Nami, Y., Marsooli, H., & Ashouri, M. (2014). The relationship between creativity and academic achievement. *Procedia-Social and Behavioral Sciences, 114*, 36-39. doi:10.1016/j.sbspro.2013.12.652

Njoroge, G. N., Changeiywo, J. M., & Ndirangu, M. (2014). Effects of inquiry-based teaching approach on secondary school students' achievement and motivation in Physics in Nyeri County, Kenya. *International Journal of Academic Research in Education and Review, 2*(1), 1-16.

Oghenevwede, O. E. (2010). Effects Of discovery and ınquiry approaches in teaching and learning of Biology on secondary schools students' performance in Delta State, Nigeria. *Journal of Research in Education and Society, 1*(1), 30-39.

Olukayode, O. J. (2012). Inquiry method, teacher guided discussion method and student's attitude and performance in social studies. *Global Journal of Management and Business Research, 12*(15), 54 - 59.

Opara, J. A. (2011). Inquiry method and student academic achievement in Biology: Lessons and policy ımplication. *American-Eurasian Journal of Scientific Research, 6*(1), 28-31.

Page, D., & Mukherjee, A. (2006). Using negotiation excercises to promote critical thinking skills. *Developments in Business Simulation and Experiential Learning, 33*, 71-78.

Prince, M. J., & Felder, R. M. (2006). Inductive teaching and learning methods: definitions, comparisons, and research bases. *J. Engr. Education, 95*(2), 123-138.

Rabu, S. N., Aris, B., & Tasir, Z. (2013). Teaching critical thinking through online instructor scaffolding: A conceptual framework. *Procedia-Social and Behavioral Sciences, 97*, 314-319. doi:10.1016/j.sbspro.2013.10.239

Sadeh, I., & Zion, M. (2012). Which type of ınquiry project do high school biology students prefer: open or guided? *Res Sci Educ, 42*, 831-848. doi:10.1007/s11165-011-9222-9

Seyihoğlu, A., & Kartal, A. (2010). The views of the teachers about the mind mapping technique in the elementary life science and social studies lessons based on the constructivist method. *Kuram ve Uygulamada Eğitim Bilimleri/Educational Sciences: Theory & Practice, 10*(3), 1637-1656.

Smallhorn, M., Young, J., Hunter, N., & Da Silva, K. B. (2015). Inquiry-based learning to improve student engagement in a large first year topic. *Student Success, 6*(2), 65-71. doi:10.5204/ssj.v6i2.292

Sugiyono. (2016). *Metode penelitian kuantitatif, kualitatif dan R & D [Research methods quantitative, qualitative and R & D]*. Bandung: Penerbit Alfabeta.

Taghva, F., Rezael, N., Ghaderi, J., & Taghva, R. (2014). Studying the relationship between critical thinking skills and students' educational achievement (Eghlid Universities as case study). *International Letters of Social and Humanistic Sciences, 25*, 18-25.doi:10.18052/www.scipress.com/ILSHS.25.18

Thompson, C. (2011). Critical Thinking across the Curriculum: Process over Output. *International Journal of Humanities and Social Science, 1*(9), 1-7.

Treffinger, D. J., Young, G. C., Selby, E. C., & Shepardson, C. (2002). *Assessing creativity: A guide for educators. The National Research Center on The Gifted and Talented.* Center for Creative Learning, Sarasota: Florida.

Ulger, K. (2016). The relationship between creative thinking and critical thinking skills of students. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi (H.U. Journal of Education), 31*(4), 695-710. doi:10.16986/HUJE.2016018493

Unlu, S. (2018). Curriculum development study for teacher education supporting critical thinking. *Eurasian Journal of Educational Research*, 76, 165-186. doi:10.14689/ejer.2018.76.9

Vasudevan, H. (2013). The ınfluence of teachers' creativity, attitude and commitment on students' proficiency of the english language. *IOSR Journal of Research & Method in Education (IOSR-JRME), 1*(2), 12-19.

Vieira, R. M., Tenreiro-Vieira, C., & Martins, I. P. (2011). Critical thinking: Conceptual clarification and its importance in science education. *Science Education International, 22*(1), 43-54.

Weinstein, D. (2014). Teaching idea. Mind maps: A lesson In creativity. *The Utah Journal of Literacy, 17*(1), 44-51.

Widoyoko, S., E., P. (2014). *Teknik penyusunan ınstrumen penelitian [Research ınstrument technique]*. Yogyakarta: Pustaka Pelajar.

Yusnaeni, Susilo, H., Corebima, A. D., & Zubaidah, S. (2016). *Hubungan Kemampuan Berpikir Kreatif dan Hasil Belajar Kognitif pada Pembelajaran Search Solve Create and Solve di SMA [The Correlation between crerative Thinking Skills and Cognitive Learning Results in Search Solve Create and Solve Learning at Senior High School].*Prosiding Seminar Nasional Biologi 2016. Universitas Negeri Surabaya, 443-446.

Živković, S. (2016). A model of critical thinking as an ımportant attribute for success in the 21st Century. *Procedia-Social and Behavioral Sciences, 232*, 102-108. doi:10.1016/j.sbspro.2016.10.034

Zubaidah, S. (2010). *Berpikir Kritis: Kemampuan Berpikir Tingkat Tinggi yang Dapat Dikembangkan melalui Pembelajaran Sains [Higher Order Thinking Skills which can be developed through Science Learning].*A paper presented at Seminar

Nasional Sains 2010 with the theme "Optimalisasi Sains untuk Memberdayakan Manusia" di Pascasarjana Universitas Negeri Surabaya, 16 January.

Zubaidah, S., Corebima, A. D., & Mistianah. (2015). *Asesmen Berpikir Kritis Terintegrasi Tes Essay [Critical Thinking Assessment integrated with Essay Tests]*.A paper presented at Simposium on Biology Education, Jurusan Biologi FKIP Universitas Ahmad Dahlan Yogyakarta, 4-5 April 2015.

Zubaidah, S., Fuad, N. M., Mahanal, S., & Suarsini, E. (2017). Improving creative thinking skills of students through differentiated science ınquiry ıntegrated with mind map. *Journal of Turkish Science Education, 14*(4), 77-91. doi:10.12973/tused.10214a

Eurasian Journal of Educational Research 81 (2019) 115-128

Eurasian Journal of Educational Research
www.ejer.com.tr

Development of the Academic Stressors Scale for Bulgarian University Students

Liliya BABAKOVA[1]

ARTICLE INFO

Article History:
Received: 13 Mar. 2019
Received in revised form: 5 Apr. 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.7

Keywords
Academic stressors scale, Validity, Reliability. University students

ABSTRACT

There are numerous studies regarding the damage of academic stress on student well-being and achievement. Unfortunately, there are not many methods to measure various academic stressors among students.

Purpose: The purpose of this study was to develop a valid and reliable scale to measure the stressors to which students are subjected in the academic environment.

Research Methods: After interviews with students about the stressors to which they are subjected at the university, a test form of a scale, which contains 19 items, was developed. The scale form was completed by 187 first-year students at the university.

Findings: The results showed that the Academic stressors scale was a reliable and valid data collection tool to be used in higher education. Four subscales emerged: stress related to parental expectations, stress related to lack of knowledge, stress related to learning material and the lecturers, and stress related to auditorium activities, which were confirmed by the confirmatory factor analysis. It was found that the biggest stressor in the academic environment was the stress associated with lack of knowledge.

Implications for Research and Practice: Researchers and educators can use and apply the "Academic stressors" scale among students; and thus, track which students are most vulnerable to poor success and dropout from the university, and take measures to prevent such negative consequences.

© 2019 Ani Publishing Ltd. All rights reserved

[1] Plovdiv University "Paisii Hilendarski", BULGARIA, e-mail: babakova_lilia@abv.bg, ORCID: https://orcid.org/0000-0001-8666-4323

Introduction

The current study of students' learning behavior was determined by various factors that influence it. One such factor like the stress occupies a central place among the predictors that determine students' behavior in the audience. It can be exacerbated by the large flow of information by the lack of systematisation of work during the semester, by disruptions in the learning and resting mode. The examination stress occupies one of the first places among the stressors in the students. In modern students experiencing high intellectual and emotional atrocities in the learning process, there is often negative dynamics of attitudes towards learning activity.

Academic stress among higher education students has been a subject of interest for many years and has recently attracted interest in a number of studies focusing on the relationship between stress, work and students (Heikkila, et al., 2012). The interest in stress among students is related to the recognition that excessive stress is harmful to academic achievement and may lead to dropping out (Kamtsios & Karagiannopoulou, 2015).

Much of the academic stress study was conducted primarily among first year students, as the university environment and the requirements faced by young people are new (Lin & Chen, 2009). During the first year at the university, undergraduate students have difficulty in learning a great deal of academic material for a short period of time, and they are required to develop effective techniques to deal with the volume of their assigned materials (Kumar & Bhukar, 2013). Some students confess that they have difficulties in interpersonal relationships with peers and professors, difficulties in adapting to university administration, etc. (Kumar & Bhukar, 2013). Below are some factors that can provoke stress among students:

Stress Related to Learning Material and Lecturers

Professors strive to focus on the acquisition of knowledge and often ignore students' emotions during the learning process, and this can cause stress and problems with learning and acknowledgment of the new material. Getting criticism from their mentors and assistants for academic work has also been associated with stress (Kumar et al., 2009). Students are yet to face a new and unfamiliar situation, rules and environment such as the university can show neuroticism, anxiety, disappointment, humiliation, depression, and so on. Similar emotions can be reinforced by the inability to obtain additional counseling from lecturers, the lack of support, or the very high demands of the lecturers, etc. This in turn can be a predictor of students' learning achievements, their academic self-esteem, and their ability to adapt to the new learning environment (Chen, et al., 2006).

Stress Related to the Lack of Knowledge

During the first year at the university, undergraduate students have difficulty in learning a great deal of academic material for a short period of time and are required to develop effective strategies to deal with the volume of their assigned materials (Kumar & Bhukar, 2013). Morse and Dravo (2007) investigated dental medicine students and found that the most serious sources of stress amongst students are: a heavy workload, the amount of assigned tasks by the lecturer, fear of failure at the end

of the year, exams and assessments (Morse and Dravo, 2007). In many studies, the largest stressor and source of anxiety has been found to be the exam session and the exams (Bedewy & Gabriel, 2015; Harikiran et al., 2012). The perception of heavy workload during the semester and the long examination session are major sources of stress and anxiety related to the university environment.

Stress Related to Parental Expectations

A number of studies have found that parental pressure and expectations of professors during the session, as well as the choice of specific academic education or future careers, are sources of stress for first year students. Some authors found that students who enroll in university discipline at the request of their parents rather than on their own initiative, feel much more stressed to report their failure to their parents than students who have entered the university on their own initiative (Bedewy & Gabriel, 2015; Tangade et al., 2011). Other authors suggest that parental pressure predicts a higher degree of anxiety at the exams, as the threat of negative criticism increases. Conversely, it is theoretically argued that parental support will predict a lower level of stress and test anxiety as the threat of negative assessment is reduced (Putwain et al., 2010). Other authors conclude that the five main stresses presented in descending order are: exams and tests, student's personal aspirations, learning tasks, the aspirations of the professor and the aspirations of parents (Bedewy & Gabriel, 2015; Wang & Yeh, 2005).

Stress Related to the Auditorium Activities

Mehralizadeh et al. (2013) found that the factors that influence the new knowledge of the learning material are: concentration problems, lecturers' lack of teaching skills, lighting and ventilation in the audience, lack of time for preparation for the upcoming workshops.

Method

Research Design

The purpose of this study was to develop a scale for academic stressors among students. The study design for this study was considered at a descriptive level and at an acknowledgment level. Confirmatory studies test a priori hypotheses - such a priori hypotheses usually stem from theory or results from previous studies, which was also the purpose of this study. The study also had a quantitative character which allows an easier interpretation of results (Çelik-Örücü, 2013).

Research Sample

187 students from the first year of two universities in Plovdiv attended the study. The participants received detailed instructions to complete the test and were given sufficient time. The average age of the studied participants was 21.80 years, of which 42% were male and 55% female. 41% of students studied pedagogical disciplines and

55% studied arts disciplines. 46% of students were from big cities, and 44% have indicated that they are from small towns or villages.

Research Instruments and Procedures

In order to create a scale for assessing academic stress, first interviews were made with a part of the students. During the interviews, students reported and gave feedback on the main stress factors in the new university environment that frustrated them or prevented them from developing their academic potential during the sessions. Other students were asked to write short essays on what annoys them at the university or prevents them to develop their potential. After the content analysis, 19 items were structured and formulated, which were examined by two experts in the field of psychometry and two experts in pedagogical psychology. After agreeing to the overall scale structure, it was provided to the students to complete. Students first reported their age, gender and type of secondary school completed. Then they completed the "Academic stressors" scale. It consists of 19 items located in a 5-point Likert type scale. The students answered the question "What are the main obstacles and stressors at the university that you have experienced in the last two months?". Participants in the study completed the test at a psychology seminar. They were informed that the purpose of the tool is to identify the main obstacles or reasons that reduce their willingness to attend lectures and exercises. The questionnaire was filled in anonymously and the participants were convinced that the results would in no way affect their academic results at the university. After completing the Academic Stress Scale, students were provided with an Academic Engagement scale that was tested and validated for Bulgarian context. It contains 9 items divided into two subscales: "Dedication of Academic Work" ($\alpha = 0{,}868$) and Energy" ($\alpha = 0{,}831$). And they were given Resilience scale ($\alpha = 0{,}832$). It contains 7 items into one scale (Babakova, 2019). Surveys are offered to evaluate 7-point scale statements with which they determine their degree of agreement.

Hypotheses

In the present study the constructive validity of the "Academic stressors" scale was tested by a sample of Bulgarian students. The invariant of the scale measurement was verified by gender, university disciplines (field of study) and place of residence. We also wanted to know if the scale is sufficiently reliable and internally coherent.

The convergence validity of the "Academic stressors" scale was structured in this study by the internal correlations of the internal subscales of the scale. It was assumed that the internal correlations of the scale will correlate significantly and will be positive, while the correlations with the "Academic Engagement" scale will be negative. This study also identified the differences in the scales „Academic stressors“ by gender, field of study and place of residence. We took differences among students in their experience of stressors. Studies show that female students report higher degrees of stress at the university than male students.

Data Analysis

The collected data was processed and analyzed using SPSS 22 and AMOS. Statistical analyzes were performed to demonstrate the validity and reliability of the

scale. The following data analysis tools were used in the study: Internal reliability of the scales, Exploratory and Confirmatory Factor Analysis, Descriptive statistics with the average meanings of scales, ANOVA to identify differences in gender, specialty, and place of residence, Student's t-test to compare the results with another sample of students, Correlation analysis to internal and external relationships in the scale

Results

An analysis of the items and scales was first done. An exploratory factor analysis was used to check the construct validity. All items had high factor weights.

In our case, four factors have been identified. The KMO value is 0.850, which means that the data can be subjected to a factor analysis. Barlett's Spherical Value Test is also statistically significant (1414,388; p <0,001) and an explanation of variation of 58,364% (first factor with 20,358% dispersion, second factor - 17,164% dispersion, third factor - 10,844% factor (9,998%), the following factors were attributed to the stress related to the lack of sufficient knowledge (α = 0,805), stress related to the learning material and the lecturers (α = 0,823), stress related to auditorium activities (α = 0.786), stress related to parental expectation (α = 0.836). Below, Table 1 gives the factor extracts of the Academic Stressors Scale.

Table 1

Academic Stressors Scale Extraction method: Principal Components Analysis Method of rotation: Varimax with Kaiser normalization

Academic Stressors	Factor			
	F1	F2	F3	F4
Q4 Spend a lot of time searching for information about a topic		.536		
Q3 The attitude of my parents that I do not do well with my training				.751
Q2 Conflicts with parents because of my academic results				.816
Q 1 Disapproval of my learning results by my parents				.798
Q 5 Anxiety related to university exams		.689		
Q 14 The lack of consistency between professor lectures and curriculum content in textbooks	.653			
Q 19 Inability to concentrate at lectures			.628	
Q 13 The lack of interest in the study material by colleagues	.690			
Q 6 Lack of knowledge to prepare for exercises and seminars		.695		
Q12 The abusive attitude of some lecturers towards students	.736			
Q10 The tasks assigned by the lecturer can not be completed in time	.581			
Q11 Lack of communication between lecturers and students	.742		.835	
Q 18 Lack of discussion during classes				
Q 17 Lecturers quickly write on the board / change slides of the presentation			.630	
Q 7 A feeling of inferiority in the audience		.594		
Q 8 Incomplete and confusing learning materials		.655		
Q 16 Lack of knowledge in a given discipline			.579	
Q 15 Time Delays			.598	
Q 9 Lack of sufficient information about the conduction of exams		.682		
Cronbach Alpha	0,823	0,805	0,786	0,836

F1. Stress related to the learning material and the professors; F2. Stress related to the lack of sufficient knowledge; F3.Stress related to auditorium activities; F4. Stress related to parental expectation..

Table 1 shows the semantic content of each scale. The scale "Stress Related to Parental Expectations" focuses on parents as a leading and important factor in student education. Disappointment, criticism or conflicts between parents and their children can lead to stressful perceptions about the current state of the students at the school. Inside the Scale "Stress Related to auditorium activities", there are statements that focus on the difficulties faced by students during sessions - inability to concentrate, quickly changing presentation slides, lack of discussion, etc. The statement in the scale "Stress related to the lack of knowledge "are pooled around the sense of insufficient knowledge and skills on the part of students in order to be able to cope with the demands of their lecturers. The last scale "Stress related to the learning material and the lecturers" is mainly associated with the problems faced by students with their lecturers, such as difficulties with learning material, conflicts, poor communication, or lecturers negative attitudes towards students.

Confirmatory Factor Analysis

In order to confirm the structure of the exploratory factor analysis, a confirmation factor analysis was performed using the AMOS statistical software. The Confirmatory Factor Analysis (a) allows the researcher to see how well the data fit into a particular theoretical model (ie, adapting data to a priori-defined model), (b) assists researchers to be precise in defining constructions. In this case, the theoretical model consists of four correlated factors constituting an inclined pattern.

Multiple fitness indices were evaluated to support the model. The x2 / df ratio was included as an absolute fitness index with acceptable chi-square score corrected for degrees of freedom defined as less than five. We looked at two gradual adjustment indices, the TLI index and the IFI index, with values close to .95 indicating good fit. We also included a Comparative Fitness Index (CFI) with values greater than .90 considered to be good fit. Finally, we examined the approximate square error of approximation (RMSEA). Values below 0.05 show good fit, and values that are above .08 represent reasonable approximation errors. The model we tested initially showed an RMSEA of 0.06, but after we put two correlation relationships between two of the errors in two of the subscales, we obtained good degree indices as follows: $\chi 2 = 154{,}118$ (df = 144), p = .02, $\chi 2$ / df = 1.070, TLI = .979, IFI = .983, CFI = .983, RMSEA = 0.039. The four factors correlate very well and have good regression weights ranging between 0.522 and 0.860. The model is presented in Figure 1, below:

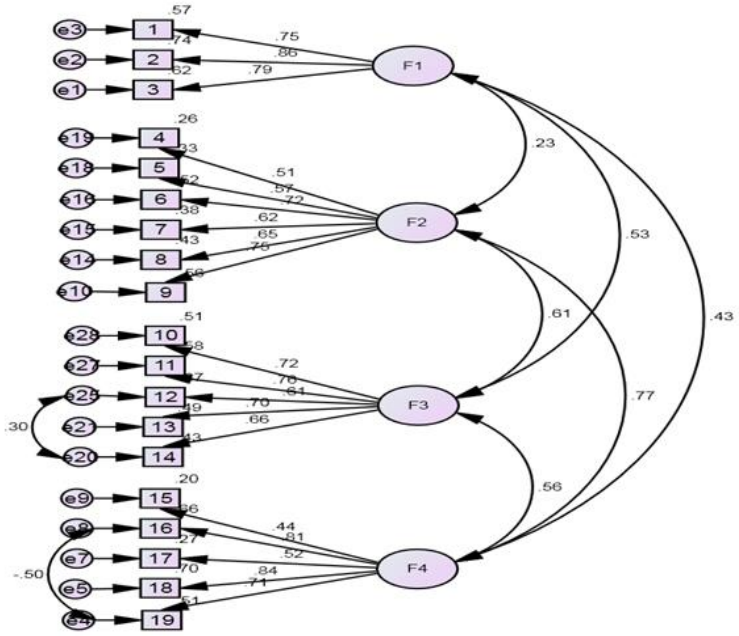


Figure 1. Confirmatory Factor Analysis of the Academic Stressors Scale. F1. Stress related to parental expectation F2. Stress related to lack of knowledge F3 Stress related to the learning material and lecturers F4 stress related to the auditorium activities.

Descriptive Statistics of Subscales

Table 2 shows the meanings for each subclass of the "Academic stressors" scale. It was found that the most pronounced stress in first year students is stress related to the lack of knowledge. It should be noted here that the test was given to students three weeks before their examination session. Significantly, less stressful subscales were the stress related to the auditory occupations that students are experiencing during the learning process and the stress related to the learning material and the lecturers. The least pronounced and insignificant stress is one that is related to parental expectations.

Table 2

Descriptive Statistics of Subscales

Subscale	For a sample		Male students		Female students	
	M	***SD***	***M***	***SD***	***M***	***SD***
Stress related to parental expectation	5,11	2,95	5,47	3,01	5,11	3,08
Stress related to the auditorium activities	13,93	4,86	13,07	4,93	13,09	4,97
Stress related to lack of knowledge	19,31	5,69	17,43	5,64	20,17	5,45
Stress related to the learning material and lecturers	11,55	4,69	11,06	4,71	12,00	4,73

ANOVA showed statistically gender differences based on the scale "Stress related to lack of knowledge": F (829,907) = 4,222; p = 0.043. Female students were found to report more than the male students about stress related to lack of knowledge of the main subjects studied at the university. No statistically significant differences were noted on the scales: "stress related to parental expectation" F (216,238) = 0,244; p = 0.623); "Stress related to learning material and lecturers" F (430,012) = 0,704; p = 0.404) and "Stress related to auditorium activities " F (560,825) = 0.040; p = 0.842). The "place of residence" factor was found to have a statistically significant difference by factor "stress related to parental expectation" F (222,180) = 4,682; p = 0.034). Students from small towns and cities report more problems with their parents than those from big cities. Many of them shared during the study that for their parents, who raised many of them, it is very important that their children study well and take the exams. No statistically significant differences were found for the scales: "Stress related to auditorium activities" F (554,481) = 0,869; p = 0.354); "Stress related to lack of knowledge" F (774, 162 = 0.234; p = 0.628) and no significant differences were noted on the "Stress related to the learning material and lecturers" F (427.585) = 0.332; p = 0.556. There was a statistically significant difference between "Field of study" and "Stress related to lack of knowledge" F (456,751) = 7,796; p = 0.001). Highest values on this scale were reported by students studying in the music field. This is explained by the fact that in the first year a large number of students feel that they do not start with the same knowledge and skills, and this is a prerequisite for some of them to report greater difficulties in their study due to insufficient knowledge. There were no statistically significant differences in the "Field of study" factor with the "Stress-related to parental expectation" F (115,937) = 0,260; p = 0.772), "Stress related to auditorium activities " F (302,297) = 2,013; p = 0.141), "stress related to learning material and lecturers" F (253,708) = 2,569; p = 0.083).

The test resistantability is also confirmed by the internal correlations between the different subscales. In general, the correlations between the scales are in line with the theoretical concept of the structure and the relationships between the types of

academic stressors. The strongest is the correlation between subscale "Stress related to lack of sufficient knowledge" and "Stress related to auditorium activities" (r = 0.77; p <0.001). It can be assumed that students who find deficiency in their knowledge of the university discipline they have chosen to study have problems with concentration and full learning of the learning material in the audience. There is a significant relationship between the "Stress related to the auditorium activities" and the stress related to the learning material and professors "(r = 0.56, p <0.001). There is a tendency for students who start their studies at a university with insufficient knowledge and training in their university discipline to have learning problems because they do not have a solid enough knowledge based on which to build the new math studied in the higher education place. The high academic expression of professors can also create perceptions of difficult communication and distancement among students who begin to study their chosen university discipline with insufficient knowledge of it. There is also a lower but positive relationship between "Stress related to auditorium activities" and "Stress-related to parental expectation" (r = 0.43; p = 0.057). Students who have disputes with their parents about their study have problems with learning or taking part in the auditorium activities. On the scale "Stress related to lack of knowledge" and scale "Stress related learning material and lecturers", there is a moderate but statistically significant relationship (r = 0.61; p <0.001). Learning material difficulties or what lecturers teach are related to the lack of knowledge of some undergraduates with insufficient knowledge. There is a significant correlation between the scale "Stress related to the learning material and lecturers" and the scale "Stress related to parental expectation" (r = 0.53; p = 0.026). Students who have problems with learning or communicating with lecturers feel threatened by the poor prospect of continuing their study. This can lead to significant problems with parents who have urged their children to complete their education rather than just entering a new university discipline. On the other hand, the problems with the parents which have some students entering the university have led to worse learning of the study material, perceptions of problematic relations with the lecturers, etc. The lowest correlation in the present study is between the scale "Stress related to the lack of knowledge "and the scale" Stress-related to parental expectations" (r = 0.23; p = 0.046). This shows that far from all students who lack sufficient knowledge at the university have problems with their parents. All these intercorrelations are an indication of a good consistency between the different scales.

Differences in Subscales of the "Academic Stressors" Scale in Students from Different Universities

In order to verify discriminative validity, the hypothesis testing method was used. In this study a comparison of the average values of the academic stress subscales was made with students from two universities. The results of the T-test are statistically significant in the four subscales among the students at one university where art disciplines are taught and students in another university where pedagogical disciplines are studied: the stress-related scale "(T = 2.031, sd = 4.18; p = 0.013); scale "Stress related to lack of knowledge" (t = 3.34, sd = 2.97; p<0.001); scale "Stress related to learning material and lecturers" (t = 1.94, sd = 3.21; p = 0.056); scale "stress related

to auditorium activities " (t = 4.14, sd = 3.98; p = 0.039). The comparison of the mean in the two instances with the help of the Student's t-criterion shows that the differences on the subscales of the "Academic stressors" scale are underestimated at p <0.001 and p <0.05. The brightest differences are observed on the "Stress related to lack of knowledge subscale (students studying pedagogical disciplines have lower levels of stress than students studying the arts.) Differences on the scale are also quite indicative of "stress related to learning materials and lecturers" (again higher levels of this scale are seen in students studying arts compared to those studying pedagogical discipline.

The constructive validity of the test is confirmed by the measurement of the correlations between the sub-scales of the Academic Stressors scale and the subscales of "Academic engagement" that are Resilience, Energy, and Dedication to learning. For example, correlation analysis showed that students who have problems with their parents have negative values on the Resilience (r = - 0.023; p = 0.844) and Dedication (and r = - 0.004; p = 0.989); and an insignificant relationship with the "Energy" scale (r = 0.125, p = 0.284) is established. Students who reported having stress related to auditorium activities were found to have negative relationships with the Dedication scale (r = - 0.156; p = 0.180) and negative and statistically significant relationships with the scales "Resilience" (r = - 0.234, p = 0.043), and "Energy" (r = - 0.225 p = 0.052). For students who reported high levels on the "Stress related to the lack of knowledge" subscale, they tend to indicate low values on the "Dedication" subscale (r = -0,040; p = 0,736) and distinguish negative and statistically significant differences in (r = - 0,383; p = 0,001) and "Energy" (r = - 0,229; p = 0,048). On the "Stress related to learning material and lecturers" subscale it was found that the strongest negative and statistically significant correlation was with a "Resilience" subscale (r = -0.325; p = 0.004). On the "Dedication" subscale, a negative correlation (r = - 0.183; p = 0.115) and the "Energy" subscale (r = -0.207; p = 0.073) were also found. Negative relationships give reason to assume that the scale is valid.

Studies on the development and adaptation of a particular scale are topics of major importance for educational research as they provide an opportunity to collect reliable and valid data subsequently. Understanding the current academic stressors faced by students is one of the main prerequisites for the implementation of preventive educational measures to minimize these stressors and thus students to achieve higher satisfaction with university activities. When there is a quality instrument to measure stressors in students, then it becomes possible to track trends in the experience of stress and to take measures to limit its impact on students. The present study found the results of the constructive and convergent validity of a scale for measuring the academic stressors. The internal consistency of the scales turned out to be high Cronbach's alpha ranged between 0.836 and 0.786 for a sample of students, which is an indicator that item are understandable for Bulgarian students.

Discussion, Conclusion and Recommendations

From the above results and conclusions, it can be summarized that first year at the university, students experience academic stress mainly in four areas: stress that is due

to the excessive demands and expectations of parents for high learning achievements; stress in the audience, which is due to difficulties or problems with the learning of the lesson during the sessions, stress that is due to the lack of sufficient knowledge or general culture in the area in which the students are trained and the stress related to the study material and lecturers. Female students reported higher levels of stress related to lack of knowledge, that is, in some university discipline, male students succeeded in passing the female students by learning more quickly. For their part, students living in small settlements experience significantly higher levels of stress related to their parents. Students studying music disciplines experience the highest levels of stress related to lack of knowledge. " It can be summed up that the most significant stress that students have reported is one that is related to the lack of sufficient knowledge. Students who study at art discipline have higher levels of stress related to the lack of knowledge and stress associated with the learning material and the lecturers. One of the reasons for these results is that at present Bulgarian higher education institutions accept students with a maturna assessment rather than a specialized examination for a given field of study. This means that students who complete musical or artistic schools will have much more knowledge than students who have completed general education schools but have entered an arts degree. This has resulted in a serious dissonance that drives students, graduates of general education schools to compare with those who have completed specialized schools and experience the significant difference in knowledge and skills. Therefore, it would be good if the Bulgarian higher education institutions introduce a specialized exam for each discipline in order to accept students with relatively close knowledge of the respective specialty or to increase the hours of preparation of the students who are just entering a discipline and thus by the end of the first year the knowledge of all students should be reduced to approximately equal levels.

The main objectives of this study were to develop and verify the factorial structure of a scale measuring academic stressors, gender differences, domicile and university discipline among the different subsidies, and to assess the interrelationships with the variables related to the criterion.

Four Factor Structure with good fitness indicators is established, indicating that this model is suitable for explaining the data received from Bulgarian students. All four subscales show good internal consistency.

Correlations between subscales show that they all interact statistically significantly between themselves, indicating good internal interrelationships between the individual stressors.

Correlations between Academic Stressors subscales and Academic Engagement subscales such as Resilience, Dedication and Energy indicate results that show good internal validity and correspond to the theoretical model.

The value of the Academic Stress Scale is that with a short scale, a wide range of academic stressors that everyday students can experience can be explored. The results of the present study indicate the factor structure and invariance among the Bulgarian sample, the reliability and the predictable validity. This option for measuring

academic stressors for the future can also be used for other purposes, such as, for example, styles and resources to deal with students' stressors, as well as to create a stressor-strategy model for coping - satisfaction with the learning process.

Although this study is carefully conducted, it has its limitations and shortcomings. For example, no study was conducted among other groups of students in engineering or humanities. In addition, the study was conducted only among first year students in university as it is assumed that during the first year of study, students will experience the highest levels of stress due to the new academic environment and expectations. But it is not clear whether the stress levels are higher in the first year or in the last year of study. It would be good for the same group of students to periodically fill in the "Academic stressors" scale, thus retesting the results. In addition, university students and high student comparisons can be made to test differences in the experience of different stressors.

References

Babakova, L. (2019). Intial adaptation and validation for Bulgarian conditions of scale measuring the Academic resilience amoung students. *International Journal Knowledge, 30(5)*, 1267-1272.

Bedewy, D., & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The perception of Academic Stress Scale. *Health Psychology Open*. https://doi.org/10.1177/2055102915596714

Çelik-Örücü, M. (2013). Psychometric evaluation of the Turkish version of the defensive pessimism scale. *Eurasian Journal of Educational Research, 53*, 115-130. DOI:10.14689/ejer.2013.53.7

Chen, F.S., Lin, Y.M., & Tu, C.A. (2006). A study of the emotional intelligence and life adjustment of senior high school students. *World Transactions on Engineeringand Technology Education*, *5*(3), 473-476. Chen, F.S., Lin, Y.M., & Tu, Retrieved on December 3, 2018 from www.wiete.com.au/journals/WTE&TE/Pages/Vol.5.../22_Chen37.pdf

Harikiran, A., Srinagesh, J., Nagesh, K., & Sajudeen, N. (2012). Perceived sources of stress amongst final year dental under graduate students in a dental teaching institution at Bangalore, India: A cross sectional study. *Indian Journal of Dental Research, 23*, 331–336, DOI: 10.4103/0970-9290.102218

Heikkila, A., Lanka, K., Niemine, J., & Niemivitra, M. (2012). Relationships between teacher students' approaches to learning, cognitive and attributional strategies, well being and study success. *Higher Education, 64*, 455-471.

Kamtsios, S., & Karagiannopoulou, E. (2015). Exploring relationships between academic hardiness and academic sterssors in university undergraduates. *Journal of Applied Educational and Policy Research, 1(1)*, 53-73.

Kumar, S., & Bhukar, J. P. (2013). Stress level and coping strategies of college students. *Journal of Physical Education and Sports Management, 4*(1), 5-11.

Kumar, S., Dagli, R., Mathur, A., et al. (2009). Perceived sources of stress amongst Indian dental students. *European Journal of Dental Education, 13*, 39–45.

Lin, Y.M., & Chen, F.S. (2009). Academic stress inventory of students at universities and colleges of technology. *World Transactions on Engineering and Technology Education, 7,* 157-162.

Mehralizadeh, S., Ghorbani, R., Zolfaghari, S., Shahinfar, H, Nikkhah, R., & Pourazizi, M. (2013). Factors affecting student concentration in classroom: Medical students' viewpoints in semnan university of medical sciences. *Iranian Journal of Medical Education, 13,* 663-671.

Morse, Z., & Dravo, U. (2007). Stress levels of dental students at the Fiji School of Medicine. *European Journal of Dental Education, 11*, 99–103.

Putwain, D., Woods, K., & Symes, W. (2010). Personal and situational predictors of test anxiety of students in post-compulsory education. *British Journal of Educational Psychology, 80,* 137–160.

Tangade, P., Mathur, A., Gupta, R., et al. (2011). Assessment of stress level among dental school students: An Indian outlook. *Dental Research Journal, 8*, 95–101.

Wang, H.F., & Yeh, M.C. (2005). Stress, coping, and psychological health of vocational high school nursing students associated with a competitive entrance exam. *Journal of Nursing Research, 13(2),* 106–116.

Eurasian Journal of Educational Research 81 (2019) 129-146

Eurasian Journal of Educational Research
www.ejer.com.tr

Top Managers' Organizational Change Management Capacity and Their Strategic Leadership Levels at Ministry of National Education (MoNE)*

Omur COBAN[1], Servet OZDEMIR[2], John PISAPIA[3]

ARTICLE INFO

Article History:
Received: 23 Dec. 2018
Received in revised form: 13 April 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.8

Keywords
Strategic leadership, organizational change management, top managers in MoNE, the central organization of MoNE

ABSTRACT

Purpose: The purpose of the study was to identify the relationship between strategic leadership levels of top managers that work in MoNE and their organizational change management capacity. **Research Methods:** In the study, a quantitative research design was employed during data collection and the analysis phases. The population of the study was consisted of head workers, educational experts, MoNE specialist assistants, unit managers, teachers working at the head organization of MoNE, and department heads. The data were collected by reaching the all units of the population so in this study, "census" was done.

Findings: It was seen that there was a highly positive relation between the strategic leadership levels of top managers and their organizational change management capacity. It was also found that the subcategories of the SLQ were the meaningful predictors of all subcategories of the OCMQ.

Implications for Research and Practice: It was seen that top managers in MoNE could not indicate strategic leadership attitudes during the organizational change management. Moreover, it was found out that top managers in MoNE were managing directors, they were not technical managers or transformative managers. MoNE should build the capacity of top managers on organizational change management.

© 2019 Ani Publishing Ltd. All rights reserved

* This is partly presented at the 5th Eurasian Journal of Education Research Conference in Antalya on 3-5 May, 2018. It is produced from Doctoral dissertation.

[1] Corresponding Author, Karamanoglu Mehmetbey University, Faculty of Education, KARAMAN, cobanomur@gmail.com, ORCID ID: https://orcid.org/0000-0002-4702-4152.

[2] Baskent University, Faculty of Education, ANKARA, servetozdemir1996@gmail.com, , ORCID ID: https://orcid.org/0000-0001-7870-9632.

[3]Florida Atlantic University, Faculty of Education, FLORIDA, USA, jpisapia@fau.edu, https://orcid.org/0000-0001-5698-4326.

Introduction

It is known that organizations which manage the organizational change have adapted themselves to changing society, and therefore, they become more durable. It is also stated that making radical changes on organization's own strategy and structure is important for evading the threats from surroundings (Hannan and Freeman, 1984). Organizational culture and learning organizational structure also have an important role in organizational change together with technology, structure, human and environment (Benneth, 2008; Lawler and Silitoe, 2010; Tseng and Mclean, 2008). The other important thing for the organizations is being ready to change before the change starts (Annulis and Gaudet, 2007; Tarraco, Hoover& Knippelmeyer, 2005). Agaoglu (2006), Chermach, Lynham & Merwe (2006), Lawler and Silitoe (2010) with Wang (2007) point out in their studies the importance of organizational learning and learning organization approach for managing the institutional organizational change in large-scale organizations. It has occurred that organizational change is one of the most important factors for providing organizational development according to the results of these researches on management of organizational change aforementioned. Besides, it is stated that the necessity of determining of readiness level for the aspect of change, having a higher organizational commitment, having the characteristic of learning organization aspect and being concerned with the stage of change management in the change would be done in the organizations (Ak, 2006). The culture of the organization, sharing the common vision with all of the partners, performance of the ones who have a role in the change, whether having a strong leadership character, how to manage the resistance against the change are the important criteria for carrying out the change by organizations (Ozdemir, 2013). Cadwell and Gould (1992), stated that developing vision, measurement, strategies for leadership, providing confidence, developing communication, forming an efficient team for the change and forming a structure or model for change are vital and an effective organizational change occurs by this way.

Those studies emphasize the strong leadership character besides necessity for a common vision, creating strategies and providing a model for change. It is difficult to perform a successful change in the organizations because they are open social systems and mental and emotional dimensions should be considered (Burnes, 2004). In other words, organizations should move with two basic factors: a strong leadership role and commonly designed and shared strategy. Strategically, leadership is the approach which combined these two aspects. According to Vera and Crossan, if organizations need change, they need to have a learning organization aspect. And to create learning organizations, top managers should have strategical leadership characters (Vera and Crossan, 2004). It is seen that strategic leadership is vital for organizational change management and transforming the organization.

Organizational Change Management

The organizational change could be planned or non-planned; urgent or staggered (Ozdemir, 2013). Senge has put forward the learning organization approach with fifth discipline approach in the midst of the 1990's and expressed that learning organization aspect was the most important factor for organizational change. Besides this, Lewin

manifested changing as unfreezing, moving and de-freezing in his three-stage changing model. Lawler and Silitoe (2010) and Orucu (2012), have stated that unfreezing should be understood as dissociation in organizational culture and present work process; moving should be understood as starting the organizational change by passing a new system; defreezing should be understood as the institutionalization of all manner and applications of the new system has emerged. It is very important to make the employees feel safe psychologically in unfreezing stage; motivation and power for moving stage; fasten upon the new manners and values which provide to get into the new system in defreezing stage (Burnes, 2004). If the top manager follows these stages, he/she manages organizational change well.

Another approach which is similar to the change management approach of Lewin is provided by Fullan (2007). According to Fullan (2007), the point for change that should not be neglected is authorization should be top-down and participation should be bottom-up. Another important aspect as it is that there should be a monitoring and evaluation mechanism. This point of view shouldn't be overlooked that force (supervision) without support to change would cause resistance. Support without force would cause wasting of sources. Therefore, balance between support and force (supervision) to successful change operation should be created.

Strategic Leadership

After the 1980's leadership studies have become changed and renewed, especially after the midst of 1980's change has directed to strategical leadership from supervisory leadership (Boal & Hooijberg, 2001; Yukl, 2002). It can be said that this change in the emphasis on leadership research has emerged from Upper Echelon Theory of Hambrick and Mason (1984). According to Wheelen and Hunger (1995), one of the important responsibilities of top managers is to determine the climate of the organization. Employees in the organizations want to have a vision in which direction they should work. It is the strategical leader who will give this direction to employees. The strategical leader is also a leader who has strategical thinking and strategical planning skills. Pisapia has developed a scale for performing empirical studies on strategical leadership. This scale has five different dimensions which are bartering, managing, bonding, bridging and transforming (Pisapia, Guerra & Semmel 2005). The dimensions in the scale were changed in the studies performed in Turkey while translating to Turkish as managing – executive leadership; bonding – ethical leadership; bridging – political leadership, transforming – transforming leadership; bartering – associational leadership (Altinkurt 2007; Aydin, 2012; Elma, 2010; Kilinckaya, 2013; Ugurluoglu, 2009; Ulker, 2009). In this study, the sub-dimensions are mentioned as in Turkish. Here are these sub-dimensions:

Transforming leadership: This transforming leadership concept has been systematized by James McGregor in 1978. In his classical work of Leadership on political leadership, he has defined two kinds of leadership as transactional and transformational leadership. Bass (1985) has enhanced this difference a step forward and performed experimental research on it (as cited in Burnes, 2004). To him, a leader is the one who confects high-level spirits, motivation, and performance on the team.

Transforming leaders do not react to environmental situations but create a new environment. They use these steps (Charisma or idealized effect, inspired motivation, intellectual stimulation, individual support) while creating this new environment (Bass & Avolio, 1993). *Managing leadership*: Managing leaders are enviable for managing short-term goals and daily activities. Some organizations force the employees to be managing leaders. Management culture emphasizes fluency and control. A managing leader, however, focuses his energy on goals, sources, organizational structure or human; he is a problem solver (Mullins, 1996). Shortly, the leader looks for which problems should be solved and the best way to reach the needed results for the contribution of people to the organization. *Ethical Leadership*: Billy Grace who is the founder of ethical leadership has developed the 4V model. The dimensions of this model are values, vision, voice, and virtue (Celik, 2000). Ethical leadership is stated as the heart of the leadership and deemed an important concept in the aspect of management (Yukl, 2002). Heart of the leadership statement means the values, beliefs, and desires of a leader. The mind of the leader reflects the mental capacity, his theories related with implementation and abilities of the leader. *Political leadership*: Mintzberg (2014) defines the organizations as political arenas and states that individuals have to manifest political attitudes and skills in certain situations for being successful. Administrators and employees direct their efforts to work as a team with the others instead of individual duty and obligations; communicate directly with customers and buyers or reflect their management skills to the meeting, coordination and facilitating of the others works (Burnes, 2004). So, it can be said that political leaders can easily perceive the social signs and read the behavioral motivation of the followers, and have the skill for influencing and controlling and efficiently building up communication webs in the organization. *Bridging Leadership*: The aim of this leadership is to build up stronger allies and relationships. These relationships cover both employees and outer partners. The leader should observe win-win policy in the relationship by moving reciprocal dependance principle. The leader should do this reinforcement for the aims of the organization, not for his interests. He also uses his present relationships in the direction of the aims of the organization (Pisapia, 2009).

MoNE has been in a reconstruction period. Another important aspect which is important as structural changes are the new attitudes which is brought by the new structure. It is important to know what kinds of organizational change management strategies should be performed by top managers according to the perception of MoNE employees for the institutionalization of this renovation. Also, the managing capacity of the new structure by the administrators according to the perceptions of employees is important. Leadership attitudes and skills for managing the change of top managers are not considered before for evaluation of the restructuring process in MoNE. It is aimed to manifest perception of employees operating for change performed in MoNE and leadership skills of executives to these operations. By the help of this study, MoNE may prepare a training program for top managers to build their capacity on organizational change management.

The aim of the research was to manifest the relationship of strategical leadership behavior of top managers of the central organization in MoNE with competency for

managing organizational change. Therefore, the answers to these questions were seeked:

RQ1. How are the strategical leadership attitudes of top managers in the central organization of MoNE according to the perception of the employees?

RQ2. How are the competencies for managing the organizational change of top managers in the central organization of MoNE according to the perception of the employees?

RQ3. Is there any relationship between strategical leadership attitudes of top managers in the central organization of MoNE with managing the organizational change according to the perception of the employees?

RQ4. Are strategical leadership attitudes of top managers a significant precursor of competency of managing organizational change according to the perception of employees who work in the central organization of MoNE?

Method

Research Design

Data collection and analysis were performed in a quantitative research model in this study. Although general opinions are obtained in qualitative studies, profound information cannot be obtained. It is managed in correlational survey model. Causality and correlation comparison are made between variables in relational studies (Gall, Borg, Gall, 2007).

Research Sample

The universe of the research consisted of chiefs, assistant specialists of national education, education specialists, branch managers, assigned teachers, inspectors of education, and department heads who are the employees in a central organization of MoNE. When the number of them were considered, there were 160 department heads, 50 inspectors, 180 branch managers, 350 assigned teachers, 150 assistant specialists, 160 education specialists, and 550 chefs. As all units of the universe have been reached and the data has been collected, a "census" was made in this research. (Gall, et al., 2007).

Research Instruments and Procedures

It was aimed to evaluate organizational change management in MoNE in the point of view of strategical leadership based on the opinions of employees who work in a central organization of MoNE. Strategical Leadership Scale (SLS) which was developed by Guerra and Pisapia that was adapted to Turkish language and culture with Organizational Change Management Scale (OCMS) which was developed by Ak (2006) were used for the research and applied to employees in the central organization of MoNE. SLS consisted of five sub-dimensions (managing leadership, ethical leadership, political leadership, transforming leadership and bridged leadership) and

35 articles. OCMS has consisted of four sub-dimensions (determining the need for change, preparation for changing process, applying the change and evaluating the change) and 67 articles. Both of these scales are in five-point Likert type.

Data Analysis

912 data collecting tools were delivered and 603 of them returned (66 %) in this research. It is found that 523 of them (58 %) could be analyzed when the researcher examined them. SLS (Strategical Leadership Scale) is translated into Turkish by 5 experts of this field. The Turkish version of the scale was recreated and then sent to 4 field experts. Then it was examined by a Turkish language expert. After these processes, this scale was applied to 10 people in sampling and asked for their opinions. After the final forming of the scale it was delivered to 202 individuals in the central organization of MoNE for validity, and Confirmation Factor Analysis (CFA) was done with obtained data in Lisrel 8.0.

CFA is a type of analysis that test for affirmation as a model that a structure which was defined and limited before (Brown, 2006). This analysis is used for affirmation of a theoretic structure or model. Besides this, CFA is used for evaluation of the validity of structure (Joreskog and Sorbom, 1993). Simsek (2010), stated that the standardized value of observed variables is fixed to "1" ; therefore, values of latent variables should be lower than "1". A load of observed variables of standardized parameters on latent variables should be minimum 0,20. According to this condition, it was seen that the factor loads of the questions representing each factor took values between 0.29 and 0.92. In addition to estimated parameters, t-values which were calculated by dividing every parameter value to standard error should also be checked. If there is a red arrow on "t value", the mentioned item does not have a significant value on 0.05 level (Simsek, 2010). It has been seen that there was no trouble on factor loads which go to latent variables to observed variables when the t values examined on path diagram were checked for obtained results.

Explanations of observed variables by latent variables are defined by t values. If estimated parameter value exceeds 1.96 it is meaningful on 0.5 level; if it exceeds 2.56 it is meaningful on 0.01 level. When CFA t values are examined, it is seen that all the articles which belong to "Ethical", "Political", Managing", "Transforming" and "Bartering" factors were meaningful on 0.01 level. It was seen that estimated parameter values (t values) between latent variables which is the basic hypothesis related with latent variables of CFA is provided for data matrix. Significance of all of t values that are parameter values is required but not sufficient for accepting the model as the acceptable or accurate model. Besides, as a criterion whether if it is a fully acceptable model, statistics of the goodness of fit should be calculated (Çelik and Yilmaz, 2013; Simsek, 2010); primarily the ratio between chi-square with a degree of freedom. If this ratio is less than 2, it is a perfect fit, and 2-3 shows an acceptable fit. The other criteria are RMSEA (Root Mean Square of Approximation), GFI (Goodness of fit index), AGFI (Adjusted Goodness of Fit), CFI (Comparative Fit Index) and IFI (Incremental Fit Index) and standardized RMR (SRMR/ Root Mean Square Residual).

It is considered that RMSEA and SRMR should be less than 0.08 and is less than 0.05 is considered as perfect compliance indicator (Kline, 2005).

It manifests that having 0.95 and higher values of CFI, IFI, NFI and NNFI, AGFI a perfect fit; being 0.95 - 0.90 is a good fit (Simsek, 2010). It is stated in some different sources that higher than 0.85 is also acceptable (Kline, 2005). Some values have "perfect fit" and some of them have "good fit" when the compliance of model which is obtained as a result of CFA to the goodness of fit indexes (AGFI value is .85, CFI is .97, NFI is .94, NNFI is .97, IFI is .97, RMSEA is .07 and SRMR is .08.). AGFI value is in the acceptable limits which are stated by Kline (2005).

The specified situation related to compliance with these ranges is given in the model compliance column. It is seen that the ratio of chi-square to the degree of freedom manifests the good fit and values belonged to this study are generally in acceptable level when the goodness of fit statistics was examined. Collected data were analyzed with SPSS 16 program. Cronbach Alfa value of SLS was 0.96 and Cronbach Alfa value of (OCMS) was 0.98.

Results

In order to determine the perceptions of top managers on strategic leadership behaviors in the central organization of MoNE, the arithmetic mean and standard deviation were calculated and given in the following table on the basis of strategic leadership behaviors sub-dimensions. When the sub-dimensions of strategical leadership behaviors were examined in Table 1, it can be seen that senior executives manifest general managing leadership relatively (M= 3.45). Political leadership follows this attitude (M= 3.01). According to employees' perceptions, senior executives exhibit relatively less transforming leadership behavior (M= 2.79) and bridging leadership behavior (M= 2.70).

Table 1

Arithmetic Mean and Standard Deviation Values of SLS

Strategic leadership dimensions	*M*	***SD***
Ethic leadership	2.92	.92
Managing leadership	3.45	.84
Transformational leadership	2.79	.87
Political leadership	3.01	.83
Bartering leadership	2.70	.83

Based on these findings, it can be said that top managers in the central organization of MoNE put forward bureaucratic management style and that employees attach importance to compliance with rules and regulations, while they rarely care about the reward system and the participation and opinions of subordinates. Also, it is seen that they have more exhibit managing and political leadership than transforming and bridging leadership attitudes. In other words, top managers of MoNE manifest managing top managers' attitudes according to the perception of employees working on the central organization of MoNE.

Arithmetic mean and standard deviations of opinions of employees were calculated and given in Table 2 on the basis of managing stages in order to determine the perception of employees related with organizational change management skills of top managers in central organization of MoNE. Top managers of MoNE occasionally manifest these skills related to these stages relatively when the sub-dimensions of managing the organizational change in Table 2 are taken into consideration. Top managers manifest skills for determining the organizational change more (M= 2.72) and they manifest skills for evaluation of organizational change less (M= 2.62) according to the perception of employees.

Table 2

Arithmetic Mean and Standard Deviation Values of OCMS

Change Organizational Management Dimensions	*M*	***SD***
Determining stage of organizational change	2.72	.91
Preparing stage of organizational change	2.68	.87
Implementing stage of organizational change	2.66	.85
Evaluation stage of organizational change	2.62	.81

Based on these findings, it can be said that top managers have better skills to determine the organizational change than the evaluation of the organizational change. The relationship between strategical managing behaviors and competency of managing the change of top managers in the central organization of MoNE is given in the following table.

Table 3

Pearson Values of SLS and OCMS

		1	2	3	4	5	6	7	8	9
Strategic leadership	1.Managing	-	.63*	.72*	.62*	.50*	.41*	.48*	.51*	.49*
	2.Ethic		-	.74*	.83*	.83*	.59*	.64*	.71*	.65*
	3.Politic			-	.77*	.73*	.55*	.62*	.67*	.61*
	4.Transformation				-	.86*	.63*	.69*	.73*	.66*
	5. Bartering					-	.61*	.65*	.72*	.65*
Organizational Change Management	6. Determining stage						-	.81*	.73*	.64*
	7.Preparation stage							-	.85*	.73*
	8.Implementation stage								-	.81*
	9.Evaluation stage									-

There is a significant relationship on medium level and in positive direction between managing leadership with determining the change (r =.41, p < .01), preparing to change (r = .48, p < .01), implementing change (r = .51, p < .01) and, with the dimension of evaluation of change (r = .49, p < .01). Besides, there is a significant relationship on positive direction between ethical leadership with determining the change (r = .59, p < .01), preparing the change (r =.64 p < .01), implementing the change (r = .71, p < .01) and, evaluating the change (r = .65, p < .01). In addition to this, there is a significant relationship in positive direction between political leadership with dimension of determining the change (r =-.55, p < .01), preparing the change (r = .62, p < .01), implemention of change (r = .67, p < .01), evaluation of change (r = .61, p < .01). There is also a significant relationship in positive direction between transforming leadership with dimension of determining the relationship (r = .63, p < .01), preparing change (r = .69, p < .01), implemention of change (r = .73, p < .01) and, evaluation of change (r = .66, p < .01). Finally, there is a significant relationship in positive direction between bridging leadership with the dimension of determining the change (r = .61, p < .01), preparing to change (r = .65, p < .01), implemention of change (r = .72, p < .01) evaluation of change (r = .65, p < .01. Based on these findings, it can be said that the competency of managing of organizational change increases by increasing their strategical leadership attitudes. Results of regression analysis which was performed to determine whether strategical management attitudes of top managers of MoNE are significant predictor for their competency of managing organizational change are presented in the Table 4.

Table 4

Regression Analysis Results of SLS and OCMS

Variables	***Determination***			***Preparation***			***Implication***			***Evaluation***		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Constant		5.73	.00		3.90	.00		3.22	.00		-.08	.93
Managing	-.24	-.47	.63	.01	.29	.76	.05	.10	.09	.05	1.17	.24
Ethic	.11	1.64	.10	.10	1.67	.09	.19	3.34	**.00***	.18	2.79	**.00***
Politic	.12	1.90	.06	.15	2.73	**.00***	.17	3.21	**.00***	.15	2.53	**.01***
Transform.	.30	3.91	**.00***	.36	5.02	**.00***	.26	3.98	**.00***	.17	2.32	**.02***
Bartering	.17	2.27	.23	.13	1.85	.06	.20	3.12	**.00***	.21	2.97	**.00***

Determination: R=.65, R^2=.42; F= 76.84, p<.05; Preparation: R=.71, R^2=.51; F= 110.07, p<.05; Implication: R=.77, R^2=.59; F= 154.32, p<.05; Evaluation: R=.70, R^2=.49; F= 101.41, p<.05.

It is seen that managing leadership, ethical leadership, political leadership, transforming leadership and bartering leadership have significant relationship together with the dimensions of determining the organizational change (R = .65, p < .05), preparing the organizational change (R = .71, p < .05), implementing the organizational change (R= .77, p <.05) and evaluation of organizational change (R = .70, p < .05) when the Table 6 is examined. According to the regression analysis the only significant predictor of the stage of determining the organizational change is transforming leadership (β =.30, p < .05). The significant predictors of preparing to organizational change stage are political leadership (β = .15, p < .05) and transforming leadership (β = .36, p < .05). There are four significant predictors of the stage of implementing organizational change: These are ethical leadership (β = -.19, p < .05), political leadership (β = -.17, p < .05), transforming leadership (β = -.26, p < .05) and bartering leadership (β = -.20, p < .05). The last stage of competency of managing the organizational change is evaluation of organizational change, and it also has four significant predictors as implementation of organizational change: Ethical leadership (β = -.18, p < .05, political leadership (β = -.15, p < .05), transforming leadership (β = -.17, p < .05) and bridging leadership (β = -.21, p < .05). In the light of these findings, it can be said that stage of determining the organizational change would be better by increasing the transforming leadership. In addition to this, it can be expressed that stage for preparing the organizational change would be more fruitful by increasing transforming leadership and political leadership. Finally, it can be stated that stages of

implementation and evaluation would be more efficient by increasing ethical, political, transforming and bridging leadership.

Discussion, Conclusion and Recommendations

When the findings of the research are examined according to the perception of employees it is seen that top managers of the MoNE should have interpersonal roles, conceptual roles and decision-making roles which are necessary to manage the changing process and stated by Burnes (2004). In light of these findings it can be said that top managers of MoNE cannot put forward their characteristics in the subject of managing the change and renovation. This opinion shows parallelism with the study performed by Atasoy and Cemaloglu (2018), Guclu, Kilinc, and Coban (2014) with educational administrators in Turkey. Besides, top managers of MoNE comply with the definition of managing director from the definitions of technical manager, administrative manager, and developer manager in the research conducted by Harris (1986). According to the research of Harris developer director type is the one which provides organizational change and transforming. As the most substantial characteristics of the developer leader, it is especially emphasized to increase the capacity of the members of the group and to give them initiative by empowering the members of the group with a shared vision. Ulukan (2005) said in his research that transformational leadership qualities should be present in the changes to be made in higher education. Finally, Boal and Hooijberg (2001) stated that the main leadership is strategical leadership, and charismatic, visionary and transforming leadership are the second type of leadership. This is in parallel with the findings obtained. It is stated that the top managers of MoNE show administrative managing characteristics. The management style that executives need to manage in order to administrate organizational change is the one which increases the capacity of employees by sharing the vision, giving priority to administrate the change together, consider the psychological aspects of employees that is constructive directorate.

It is determined that there is a positive relationship on a high level between strategic leadership with organizational change management as another finding of the research. Guclu, Coban and Atasoy (2017) expressed that administrators should create a positive atmosphere by showing transformative leadership attitudes and also give the feeling of sharing the same vision and the same thoughts to their followers. Nutt and Backoff (1993) showed that the way to transforming public organizations is to keep transformation by strategic leadership and strategic management approach in their research. Cadwell and Gould (1992) also pointed out that leaders who develop strategy are the essential element of change. It's concluded in the research conducted by Elma (2010) that the institutional transformation in public administration should be solved with a strategic leadership perspective. The regression analysis revealed that all sub-dimensions of strategic leadership characteristics are predictors of sub-dimensions of organizational change management skills. Hence, it is seen that as the level of exhibiting strategic leadership behavior of top managers increase, the skills of managing organizational change will increase. When the body of literature related to

organizational change management is examined, it can be seen that it is expressed in every condition that organizational change can be done by leaders with transforming features (Balci, 2000; Burnes, 2004; Drucker, 1996; Fullan, 2004; Lawler and Silitoe, 2010). In the light of this study, researchers can examine the organizational performance in the central organization of MoNE after the restructuring. In addition, the organizational citizenship levels and levels of organizational commitment of the employees in the central organization of MoNE can be revealed or the opinions of the employees in the provincial organization and the employees in the central organization can be compared. Besides, MoNE may plan a training program for top managers in order to build their organizational change management capacity.

References

Agaoglu, E. (2006). The reflection of the learning organization concept to school of education. *Turkish Online Journal of Distance Education, 7*(1), 132-148.

Ak, M. (2006). *Ilkogretim okulu yoneticilerinin degisimi yonetme yeterlikleri [Elementary school principals' change management skills].* (Unpublished doctoral dissertation). Afyon Kocatepe University Social Science Institute, Afyonkarahisar.

Altinkurt, Y. (2007*). Egitim orgutlerinde stratejik liderlik ve okul mudurlerinin stratejik liderlik uygulamalari [Strategic leadership in educational organizations and school principals' strategic leadership applications]. (*Unpublished doctoral dissertation). Anadolu University Educational Science Institute, Eskisehir.

Annulis, H., & Gaudet, C. (2007). *Ready or not? Assessing change readiness for implementation of the geospatial technology model*. Retrieved November 20, 2014 from http://www.eric.ed.gov.

Atasoy, R., & Cemaloglu, N. (2018). Evaluation of quality policies on education in Turkish education system. *Universal Journal of Educational Research, 6*(7) 1504 – 1518, doi: 10.13189 /ujer.2018.060711.

Aydin, I. (2002). *Yonetsel, mesleki ve orgutsel etik* [*Managerial, professional and organizational ethic*]. Ankara: Pegem.

Aydin, M. K. (2012). *Kamu ve ozel ilkogretim okulu mudurlerinin stratejik liderlik ozellikleri ile kurumlarin orgutsel ogrenme duzeyleri arasindaki iliski [The relationship between strategic leadership aspects and organizational learning level of school principals in public and private schools].* (Unpublished master's thesis). Gazi University Educational Science Institute, Ankara.

Balci, A. (2000). *Orgutsel gelisme: Kuram ve uygulama [Organizational development: theory and practice]*. Ankara: Pegem A.

Bass, B. M., & Avolio, B. J. (1993). Transformational leadership: A response to critiques. In M. M. Chemers & R. Ayman (Eds), *Leadership theory and research*. New York: Academic.

Benneth, E. (2008). E-tools of change: An analysis of corporate intranet promoting organizational change. *Baystate Health and Tufts University of Medicine, 40*(3), 3-12.

Boal, K., & Hooijberg, R. (2001). Strategic leadership research: moving on. *Leadership Quarterly, 11*(4), 515-549.

Brown, T.A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford.

Burnes, B. (2004). *Managing change*. London: Prentice Hall.

Buyukozturk, S., Cakmak, E., Akgun, O., Karadeniz, S., & Demirel, F. (2012). *Bilimsel arastirma yontemleri [Scientific research methods]* (13th ed.). Ankara: Pegem Akademi.

Cadwell, P., & Gould, E. (1992). *Effecting change in a resistant organization*. Retrieved November, 12, 2014 from http://eric.ed.gov.

Celik, H., & Yilmaz, V. (2013). *Yapisal esitlik modellemesi [Structural equation model]*. Ankara: Ani.

Celik, V. (2000). *Egitimsel liderlik [Educational leadership]*. Ankara: Pegem.

Chermach, J., Lynham, S., & Merwe, L. (2006, September). Exploring the relationship scenerio planning and perception of learning organization characteristics. *Futures, 38*(7), 767-777.

Drucker. (1996). *21. yy. için yonetim tartismalari [Management discussions for 21st century]*. (T. Bahçivangil, & G. Gorbon, trans.) Istanbul: Epsilon.

Elma, R. (2010). *Kamu yonetiminde kurumsal donusum ve stratejik liderlik* [*Organizational transformation and strategic leadership in public*]. (Unpublished master's thesis). Karamanoglu Mehmetbey University Social Science Institute, Karaman.

Fullan, M. (2004). *Leading in a culture of change*. San Fransisco: Jossey-Bass.

Fullan, M. (2007). *The new meaning of educational change*. Amsterdam: Teachers College.

Gall, M.D., Borg, W.R., & Gall, J.P. (2007). *Educational research an introduction*. (8th ed.). USA: Longman.

Guclu, N., Kilinç, H., & Coban, O. (2014). According to the teachers' point of view, the examination of primary schools' principles' competency on change management and organizational innovation. *Procedia Social and Behavioral Science.*

Guclu, N., Coban, O., & Atasoy, R. (2017). Okul yoneticilerinin stratejik liderlik ozellikleri ile orgutsel sessizlik arasindaki iliskinin ogretmen goruslerine gore incelenmesi [According to teachers' view the examination of the relationship between school principals' strategic leadership aspects and organizational silence]. *Milli Egitim Dergisi, 46*(215), 167-191.

Hambrick, D., & Mason, P. (1984). Upper echelons: Organization as a reflection of its top managers. *Academy of Management Review, 9*(2), 193-206.

Hannan, M.T., & Freeman, J. (1984). Structural interia and organizational change. *American Social Review, 49*, 149-164.

Harris, T. E. (1986). *Organizational communication: Focusing on leadership behaviour and change management*. Retrieved April 5, 2014 from http://www.eric.ed.gov.

Joreskog, K., & Sorbom, D. (1993*). Lisrel 8 users' reference guide*. Chicago: Scientific Software International.

Kilinçkaya, B. (2013). *Il millî egitim mudurlerinin stratejik liderlik ozelliklerinin arastirmasi* [*Examination of strategic leadership aspects of province national education managers*]. (Unpublished master's thesis). Gazi University Educational Science Institute, Ankara.

Kline, B. (2005). *Principles and practice of structural equation modelling* (2nd ed.). New York: The Guilford.

Lawler, A., & Silitoe, J. (2010). Perspectives on instituting change management in large organizations. *Australian Universities' Review, 52*(2), 41-48.

Mintzberg, H. (2014). *Orgutler ve yapilari [Organizations and their structures]*. (A. Aypay, trans.) Ankara: Nobel.

Mullins, L. (1996). *Management and organizational behaviour*. London: Pitman.

Nutt, P., & Backoff, R. (1993). Transforming public organizations with strategic management and strategic leadership. *Journal of Management, 19*(2), 299-347.

Orucu, D. (2012). Orgutsel degisim yonetimi [Organizational change management]. In S. Ozdemir (Eds.), *Egitim yonetiminde kuram ve uygulama.* (pp. 445-481). Ankara: Pegem Akademi.

Ozdemir, S. (2013*). Egitimde orgutsel yenilesme [Organizational innovation in education]*. Ankara: Pegem.

Pisapia, J. (2009*). The strategic leader: New tactics for a globalizing world*. New York: Information Age.

Pisapia, J., Guerra, D., & Semmel, E. (2005). Developing the leader's strategic mindset: establishing the measures. *Leadership Review, 5*, 41-67.

Senge, P. (1990). *The fifth discipline: the art and practice of learning organization*. New York: Doubleday.

Simsek, O. (2010). *Yapisal esitlik modellemesine giris. Temel ilkeler ve LISREL uygulamalari[Introduction to structural equation model: Basic principles and LISREL applications]* . Istanbul: Ekinoks.

Tarraco, R., Hoover, R., & Knippelmeyer, S. (2005). Organizational development and change in universities. *Advances in Developing Human Resource, 37*(2), 422-437.

Tseng, C., & Mclean, G. (2008). The relationship between organizational learning practices and the learning organization. *Journal of European Industrial Training, 32*(6), 418-432.

Ugurluoglu, O. (2009). *Hastane yoneticilerinin stratejik liderlik ozelliklerinin degerlendirilmesi[The evaluation of hospital managers' strategic leadership aspects]. (*Unpublished doctoral dissertation). Hacettepe University Health Science Institute, Ankara.

Ulker, M. (2009). *Okul yoneticilerinin stratejik liderlik ozelliklerine iliskin ogretmen algilari [Teachers views on school principals' strategic leadership aspects]*. (Unpublished master's thesis). Kocatepe University Social Science Institute, Kocaeli.

Ulukan, C. (2005). Transformation of university organizations: leadership and managerial implications. *Turkish Online Journal of Distance Education, 6*(4), 75-94.

Vera, D., & Crossan, M. (2004). Strategic leadership and organizational learning. *Academy of Management Review, 29*(2), 222-240.

Wang, J. (2007). Organizational learning and crisis management. *Advances in Developing Human Resource, 10(*3), 425-445.

Wheelen, T., & Hunger, J. (1995). *Strategic management and business policy* (5th ed.). USA: Addison-Wesley.

Yukl, G. (2002). *Leadership in organization* (5th ed.). New Jersey: Prentice Hall.

Millî Eğitim Bakanlığı (MEB) Yöneticilerinin Örgütsel Değişimi Yönetme Yeterlikleri ve Stratejik Liderlik Davranışları[4]

Atıf:

Coban, O., Ozdemir S., & Pisapia, J. (2019). Top managers' organizational change management capacity and their strategic leadership levels at Ministry Of National Education (MoNE*). Eurasian Journal of Educational Research*, 81, 129-146, DOI: 10.14689/ejer.2019.81.8

Özet

Araştırmanın Problem Durumu: Örgütsel değişimi başarılı bir şekilde yöneten örgütlerin gelişen, değişen topluma daha rahat ayak uydurdukları ve daha uzun ömürlü oldukları görülmektedir. Örgütün bu değişimi yaparken kendi strateji ve yapısında radikal değişimler yapması ve çevreden gelecek tehditleri hızlı bir şekilde savuşturmasının da önemli olduğu belirtilmektedir (Hannan ve Freeman, 1984).

[4] Doktora tezinin özetidir.

Örgütsel değişimde teknoloji, yapı, insan ve çevre ile birlikte örgütün kültürünün ve öğrenen örgüt yapısının da önemli rol oynadığı yapılan çalışmalarda ortaya konulmuştur (Benneth, 2008; Lawler ve Silitoe, 2010; Tseng ve Mclean, 2008). Eğitim alanında örgütsel değişim ile ilgili yapılan bir araştırmada, örgütsel gelişim ile örgütsel değişim incelenmiş ve örgütsel gelişim sağlayan örgütlerin değişimi yürütmek için öncelikle örgütsel bağlılığı artırmaları, örgütsel bağlılığı artırdıktan sonra örgütsel değişimi planlamaları gerektiği vurgulanmıştır (Tarraco, Hoover ve Knippelmeyer, 2005). Örgütlerde değişime başlanılmadan önce, örgütlerin değişim hususunda hazır bulunuşluk düzeylerinin saptanması, örgütsel bağlılığın yüksek olması, örgütlerin öğrenen örgüt özellikleri taşımaları ve örgütlerde yapılacak değişimlerde değişim yönetiminin safhalarının önemine dikkat edilmesi gerektiği ifade edilmektedir (Ak, 2006). Örgütler, değişime başlamadan nelere ihtiyaçları olduğunu belirledikten sonra, değişimi yürütürken nelere ihtiyaç duyacaklarını da iyi saptamalıdırlar. Örgütlerin değişimi yürütebilmesinde, örgütün sahip olduğu kültür, ortak vizyonu tüm paydaşlarla paylaşma, değişimde görev alacakların performansı, güçlü bir liderlik ögesinin var olup olmadığı, değişime direncin nasıl yönetileceği önemli kriterlerdir (Ozdemir, 2013). Cadwell ve Gould (1992), örgütlerde değişimin önündeki engelleri kaldırmak ve böylece daha etkili bir örgütsel değişim sağlamak için vizyon geliştirme, ölçme, liderlik stratejileri geliştirme, güven sağlama, iletişimi geliştirme, değişim için etkili bir takım oluşturma ve değişim için bir yapı veya model oluşturmanın önemli olduğunu belirtmişlerdir. Yukarıda bahsedilen araştırmalar, genel olarak örgütsel değişimi yürütmede, ortak vizyon, stratejiler oluşturma, değişim için bir model oluşturma gerekliliğinin yani sıra, güçlü bir liderlik ögesinin önemine vurgu yapmaktadır. Bunun nedeni, örgütler açık sosyal sistemlerdir ve bu yüzden başarılı bir değişim yapmak oldukça güçtür. Çünkü değişim yaparken sadece yapısal süreçler değil, zihni ve duygusal boyutlarda dönüştürülmelidir. Zihni ve duygusal donuşumu sağlamanın yolu da liderlikten geçer (Burnes, 2004). Başka bir ifadeyle, örgütler değişim yaparken iki temel unsurla hareket etmelidir. Bunlar güçlü bir liderlik rolü ve paylaşılan ve ortak oluşturulmuş bir strateji. Bu iki temel unsuru bir araya getiren yaklaşım ise stratejik liderliktir. Nitekim NT ve BackOffice (1993) da yaptıkları çalışmada kamu örgütlerini dönüştürmede başarılı olmanın yolunun stratejik liderlik ve stratejik yönetim anlayışıyla donuşumu sürdürmek olduğunu vurgulamaktadırlar. Vera ve Crossan'a göre örgütler, değişim istiyorlarsa; öğrenen örgüt özellikleri taşımalarıdır. Öğrenen örgütler oluşturmak için ise üst yöneticilerin stratejik liderlik özellikleri göstermeleri gerekmektedir (Vera ve Crossan, 2004).

Milli Eğitim Bakanlığı yeniden yapılanma surecine girmiştir. Bu süreçte yürütülen yapısal değişimler kadar önemli olan bir husus da yeni yapının getirdiği yeni davranışlardır. Bu yeniden yapılanma surecinde Millî Eğitim Bakanlığı çalışanlarının algılarına göre yöneticilerinin nasıl bir örgütsel değişim yönetimi stratejisi izledikleri, yeniliğin kurumsallaşması bakımından önem arz etmektedir. Ayrıca yine çalışanların algılarına göre, yöneticilerin stratejik liderlik davranışları yeni yapıyı yönetme kapasiteleri de önemli görülmektedir. Milli Eğitim Bakanlığı'nda yaşanan yeniden yapılanma surecinin değerlendirilmesinde, üst düzey yöneticilerin liderlik davranışları ve değişimi yönetme becerileri daha önceden detaylı olarak ele alınmamıştır. Bu araştırma, hem üst düzey yöneticilerinin değişimi yönetme

kapasitelerini hem de bu yönetim esnasında sergiledikleri liderlik davranışlarını ortaya koyması ve Türk eğitiminin en başat örgütü olan Milli Eğitim Bakanlığı'nın merkez teşkilatının dönüşümünde nelerin yapılıp nelerin yapılamadığını göstermesi açısından önemlidir.

Araştırmanın Amacı: MEB merkez teşkilatı yöneticilerinin stratejik liderlik davranışları ile örgütsel değişimi yönetme yeterlikleri arasındaki ilişkiyi ortaya koymaktır. Bu amaçla aşağıdaki sorulara yanıt aranacaktır:

1. Çalışanların algısına göre, Millî Eğitim Bakanlığı merkez teşkilatındaki üst düzey yöneticilerin stratejik liderlik davranışları nasıldır?

2. Çalışanların algısına göre, Millî Eğitim Bakanlığı merkez teşkilatındaki üst düzey yöneticilerin örgütsel değişimi yönetme yeterlikleri nasıldır?

3. Çalışanların algısına göre, Millî Eğitim Bakanlığı merkez teşkilatındaki üst düzey yöneticilerin stratejik liderlik davranışları ile örgütsel değişimi yönetme yeterlikleri arasında anlamlı bir ilişki var mıdır?

4. Millî Eğitim Bakanlığı merkez teşkilatında çalışanların algısına göre yöneticilerin stratejik liderlik davranışları, yöneticilerin örgütsel değişimi yönetme yeterliklerinin anlamlı bir yordayıcısı mıdır?

Araştırmanın Yöntemi: Araştırmanın evrenini, MEB Merkez teşkilatında görevli şef, eğitim uzmanı, millî eğitim uzman yardımcısı, şube müdürü, görevli öğretmen ve daire başkanı kadrosunda çalışanlar oluşturmaktadır. Evrenin tüm birimlerine ulaşılarak veri toplandığı için bu araştırmada "tam sayım" yapılmıştır. Bu amaçla, MEB merkez teşkilatındaki üst düzey yöneticilerin stratejik liderlik davranışlarına ve örgütsel değişim yönetim becerilerine ilişkin çalışanların algılarını belirlemek için Stratejik Liderlik Ölçeği ve Örgütsel Değişimi Yönetme Ölçeği kullanılmıştır. Korelasyon analiziyle MEB üst düzey yöneticilerinin stratejik liderlik davranışları ile örgütsel değişimi yönetme becerileri arasında ilişkiler incelenmiştir. Buna ilâveten, MEB üst düzey yöneticilerinin stratejik yönetim davranışlarının örgütsel değişimi yönetme becerilerinin anlamlı bir yordayıcısı olup olmadığı regresyon analizi ile açıklanmıştır.

Araştırmanın Bulguları: Stratejik liderlik davranışları ile örgütsel değişim yönetimi becerileri arasında yüksek düzeyde olumlu yönde ilişki olduğunu göstermektedir. Regresyon analizi ile stratejik liderlik davranışlarının bütün alt boyutlarının örgütsel değişimi yönetme becerileri alt boyutlarının yordayıcısı olduğu tespit edilmiştir.

Araştırmanın Sonuçları ve Önerileri: MEB üst düzey yöneticilerinin değişimi yönetme ve yenileşme konusunda stratejik liderlik özelliklerini tam olarak ortaya koyamadıkları söylenebilir. Bunun yani sıra, MEB üst düzey yöneticileri, teknik yönetici, idari yönetici ve geliştirici yönetici tanımlarından idari yönetici tanımına uymaktadır. Bununla birlikte, üst düzey yöneticilerin stratejik liderlik davranışı sergileme düzeyleri arttıkça, örgütsel değişimi yönetme becerilerinin de artacağı görülmüştür.

Araştırmacılar, bu çalışma ışığında Millî Eğitim Bakanlığı merkez teşkilatında, yeniden yapılanma sonrasındaki örgütsel performansı inceleyebilir. Ayrıca MEB merkez teşkilatında çalışanların değişim sonrasındaki örgütsel vatandaşlık düzeyleri ve örgütsel bağlılık seviyeleri ortaya konulabilir ya da taşra teşkilatında çalışanlar ile merkez teşkilatta çalışanların değişimle ilgili görüşleri karşılaştırılabilir. MEB, üst düzey yöneticilerin değişimi yönetme ve değişime liderlik etme konusunda kapasitelerini artırıcı eğitimler düzenleyebilir.

Anahtar Kavramlar: Stratejik Liderlik, Örgütsel Değişimi Yönetme, MEB Üst Düzey Yönetici, MEB Merkez Teşkilatı

Eurasian Journal of Educational Research 81 (2019) 147-164

Eurasian Journal of Educational Research
www.ejer.com.tr

From Writing to Presenting and Publishing Research Articles: Experiences of Philippine Education Faculty-Researchers*

Rudolf VECALDO[1], Jay Emmanuel ASUNCION[2], Mark ULLA[3]

ARTICLE INFO

Article History:
Received: 20 Mar. 2019
Received in revised form: 01 May 2019
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.9

Keywords
conducting research, phenomenological inquiry, Philippine teacher education, publishing, lived experiences

ABSTRACT

Purpose: Higher education institutions in the Philippines have been encouraged to do and publish research. Thus, this study aimed to unravel the lived experiences of 12 teacher education faculty-researchers in a public university in Cagayan Valley, Northern Philippines with regards to writing, presenting and publishing research articles. **Research Methods:** The method employed was the phenomenological inquiry through an in-depth semi-structured interview. Data were transcribed, read repeatedly, and subjected to content analysis. **Findings:** Findings revealed that personal (additional learning, self-enrichment, and prestige) and professional (knowledge generation and dissemination, career advancement, and building linkages) reasons inspired teacher education faculty-researchers in writing, presenting and publishing their studies. However, some of the challenges they encountered included lack of time due to heavy workload and multiple designations, lack of mentoring, and shortage of financial assistance for international presentation and publication. Despite external constraints and difficulties faced, these faculty-researchers were positive about doing research studies as it became an enterprise for them to find deeper meaning in what they were doing and to grow professionally as researchers. **Implications for Research and Practice**: Knowing and understanding the lived experiences of faculty-researchers in writing, presenting, and publishing research articles would have an impact on the higher education institution's research policies that can empower faculty-researchers and advance research culture in teacher education not only in the Philippines but in all higher education institutions in the world.

© 2019 Ani Publishing Ltd. All rights reserved

*This study was partly presented at the Future Education Conference organized by De La Salle Lipa, Philippines, 21-22 January, 2019.

[1] Corresponding Author, College of Teacher Education, Cagayan State University, PHILIPPINES, rudolfvecaldo@gmail.com, ORCID ID: https://orcid.org/0000-0003-1723-3487

[2] Cagayan State University, PHILIPPINES, ORCID ID: https://orcid.org/0000-0003-0701-5689

[3]Walailak University Language Institute, Walailak University, THAILAND, mark.ulla1985@gmail.com, ORCID ID: https://orcid.org/0000-0003-1005-5120

Introduction

Doing research has become an indispensable commodity in a globalizing world because it does not just generate new knowledge that brings innovations and progress (Czarl & Belovecs, 2007; Khan, 2015; Sibiya, 2011), it also serves as a platform for any academic institutions to develop and aid in the provision of quality education (Naz & Malik, 2014). As such, institutions of higher learning have placed greater emphasis on doing research in order to come up with evidence-based policies and programs, to discover solutions to the pressing and mounting challenges of humanity, and to bolster effectiveness in knowledge sharing, technological advancement, and industrial efficiency (Bourke & Loveridge, 2017; Hottenrott & Thorwarth, 2010).

In the Philippine context, universities, and colleges, both private and public, are expected to articulate much drive in generating knowledge through research (Wa-Mbaleka, 2015). Several policies for research and development have been raised primarily to reinforce the contribution of Higher Education Institutions (HEIs) to "research productivity" (Regadio & Tullao, 2015). Likewise, procedures in various institutional research and development units have been deliberately put in place, and promises of rewards and incentives have been crafted and announced with the hope of establishing a firm research foundation among faculty members and acquiring a significant quantity of quality studies. For example, the Philippine Commission on Higher Education (CHED) crafted guidelines to elevate the status of journal publication (CHED Memorandum Order No. 50, series of 2017) and provided financial grants to support Filipino researchers. It also sets a robust measure of performance among faculty and the institution as a whole. In fact, among State Universities and Colleges (SUCs), research is one of the Key Results Areas (KRAs) emphasized by CHED which higher education faculty members are heavily assessed for their corresponding academic title and leveling. Thus, research has become an avenue for individual faculty and institutions of higher learning to get funding from national agencies such as CHED, Department of Science and Technology (DOST), National Research Council of the Philippines (NRCP), and the like. Consequently, these collective efforts have been viewed as a notable move towards the alignment and competitiveness of Philippine education in the global and ASEAN academic landscapes.

Despite the aforementioned trends, thrusts, policy of attraction and apparent pressures to mobilize higher education faculty to participate in creating a vibrant research culture within and beyond the higher learning institutions, it is disheartening to note that only a little percentage of higher education faculty are genuinely involved in research (Ayala & Garcia, 2013; Wa-Mbaleka, 2015). The emerging concept of "publish or perish" (Ulla, Acompanado, & Barerra, 2017) became the byword which poses a challenge, an impetus to produce research articles that merit scientific publications and credible dissemination to learned societies and various stakeholders. Hence, this study was undertaken to describe the lived experiences of university academics who teach in the faculty of education with regards to writing, presenting and publishing research articles. Knowing and understanding their lived experiences in writing, presenting and publishing research articles would have an impact on the

higher education institution's research policies not only in the Philippines but in all higher education institutions in the world. Through the results of this study, all institutions of higher learning will be able to develop guidelines to address the issues faced by these university academics in terms of doing and publishing research studies.

Teachers' Perceptions and Beliefs in Doing Research

In the teacher education milieu, the call to intensify research endeavors is an inevitable reality highlighting its assumed participation in theorizing principles, re-examining operations, re-inventing things, and improving mechanisms to affect educational development (Jonasson, 2011). With this, research has been an enabling strategy of determining essential aspects that necessitate significant intervention and improvement for teachers' holistic development, which further explains why faculty members focus primarily on the identification of, and solutions to instructional issues encountered in the classroom setting (Bughio, 2015; Burns, 2010; Morales, 2016). Studies along with teaching and learning have also been redefined and redirected to ensure their relevance since the utilization of theoretical and empirical findings has become a vital measure of research culture and productivity.

Doing research studies has been defined in the present study as writing and conducting research work. A research work may refer either to a classroom research where teachers identify and address some classroom issues or to a more general education research that may have an impact in the teaching and learning processes and practices. Admittedly, doing research is a form of professional development (Cain, 2011; McNiff, 2010; Ulla, 2018) which can impact teachers' teaching practices. When teachers do research, they do not only examine and address the problems in their classroom (Burns, 2010; Ulla, 2018), they are also able to share their best teaching practices that are beneficial for both teachers and students (Grima-Farrell, 2017). However, Grima-Farell (2017) posits that the current context and identified needs of teachers should be equally prioritized in doing research. This point can be achieved through a study that goes beyond plain survey and literature review – an exploratory study that unravels the realities on the ground vis-à-vis the pressing concerns among public teacher education faculty-researchers. By looking deeply into the authenticity of their conscious participation, direct involvement, actual observation, and real emotions, this provides a clear and comprehensive grasp of the truth behind their journey towards research.

Consequently, while there is a dearth of empirical studies pertaining to the lived experiences of higher education teachers with regards to writing, presenting, and publishing research articles, previous studies in the field tend to concentrate only on beginning teachers (Gray & Campbel-Evans, 2002) doing action research (Bughio, 2015; Norasmah & Chia, 2016; Ulla et al., 2017; Zhou, 2012) for professional development (Morales, 2016). Moreover, most of these studies in the literature (Biruk, 2013; Morales, 2016; Norashmah & Chia, 2016; Ulla, 2018; Vasquez, 2017; Zhou, 2012) provide a glimpse of some of the challenges that confront faculty members in their

research undertakings. Bulky teaching loads, limited time and resources, lack of technical and methodological expertise, the dearth of training, and disappointments in the research process itself are few among the issues teachers inevitably face as obstacles in doing research. Interestingly, despite the difficult circumstances teachers encounter, they maintain an optimistic view towards research while considering promotion and salary increase as the top sources of their motivation and research training, incentives, lighter teaching timetable as research necessities (Ulla et al., 2017; Ulla, 2018).

In the context of beginning teachers, Gray and Campbel-Evans (2002) investigated the beginning teachers' perceptions of their empowerment and development as researchers. Part of their methodology is for the students to take one 5-unit research course. After graduation, a survey questionnaire was given to ascertain if they can draw the skills that they learned in research. Findings suggest that beginning teachers have not yet overcome the hurdles of being a teacher, moreover as teacher-researchers. The researchers recommended that teacher-training institutions must initiate the concept of teacher as the researcher and must be an on-going process.

Likewise, one study that examined the notions held by 52 English language faculty in a public university in Turkey about doing research and their level of research engagement either in reading or conducting research was conducted by Kutlay (2012). Using triangulation as the principal methodology, the study revealed that teachers rarely read research articles. They held the belief that research does not offer a practical use in the classroom setting and they primarily do not engage in research because of time constraint.

Similarly, Vasquez (2017) determined the advantages, disadvantages, and challenges of teachers engaging in research. Among the advantages, one that is remarkable focuses on using research in improving the teaching condition and the lives of the people in the community. As to disadvantages, the study noted that inadequate knowledge in doing research could lead institutions to implement off beam plans and interventions. However, he found that there are more evident advantages for teachers who do a research study than the disadvantages and challenges. He then suggested that administrators of educational institutions may carry out viable and long-term policies in providing relevant training to faculty and even students to be equipped in doing research.

In the local setting, one study conducted by Ulla et al. (2017) examined the perceptions, motivations, challenges, and needs of secondary school teachers in public and private education institutions in Mindanao, the Philippines with regards to doing research. Using a survey questionnaire and an interview as their research methods, the study revealed that although teachers faced various challenges in doing research, they had a positive perception towards it. They believed that through research, their teaching practice would be improved which could have a positive impact on their students' learning.

Admittedly, while the reviewed studies above have focused on teachers' perceptions (Gray & Campbel-Evans, 2002; Kutlay, 2012; Ulla et al., 2017) and on advantages and disadvantages (Vasquez, 2017) of doing research in different contexts, none of those studies concentrated on the experiences of education faculty researchers with regards to writing, presenting, and publishing research articles. Likewise, none of the studies in the literature included Filipino university teachers in the faculty of education as participants of the study. The reason may be linked to teachers' lack of interest in doing a research study and the practice of doing it is relatively a new concept in the Philippines' higher learning institutions. Thus, the present study attempts to explore more deeply the different themes and meanings of the lived experiences of education faculty members as it seeks to elicit their "essential" and "eidetic insights" relative to writing, presenting, and publishing research. Specifically, it looks into the purpose of engaging in research, beneficial gains, and difficulties encountered. It is in describing the lived experiences that individual researchers' potentials and weaknesses are exposed, and structural challenges are unmasked. It is in a profound understanding of "who" the researchers are that their real situation can be appropriately tackled and proper channeling of research resources becomes possible. Furthermore, since there is a shortage of studies on Filipino teacher education faculty-researchers, the current research is hoped to contribute to existing literature and to guide the TEIs in the Philippines and the ASEAN region as well as in revisiting their policies and praxis geared toward quality research for development. Specifically, this study was built to address the following questions:

1. How do teachers perceive doing, presenting, and publishing research studies in terms of their (a)purpose, (b)beneficial gains
2. What are some of the issues and challenges encountered by the teachers when doing, presenting, and publishing research studies?

Method

Research Design

The phenomenological inquiry was employed to describe the lived experiences of the teacher education researchers vis-a-vis writing, presenting and publishing research. Phenomenology places its emphasis on understanding psycho-social phenomena from the participants' point of view (Welman, Kruger, & Kruger, 2001) highlighting their "lived experiences" (Greene, 1997; Ramirez, 2012). These lived experiences mirror the reality of the situation faced by the researchers' participants in a given study. They represent the choices, perceptions, and influences of the people that may influence others (Given, 2008). Furthermore, phenomenological perspective primarily describes the phenomenon wherein both parties, the researcher and the participant, are involved in a discourse (Groenewald, 2004; Ramirez, 1984).

Research Participants

Twelve (12) tenured faculty members (10 females, 2 males) of a public university in Cagayan Valley Region, Philippines participated in the study. They came from different campuses of the university offering Teacher Education programs. All of them were licensed professional teachers in the Philippines whose ages ranged from 38-63 years old. Ten of them held a doctorate degree in education, while 2 were on the process of completing their academic requirements for their PhDs. Concerning academic rank, six (6) were Associate Professors, three (3) Professors, two (2) Assistant Professors, and an Instructor. Among the participants, two were designated as academic deans of teacher education. The number of participants in the study was determined upon reaching the theoretical or data saturation wherein common themes of the lived experiences had already been identified. Guest, Bunce, and Johnson (2006) claimed that in qualitative studies, data saturation could be reached through a homogenous group composed of about twelve (12) participants.

Furthermore, the identified participants, who are the researchers' colleagues in the university system were purposively selected considering the following criteria: (a) had at least three years of experience spent in research undertakings; (b) had at least one approved study for institutional and/or external funding; (c) had presented at least three papers in academic gatherings (local, national or international); (d) had at least one study published in a journal (local, national or international) and; (e) had undergone at least three training related to research writing. Those identified faculty-researchers were reached through their mobile phone numbers and email addresses to solicit their participation in the study. The prior and informed consent form was personally given informing each participant of the purpose of the study, their voluntary participation and utmost confidentiality in treating the data gathered.

Research Procedures

Initially, the researchers approached the Research and Development unit of the participating institution to peruse the profile of faculty-researchers of teacher education based on the given set of criteria. For the conduct of individual and separate phenomenological interview, the researchers arranged the time and venue considering the availability and convenience of the participants. The average length of the interview was 45 minutes. It was undertaken in the main campus of the participating institution. To facilitate the interview, the researchers prepared a semi-structured interview guide, which consisted of questions pertaining to the lived experiences of the participants (e.g., purpose, beneficial gains, and difficulties encountered) in writing, presenting and publishing research. All the questions prepared for the interview were made sure that they aimed at answering the research questions. Moreover, the questions were checked for consistency and relevance.

The researchers ensured that the setting of the interview was conducive, free from noise and other disturbances. Only one of the researchers conducted the interview to maintain its consistency and credibility. A mobile phone was utilized to record the

responses of the participants complemented by note-taking. The participants were told to speak in a comprehensible language (English, Filipino or mother-tongue) and a story-telling method was adopted to free the participants from any restrictions in narrating their accounts and insights. Moreover, the researchers ensured that all judgment was suspended, putting all presuppositions into a bracket, which Husserl (1982) termed as "epoche."

Data Analysis

The interview data were transcribed, read repeatedly, and subjected to content analysis. Likewise, the phenomenological analysis framework of Moustakas (1994) was adapted to explain further and understand the lived experiences of the teacher education faculty researchers. The researchers treated all statements with equal value and identified the significant elements and constant meanings of their accounts. Themes were developed, clustered, and synthesized from which textual description (first reflection) was conceived. After coding the themes and formulating the textual-structural description based on recurrent insights (second reflection), shared principles, concepts, and norms of the narrated experiences of the study participants were deduced, which resulted in the essential insight (third reflection). Finally, the researchers came up with the "essence" of the phenomenon (lived experiences of teacher education faculty researchers) resulting to the eidetic insight, which Ramirez (2007) posits as the "nucleus of truth."

Results

In presenting the findings, three main themes were formed to describe the lived experiences of the participants. These themes were writing a research article, presenting a research article, and publishing research articles. Likewise, three categories (purpose, beneficial gains, and difficulties encountered) were also developed based on the objectives of this study. Excerpts from the interview transcripts and the initials of the participants were also included to maintain their anonymity in the presentation of the findings.

Writing A Research Article

A. *Purpose.* All twelve participants revealed that they are drawn towards writing research primarily because of their desire to generate knowledge. Consistently, the participants strongly assert their fulfillment in the synthesis of their ideas to generate research that resolves vital concerns within the institution and the outside community. Two of the faculty-participants claimed,

> I allow myself to be involved in research to create new insights into teacher education [R.A.]

> My purpose of writing research is to exhibit mastery of the subject, knowledge creation, and familiarity with current educational research trends [L.C.]

On a pragmatic side, faculty-researchers are moved to write proposals and full papers to enhance their chances to be promoted to higher academic rank. Two associate professors [C.F.] and [B.C.] mentioned:

> I will go straight to my purpose. Research is my ticket for promotion

> My research output becomes a significant document that adds up to my credentials, which are hoped to serve as potential means to level up in my academic position

Known to the participants is the fact that research raises the productivity of the university and allows it to move to a higher level; thus, being responsible and devoted members of the system, they actively fulfill their functions. As fittingly quoted,

> I do research studies to adhere to the targets for the College of Teacher Education accomplishment in support of the realization of the university research agenda [M.U.]

B. *Beneficial Gains*. Unanimously, the participants expressed that doing research is an opportunity for them to gain additional learning. As pointed out by an instructor-participant [J.S.],

> I gain additional learning as I immerse myself into writing a research. It has enriched my knowledge, improved my writing skills, widened my learning perspective, and strengthened my work values

C. *Difficulties Encountered*. The most significant challenge in research writing is the lack of time due to heavy teaching timetable and multiple administrative functions.

> I could not adequately focus on doing research because of the minimum 21-unit load per semester [M.U.]

> I am part of a campus with very few faculty members, so I need to work on multiple designations. As a result, I am left with insufficient time for writing my research [W.G.]

Furthermore, the faculty-participants observed the lack of mentoring among teacher education researchers. Two associate professor-participants said:

> Although I am already seasoned in the field, I could not forego of the current need for a mentor-mentee relationship, which I consider as an enabling mechanism to succeed from conceptualizing to completing a research project [G.P.]

> For me, mentoring further boosts my confidence level as I am assured of being well-guided and technically assisted during the entire writing process. Unfortunately, I do not see this in my campus [B.C.]

Presenting A Research Article

A. *Purpose.* Among the study participants, they see research presentation as a vital platform in disseminating results of their studies. A male professor-participant [A.T.] said,

> My attendance in academic forums and conferences in local, national and even international arena provides a proper avenue to share the salient points of my studies, which are hoped to be utilized in various fields or disciplines in teacher education.

Besides, all the faculty-participants are motivated to establish a professional connection as they present their outputs. As claimed by two of them:

> I consider these academic rendezvous as ideal opportunities to form the linkage with fellow researchers and academicians from various places and agencies and to reinforce personal and institutional association [R.C.]

> Presenting my research facilitates the forging of viable networks with other scholars in my field [R.A.]

B. *Beneficial Gains.* Eight (8) of the participants expressed their joy that through research presentation, they experience personal enrichment by gaining more learning and having the opportunity to travel. As happily noted by two participants:

> I listen to and learn from expert researchers during vibrant engagements in the plenary and parallel sessions of research presentations. Also, my ability to express myself in precise and concise language was enriched and I feel a sense of fulfillment after successfully presenting a paper considering the compliments from the listeners [A.T]

> The privilege I receive from traveling to different parts of the country or overseas that widen my perspectives of places and cultures makes the research presentation experience more interesting. To see different places and to acquire significant encounter with other people demonstrates a form of incentive I happily claim from attending research forums and conferences [J.S.]

C. *Difficulties Encountered.* On a personal level, seven of the participants disclosed that they appear to be very apprehensive during national and international presentations. As revealed by an associate professor-participant [J.D.],

> I carry with me fear to please the co-researchers in an international forum. However, I consider this as an expected emotion, an inner tension, since the

> apprehension usually springs from the presence of specialists and experts along with teacher education studies coming from a range of reputable institutions.

Another challenge that the majority of the participants shared pointed to lack of fund for international presentation and publication. A female participant [G.P.] boldly claimed,

> Lack of financial assistance to support expenses during international travels became a significant concern I had to deal. Sometimes, due to the considerable number of presenters, the small campus where I belong could hardly shoulder all the expenditures. And so, I just went on paying the expenses of my presentation.

Moreover, presenting research outputs at a local level, through the institution's in-house-review, poses a challenge to faculty-participants. Half of the participants shared that they felt the partiality among panel members who are not inclined with qualitative research and a tendency to lean towards quantitative. As mentioned by three of them,

> In context, since most of the invited panel of reviewers is inclined to quantitative research design in which the qualitative research conducted within the realms of teacher education are perceived not to be fully understood nor appreciated by the reviewers [R.A.]

> I felt that my research design in my field was not appreciated by panel members who sat in a presentation [M.M.]

> I see the necessity of having a pool of experts who specialize in qualitative and mixed studies and are capable of significantly scrutinizing papers written with these emerging methodologies [J.S.]

Publishing A Research Article

A. *Purpose.* Faculty-researchers who were able to publish in reputable journals were passionately prompted by their intense desire to participate in contributing knowledge to the broader community and to help in their institution's growth. They desire to propose solutions to the problems faced by certain areas, the university, and the society as a whole. As the participants testified,

> I really try my best to publish research articles to reputable journals so that I can help my university in achieving its targets [R.A.]

> I publish the findings of my research hoping that they could address the specific needs of people and groups. I want to help and to effect change through my publications [A.T.]

> I want to meaningfully be of help to others and circulate my valuable findings especially of those which are geared toward policy formulation and critique to existing structures [G.P.]

B. *Beneficial Gains.* Learning to successfully deal with the complexity of journal formats and carefully mastering the technicalities of publishing a paper are highlights of the faculty-researchers' beneficial gains. As articulated by two of them, [J.S.], and [J.D.],

> Having learned the format of a specific publication and the technicalities of journal writing rewarded my time and effort in patiently dealing with the complex publication demands

> I learned much through the process of publication, most importantly, the value of humility in modestly accepting comments and suggestions that primarily intend to raise my research outputs into the next level.

More to these is the sense of pride and prestige they carry with them because of the admiration they receive from family members, friends, and colleagues.

> My academic reputation in the teacher education field is affirmed, which further allows me to be tapped by my institution's Research and Development Unit for the conduct of studies along with their area of specialization [M.U.]

> My publishing performance serves as inspiration and benchmark to other faculty members, especially the new ones, who aspire for the same achievement [R.C.]

C. *Difficulties Encountered.* One of the major difficulties that the participants experienced is the lack of time needed in complying with the demands of the rigid publication process due to heavy teaching workload. As a male participant remarked,

> The lack of adequate time to fit in comments of the referees because of work stood as a challenge. Integrating all the recommendations while working with a tight timetable made the publication a tough target because I believe that quality paper requires quality time [R.A.]

Additionally, some faculty-researchers met predatory journals and were tempted to have their work published because of their convincing tactics. As observed by one of them,

> Predatory journals are good at convincing researchers to publish in their journal. In the end, some of my papers ended up as preys into these journals instead of having them published into appropriate and credible ones [G.P.]

Lastly, due to the lack of institutional budget, faculty-researchers had to pay on their own publication fees in some national and international refereed journals. A female participant [W.G.] shared,

Since some of my studies did not go through the institution's in-house review, my payments for international publication had to be extracted from my own pockets.

Discussion, Conclusion and Recommendations

The current study looked into the lived experiences, including the purpose, beneficial gains, and difficulties encountered by teachers from the faculty of education in a Philippine higher education institution with regards to writing, presenting, and publishing research articles. Findings of the present study revealed that one common purpose why these academics engaged into writing, presenting, and publishing research articles is to generate and share knowledge. They believed that by writing, presenting, and publishing their research articles, they were not only able to share with others their teaching practices but also solutions to some vital education concerns. Sharing research findings is a crucial factor as it could have an impact on the teaching and learning process not only within their institution but also to the outside community. Although, knowledge sharing in education sector is still an issue considering the fact that a number of schools do not have a clear process on how to develop practices for knowledge sharing among teachers (Rismark & Solvberg, 2011), doing research, presenting, and publishing it is a good platform for sharing and acquiring new knowledge. Since, education institutions are being considered as professional learning communities (Rismark & Solvberg, 2011), as most teachers constantly attend conferences, seminars, and workshops where various issues related to teaching and learning are discussed, knowledge sharing is necessary in order to preserve what has been known and what will be known (Singh, Abidin, Mohd. Zainuddin, 2012). Furthermore, doing research may be thought as one of the most important steps towards preserving knowledge by informing other education scholars, practitioners, and policymaking bodies about the latest trends and issues in education. Thus, conducting research, presenting, and publishing it is admittedly not only a good avenue for teachers to contribute knowledge to the broader community but also a good room where education policies and some guidelines may be crafted in order to address the problems that hinder the teaching and learning process.

Another important finding from the study is the reported benefits that these teachers achieved when writing, presenting, and publishing research studies. They believed that additional learning, professional skills enrichment, and skills in publishing research improvement were some of the benefits they gained in writing, presenting, and publishing research studies. This finding concurred with the result of the studies conducted by Morales (2016), Grima-Farell (2017), Ulla (2018) who noted that doing a research study in general, develops and improves teachers' teaching skills, strategies, and knowledge of the subject matter, and enriches their professional experiences. Indeed, writing a research, presenting it in a conference, and publishing goes beyond enabling teachers to reflect on the current situation of their local school

context and address the education issues they have. It also allows them to connect to other education scholars, practitioners, and education policymakers and share with them the new empirical knowledge gained. Through this, their professional network may not only grow, but it is also a way for them to enhance further their research skills through research collaboration.

Furthermore, it has been revealed in the study that the challenges the faculty-participants had experienced when doing a research are external in nature, which emanate from the rules, policies, and practices that have been habitually formed in the academe. Nevertheless, teacher education researchers' actions in doing research are internally driven. The challenges such as heavy workloads, lack of financial support for presentation and publication, and the experience of somewhat partiality during in-house review presentations cannot totally impede them in their desire to undertake research. In fact, they were willing to go beyond constraints, and this is what Giddens (1984) referred to in his structuration theory as "agency". In this framework of analysis, he notably emphasized the importance of agency in the perpetuation of social practices that constitute institutional structures or in the creation of new structures. Considering this view, it is the exercise of the agency of the researchers that drive them in forming or transforming the research culture of their university. It is also through the exercise of their agency that they could withstand and overcome the constraints and difficulties encountered allowing them to engage meaningfully in research endeavors.

Generally, the present study supports one of the points extracted by Ulla et al., (2017) that promotion and incentives are some significant reasons for faculty to get involved in the research. Further, additional learning and prestige are the perceived beneficial gains which are also observed in other studies (Grima-Farell, 2017; Morales, 2016; Ulla, 2018). Subsequently, research endeavors entail difficulties. The studies which were undertaken by Zhou (2012); Biruk (2013); Norashmah and Chia (2016); Vasquez (2017), and Ulla (2018) presented similar concerns that teachers encounter in their research undertaking. In this study, limited time due to heavy workload and multiple designations, and shortage of financial assistance are among the concerns faculty-researchers confront as challenges in doing research.

Lastly, the teacher education researchers consider personal (additional learning, personal enrichment, and prestige) and professional (knowledge generation and dissemination, career advancement, and linkages) reasons in engaging in research activities. Moreover, they see research as a meaningful experience, which serves as an enterprise for them to grow professionally, to actively participate in the growth and development of their respective institution, and to significantly contribute to the community through knowledge generation and dissemination. Meanwhile, the challenges and difficulties encountered by the faculty-researchers are external in nature. However, the researchers are "internally driven" that is why they are able to engage in research with passion and focus. Their tenacity in writing, presenting and publishing research articles became an inner quest for self-cultivation, which enables

them to withstand whatever difficulties and struggles they encounter. With this, they are formed by the institution and become agents of changing and creating new structures in the learning institutions at the same time. They are motivated to have a higher degree of participation to contribute efficiently to their respective discipline, the institution, and the community. By doing so, they become primary agents in the continuation or even change of the research culture in the higher learning institutions, which is implicative of the degree of consciousness that they manifest. As they went through the journey of doing research, an inward transformation took place. A method of self- cultivation became evident. The researchers simply became aware of their personal limitations and the boundaries of their institutional resources and policies. These concerns did not hinder them; instead, these led them to move beyond challenges. They were inspired as they found meaning in generating and disseminating knowledge not only for them but the possible transformation of the institution and the community.

This phenomenological study on the lived experiences of teacher education researchers when writing, presenting, and publishing research articles reveals that the faculty's purpose and beneficial gains in doing research are attributed to personal and professional reasons. The personal reasons are additional learning, personal enrichment, and prestige whereas the professional reasons include knowledge generation and dissemination, career advancement, and building linkages. Nonetheless, there are some external constraints that they experienced such as lack of time due to heavy workloads and multiple designations, lack of mentoring, and shortage of financial assistance for international presentation and publication. Despite the challenges that they face, admittedly, they are internally driven going beyond the pragmatic benefits or any challenges imposed by the institution as they find value in doing research. They exercise their "agency", which allows them to overcome the different difficulties. This experience stood as a viable platform for them to self-cultivate - to grow inwardly (personally and professionally) as researchers.

Although the present study provides significance to existing literature, specifically on the exploration and documentation of the lived experiences of teacher education faculty researchers when writing, presenting, and publishing research articles considering their purpose, beneficial gains, and difficulties encountered, it also poses limitations. Concerning participants and scope, the data were collected from only 12 participants coming from the same geographical region in the Philippines and may not adequately represent all Filipino public teacher education faculty researchers. Nonetheless, from the findings, it can be viewed that this present study may be considered as a preliminary effort to understanding the potential future of research in the Philippines, where a future framework can be developed to explain some factors that impede research in education, a framework that could be used in teacher training in the Philippines and globally.

Additionally, this study bears valuable implications for TEIs not only in the Philippines but the ASEAN milieu as well. First, administrators may institutionalize

or strengthen any existing mentoring system in research. This scheme is hoped to help junior researchers to embrace the rigors of research because the guidance of senior faculty from conceptualization all the way to completion may guarantee quality output in writing, presenting, and publishing studies. In this manner, collaboration may even be reinforced, which marks an enabling environment for improved research capability. Second, teaching loads may be reasonably decreased to facilitate better productivity in the research process, since the reduction of workload means increased time for research. Third, multiple designations may be reorganized where tasks are fittingly distributed to faculty, with research-connected activities as the priority. Faculty researchers may be given additional assignments related to research as this allows them to stay focused on their studies. Fourth, the institutional budget allocated for international presentation and publication may be raised to sufficiently support faculty researchers financially. Fifth, in-house institutional reviews may be revisited to ensure that both qualitative and quantitative studies are evenly represented and objectively assessed by competent panel members. Finally, future studies along with this area may consider other research designs, broader geographical scope, and bigger sample size including private teacher education faculty- researchers as participants.

References

Ayala, C. O., & Garcia, B. (2013). Research productivity and utilization in higher education institutions in the Calabarzon Region. *MSEUF Research Studies*, *15* (1), 2-15.

Biruk, E. H. (2013). *The practice and challenges in conducting action research: The case of Sululta Secondary School*. (MA Thesis). Retrieved from http://etd.aau.edu.et/bitstream/123456789/4842/1/33.%20Biruk%20Haile.pdf (28 December, 2018).

Bourke, R., & Loveridge, J. (2017). Educational research and why it's important. *New Zealand Education Stud*ies, *52*, 207-210.

Bughio, F.A. (2015). Issues and challenges in doing action research in public sector university, *Journal of Research in Social Sciences*, *3*(1), 86-95.

Cain, T. (2011). Teachers' classroom-based action research. *International Journal of Research & Method in Education, 34*(1), 3-16. https://doi.org/10.1080/1743727X.2011.552307.

Commission on Higher Education (CHED) Memorandum Order No. 50, Series of 2017.

Czarl, A., & Belovecs, M. (2007). Role of research and development in the 21st century. *Revista Informatica Economica* nr, *4*(44), 25-28.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Cambridge: Policy Press

Given, L. (2008). *Lived Experience*. *The SAGE encyclopedia of qualitative research methods*. UK: SAGE Publications Ltd.

Gray, J., & Campbel-Evans, G. (2002). Beginning teachers as teacher-researchers. *Australian Journal of Teacher Education*, 27(1). http://dx.doi.org/10.14221/ajte.2002v27n1.4.

Greene, M. (1997). *The lived world, literature, and education.* In D. Vandenberg (Ed.), phenomenology & education discourse (pp. 169-190). Johannesburg: Heinemann.

Grima-Farell, C. (2017). *What matters in a research to practice cycle? Teachers as researchers*. Singapore: Springer Science Business Media.

Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, *3*(1), 1-26.

Guest, G., Bunce, A., & Johnson, L. (2006).How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 24. DOI: 10.1177/1525822X05279903.

Hottenrott, H., & Thorwarth, S. (2010). Industry funding of university research and scientific productivity. ZEW Discussion Papers, No. 10-105, Mannheim: Zentrum fur Europaische Wirtschaffsforschung (ZEW).

Husserl, E. (1982). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy*. (L. Kersten, Trans.). The Hague: Nijhoff.

Jónasson, J.T. (2011). Problems with the implementation of research-based teacher education reform. Proceedings from *Teacher Education Policy in Europe Conference*. Vienna: A TEPE.

Khan, J. (2015). The role of research and development in economic growth: a review. *Journal of Economics Bibliography*, *2*(3), 128-133. DOI: 10.1453/jeb.v2i3.480.

Kutlay, N. (2013). A survey of English language teachers' views of research. *Procedia - Social and Behavioral Sciences, 70*, 188-206. https://doi.org/10.1016/j.sbspro.2013.01.055

McNiff, J. (2010). *Action research for professional development: Concise advice for new and experienced action researchers*. Dorset, UK: September Books.

Morales, M. P. E. (2016). Participatory action research (PAR) cum action research (AR) in teacher professional development: A literature review. *International Journal of Research in Education and Science, 2*(1), 156-165.

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: SAGE Publication Inc.

Naz, S., & Malik, S. K. (2014). An analysis of college teachers' awareness about conducting action research for effective teaching. *International Journal of Secondary Education, 2*(1), 7-10.

Norasmah, O., & Chia, S. Y. (2016). The challenges of action research implementation in Malaysian schools. *Pertanika Journal of Social Science and Humanities, 24*(1), 43-52.

Ramirez, M. (1984). *Understanding Philippine social realities through the Filipino family:* a *phenomenological approach.* Manila, Philippines: Asian Social Institute Press.

Ramirez, M. (2012*). The development of social thought in the Asian social institute: A phenomenological approach.* Antipolo, Philippines: SynerAide Research and Publication.

Ramirez, M. (2007). *Contribution to national development in research journal*. Manila: Philippines: Asian Social Institute Press.

Regadio, C., & Tullao, T. (2015). The role of government in enhancing research productivity of SUCs and private HEIs in the Philippines. Proceedings from *DLSU Research Congress*. Manila: DLSU Press.

Rismark, M., & Solvberg. A. (2011). Knowledge sharing in schools: a key to developing professional learning communities. *World Journal of Education*, *1*(2), 150-160. doi:10.5430/wje.v1n2p150

Sibiya, P. (2011). The role of research and development in industry and commerce. *International Journal of Scientific and Engineering Research*, 2(8), 1-10.

Singh, W. K. R., Abidin, W. Z., & Mohd. Zainuddin, N. M. (2012). Knowledge sharing framework for teachers of ABC primary school. Proceedings from 2012 IEEE: *Colloquium on Humanities, Science and Engineering (CHUSER)*. Malaysia: IEEE

Ulla, M. B. (2018). Benefits and challenges of doing research: Experiences from Philippine public school teachers. *Issues in Educational Research*, 28(3), 797-810. http://www.iier.org.au/iier28/ulla.pdf

Ulla, M. B., Barrera, K. B., & Acompanado, M. M. (2017). Philippine classroom teachers as researchers: teachers' perceptions, motivations, and challenges. *Australian Journal of Teacher Education, 42*(11). http://dx.doi.org/10.14221/ajte.2017v42n11.4

Vásquez, V. E. L. (2017). Teachers as researchers: Advantages, disadvantages, and challenges for teachers intending to engage in research activities. Retrieved from https://www.academia.edu/719736 (7 November, 2018).

Wa-Mbaleka, S. (2015). Factors leading to limited faculty publications in Philippine higher education institutions. *International Forum, 18*(2), 121-141.

Welman, C., Kruger, S. J., & Kruger, F. (2001). *Research methodology for the business and administrative sciences*. Oxford, England: Oxford University Press.

Zhou, J. (2012). Problems teachers face when doing action research and finding possible solutions. *Chinese Education & Society*, *45*(4), 68-80. DOI: 10.2753/CED1061-1932450405.

Eurasian Journal of Educational Research 81 (2019) 165-188

Eurasian Journal of Educational Research
www.ejer.com.tr

Investigation of Narrative Texts Used by Fourth Grade Primary School Students*

Sultan Selen KULA[1], Ilkay ASKIN TEKKOL[2]

ARTICLE INFO

Article History:
Received: 28 Jun. 2017
Received in revised form: 09 Mar. 2018
Accepted: 16 May 2019
DOI: 10.14689/ejer.2019.81.10

Keywords
Primary school Turkish course curriculum, narrative text, text elements, written expression, evaluation

ABSTRACT

Purpose: The aim of the research was to determine the use of narrative text elements by the 4th grade primary school students in their narrative texts in compliance with the designated written expression evaluation criteria.

Method: In this qualitative research, document analysis was used as the data collection method. The texts of twenty-three pupils attending the 4th grade of a state school affiliated to the Ministry of National Education were examined through easily accessible case sampling method among the purposeful sampling methods.

Findings: According to the results of the research, the majority of the students achieved the proper behaviour to leave a gap between the words and lines, paid attention to the page layout, etc., but they did not comply with the rule of first line indent in a paragraph. It was found that students were not having any trouble while deciding on a title for their texts, and these titles conformed to the texts, and that the texts were also organized in a logical order. Participants were found to have problems in dividing the subject into paragraphs and providing meaningful transitions between these paragraphs. Finally, it was observed that the majority of students made mistakes in the use of punctuation marks in compliance with the writing rules in the texts they wrote.

Implications for Research and Practice: The results of data indicate that the students have insufficient knowledge of writing narrative. This is evident from the schematic structure and linguistic features of the texts. Students need a lot of writing guidance from the teacher. In addition, an appropriate teaching techniques and approaches should be implemented.

© 2019 Ani Publishing Ltd. All rights reserved

*This study was partly presented at the International Congress of Eurasian Social Sciences in Alanya, 06-08 April 2017

[1] Corresponding Author, Ahi Evran University, TURKEY, E-mail: selenyazgunoglu@windowslive.com, ORCID: https://orcid.org/0000-0002-1614-3431

[2] Kastamonu University, TURKEY, E-mail: ilkayaskin@hotmail.com, ORCID: : https://orcid.org/0000-0003-0964-1528

Introduction

Writing is the expression of feelings, thoughts, events, wishes and dreams in written form. Writing education is an action closely related to the development of cognitive skills, accommodating all the achievements of language skills, and it is intertwined with the mental processes of the individual (Bagci, 2013; Coskun, 2013; Gunes, 2014). Thus, it contributes to the development of many skills of an individual. Through writing, students improve their ability to think more broadly, organize their knowledge, use the language, and enrich their knowledge. It is also a process that contributes to the transfer, implementation and concretization of students' thoughts. In this context, writing education is of great importance in terms of the mental development as well as the language development of the student (Gunes, 2014). Through the texts written by the pupils, it is also intended to develop creative skills, which is one of the most important indicators of mental development (Ministry of National Education [MoNE], 2015).

Written expression, which is so important, must be realized in accordance with its rules (Bagci, 2013). The Primary School Turkish lesson curriculum is aimed at improving writing skills of the students as well as their mental skills that are related to their writing skills (Ministry of National Education, 2015, 2017). For this purpose, the way to benefit from different types of writing has been adopted in the curriculum. Of these writing types, writing type used in the study is free writing. Topics are decided by the student himself/herself in free writing. The aim of free writing is to improve writing skills of students as well as to develop their writing habits. In the teaching-learning process, memories, letters, poems, stories, daily events, etc., can be used as free-writing activities. (Gunes, 2014; Iseri, 2008). It is possible to say that free-writing is one of the appropriate writing styles for observing creativity of students. For this purpose, students were asked to write free-writing about subjects they choose. In their free-writing, students are asked to tap into their emotions, thoughts and imagination to bring out their creativeness, then freely express them on paper (Oral, 2012). Surely, acquiring the writing skill requires a long process. In order to be able to achieve this skill, it is deemed necessary to make various and encouraging writing activities with students, to evaluate activities that are done, and to remove or correct deficiencies and mistakes. (Bagci, 2013; Iseri, 2008).

Different types of texts are used within writing activities. In the Primary School Turkish Language Teaching Curriculum organized in 2015, texts are divided into three groups as informative texts, narrative texts and poetry (Ministry of National Education, 2015). In 2017, the Primary School Turkish Language Teaching Curriculum was renewed. It is observed that same text types (narrative texts and poetry) appear in the Primary School 4th Year Turkish Language Teaching Curriculum which will be implemented in 2018-2019 academic year (MoNE, 2017). In type of narrative text used in this study, there is an event being focused in the text, and everything revolves around this event (Temizkan, 2009). In narrative expression, the narrator presents the sequence of events related to each other with a certain point of view at a certain time, space and fictional order. Even if they are small, there are events, characters/heroes

experiencing these events, and time and space in narrative texts (Coskun, 2013). In these texts, there is a fictional world created by the author's imagination (Sidekli, 2014).

In this sense, it is possible to say that creativity is the foreground in narrative texts. Creativity is defined as generating ideas about hypotheses, testing these hypotheses, modifying them, and evaluating their results. The act of creating a new or original product lies within the concept of creativity. What truly matters here is an individual's ability to exceed his/her own capacity (Torrance, 1977). When aspects of creativity are examined, following concepts are encountered; fluency, flexibility, originality, detailing and re-describing (Torrance ve Goff, 1989 as cited in Oncu, 2003). In this context, it is aimed to determine creativity of written expression of students. In this research, dimensions of creativity listed above are reflected in the written texts of the students with regard to; students' showing original ideas in their stories, being able to handle events in detail, and expressing their thoughts in a connected and fluid way within the scope of the Turkish lesson. The Primary School Turkish Language Teaching Curriculum, which was organized in 2015 and renewed in 2017, emphasizes the importance of developing the world of emotions, thoughts and imaginations by considering creativity of the students (MoNE, 2015, 2017).

There are many different ways used to evaluate students' writings. In this context, it is deemed useful to refer to evaluation of written expression studies. It is only possible for writing studies to achieve desired purposes by evaluating the activities. In written expression, it is also measured that the student acquires many different dimensions besides the ability to comply with grammar rules. For this, it is necessary to prepare an evaluation key that covers different topics such as content, organization, linguistic knowledge, narrative structure, creativity, and writing and punctuation rules (Cetin, 2002). It is suggested to use graded scoring keys (rubric) to evaluate written expressions of the students in the 4th grade Turkish lesson curriculum of primary school. Rubric is a tool that contains criteria developed for scoring any work (MoNE, 2006). It is a graded scoring system used to determine the level of competence and performance of a pupil in carrying out a task or field oriented information (Brookhart, 1999). Two types of rubrics are mentioned, namely holistic and analytic. Holistic rubric is a scoring key for assessing the work in a sense that allows the whole of the study to be evaluated in general. The analytic rubrik is a scoring key that allows the student texts to be divided into sub-skill areas such as form, grammar, punctuation, and spelling. (Gocer, 2013; MoNE, 2006). The formation of analytic rubrics begins with determination of what features should be found in a good writing (Nitko, 2004). Rubric development phases are stated as follows (MoNE, 2006):

- Determining the purpose for which your scale will be developed
- Clearly defining what to evaluate
- Deciding on the adequacy levels
- Establishing the key for behaviors, products, or skills that are trying to be measured in the study

- Writing criteria for behavior, product or proficiency level of each skill
- Preparing and implementing the draft of the scale to be used

Aim of the Research

The necessity of measurement and evaluation studies to determine to what extent following skills have improved is emphasized in primary school Turkish lesson curriculum; following the rules of writing and using punctuation marks correctly, writing events according to the order of occurrence, paying attention to page order, writing appropriate title for the text, and choosing correct words appropriate for content and context. It is also emphasized that establishment of relations of visual texts is important. In addition to this, the Turkish curriculum aims to provide students with creative thinking and development of their imagination world (MEB, 2015). When literature is examined, it is seen that there are studies that examine texts written by students, in terms of language and expression, (Alkan, 2007; Cecen, 2011; Kilic, 2012), according to the rules of writing and punctuation (Arı, 2008; Arıcı & Ungan, 2008; Kilic, 2012; Kula, Budak & Tasdemir, 2015; Yasul, 2014), and the place of narrative text items (Kilic, 2012; Yilmaz, 2008). Unlike the previous studies, in this study, narrative texts written by the students are examined as a whole in terms of form features, language and expression features, application situations of spelling and punctuation rules, creativity, and use of narrative text items.

In this context, the aim of the research is to determine the usage of narrative text items in compliance with the criteria of written expression evaluation, and creativity situations in narrative texts written by primary school 4th grade students. The sub-problems of working towards this goal are determined as follows:

1. How do the 4th grade primary school students use formal features of written expressions?
2. How do the 4th grade primary school students use language and expression features in their written expressions?
3. How do the 4th grade primary school students apply writing and punctuation rules in their written expressions?
4. What are the creativity levels in the written expressions of 4th grade primary school students ?
5. What is the level of usage of narrative text elements in the written expressions of 4th grade primary school students?

Method

Research Design

This study, which examines the use of narrative text elements in narrative texts written by 4th grade primary school students and observes compliance with determined written expression evaluation criteria, is designed within a qualitative research model. The qualitative research approach provides deep and detailed insight into the issues being examined and allows gathering elaborate information (Patton, 2014).

Research Sample

In the creation of the study group, twenty-nine students were chosen who were in the 4th grade of a public primary school affiliated to the Ministry of National Education in the city center of Tarsus in the province of Mersin, and easily accessible case sampling method was adopted from the purposeful sampling methods. The fact that the study group is composed of 4th grade students in a primary school is because writing activities gain importance in the third and 4th grades as stated in the Primary School Turkish Language Teaching Curriculum (MoNE, 2015, 2017). Examining the achievements in the programs developed in 2015 and 2017, it is seen that the achievements related to narrative writing are especially included in the 4th grade (MoNE, 2015, 2017). 4th grade is also the last step of primary school level in Turkey. It is expected that 4th grade students should have the most competent level of writing skill among the primary school levels.

Since six of the texts written by these students did not qualify as narrative texts, they were not included in the analysis. Thus, a total of twenty-three texts were examined. Qualitative surveys allow for an in-depth examination of a topic on relatively small samples, which are usually chosen purposefully (Patton, 2014).

Research Instruments and Procedures

The data of the study were obtained from the stories written by students in a free writing activity. Free writing is accepted as a form of creative writing. The basis of free writing is to encourage students to write without worrying about making mistakes. Students write freely, and writing becomes a pleasant experience for them (Byrne, 1991).

The study was carried out by the classroom teacher informed by researchers in order not to affect the natural processes of the students in the classroom environment. "Narrative Text Evaluation Rubric (NTER)", which was created by the researchers for this purpose, was used to systematically evaluate the narrative texts written by the students. In order to provide coverage of rubric's scope, during the preparation of NTER, the related field literature was scanned primarily. After that, written expression evaluation categories were established. These categories were determined as; "*Form, language and expression, spelling and punctuation, creativity and narrative text elements*". The sub-dimensions of each categorie were formed by examining the written expression gains in the 2015 primary school 4th grade Turkish lesson curriculum.

While NTER's categories and sub-dimensions belonging to these categories were being determined, the written expression evaluation rubrics in the field (Alkan, 2007; Corden, 2007; Coskun, 2005; Griffin & Anh, 2005; Ozturk, 2007; Peters, 1990; Ramey, 2007) were utilized. According to the categories in the NTER, use of form, language and expression, writing and punctuation, creativity, use of narrative text elements in the texts written by the students were determined in three ratings as*"full presence, partial presence and no presence"*.

Validity and Reliability

In order to ensure the reliability of the rubric, narrative texts of the students were scored separately by the researchers and the consistency between the scores was calculated using the intercoder reliability suggested by Miles and Huberman (1994) [Reliability = (Opinion Alliance) / (Opinion Alliance + Opinion Separation)]. The percentage of intercoder reliability calculated with the formula is 92%. Over 70% intercoder reliability means that your scale is reliable (Miles and Huberman, 1994). Therefore, it can be said that NTER is a reliable scale. The prepared form was examined by a field specialist and a language expert, and necessary arrangements were made.

Data Analysis

The qualitative data obtained from the texts written by the students were analyzed through document review. Analyses were supported with direct citations from the texts written by the participants. Document review involves the process of using and analyzing written materials as data (Merriam, 2013; Yıldırım & Şimşek, 2008,). In the document review process these stages are followed; accessing the documents, checking the authenticity, understanding the documents, analyzing the data, and using them. In the analysis of the data, the participants were coded as k1, k2, k3, ... k24. In the document review, the researcher should establish a system for coding and cataloging issues related to the evaluation of the documents (Merriam, 2013).

Results

Results Related to the First Sub-problem

Results related to the formal features used by 4th grade primary school students in their written expressions are shown in Table 1:

Table 1

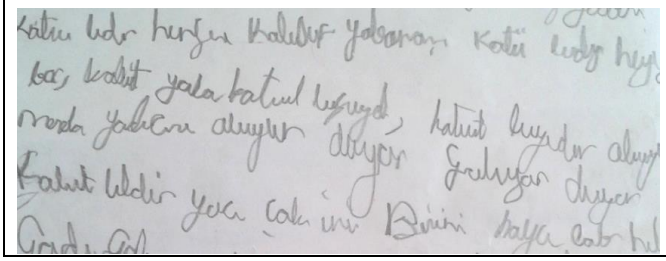
Formal Features Used in Written Expression

Formal Features	***Participants***						
	This feature has never been used.	***n***	***This feature is partially used but there are places that are not used or used incorrectly.***	***n***	***This feature has been used entirely and accurately in the entire text.***	***n***	***TOTAL***
Using proper spacing between sentences and lines	-	-	k4, k7, k17	3	k1, k2, k3, k5, k6, k8, k9, k10, k11, k12, k13, k14, k15, k16, k18, k19, k20, k21, k22, k23	20	23
Attention to page layout and cleanliness	-	-	k1, k7, k16, k17	4	k2, k3, k4, k5, k6, k8, k9, k10, k11, k12, k13, k14, k15, k18, k19, k20, k21, k22, k23	19	23
Using proper, legible writing	k4	1	k8, k12, k16, k17	4	k1, k2, k3, k5, k6, k7, k9, k10, k11, k13,k14, k15, k18, k19, k20, k21, k22, k23	18	23
Using first line indent for each paragraph	k1, k2, k4, k5, k6, k7, k8, k10, k11, k13, k16, k21, k22	13	k3, k12, k15, k17, k18, k19	6	k9, k14, k20, k23	4	23
Proper spacing between words	-	-	k1, k7	2	k2, k3, k4, k5, k6, k8, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23,	21	23

As seen in Table 1, *"Using proper spacing between sentences and lines"* feature is applied properly by twenty of the participants while the other three applied this feature partially.

In the texts, four of the participants were inelaborate in terms of *"Attention to page layout and cleanliness"* and applied this feature partially while nineteen participants cared about the page layout and cleanliness in the whole text.

Type 1

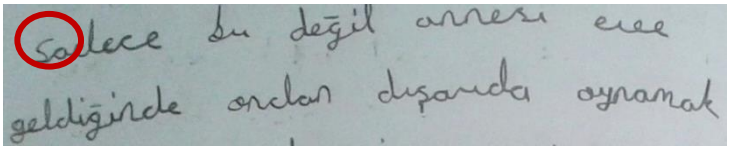


One of the participants did not apply *"Using proper, legible writing"* feature at all- (k4)

While four of the participants partially applied proper, legible writing, eighteen participants performed well and applied this feature in the whole text.

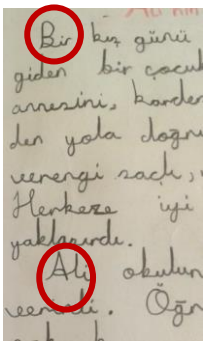
Regarding the formal features used in written expressions, the most misused feature was "Using first line indent for each paragraph". Thirteen of the participants did not use indents according to the other lines in their written text. While six participants partially used this feature, four participants used it in an exact and correct manner. Text samples for this feature are as follows:

Type 2



(k9)

Type 3



Twenty-one participants used "*Proper spacing between words*" feature fully and correctly, while two of the participants were partially correct using the feature.

(k14)

Results Related to the Second Sub-problem

Results related to the language and narrative characteristics used by the 4th grade primary school students are shown in Table 2:

Table 2

Language and Expression Characteristics Used in Written Expresssion

Language	**Participants**						
Expression Features	*This feature has never been used.*	*n*	*This feature is partially used but there are places that are not used or used incorrectly.*	*n*	*This feature has been used entirely and accurately in the entire text.*	*n*	*TOTAL*
Title writing	-	-	-	-	k1, k2, k3, k4, k5, k6, k7, k8, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23	23	23
Selecting the title in relation to the text	-	-	k4, k12	2	k1, k2, k3, k5, k6, k7, k8, k9, k10, k11, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23	21	23
Expression of the desired subject in whole, with logical consistency, broken down into paragraphs	k1, k2, k4, k5, k6, k7, k16, k21, k22	9	k8, k10, k11, k12, k13, k15, k17, k18, k19	9	k3, k9, k14, k20, k23	5	23
Providing meaningful transitions between paragraphs	k1, k2, k4, k5, k6, k7, k16	7	k8, k10, k11, k12, k18, k21, k22	7	k3, k9, k13, k14, k15, k17, k19, k20, k23	9	23
Writing meaningful and regular sentences	k4	1	k1, k8	2	k2, k3, k5, k6, k7, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23	20	23
Not mentioning irrelevant thoughts	k4	1	k7, k14, k22	3	k1, k2, k3, k5, k6, k8, k9, k10, k11, k12, k13, k15, k16, k17, k18, k19, k20, k21, k23	19	23
Establishing the flow of the text in a logical order	k4	1	k2, k7, k17, k22	4	k1, k3, k5, k6, k8, k9, k10, k11, k12, k13, k14, k15, k16, k18, k19, k20, k21, k23	18	23
Making a proper entry to the subject of the text	-	-	k4, k8	2	k1, k2, k3, k5, k6, k7, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23	21	23
Proper use of the words and their meanings	-	-	k4	1	k1, k2, k3, k5, k6, k7, k8, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k22, k23	22	23

As seen in Table 2, all of the participants (n=23) wrote a title for their texts. This feature was used properly by all participants.

For "*Selecting the title in relation to the text"* feature, two of the participants' selected title was not strictly related to the text. Twenty-one participants identified appropriate titles for the text.

"*Expression of the desired subject in whole, with logical consistency, broken down into paragraphs*" feature were not applied at all by nine of the participants. Nine other participants partially applied this feature or made some mistakes. Five of the participants used this feature in a correct and proper manner.

"*Providing meaningful transitions between paragraphs"* feature was not used by seven participants. Seven others used it partially and nine of them applied it correctly. In the light of these results, it can be said that the participants in general have some deficiencies in dividing the text into meaningful paragraphs and providing meaningful transitions between them.

In terms of *"Writing meaningful and regular sentences",* one participant did not apply the feature in the text, two of them applied it partially and twenty-one participants applied this feature properly.

"*Not mentioning irrelevant thoughts"* feature is not applied by one of the participants, three of them applied it partially and nineteen participants applied it properly.

One of the participants did not apply "*Establishing the flow of the text in a logical order*" feature at all, four participants applied it partially, and eighteen participants applied it correctly and properly.

"*Making a proper entry to the subject of the text"* feature was applied correctly and properly by the most of the participants (n=21). However, two of the participants applied this only partially.

"*Proper use of the words and their meanings*" feature was applied correctly by almost all participants (n=22); however, one of the participants applied this only partially.

Results Related to the Third Sub-problem

The level of application of the writing and punctuation rules in written expressions of 4th grade primary school students is shown in Table 3:

Table 3

Spelling and Punctuation Features Used in Written Expression

Spelling And Punctuation Features	*Participants*						*TOTAL*
	This feature has never been used.	*n*	*This feature is partially used but there are places that are not used or used incorrectly.*	*n*	*This feature has been used entirely and accurately in the entire text.*	*n*	
Using punctuation in the right place and correctly	-	-	k1, k4, k5, k6, k7, k10, k11, k14, k17, k19, k21, k22	12	k2, k3, k8, k9, k12, k13, k15, k16, k18, k20, k23	11	23
Complying with the writing rules	-	-	k1, k2, k3, k4, k5, k6, k7, k8, k10, k11, k12, k14, k16, k17, k19, k20, k21, k22, k23	19	k9, k13, k15, k18	4	23

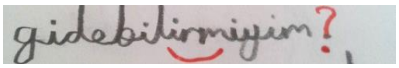
As seen in Table 3, *"Using punctuation in the right place and correctly"* feature was applied in a partly correct manner by twelve of the participants while eleven participants applied it properly and correctly. In line with the results, It is possible to say that half of the participants (n = 12) could not use punctuation marks correctly and in the right places. It was observed that punctuation marks such as colons, speech lines, periods, commas, apostrophes, and question marks were not used from time to time in places where they should be used. The following examples from the participants' texts can be shown as support to this finding:

Type 4



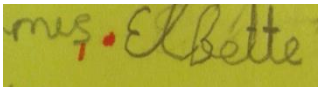
Apostrophe not used where it should be used- (k19)

Type 5



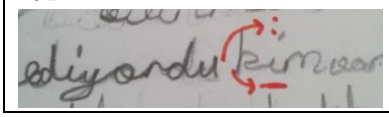
Question mark not used where it should be used- (k14)

Type 6



Period not used where it should be used- (k10)

Type 7

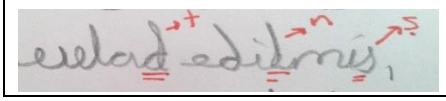


Colon and speech line not used where they should be used- (k5)

"Complying with the writing rules" feature was not applied correctly by most of the participants (n=19). Four of the participants, however, applied this feature properly and correctly. It was seen that from time to time participants ignored writing rules like

starting the sentence with capital letters, writing the initials of proper nouns in capital letters, writing "-de, -da" suffixes separately where necessary, and writing the question suffixes separately. In addition, it was seen that they made mistakes in the spelling of words. Examples of misuse of the writing rules can be shown as follows:

Type 8



Writing words incorrectly - (k2)

Results Related to the Fourth Sub-problem

The creativity levels in the written expressions of the 4th grade primary school students are shown in Table 4:

Table 4

Creativity Features Used in Written Expression

Creativity Features	*Participants*						*TOTAL*
	This feature has never been used.	*n*	*This feature is partially used but there are places that are not used or used incorrectly.*	*n*	*This feature has been used entirely and accurately in the entire text.*	*n*	
Providing original ideas	-	-	k4, k7, k22	3	k1, k2, k3, k5, k6, k8, k9, k10, k11, k12, k13, k14, k15, k16, k17, k18, k19, k20, k21, k23	20	23
Providing strong and exciting feelings	k4	1	k1, k2, k7, k8, k10, k11, k18, k19, k21	9	k3, k5, k6, k9, k12, k13, k14, k15, k16, k17, k20, k22, k23	13	23
Providing surprising events or surprising results	k4, k7, k10	3	k1, k2, k8, k11, k13, k14, k15, k16, k18, k19, k20, k21, k22	13	k3, k5, k6, k9, k12, k17, k23	7	23
Giving the thoughts in the story fluently	k4	1	k1, k2, k7, k14, k17, k22	6	k3, k5, k6, k8, k9, k10, k11, k12, k13, k15, k16, k18, k19, k20, k21, k23	16	23
Giving the thoughts involved in the story in an interrelated manner	k4	1	k2, k7, k14	3	k1, k3, k5, k6, k8, k9, k10, k11, k12, k13, k15, k16, k17, k18, k19, k20, k21, k22, k23	19	23

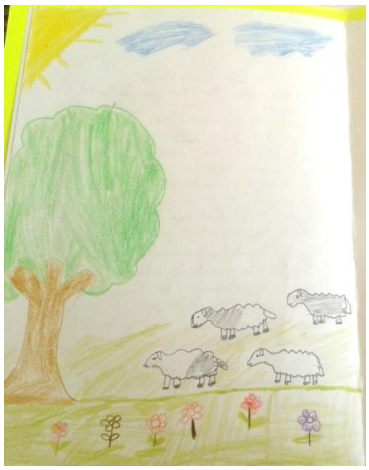
As seen in Table 4, *"Providing original ideas"* feature was applied partially by three participants while twenty participants applied it in the whole text. The students also

supported the original ideas in their texts with their own drawings. Examples from works of participants related to this finding are as follows:

Type 9



k(22)



k(12)

"*Providing strong and exciting feelings*" feature was not applied at all by one of the participants, partially applied by nine of them, and thirteen participants applied this feature in the whole text.

"*Providing surprising events or surprising results*" feature was not applied by three of the participants, thirteen participants applied this partially, and seven of the participants applied this feature in the whole text.

"*Giving the thoughts in the story fluently*" feature was not applied by one of the participants, six of them applied the feature partially while sixteen participants applied this feature in a proper and correct manner.

"*Giving the thoughts involved in the story in an interrelated manner*" feature was not applied by one of the participants, three of them applied this partially, and nineteen participants applied this feature in the whole text.

Results Related to the Fifth Sub-problem

The level of use of narrative text elements in written expressions of 4th grade primary school students was determined as shown in Table 5.

Table 5

Narrative Text Elements Used in Written Expression

	Participants						
Narrative Text Elements	*This feature has never been used.*	*n*	*This feature is partially used but there are places that are not used or used incorrectly.*	*n*	*This feature has been used entirely and accurately in the entire text.*	*n*	*TOTAL*
Providing the main character in the story	k4	1	k1, k7, k8, k11, k17, k18	6	k2, k3, k5, k6, k9, k10, k12, k13, k14, k15, k16, k19, k20, k21, k22, k23	16	23
Providing space in the story	k2, k4, k10	3	k1, k7, k8, k11, k14, k15, k18, k19, k20, k21, k22, k23	12	k3, k5, k6, k9, k12, k13, k16, k17	8	23
Indication of the time in the story	k4	1	k1, k2, k7, k8, k11, k13, k15, k16, k18, k19, k20, k21, k23	13	k3, k5, k6, k9, k10, k12, k14, k17, k22	9	23
Providing an initiator event that allows the main character to form a goal in the story	k4, k7	2	k8, k13, k14, k22	4	k1, k2, k3, k5, k6, k9, k10, k11, k12, k15, k16, k17, k18, k19, k20, k21, k23	17	23
Specifying the purpose of the main character	k2, k4	2	k7, k8, k13, k14, k16, k22	6	k1, k3, k5, k6, k9, k10, k11, k12, k15, k17, k18, k19, k20, k21, k23	15	23

Table 5 Continue...

	Participants						
Narrative Text Elements	*This feature has never been used.*	*n*	*This feature is partially used but there are places that are not used or used incorrectly.*	*n*	*This feature has been used entirely and accurately in the entire text.*	*n*	*TOTAL*
Indicating the initiative of the main character to accomplish the goal in the story	k2, k4	2	k7, k8, k13, k22	4	k1, k3, k5, k6, k9, k10, k11, k12, k14, k15, k16, k17, k18, k19, k20, k21, k23	17	23
Achieving a result at the end of events in the story	k4, k13	2	k7, k14, k22	3	k1, k2, k3, k5, k6, k8, k9, k10, k11, k12, k15, k16, k17, k18, k19, k20, k21, k23	18	23
Providing reactions of the main character	k4	1	k2, k5, k7, k8, k10, k18, k19, k21	8	k1, k3, k6, k9, k11, k12, k13, k14, k15, k16, k17, k20, k22, k23	14	23

As seen in Table 5, "*Providing the main character in the story*" element was not used at all by one of the participants, six of them placed a main character but did not go into detail or provide explanation and description. Sixteen participants placed the main character, gave details related to the character, and also added extra descriptions.

"*Placing space in the story*" element was not applied by three participants, twelve of them placed a concept of space but did not provide any details or description. Eight participants, however, placed the space into the story and provided details and descriptions related to the space in the story.

"*Indication of the time in the story*" element was not applied by one of the participants, thirteen of them indicated the time in the story but did not provide any details or description. Nine participants, however, indicated the time in the story and provided details and descriptions related to it.

"*Provideing an initiator event that allows the main character to form a goal in the story*" element was not applied by two of the participants, four participants placed an initiator event to form the main character's goal but did not provide details or description. Seventeen participants succesfully placed an initiator event and provided details and descriptions of it. "*Specifying the purpose of the main character*" element was

not applied by two of the participants, six of them specified a purpose but did not provide any detail or description. Fifteen participants, however, specified the purpose of the main character and supported it with details and descriptions.

"*Indicating the initiative of the main character to accomplish the goal in the story*" element was not applied by two of the participants, four of them indicated the initiative but did not provide details or description. Seventeen participants, however, indicated the initiative of the main character and provided details and descriptions related to it.

"*Achieving a result at the end of events in the story*" element was not applied by two of the participants, three participants provided a result but did not go into detail or describe it. Eighteen participants provided a result along with various details and descriptions related to it.

"*Providing reactions of the main character*" element was not applied at all by one of the participants, eight of them provided reactions of the main character without details, explanations or descriptions. Fourteen participants, on the other hand, succesfully provided reactions of the main character and supported it with details and explanations.

Discussion, Conclusion and Recommendations

In this study, it was tried to determine the use of narrative text elements in compliance with written expression evaluation criteria, and the creativity in the narrative texts written by the 4th grade primary school students.

The first sub-problem of the research was to determine the form characteristics of the written expressions of the 4th grade primary school students. According to the results of this sub-problem, majority of the participants were found to be appropriately applying the rules of proper spacing between sentences and lines, caring for page layout and cleanliness, using proper, legible writing and proper spacing between words. However, it was found that most of the students did not comply with the rule of using first line indents for each paragraph. First line indent usually remains as a too abstract concept for students especially when it is given as a direct rule to first-year primary school students. For this reason, as a result of the fact that the subject is not fully learned, students may be faced with a situation in which they show deficient behaviour, or never show the behavior at all. This result is also consistent with similar studies in the field (Alkan, 2007).

The second sub-problem of the research was to determine the language and expression characteristics of the written expressions of the 4th grade primary school students. In this context, all participants wrote titles to their texts and most of these were related to the text. Furthermore, students wrote meaningful and regular sentences, did not give any irrelevant thoughts in the text, had set up the flow of the text in a logical order, made an appropriate entry in the text, and used the words appropriately and in compliance with their meanings.

Very few of the participants wrote the desired text by dividing it into paragraphs and provided meaningful transitions between these paragraphs. Similarly, in other studies conducted on the examination of narrative texts of students, it is found that there is a lack of placing paragraphs appropriately and ensuring the integrity between them. (Cecen, 2011; Kilic, 2012).

The third sub-problem of the research was to determine the application of spelling and punctuation rules in written expressions of the 4th grade primary school students. Texts written by the majority of participants had errors in the use of punctuation marks and in compliance with the writing rules. Also in literature, it has been revealed that students have problems in this regard (Ari, 2008; Arici & Ungan, 2008; Kilic, 2012; Kula, Budak & Tasdemir, 2015; Yasul, 2014). It can be considered that students have made mistakes in this regard because as the rules are given directly, they can not be concretized, and the subject can not be fully learned. It is known that teachers use methods of direct expression and question-answer in teaching punctuation marks (Kurudayioglu & Dolek, 2018). It is considered that there is a need for methods to make students active in the teaching process as well as lectures and question-answer methods. The possibility of success in the courses where the student actively participates is increasing.

The fourth sub-problem of the research was to determine the creativity of written expressions of the 4th grade primary school students. In this context, it was examined how the students wrote about the original ideas, strong and exciting feelings, surprising events and conclusions in the narrative texts written by them. It was also examined how students expressed their thoughts in a fluent and interrelated manner. Majority of the participants provided original ideas, strong and exciting feelings, and expressed their thoughts in a fluent and interrelated manner in the narrative texts they wrote. In addition, they were creative by drawing their original visuals that told their stories. It is known that visual images improve students' motivation in writing, creativity and imagination (Listyani, 2019). These results, along with providing clues about the creativity of the students, reveal that there is a lack of astonishing facts or surprising results in the narrative texts of the students.

The fifth sub-problem of the research was to determine the use of narrative text items in the written expressions of the 4th grade primary school students. A large number of students included the main character and used details, and made explanations or descriptions about the main character in narrative texts they wrote. Similarly, in the narrative texts they wrote, students provided an initiator event, which gave the main character a purpose, an introduction to this purpose and the main character's initiative to achieve this goal. Moreover, the majority of the participants reached a conclusion at the end of the events in the story, and they included reaction of the main character in the narrative texts they wrote. However, a small number of students provided details regarding space and time elements in the story in the narrative texts they wrote. According to these results, it can be said that students have not had much problems in using narrative text elements. However, it can be stated that it is particularly troublesome for students to provide time elements. This can be considered due to the fact that the concept of time remains abstract for students.

Similarly, when literature is examined, it is seen that the level of providing time factor in the narrative texts of the students is low (Kilic, 2012; Yılmaz, 2008). It is recommended that teachers give verbal, written, corrective and body language feedback to improve students' writing skills (Goer & Senturk, 2019).

It is important to provide students with reinforcements while teaching the formal features of texts, especially with an emphasis on the rule of first line indents of paragraphs and giving various examples/non-exemplary situations. In regards for the students to divide the text in paragraphs, make meaningful transitions between them, and include time and space elements in the story; teaching the basic principles of composition, preparing an outline/plan, and arranging the texts according to it is thought to be beneficial for students' writing texts in meaningful paragraphs and including the elements of text. It is also very important that the grammatical rules that are abstract for students are not to be presented directly in the first three grades of primary schools; instead, these rules should be shadowed out and the correct use of the language should be taught. In the 4th grade, however, grammar rules are being taught. Reinforcing these rules by giving examples and non-examplary situations is tought to contribute to the students' learning of spelling and punctuation in a correct and complete manner.

This study was conducted with 4th grade primary school students and with a single class. Narrative texts of students who are studying at different grade levels can be examined and compared. In this way, tips on the root of the deficiencies of students regarding the narrative texts can be obtained. Furthermore, interviews with teachers and students may also be conducted in order to reveal students' use of narrative text elements and written expression skills.

References

Alkan, Z. N. (2007). *İlköğretim beşinci sınıf öğrencilerinin yazılı anlatım hataları* [5th grade students' writing mistakes in Turkish public schools]. (Master thesis). Eskişehir Osmangazi University, Social Sciences Institute, Eskişehir.

Ari, G. (2008). *Öğrencilerin hikâye edici metinlerinin çözümleyici puanlama yönergesine göre değerlendirilmesi (6. ve 7. sınıf örneği)* [Assessment of students? narrative texts by analytic rubric (grade 6 and 7)]. (PhD thesis). Marmara University Social Sciences Institute, İstanbul.

Arici, A. F., & Ungan, S. (2008). İlköğretim ikinci kademe öğrencilerinin yazılı anlatım çalışmalarının bazı yönlerden değerlendirilmesi [An evaluation of secondary school students' writing mistakes with respect to some points]. *Dumlupınar University Journal of Social Sciences,* 20, 317-328.

Bagci, H. (2013). Yazılı anlatım ve unsurları [Written expression and elements]. M. Ozbay (Eds.), *Yazma eğitimi* [Writing education]. Ankara: Pegem Academy Publishing.

Brookhart, S. M. (1999). *The art and science of classroom assessment: The missing part of pedagogy.* ASHE-ERIC Higher Education Report. 27(1), Washington, DC: The George Wahington University, Graduate School of Education and Human Development.

Byrne, D. (1991). *Teaching writing skills.* Hong Kong: Longman.

Corden, R. (2007). Developing reading-writing connections: The impact of explicit instruction of literary devices on the quality of children's narrative writing. *Journal of Research in Childhood Education,* 21(3), 269-289.

Coskun, E. (2005). *İlköğretim öğrencilerinin öyküleyici anlatımlarında bağdaşıklık, tutarlılık ve metin elementleri*. [Cohesion, coherence and text elements in narrative texts of primary school students]. (PhD thesis). Gazi University, Educational Sciences Institute, Ankara.

Coskun, E. (2013). Yazma eğitimi [Writing education]. A. Kırkkılıç ve H. Akyol (Eds.), *İlköğretimde Türkçe oğretimi* [Teaching Turkish in primary schools]. Ankara: Pegem Academy Publishing.

Cecen, M. A. (2011). Yedinci sınıf öğrencilerinin öyküleyici yazılarında tutarlılık [Consistency in narrative writings of seventh grade students]. *Turkey Social Researches Journal,* Ağustos, 1-20.

Cetin, B. (2002). *Kompozisyon tipi sınavlarda kompozisyonun biçimsel özelliklerinden kestirilen puanların anahtarla ve genel izlenimle puanlanmasından elde edilen puanlarla ilişkisi.* [The relation between scores predicted from structural features of essay and scores based on scoring key and overall impression, in essay type examination]. *(*Master thesis). Hacettepe University, Social Sciences Institute, Ankara.

Gocer, A. (2013). Yazma çalışmalarını değerlendirme [Evaluation of writing activities]. M. Ozbay (Ed.), *Yazma eğitimi* [Writing education]. Ankara: Pegem Academy Publishing.

Gocer, A., & Senturk, R. (2019). Types of feedback for the development of writing skills in turkish education. *The Journal of Social Sciences Institute,* 43, 123-149.

Griffin, P., & Anh, P. N. (2005). Assessment of creative writing in Vietnamese primary education. *Asia Pacific Education Review,* 6(1), 72-86.

Gunes, F. (2014). *Türkçe öğretimi: yaklaşımlar ve modeller* [Teaching Turkish: approaches and models]. Ankara: Pegem Academy Publishing.

Iseri, K. (2008). Yazma eğitimi [Writing education]. A. Tazebay & S. Çelenk (Eds.), *Türkçe öğretimi* [Teaching Turkish]. Ankara: Maya Academy Publishing.

Kilic, B. (2012). *İlköğretim yedinci sınıf öğrencilerinin yazdıkları öyküleyici metinler üzerine bir inceleme*.[A study on primary education seventh grade students icon narrative texts]. (Master thesis). Necmettin Erbakan University, Educational Sciences Institute, Konya.

Kula, S., Budak, Y., & Tasdemir, M. (2015). İlkokul 4. sınıf öğrencilerinin noktalama kurallarını öğrenme düzeyi. [The fourth grade students' learning level of the punctuation rules]. *International Journal Of Eurasia Social Sciences, 6*(18), 58-80.

Kurudayioglu, M., & Dolek, O. (2018). Teacher views on teaching punctuation marks. *Mersin University Journal of the Faculty of Education,* 14(1), 372-385.

Listyani. (2019). The Use of a visual ımage to promote narrative writing ability and creativity. *Eurasian Journal of Educational Research,* 80(2019), 193-224.

Merriam, S. B. (2013). *Nitel araştırma desen ve uygulama için bir rehber* [A guide to qualitative research design and practice]. (Ed. Turan, S.). Ankara: Nobel Publishing.

Miles, M.B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook.* California: Sage Publications.

Ministry of National Education [MNE]. (2006). İlköğretim 4. Sınıf Türkçe Dersi öğretmen kılavuz kitabı [*Primary School 4th Grade Turkish Course Teacher's Book].* İstanbul: Star Media Publishing.

Ministry of National Education. (2015). Türkçe Dersi Öğretim Programı (1-8. Sınıflar) [*Curriculum of Turkish course (Grades 1-8)].* Ankara: MNE.

Ministry of National Education. (2017). Türkçe Dersi Öğretim Programı (1-8. Sınıflar) [*Curriculum of Turkish course (Grades 1-8)].* Ankara: MNE.

Nitko, A. J. (2004). *Educational assessment of students.* New Jersey: Pearson Education Inc.

Oncu, T. (2003). Torrance yaratıcı düşünme testleri-şekil testi aracılığıyla 12-14 yaşları arasındaki çocukların yaratıcılık düzeylerinin yaş ve cinsiyete göre karşılaştırılması. [Comparison of creativity levels of children ages 12-14 by age and sex by means of Torrance Creative Thinking Tests - Shape Test]. *Ankara University Journal of the Faculty of Language and History*, 43 (1), 221-237.

Ozturk, E. (2007). *İlköğretim beşinci sınıf öğrencilerinin yaratıcı yazma becerilerinin değerlendirilmesi*. [Evaluating the creative writing skills of the 5th grades of primary education]. (PhD thesis). Gazi University, Educational Sciences Institute, Ankara.

Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri* [Qualitative research and evaluation methods]. (Ed. Butun, M. & Demir, S. B.). Ankara: Pegem Academy Publishing.

Peters, C. (1990). Applause, applause: Evaluating creative responses and projects. Paper presented at the *Annual Meeting of the National Council of Teachers of English* (80th, Atlanta, GA).

Ramey, L. (2007). Creative writing and critical theory. S. Earnshaw (Ed.), *In The handbook of creative writing*. Edinburgh: Edinburgh University Press.

Sidekli, S. (2014). Metin öğretimi [Teachin text]. M. Yılmaz (Ed.), *Türkçe öğretimi* [Teaching Turkish]. Ankara: Pegem Academy Publishing.

Temizkan, M. (2009). *Metin türlerine göre okuma eğitimi [Reading education according to text types].* Ankara: Nobel Publishing.

Torrance, E. P. (1977). *Creativity in the classroom*. Washington: National Education Association

Yasul, A. F. (2014). *İlkokul 4. sınıf öğrencilerinin öyküleyici metin yazma becerilerinin değerlendirilmesi (Muş ili merkez ilçesi örneği).* [The evaluation of narrative text writing skills of 4th grade primary school students (The example of Muş province)]. Master Thesis, İnönü University, Educational Sciences Institute, Malatya.

Yildirim, A., & Simsek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in the social sciences]. Ankara: Seçkin Publishing.

Yilmaz, S. K. (2008). *İlköğretim altıncı sınıf öğrencilerinin öyküleyici metin yazma becerileri.* [Primary school 6th class students' skill level of writing a narrative texts]. *(*Master thesis). Gazi University, Educational Sciences Institute, Ankara.

İlkokul 4. Sınıf Öğrencilerinin Kullandıkları Öyküleyici Metinlerin İncelenmesi

Atıf:

Kula, S. S., & Askin-Tekkol, I. (2019). Investigation of narrative texts used by fourth grade primary school students. *Eurasian Journal of Educational Research*, 81, 165-188, DOI: 10.14689/ejer.2019.81.10

Özet

Problem Durumu: İlkokul 4. sınıf Türkçe dersi öğretim programında yazma becerisinin geliştirilmesiyle; öğrencilerin duygu, düşünce, hayal, tasarı ve izlenimleri ile bir konudaki görüşlerini dilin imkânlarından yararlanarak ve yazılı anlatım kurallarına uygun şekilde anlatmaları, yazmayı kendini ifade etmede bir alışkanlığa dönüştürmeleri amaçlanmaktadır. Öğrencilerin düş güçleri ile yazma becerilerini birlikte kullanarak öyküleyici metinler yazmaları da programda desteklenmektedir. Programda, yazım kurallarına uyma ve noktalama işaretlerini doğru kullanma, anlam bütünlüğü içinde olayları oluş sırasına göre yazma, sayfa düzenine dikkat etme, metne uygun başlık yazma, içeriğe ve bağlama uygun doğru kelimeler seçme, oluşturduğu metinlere uygun çizim, grafik ve görsel kullanma becerilerinin ne ölçüde geliştiğini belirlemeye yönelik ölçme ve değerlendirme çalışmalarının yapılmasının gerekliliği üzerinde durulmaktadır.

Araştırmanın Amacı: İlkokul 4. sınıf öğrencilerinin yazdıkları öyküleyici metinlerde, öğrencilerin öyküleyici metin öğelerini kullanma, belirlenen yazılı anlatım değerlendirme ölçütlerine uyma ve yaratıcılık durumlarını belirlemektir. Bu amaç doğrultusunda çalışmanın alt problemleri şu şekilde belirlenmiştir:

1. İlkokul 4. sınıf öğrencilerinin yazılı anlatımlarında biçim özellikleri nasıldır?

2. İlkokul 4. sınıf öğrencilerinin yazılı anlatımlarında dil ve anlatım özellikleri nasıldır?

3. İlkokul 4. sınıf öğrencilerinin yazılı anlatımlarında yazım ve noktalama kurallarını uygulama durumları nasıldır?

4. İlkokul 4. sınıf öğrencilerinin yazılı anlatımlarındaki yaratıcılıkları nasıldır?

5. İlkokul 4. sınıf öğrencilerinin yazılı anlatımlarında öyküleyici metin öğelerini kullanma durumları nasıldır?

Araştırmanın Yöntemi: Çalışma, nitel araştırma modeliyle tasarlanmıştır. Nitel araştırma yaklaşımı, araştırılan konuları derin ve ayrıntılı olarak inceleme fırsatı sunarak detaylı bilgi elde etmeye olanak tanımaktadır. Çalışma grubunun oluşturulmasında amaçlı örnekleme yöntemlerinden kolay ulaşılabilir durum örneklemesi yolu benimsenmiş ve Mersin İli Tarsus İlçe merkezde bulunan, sosyo-ekonomik bakımdan orta düzeyde yer alan, Milli Eğitim Bakanlığına bağlı bir devlet okulunun dördüncü sınıfına devam etmekte olan yirmi dokuz öğrenci ile çalışılmıştır. Bu öğrencilerden altısının yazdıkları metinler öyküleyici metin olma özelliği göstermediğinden analize dâhil edilmeyerek toplam yirmi üç metin incelenmiştir.

Birinci Alt Probleme İlişkin Bulgular: "Cümleler ve satırlar arasında uygun boşluklar bırakılması"nda katılımcıların üçü yazdıkları metinlerde kısmen bu özelliğe dikkat ederken, yirmi kişi cümleler ve satırlar arasında uygun boşluklar bırakmışlardır.

"Sayfa düzenine ve temizliğe dikkat edilmesi" hususunda zaman zaman özensiz davranarak bu özelliği kısmen kullanırken, on dokuz katılımcı yazılı metinlerinde bu özelliğe tam olarak özen göstermişlerdir.

"Düzgün ve okunaklı bir yazı kullanılması"nda katılımcılardan bir tanesi bu özelliği hiç kullanmazken dört katılımcı bu özelliği kısmen kullanırken, on sekiz katılımcı yazdıkları metnin tamamında düzgün ve okunaklı bir yazı kullanmıştır. Yazılı anlatımlarda kullanılan biçim özelliklerine bakıldığında en çok hatalı kullanılan özellik "Paragraflara diğer satırlara göre biraz daha içeriden başlanılması" olarak dikkat çekmektedir.

İkinci Alt Probleme İlişkin Bulgular: "Başlığın metnin konusuyla ilişkili olarak seçilmesi" özelliği için katılımcılardan iki tanesinin seçtiği başlık metnin konusuyla tam olarak ilişkili değildir. "Anlatılmak istenilen konu, bütünlük içinde, mantıksal tutarlılıkla paragraflara bölünerek açıklanması"nda katılımcıların dokuz tanesi bu özelliği hiç kullanmamış, dokuz katılımcı bu özelliği kısmen kullanmış beş katılımcı ise bu özelliği tam ve doğru olarak kullanmıştır. "Paragraflar arasında anlamlı geçişler sağlanması"

özelliğini yedi katılımcı hiç kullanmazken, yedi katılımcı kısmen kullanmış, dokuz katılımcı ise bu özelliği tam ve doğru olarak kullanmıştır. "Anlamlı ve kurallı cümleler yazılması" özelliği katılımcıların biri tarafından hiç kullanılamazken, iki katılımcı tarafından kısmen kullanılmış ve yirmi katılımcı tarafından tam ve doğru olarak kullanılmıştır. "Konu dışı düşüncelere yer verilmemesi" özelliği katılımcılardan biri tarafından hiç kullanılmazken, üç katılımcı tarafından kısmen kullanılmış ve on dokuz katılımcı tarafından tam ve doğru olarak kullanılmıştır. "Anlatılan metnin akışının mantıksal bir sıra ile kurulması" özelliği katılımcılardan biri tarafından hiç kullanılmazken, dört katılımcı tarafından kısmen kullanılmış ve on sekiz katılımcı tarafından tam ve doğru olarak kullanılmıştır. "Metinde konuya uygun bir giriş yapılması" katılımcıların çoğunluğu (n=21) tarafından tam ve doğru olarak kullanılmıştır. "Kelimelerin yerinde ve anlamlarına uygun kullanılması" özelliği hemen hemen tüm katılımcılar (n=22) tarafından doğru kullanılmıştır.

Üçüncü Alt Probleme İlişkin Bulgular: "Noktalama işaretlerinin doğru ve yerinde kullanılması" özelliğini on iki katılımcı kısmen doğru kullanabilirken, on bir katılımcı bu özelliği tam ve doğru olarak kullanmıştır. İki nokta, konuşma çizgisi, nokta, virgül, kesme işareti ve soru işaretlerinin kullanılması gereken yerlerde zaman zaman kullanılmadığı gözlenmiştir. "Yazım kurallarına uyulması" özelliğini katılımcılardan büyük çoğunluğu (n=19) tam olarak doğru kullanamazken, dört katılımcı metinlerinin tamamında yazım kurallarına tam ve doğru olarak uymuşlardır. Katılımcıların cümleye büyük harfle başlamayı, özel isimlerin baş harfini büyük harfle yazmayı, ayrı yazılması gereken –de, -da eklerini ayrı yazmayı, soru eklerini ayrı yazmayı zaman zaman gözden kaçırdıkları görülmüştür. Bunun yanı sıra kelime yazımlarında hatalar yaptıkları gözlenmiştir.

Dördüncü Alt Probleme İlişkin Bulgular: "Orijinal fikirlere yer verilmesi", "Güçlü ve heyecanlı duygulara yer verilmesi", "Şaşırtıcı olaylara veya şaşırtıcı sonuçlara yer verilmesi",

"Öyküde yer alan düşüncelerin akıcı bir şekilde verilmesi", "Öyküde yer alan düşüncelerin birbiriyle bağlantılı bir şekilde verilmesi" özellikleri katılımcılar tarafından kısmen kullanılmıştır.

Beşinci Alt Probleme İlişkin Bulgular: "Öyküde ana karaktere yer verilmesi", "Öyküde mekâna yer verilmesi", "Öyküde geçen zamanın belirtilmesi", "Öyküde ana karakterin bir amaç oluşturmasını sağlayan başlatıcı bir olay verilmesi", "Ana karakterin amacının belirtilmesi", "Öyküde ana karakterin, amacını gerçekleştirmek için yaptığı girişimin belirtilmesi", "Öyküde geçen olaylar sonunda bir sonuca ulaşılması", "Ana karakterin tepkilerine yer verilmesi" özelliklerinin çoğunlukla katılımcılar tarafından kullanıldığı görülmüştür.

Araştırmanın Sonuçları ve Önerileri: Bu çalışma ilkokul 4. Sınıf öğrencileri ile ve tek bir sınıf ile yürütülmüştür. Farklı sınıf düzeylerinde öğrenim görmekte olan öğrencilerin öyküleyici metinleri incelenerek, karşılaştırmalar yapılabilir. Bu sayede öğrencilerin öyküleyici metinlere ilişkin eksikliklerinin nereden kaynaklanıyor olabileceğine dair ipuçları elde edilebilir. Ayrıca, öğrencilerin öyküleyici metin öğelerini kullanma ve

yazılı anlatım becerilerinin ortaya konması amacıyla öğretmenlerle ve öğrencilerle görüşmeler de yürütülebilir.

Anahtar Kelimeler: İlkokul Türkçe dersi öğretim programı, öyküleyici metin, metin öğeleri, yazılı anlatım, değerlendirme.

Submission Checklist

Makale Sunumu Kontrol Çizelgesi

ÖNEMLİ: EJER Dergisi makale yazarlarından yayın ücreti talep etmez. Derginin yayın dilinin İngilizce olması sebebiyle dergi kurullarınca yayın kararı verilen makaleler için alan ve dil uzmanlarına proofreading (son okuma) yaptırılır. Dolayısıyla sadece proofreading (son okuma) ücreti alınır.

IMPORTANT: EJER does not charge Article Publication Fee and does not ask authors to make payment. Since the publication language of the EJER is in English, any paper is accepted by the editorial board after the review process is completed sent for the proof reading. Therefore, only the proofreading fee will be charged.

** Aday makalenin değerlendirilmeye hazır olduğunu aşağıdakilerin her biri ile karşılaştırarak kontrol ediniz.*

* Indicate that this submission is ready to be considered by this journal by checking off the following.

Manuscript Agreement: *I / We hereby accept that, the article after being accepted for publication in the Eurasian Journal of Educational Research (EJER), the author (s) as, all rights related to the article has been transferred to the ANI PUBLISHING under the laws of the, "copyright transfer".* Makale Eurasian Journal of Educational Research (EJER) dergisinde basıma kabul edildikten sonra, yazar(lar) olarak; makale ile ilgili tüm hakları, "Telif Hakkı Devir" yasaları uyarınca, ANI YAYINCILIK'A devrettiğimizi kabul ediyoruz.		
Manuscript Submission: *I have prepared my manuscript based on the criteria listed below and I accept all submission conditions.* Makalemi aşağıda belirtilen kriterlere göre hazırladım ve makale gönderme koşullarının tamamını kabul ediyorum. *Indicate that this submission is ready to be considered by this journal by checking off the following.* Aday makalenin değerlendirilmeye hazır olduğunu aşağıdakilerin her biri ile karşılaştırarak kontrol ediniz.		
1	☒	*The manuscript is a report of original educational research or a discussion article on research topics in education.* Aday makale, eğitim alanıyla doğrudan ilgili bir araştırma ya da tartışma yazısıdır.
2	☒	*The submission has not been previously published, nor sent to another journal for consideration.* Sunulan çalışma daha önce herhangi bir yerde yayınlanmamıştır, başka bir derginin incelemesinde değildir.

3	☒	*Within a year, I have not submitted a manuscript to EJER as an author or co-author for review other than this manuscript.* Son bir yıl içerisinde, yazarı olduğum ya da yazarları arasında bulunduğum başka bir çalışma değerlendirilmek üzere EJER'e sunulmamıştır.
4	☒	*The author agrees to pay the amount to be notified to the proofreading of the article and 10 loose copies if the article is accepted.* Yazar, aday makalenin kabul edilmesi halinde makalenin İngilizce son okuma (proofreading) ile 10 serbest kopya gönderimi için kendisine bildirilecek tutarı ödemeyi kabul eder.
5	☒	*The entire manuscript is written in English.* Aday makalenin bütününün yazım dili İngilizcedir.
6	☒	*The original manuscript is typed on A4 paper. The margins are 2.5 cm.* Aday makale kenar boşlukları 2.5 cm olan A4 kağıda yazılmıştır.
7	☒	*Each paragraph is longer than two sentences.* Her bir paragraf en az üç cümle içermektedir.
8	☒	*The entire manuscript - including quotations, references, author note, content footnotes, figure captions, and all parts of tables – is double-spaced.* Aday makalenin tamamı, alıntılar, kaynakça, şekil ve tablo başlıkları da dâhil olmak üzere çift aralıklı yazılmıştır.
9	☒	*The submission file is in Microsoft Word document file format. 12-point Times New Roman font is used in entire manuscript.* Aday makale, tamamında 12 punto Times New Roman yazı tipi kullanılarak hazırlanmış bir Microsoft Word dokümanıdır.
10	☒	*The text has had the authors' names removed. If an author is cited, "Author" and year are used in the bibliography and footnotes, instead of author's name, paper title, etc. The author's name has also been removed from the attached document.* **Aday makale, yazar adları çıkarılarak sunulmuştur**. Eğer yazar kendisine atıfta bulunduysa yazarın adına ve çalışma başlığına yer verilmeyecek, sadece "Author" yazılarak çalışmanın yılı belirtilecektir. Eklenen dosyada yazar adı belirtilmeyecektir.
11	☒	*The title is 10 to 12 words.* Aday makalenin başlığı 10-12 sözcük uzunluğundadır.

12	☒	*The maximum length of the manuscript-including structured abstract in English, tables, and references is 6000 words. This limitation does not include Turkish extended abstract (750-1000 words) which is placed after the references section.* Aday makale, İngilizce abstract, tablolar ve kaynakça vb. tüm ögeler dâhil olmak üzere en fazla 6000 sözcüktür. Kaynakça'nın ardından yer verilen uzun Türkçe özet (750-1000 sözcük) bu sayıya dâhil değildir.
13	☒	*The article is preceded by **English Structured Abstract of not more than 250 words** and not less than 200 using five required headings:* **Purpose***: State the problem in field. Then explain the purpose of the study.* **Method:** *Specify the research design, sample, and research instrument and data analysis in brief.* **Findings***: Highlight the significant, interesting or surprising results*. **Implications for Research and Practice**. (These headings may need some adaptation in the case of discussion papers: *Background, Purpose of Study, Sources of Evidence, Main Argument, and Conclusions)*. More information available from http://www.tandf.co.uk/journals/authors/rereabstracts.asp Yapılandırılmış İngilizce öz 200-250 sözcük uzunluğunda olup, aday makalenin başında yer almakta ve **Purpose** *(İlk önce alanda karşılaşılan sorunu belirtelim. Daha sonra araştırmanın amacını bir cümle ile veriniz),* **Method** *(Araştırma deseni, örneklem, very taoplama aracı ve verilerin analizinini kısaca açıklayınız),* **Findings** *(En önemli ve çarpıcı araştırma bulgularını verelim)* **Implications for Research and Practice,** (*Uygulama ve ileriye dönük araştırmalar için olası çıkarımlarınız)* başlıklarını içermektedir. Bu başlıklar tartışma yazıları için: *Çalışmanın Temeli, Çalışmanın Amacı, Kanıt Kaynakları, Ana Tartışma ve Sonuçlar* şeklinde olabilir. Daha fazla bilgi için; http://www.tandf.co.uk/journals/authors/rereabstracts.asp adresine başvurunuz.
14	☒	*Following the structured abstract in English four to six keywords are included. They should **represent** the content of your manuscript and **be specific** to your field or sub-field. Avoid using keywords form the title of the paper.* Yapılandırılmış İngilizce özden sonra 4-6 anahtar sözcüğe yer verilmiştir. Anahtar kelimeler çalışmanızı temsil etmeli ve kendi alanınıza ya da alt alanlara özgü olmalıdır. **Makale adındaki kavramları anahtar kelime olarak seçmekten kaçınınız**.
15	☒	*An extended (750-1000 words) Turkish structured abstract is placed following the "References" section using five required headings: Problem Statement, Purpose of Study, Methods, Findings and Results, and Conclusions and Recommendations*. (These headings may need some adaptation in the case of discussion papers: *Background, Purpose of Study, Sources of Evidence, Main Argument, and Conclusions)*. More information available from http://www.tandf.co.uk/journals/authors/rereabstracts.asp Kaynakça'dan sonra 750-1000 sözcükten oluşan Türkçe yapılandırılmış öze yer verilmiştir. Türkçe yapılandırılmış öz *Problem Durumu, Araştırmanın Amacı, Araştırmanın Yöntemi, Araştırmanın Bulguları, Araştırmanın Sonuçları ve Önerileri* başlıklarını içermektedir. Bu başlıklar tartışma yazıları için: *Çalışmanın Temeli, Çalışmanın Amacı, Kanıt Kaynakları, Ana Tartışma ve Sonuçlar* şeklinde olabilir. Daha fazla bilgi için; http://www.tandf.co.uk/journals/authors /rereabstracts.asp

16	☒	*Following the Turkish structured abstract, four to six keywords are included.* Uzun Türkçe özetten sonra 4-6 anahtar sözcüğe yer verilmelidir.
17	☒	*References are not cited in the structured abstracts in English and in Turkish.* İngilizce abstract ve Türkçe öz içerisinde atıfta bulunulmamıştır.
18	☒	*The format of headings, tables, figures, citations, references, and other details follow the **APA 6 style** as described in the Publication Manual of the American Psychological Association, 6th edition, available from http://www.apa.org* Aday makalenin başlıkları, tabloları, şekilleri, atıfları, kaynakçası ve diğer özellikleri tamamen APA altıncı baskıda belirtildiği şekildedir.
19	☒	*All illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end.* Aday makalenin şekilleri ve tabloları metin içerisinde bulunmaları gereken uygun yerlere yerleştirilmiştir. Makale sonunda sunulmamıştır.
20	☒	Citations in the text of the document include the author's surname, the year of publication, and, when there is a specific quote from a source used, a page number where the quote is located in the text. **Example:** Nothing seemed so certain as the results of the early studies (Tatt, 2001, p. 445). It was precisely this level of apparent certainty, however, which led to a number of subsequent challenges to the techniques used to process the data (Jones & Wayne, 2002, p. 879). There were a number of fairly obvious flaws in the data: consistencies and regularities that seemed most irregular, upon close scrutiny (Aarns, 2003; West, 2003, p. 457). With studies by two authors, always include both author names: (Anderson & Bjorn, 2003) As Anderson and Bjorn (2003) illustrated in their recent study As recently as 2003, a prominent study (Anderson & Bjorn) illustrated When a study has 3, 4, or 5 authors, include the names of all the authors the first time the work is cited: (Anderson, Myers, Wilkes, & Matthews, 2003) For all subsequent citations of this work, use "et al.": (Anderson et al., 2003) When a work has 6 or more authors, use et al.: (Bell et al., 2003) For unsigned works, include the title, enclosed in parentheses. Put quotation marks for short work titles, and italicize the titles of reports, books, and other significant works: ("Recent Developments," 2004) (Dictionary of Tetrathalocigistic Diseases, 2004) Metin içindeki atıfları üstte verilen örneklere uygundur.
21	☒	Three levels of headings are used: Level 1, Level 3 and Level 4. The headings are formatted as follows: Centered Uppercase and Lowercase Heading (Level 1)

		Flush Left, Italicized, Uppercase and Lowercase Side Heading (Level 3) *Indented, italicized, lowercase paragraph heading ending with a period.* Start writing after the period (Level 4). Aday makale içerisinde üç farklı düzey başlık kullanılmıştır. Düzey 1, Düzey 2, Düzey 3. Başlıklar bu düzeylere uygun olarak aşağıdaki şekilde biçimlendirilmiştir: Ortalı ve Her Sözcüğün İlk Harfi Büyük Yazılmış Başlık (Düzey 1) *Tam Sola Dayalı, İtalik ve Her Sözcüğün İlk Harfi Büyük Yazılmış Başlık* (Düzey 3) *İçeriden, italik, tamamı küçük harflerle yazılmış ve nokta ile bitten başlık.* Noktadan sonra normal metin yazımına devam edilmeli (Düzey 4).
22	☒	References are listed in alphabetical order. Each listed reference is cited in text, and each text citation is listed in the References. Basic formats are as follows: Haag, L., & Stern, E. (2003). In search of the benefits of learning Latin. *Journal of Educational Psychology, 95,* 174–178. Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley. Johnson, D. W., & Johnson, R. T. (1990). Cooperative learning and achievement. In S. Sharan (Ed.), *Cooperative learning: Theory and research* (pp. 173–202). New York: Praeger. **Turkish References Only:** Çınkır, Ş., & Çetin, S. K. (2010). Öğretmenlerin okullarda mesleki çalışma ilişkileri hakkındaki görüşleri [Teachers' opinions about the professional working relationships in schools]. *Kuram ve Uygulamada Eğitim Yönetimi, 1 6*(3), 353-371. **Article in an Internet-only journal/Periodical, database** Fredrickson, B. L. (2000, March 7). Cultivating positive emotions to optimize health and well being. *Prevention & Treatment, 3,* Article 0001a. Retrieved November 20, 2000, from http://journals.apa.org/prevention/volume3/pre0030001a.html More information is available from: http://citationonline.net/CitationHelp/csg04-manuscripts-apa.htm#references Kaynakça'nın yazımı üstte verilen örneklere uygundur.
23	☒	***Order of the main parts in the manuscript is as follows:*** *Main title in English (max. 12 words)* *Structured abstract (min. 200- max.250 words length)* *Keywords (in English, min. four-max. six)* *Main text* *References* *Main Title in Turkish (max. 12 words*

		Extended structured abstract (min.750-max.1000 words length in Turkish) *Keywords (in Turkish, min. four-max. six)* Aday makaleyi oluşturan ana öğeler aşağıdaki düzendedir: İngilizce Ana Başlık (En fazla 12 sözcük) Yapılandırılmış İngilizce Abstract (En az 200, en fazla 250 sözcük) Anahtar Sözcükler (İngilizce, en az dört, en fazla altı) Ana Metin Kaynakça Türkçe Ana Başlık (En fazla 12 sözcük) Yapılandırılmış Türkçe Öz (En az 750, en fazla 1000 sözcük) Anahtar Sözcükler (Türkçe, en az dört, en fazla altı)
24	☒	**Structure of the Manuscript should be as follows:** Manuscript Title **English Abstract (200-250 words) Sub-headings:** *Purpose:…* *Purpose of Study:…* *Method:….* *Findings:….* *Implications for Research and Parctice:…* *Keywords:…* **Introduction Method (sub-headings):** *Research Design* *Research Sample* ♦*Research Instrument and Procedure* *Data Analysis* **Results, Discussion and Conclusion, References** **Extended Turkish Abstract (750-1000 words) Sub-headings:** *Problem Durumu:…*

♦ Reliability and the validity of the research instrument used or adapted in the work must be provided, and explained in detail.

		Araştırmanın Amacı:… *Araştırmanın Yöntemi:…* *Araştırmanın Bulguları:…* *Araştırmanın Sonuçları ve Önerileri:…*
25	☒	***EJER editor reserves the right to reject manuscripts and not to publish it that do not comply fully with the EJER Manuscript Submission Guidelines.***

SUBSCRIPTION/*ABONELİK*

Annually / *Yıllık*

***Individual** / Kişi Aboneliği .....: 200 TL*
***Institution** / Kurum Aboneliği .....: 600 TL*
***Abroad** / Yurtdışı Aboneliği:.....: 300 $*
***Student** / Öğrenci Aboneliği:.....: 150 TL*

For single issue / *Tek sayılar için*

***Individual** / Kişiler .....: 40 TL*
***Institution** / Kurumlar .....: 140 TL*

Payment / *Ödeme*

Dollar ($) Account / *Dolar Hesabı*
Account Information for Payment
Account Name: Anı Yay. Rek. Dan. Eğit. Ltd. Şti.
Bank Name: Is Bank
IBAN Number: TR82 0006 4000 0024 2141 3300 29
SWIFT CODE: ISBKTRISXXX
TURKEY

Turkish Lira (TL) Account / *Türk Lirası Hesabı*
Banka: İşbank
Hesap Adı: Anı Yay. Rek. Dan. Eğit. Ltd. Şti.
Şube Kodu: 4214
Hesap No: 962561
IBAN: TR14 0006 4000 0014 2140 9625 61