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Behice Varışoğlu

Full Length Research Paper

Determination of perception of community of inquiry

Yusuf Ziya Olpak*, Mustafa Yağci and Uğur Başarmak

Faculty of Education, Ahi Evran University, 40100 Kirşehir, Turkey.

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Community of inquiry (Col) is the conceptual framework which describes critical prerequisite factors for deep and meaningful learning in online learning environments. Based on the literature concerning the Col framework, it can be observed that studies in which three factors in the model (cognitive, social and teaching presence) were investigated have been increased as scales to determine perception towards Col have been developed, which thus made it possible to work on relatively larger sampling groups effectively and to increase generalizability of findings. In this context, within the scope of the present research, by investigating different data collection tools developed by different researchers, studies aiming to determine Col perception by means of a scale were investigated in detail. Research results reveals that Col survey instrument developed by Arbaugh et al. (2008) has been widely accepted in the literature; and that the instrument has been adapted to number of languages such as Turkish, Korean and Arabic; and employed in diverse disciplines such as education, business and health care.

Key words: Community of inquiry, cognitive presence, social presence, teaching presence.

INTRODUCTION

Community of inquiry (Col) framework suggested by Garrison et al. (2000) in their study for deep and meaningful learning in online learning environments is a conceptual framework which describes critical prerequisite elements for successful education outcome in higher education. According to the review of the relevant literature, it was observed that the precursor study conducted by Garrison et al. (2000) has attracted the attention of number of scholars who especially work on distance education and this has been cited 2,975 times according to Google Scholar data (as of January 1st, 2016). Since its introduction, the Col framework has been verified structurally by various studies (Akyol and Garrison, 2008; Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004, 2010; Kozan and Richardson,

2014; Yu and Richardson, 2015); and it is claimed that learning could be enhanced by developing interaction among these three basic elements of cognitive, social and teaching presence (Garrison et al., 2000).

According to the review of studies investigating the Col framework, number of studies examining all three elements included in the model has been increased, while numbers of survey instruments allowing determination of Col perception have been increased. Thus, it has been possible to work with larger sampling groups more effectively and to increase generalizability of findings. In this context, along the next sections of the study, in addition to information regarding the Col framework and its basic components, studies on determination of degree of Col perception by means of

*Corresponding author. E-mail: yusuf@ahievran.edu.tr.

Table 1. Community of inquiry coding template.

Elements	Categories	Indicators (examples only)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emotions
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration
Teaching Presence	Instructional Management	Defining and initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

various scales were presented; and finally, result and suggestions were reported based on investigated researches.

COMMUNITY OF INQUIRY FRAMEWORK

In the study of Garrison et al. (2000), categories and sample indicators are developed as a coding template to investigate basic elements in the Col for convenient application and sensitivity concerns (Table 1). Indicators in the coding template are composed of keywords, frequently repeated expressions or their synonyms.

According to Table 1, within the Col framework coding template, categories regarding cognitive, social and teaching presence and sample indicator relevant with each individual category are presented. These elements in the Col framework can either increase or decrease quality of learning outputs and educational experience according to authors. Accordingly, one of the issues that can be faced by educators can be Col in virtual environments (Garrison et al., 2000).

Cognitive presence

Cognitive presence is described as one of the three elements in the Col framework; but, there is critical thinking on its foundation and it is functionalized through practical inquiry model (Garrison et al., 2001). Critical thinking concept utilized from this point is structured by making use of Dewey's (1933) reflective thinking model. For Dewey, it has practical value which deepens meaning of our reflective or critical thinking experiences (Garrison and Anderson, 2003). In this regard, the critical thinking approach utilized at this point is comprehensive; and it includes creativity, problem solving, intuition and insight (Garrison and Archer, 2000; As cited in Garrison et al., 2001). In Figure 1, two-dimensional and practical research

model is structured on experience (Dewey, 1933; As cited in Garrison and Anderson, 2003). Whereas, the first dimension of the model reflects the continuity between action and thinking about it, the second dimension represents the transition between concrete and abstract universes (Garrison et al., 2001).

Practical inquiry model consists of four stages with respect to educational context and especially to describe cognitive presence in online learning. Details on each stage in the practical inquiry model were explained below (Garrison et al., 2001).

The first stage of the model reflects beginning step for the critical research; and it is referred as triggering event. At this step, status of problem or dilemma based on experiences is defined. It is preferred that problem or dilemma that will be defined at this step are related to previous studies or experiences of students (Garrison and Anderson, 2003). In educational context, lecturers can create triggering events by means of difficulties in learning or tasks. Additionally, in more democratic and non-hierarchal practices such as computer conferencing, any group member can also add a triggering event on purpose or indirectly. In this process, role of the teacher is to commence and form triggering events; and in some cases, is to ensure that focuses of learners to remain on path to the target education outputs by eliminating potentially distracting ones.

The second step of the model is exploration. Students, at this stage, try to understand every nature of the problem first; then, they make possible explanations and do research for appropriate information. This research can be conducted through more special activities such as group activities and brain storming or literature review (Garrison and Anderson, 2003). Students, at the end of this stage, will start to be more selective regarding what is more appropriate as subject or what is appropriate for problem.

The third stage is integration. At this stage, a meaning is constructed based on the opinions manufactured at the

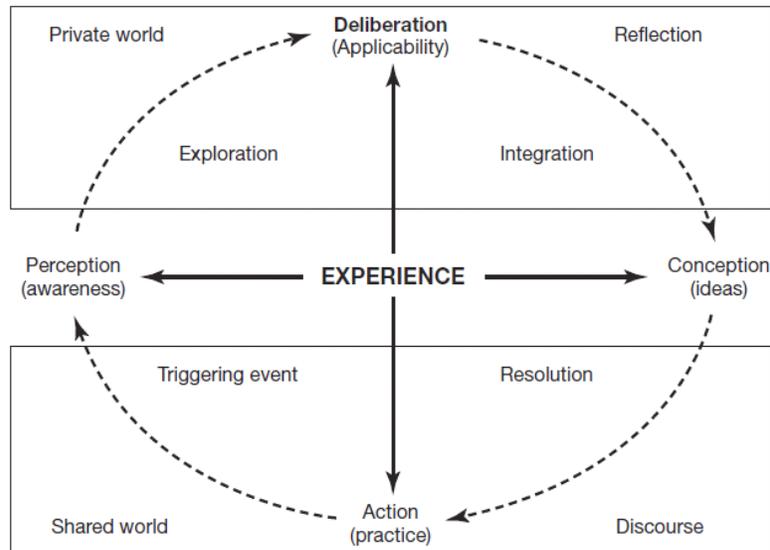


Figure 1. Practical inquiry model.

exploration step. Students, at the transition period from exploration step, would take how to describe and integrate the subject or event into consideration; and would start assessing applicability of opinions. This is the stage most difficult to determine in terms of teaching or research. Evidences for integration of opinions and structuring of meaning can be deduced from the communication in the Col. This stage requires an effective teaching presence so that it could be a model for critical thinking process; and provide additional information so as to determine misconceptions, to probe and secure maintenance of commenting and cognitive development.

The fourth and final stage of the practical inquiry model is resolution. Students put information that they acquired at this stage into practice directly or indirectly. Progress toward the fourth stage necessitates exposure of expectations deliberately and opportunity for students to test the information they have just gained. Moreover, results at the resolution stage could yield new problems and create new triggering events. Then, this process restarts from the beginning for new triggering events; and thus, continuous learning is incited on continuous base.

In sum, practical inquiry model reflects critical thinking process. This means creating a cognitive presence (Garrison et al., 2001). In this context, cognitive presence can be described as a research process to describe problem, searching for appropriate content and opinions, integration of opinions created within a meaningful structure or solution, and testing usefulness of output directly or indirectly (Garrison, 2006). Moreover, it is also important to understand that unlike special personal learning outputs, higher order thinking process is focused on cognitive presence (Garrison et al., 2001), the most difficult to create and to develop with respect to other

elements within the Col framework in online courses (Garrison and Arbaugh, 2007). Similarly, in the study of Akyol and Garrison (2011), it is reported that establishing and maintaining deep learning and cognitive presence online and blended learning environments depend on the dynamic balance among cognitive, social and teaching presence. Results of the study reported by Shea and Bidjerano (2009) indicate that experiences of students regarding teaching presence affect their perception toward social presence directly; and social and teaching presence contributes directly to quality of students' cognitive presence. Archibald's (2010) study employs the Col survey instrument developed by Arbaugh et al. (2008) as well; and the results suggest that teaching and social presence explain 69% of the variance in cognitive presence.

Social presence

Social presence concept, one of the three basic elements of the Col framework, was first used by Short et al. (1976); and it was described as "degree of perception of each person in interpersonal relationships" (As cited in: Kim et al., 2011); and it is considered as one of the core concepts in online learning (Lowenthal and Dunlap, 2010). Review of the relevant literature reveals that social presence is defined differently by various researchers (Gunawardena and Zittle, 1997; Kang et al., 2007; Tu and McIsaac, 2002); and it can especially be observed that presence feeling of individuals and degree of establishing communication with other participants in online learning environments were addressed. If social presence concept is nested within the Col framework, it is

described as “ability of learners to project themselves socially and emotionally in the Col” (Rourke et al., 2001). However, according to Garrison (2009), since social presence concept has been substantially differentiated from its original conceptualization over time and this description has socio-emotional structure to the great extent, it does not fully reflect presence concept in establishing a purposeful educational group. Therefore, Garrison (2009) updated the definition of the social presence concept as “the ability of participants to identify with the community (e.g., course of study), to communicate purposefully in a trusting environment, and to develop inter-personal relationships by way of expressing their individual personalities”.

Of the core elements within the Col framework, the most extensively studied element in the relevant literature is social presence (Arbaugh, 2007). For instance, results of the study, which investigates effect of the social presence perception on student satisfaction in computer-based conference, conducted by Gunawardena and Zittle (1997) suggest that social presence perception is significant determinant in satisfaction in text-based computer conference. Moreover, positive correlation between social presence perception and students’ learning perceptions is reported by Richardson and Swan (2003); a significant correlation between social presence perception and satisfaction with online discussions is reported by Swan and Shih (2005); and social presence perception has significant influence on students’ cognitive learning, their satisfaction with learning process, with the participants of the relevant activities, and with learning outputs (Lu et al., 2007). The study of Tu and Mclsaac (2002) investigates dimensions of social presence through qualitative and quantitative methods; and suggests that social presence is an essential element which affects online interactions. Additionally, there are other studies which shows that privacy could affect degree of social presence perception (Tu and Mclsaac, 2002; Tu, 2001, 2002).

According to Garrison and Anderson (2003), the essential question is how to create social presence in supporting the Col and critical reflective thinking in an online learning environment. Researchers answer this question as that it is necessary to be aware of the fact that social presence could be at the most appropriate level because group with low social presence cannot be maintained, the one with high level could prevent disagreements but this could encourage superficial comments and social chats.

Teaching presence

Another dimension within the framework of the Col, teaching presence, is described by Anderson et al. (2001) as designing, facilitating and directing of cognitive and social processes to create meaningful personal learning and valuable learning outputs in terms of

teaching. Based on this definition, teaching presence, in conformity with aimed outputs and students’ needs and talents, integrates all elements in the Col framework by means of balanced functional relationship (Garrison and Anderson, 2003). Anderson et al. (2001) suggested that all participants can contribute to teaching presence in online courses; and therefore, instead of “teacher presence”, “teaching presence” reference was found suitable. According to Anderson et al. (2001), teaching presence commences before the course starting time (includes studies and plans related with the course); and it continues along the course period (in this process, lecturer facilitates discussions and provides direct education when necessary).

Within the computer conference context in online courses, Anderson et al. (2001), under the scope of their study on establishing and maintaining teaching presence, developed a tool to determine teaching presence and described various parameters under three main categories: “Design and Organization”, “Facilitating Discourse” and “Direct Instruction”. Based on the review of the relevant literature, it was observed that numbers of studies on teaching presence are important for a quality learning experience (Arbaugh and Hwang, 2006; Chakraborty and Nafukho, 2015; de la Varre et al., 2011; Ice et al., 2007; Morgan, 2011; Shea et al., 2003a, b, 2005, 2006, 2010); and the coding template developed by Anderson et al. (2001) was utilized by numbers of researchers (Arbaugh and Hwang, 2006; Shea et al., 2003a, b; 2006).

METHODOLOGY

How to determine community of inquiry perception?

This section reports on the researches aiming at assessing the Col perception through a scale, a method different from the content analysis, as a result of a literature review on assessment of the Col perception (Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004) in a chronological order. The first research obtained in this scope was study of Garrison et al. (2004). In this preliminary study reported by them, on the basis of the Col model developed by Garrison et al. (2000), a scale consisted of 28 items which also includes three basic elements (cognitive, social and teaching presence) in the Col framework was developed. Five response choices were provided ranging from much better to much worse. The developed scale was applied to 65 students from 2 different graduate programs at the Athabasca University; and obtained results were analyzed through exploratory factor analysis. Although, exploratory factor analysis results confirm the structure with three factors in the Col framework, it was reported that some items are related to more than one factor. The small sample size used for this exploratory analysis may have been responsible for the failure of Garrison, Cleveland-Innes and Fung’s questionnaire items to clearly load on their intended factors.

Arbaugh (2007) developed a scale in his study by utilizing from various studies (Garrison et al., 2001; Gunawardena and Zittle, 1997; Richardson and Swan, 2003; Shea et al., 2003; Short et al., 1976); and used a seven-point Likert scale in the study including answer options in the range of “strongly agree” and “strongly disagree”. The study data was collected from 667 graduate students

taking different courses at an MBA program from 55 different universities across the United States during the period between February 2004 and January 2006. At the end of the research, the scale used was confirmed as four-factor structured (teaching presence, cognitive presence, social presence and course design and organization). Although "course design and organization," as one of the sub-dimensions in teaching presence, was conceptualized, it was stated as a result of this study, that it was standing out as an individual factor.

Arbaugh et al. (2008) aimed to develop a reliable and valid instrument for the Col in their study as well. Within this scope, it was suggested that generability of studies conducted over a single institution would be limited; and in the summer season of 2007, 287 graduate students from educational sciences and business management majors in four different education institutions providing online education in the United States and Canada were included in the study. In scoring of the scale consisted of 34 items developed by researchers, point degree between (0=Certainly Disagree) and (4=Certainly Agree) was used. Conducted analyses confirmed that conceptual framework of the Col composed of cognitive, social and teaching presence. It was reported that this developed scale can be employed in assessment of the education given by various stakeholders such as course designers, program administrators and lecturers. According to detailed examination of conducted studies so far, it can be observed that the instrument used in the study of Swan et al., (2008) and the one used in the study of Arbaugh et al., (2008) were same. This is because of different articles published about the subject by researchers who used to be member of the instrument development team. However, in the development process of this survey instrument, if the study published by Arbaugh et al. (2007) is taken into consideration, it is possible to claim that the original instrument was developed by Arbaugh et al. (2008). Additionally the study conducted by Arbaugh et al. (2008) has been cited 254 times according to Google Scholar data (Feb 24, 2016). The Col survey instrument developed by Arbaugh et al. (2008) caught attention of several researchers working on distance education. Beyond this point, different versions of the instrument, related studies and disciplines are explained related to Col Survey instrument.

Arbaugh et al. (2010) investigated differences among cognitive, social and teaching presence perceptions of students from different disciplines. In collection of data within the scope of research, Arbaugh et al.'s (2008) Col survey instrument was employed with seven-point degree. In this context, data was collected from 1,582 students from two different education institutions in the U.S. during the period between fall semesters of 2007 and 2008. Students in the sampling group were from both undergraduate and graduate levels in different majors; and they study either blended or fully online learning environments. Researchers were supported concerning practicability of the Col model in terms of disciplinary differences. Study results reveal that there are remarkable opportunities for potential studies in the future in examining how Col framework's elements could be effective and and be influenced by other various academic disciplines. Additionally, how this framework could be advanced or upgraded in order to explain course efficiency in core disciplines.

The purpose of the study conducted by Bangert (2009) was to test the validity of the Col survey instrument developed by Arbaugh et al. (2008). To that end, the Col survey instrument suggested by Arbaugh et al. (2008) was applied to 1,173 undergraduate and graduate level students in the blended or fully online learning environments in primarily educational science departments of medium sized universities located in the western part of the United States during spring semester of 2008 academic year. Different from the original scale, ordinal responses were scored using the scale (1=Strongly Disagree) to (6=Strongly Agree). Finally, it was reported that the Col survey instrument was suitable tool to determine and to enhance educational quality of faculties. Beside,

since Garrison and Vaughn (2007) indicates that Col model is appropriate for blended online courses, within the scope of the present research, unlike the preliminary research where the original scale was developed, data was collected from students who receive fully online education in addition to the ones receiving blended online education.

In the study conducted by Shea and Bidjerano (2009), it was aimed to assess practicability of the Col framework in definition, explanation and ultimately development of learning in online education environments. In data collection process, Arbaugh et al.'s (2008) Col survey instrument was employed. However, 12th item was used differently than the original scale. In scoring of scale items, degree from (1=Strongly Agree) to (5= Strongly Disagree) was used. Moreover, for each item, the participants had the option to indicate that they choose not to answer the question by selecting "N/A". Collected data was screened for missing values, univariate and multivariate outliers; and they were downsized from 2,605 to 2,159 by 17% reduction. The research results indicate that survey items conform to the structures specified in the Col framework. Moreover, it was reported that structures related with the cognitive, social and teaching presence and the Col framework were useful model in description, explanation and development of online education. Noteboom and Claywell (2010) reported in their study that results of Shea and Bidjerano's (2009) study were supporting the Col framework, but it is not open for generalizations to the disciplines such as health care. Therefore, the aim of this study was to assess students' perceptions of cognitive, social and teaching presence. Within the research scope, the version of the Col survey instrument employed by Shea and Bidjerano (2009) was used; and data collected from 337 students who are registered with several online health care programs in the United States was studied. When Noteboom and Claywell (2010) conducted a factor analysis, they ended up with similar results of the study by Shea and Bidjerano (2009). The only difference that they found was two items, which loaded, unexpectedly in a different factor. An item had loaded on social presence instead of teaching presence, and another item had loaded on cognitive presence rather than social presence.

The primary purpose of the study of Carlon et al. (2012) was to confirm the structure of the Col model with health care discipline. To that end, students receiving 38 different online courses from graduate and undergraduate programs of nursing, physical therapy and health care administration (including health information management students) were asked to respond the version of the Col survey instrument published by Shea and Bidjerano (2009) and to provide some relevant demographical information. In the end, totally 330 valid responses were collected from these students. Study results confirmed the survey instrument in the health care discipline. However, conducted additional factor analyses suggested that there is potential fourth factor in the model. This finding conforms to other studies reported in the literature (Bangert, 2009; Díaz, Swan, Ice, and Kupczynski, 2010; Shea and Bidjerano, 2009). In aforesaid studies, while evidences concerning the fact that teaching presence has two-factored structure were provided, in the scope of the present study, it was indicated that the structure of the social presence would include two-factors: social comfort and social experience as well.

Boston et al. (2009) stated in their study that attrition rates in online learning programs were higher with respect to face-to-face programs; and the correlation between Col framework parameters and student persistence was investigated. Aforesaid research was conducted on 28,877 students in the American Public University System (APUS is an online, for-profit university) who receive bachelor or associate level courses and who filled in Col survey instrument. When items in the Col survey instrument employed in the research scope were considered, it can be seen that there are certain differences with respect to the Col survey instrument developed by Arbaugh et al. (2008); and that it possesses the same items used in the Col survey instrument developed by Díaz et al.

(2010).

Discrepantly from previous studies, Díaz et al. (2010) did not only tested validity of Col survey instrument, but also respondents were asked to express their opinions concerning significance of each item; then, obtained data was analyzed. Within the scope of the study, Col survey instrument developed by Arbaugh et al. (2008) was taken as the basis; however, some amendments made on certain items in the scale (12th and 28th items). Within the scope of this study, totally 412 undergraduate and graduate degree students from four different institutions in the United States were included in the study. Items in the scale were scored through 5-point conventional Likert scale (1=Strongly Disagree) to (5=Strongly Agree), while item importance ratings utilized an ordinal scale with the same range of quantitative values (1=Unimportant; 2=Somewhat Important; 3=Important; 4=Very Important; 5=Extremely Important). Research results confirmed triple-structure of the Col framework.

Study of Kozan and Richardson (2014) aims to investigate factor structure of adapted version of the Col survey instrument developed by Arbaugh et al. (2008). To that end, the Col survey instrument suggested by Díaz et al. (2010) was employed to assess students' cognitive, social and teaching presence perceptions. The research data were collected from graduate students pursuing a fully online Learning, Design, and Technology Master of Science Program in a College of Education. In this regard, totally 643 answered the survey appropriately; and obtained answers were randomly divided into two groups for the EFAs (N=352) and CFAs (N=291). However, since some students were enrolled in multiple courses, repeating answers were subtracted and EFAs (N=219) and CFAs (N=178) were conducted on basis of answers received from singular respondents. Results of the study validated the Col. However, it was emphasized that it should be reminded during the assessment that only students in one university were participated in the study. Furthermore, since only students receiving online courses were included in this study, it will be possible to obtain better understanding of the Col survey instrument if participation of students receiving courses in blended learning environments and inclusion of students from different educational institutions could be ensured in the future studies.

In the study of Alaulamie (2014), it was investigated that whether cognitive, social and teaching presence were significant predictors of satisfaction of students in online programs offered by the prominent Saudi universities. In determination of students' cognitive, social and teaching presence perceptions, Arbaugh et al.'s (2008) Col survey instrument was utilized after it was adapted to the Arabic. Answer options of the survey instrument items were consisted of "Strongly Agree", "Agree", "Neutral", "Disagree" and "Strongly Disagree". Data employed within the scope of the research were collected from 2,442 students who answered questions in data collection tool appropriately. Research findings suggest that Arabic version of the Col survey was valid and reliable. Factor analysis showed that items were loading appropriately in the expected factor. Only one item in the instrument, which is item 24, was showing a cross loading issue. This item could be dropped for future uses or it may need more investigation by researchers.

Yu and Richardson's (2015) study aims to investigate validity and reliability of Korean version of the Col survey instrument for online learning. To that end, the Col survey developed by Arbaugh et al. (2008) was translated into Korean; and it was structured according to 5-point Likert scale with degrees from (1=Strongly Disagree) to (5=Strongly Agree). This survey was applied on 995 undergraduate students who were attending fully online courses at the Cyber University in Korea. Study results suggest that internal consistency reliability of the Korean version of the Col survey was high and that three-factor structure was supported.

Arbaugh et al.'s (2008) Col survey instrument was adapted into Turkish by various researchers (Horzum, 2015; Küçük, 2013; Öztürk, 2012). The study reported by Öztürk (2012) was including 140 students who study at computer and educational technologies

teaching departments from faculties of educational science at four different public universities during the academic year between 2010 and 2011 in Turkey. The survey instrument was developed in four-point Likert model with degrees from "Strongly Disagree(1), Disagree(2), Agree(3) and Strongly Agree(4)". Collected data during research was incurred in confirmatory factor analysis; finally, three-factored structure in the original scale was verified on basis of conducted reliability and validity analyses. Regarding Turkish version of the survey, a survey composed of 34 items under three sub-factors was obtained. The study reported by Küçük (2013) was conducted according to the data collected from 241 students who attend faculty of educational sciences and registered with computer course provided in blended learning environment. Answer options of the survey instrument items were consisted of "Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree". According to the analyses conducted based on the data collected during research, the three-factored structure of the original survey was verified; and a survey composed of 34 items under three sub-factors was obtained in the Turkish format of the survey. The sampling group of the study of Horzum (2015) was consisted of 277 online graduate students from nine different programs at a public university. The survey items were scored using the scale from (1=Strongly Disagree) to (5=Strongly Agree). According to the analyses conducted based on data collected during the research, the three-factored structure of the original survey was verified; and a survey composed of 34 items under three sub-factors was obtained in the Turkish format of the survey.

RESULTS AND DISCUSSION

Finally, it is observed that different data collection tools have been developed by various researchers in assessment of Col perception (Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004). However, of these data collection tools, it is possible to state that the most frequently used and the one adopted the most commonly in the literature is the Col survey instrument developed by Arbaugh et al. (2008). It was also observed that Arbaugh et al.'s (2008) Col survey was adapted into various languages such as Turkish, Korean and Arabic (Alaulamie, 2014; Horzum, 2015; Küçük, 2013; Öztürk, 2012; Yu and Richardson, 2015); and that it has been employed in various disciplines such as educational sciences, business management, and health care (Arbaugh et al., 2010; Arbaugh, 2013; Bangert, 2009; Carlon et al., 2012).

On the basis of detailed investigation of studies utilized from Col survey developed by Arbaugh et al. (2008);

- (i) Majority of these studies were conducted in the United States and Canada,
- (ii) Studies were conducted on various sampling groups with different sizes from both single or multiple institutions,
- (iii) Studies included students from different degrees (bachelor, associate, undergraduate and graduate) who receive courses in fully online or blended online learning environments,
- (iv) As answer options of items included in survey instruments, various scale ranges were utilized (0-4; 1-4; 1-5; 1-6; 1-7 etc.),

(v) It was observed that students take different variables thought to be relevant with Col perception such as education level (undergraduate, graduate etc.), grade level, number of online course, online course implementation (fully online or blended), major discipline, gender and age into consideration.

Accordingly, in the future researches, new studies, which investigate differences mentioned above, can be planned. Additionally, further research is called for to explore the dynamic relationships among the presences across disciplines and institutions as well as understand the existence and role of the specific sub-elements (categories) of each presence.

The Col survey instrument was developed in the study of Arbaugh et al. (2008) conducted on 287 graduate level students, who receive fully online courses, while this survey utilized a degree system between (0=Strongly Disagree) and (4=Strongly Agree). In the study of Bangert (2009), the Col survey developed by Arbaugh et al. (2008) was conducted on 1,173 undergraduate and graduate students who study in blended or fully online learning environments. Furthermore, unlike the original survey, ordinal responses were scored using the scale (1=strongly disagree) to (6=strongly agree). Shea and Bidjerano (2009) employed the Col survey developed by Arbaugh et al. (2008) as well. However, 12th item in the original survey was amended. In scoring of the items in the survey, degrees from 1 (strongly agree) to 5 (strongly disagree) were used; and “the participants had the option to indicate that they choose not to answer the question by selecting ‘N/A’” used as an option for each item. When items in the Col survey was shared in the interactive website of <https://coi.athabasca.ca>, which aims to share and discuss researches on the Col framework (Col Survey, 2015) are examined, it can be observed that they were the same with the ones used in the scope of this research; but their scoring was different. Whereas this research used degrees from (1=strongly agree) to (5=strongly disagree); and it offered respondents to avoid items, in the Col survey published in the website, 5-point Likert degree from (1=strongly disagree) to (5=strongly agree) was used. Diaz et al. (2010) employed the Col survey developed by Arbaugh et al. (2008) as basis; but, some items (12th and 28th) in the survey were amended. Items in the survey were degree between (1=strongly disagree) and (5=strongly agree). Items used in this research were referred and exhibited in Appendix A at the end of the article under the title “Community of Inquiry Survey Instrument” (draft v15) developed by Ben Arbaugh, Marti Cleveland-Innes, Sebastian Diaz, Randy Garrison, Phil Ice, Jennifer Richardson, Peter Shea and Karen Swan. Since the Col survey (“Col Survey,” 2015) was referred in the website in which postings were published and relevant to the Col framework, it is possible to state that the survey employed within the scope of this research can be considered as newer draft.

Therefore, for the studies that would be conducted in the future, amendments on the original survey developed by Arbaugh et al. (2008) could be taken into consideration so that new researches can be conducted in which different versions of the survey are compared. Moreover, by taking changes in survey items and scoring system of items into consideration, new studies can be planned on adaptation of Col survey instrument to different languages.

Conflict of Interests

The authors have not declared any conflicts of interest.

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Full Length Research Paper

Perceptions of education faculty students on teaching methods and materials

Elif Esmer*, Gülçin Güven, Oktay Aydın, Bülent Özden, Kadriye Efe and Nurcan Şener

Primary Education Department, Ataturk Faculty of Education, Marmara University, Turkey.

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Individual differences have an influence on a wide range of education fields. These differences can range from organizing teaching environments to the techniques and strategies that the teacher uses. This study focused on individual differences of pre-service teachers and aimed to investigate the perceptions of Education Faculty students on teaching methods and education materials. A descriptive method was utilized for the study. The participants were 691 female and 364 male students from seven different departments of the education faculty. Personal information forms were used to collect data. Teaching method and teaching material preference questionnaires were used to determine the preferences of teaching methods and materials. According to pre-service teachers, the most effective teaching methods are case studies and discussions, and the most effective teaching materials are film demonstrations; however, models, schemas and graphics are also effective. As a result of this study, lecturing, question and answers, group work, individual work, inductive, discussion, case study, problem-solving and presentation methods show significant differences at a 0.01 level, while the points based on schemas, graphics, film demonstrations, computer software (CD-VCD), PowerPoint presentations and over-head projector show significant differences at a 0.01 level. Conversely, books and written materials show significant differences at a 0.05 level.

Key words: Teacher training, teaching methods, teaching materials.

INTRODUCTION

Recently, the field of education has aimed to make a breakthrough not only in people's behavior but also in their perception and ways of thinking. Education provides people with learning environments that makes their own potential emerge and enables them to shape their way during the learning process. Individual differences have an influence on a wide range of education fields, from

organizing teaching environments to the techniques and strategies that the teacher would use (Esmer, 2013). Furthermore, the fact that people prefer different ways of learning demonstrates the variety of the human brain and that each brain has a unique structure.

Teachers are currently expected to create learning environments suitable for the individual differences

*Corresponding author. E-mail: esmerelif@gmail.com.

mentioned above. This competency, which is expected from the teachers in Turkey, is mentioned under the "Personal and Professional Values" section (regardless of the subject area) in the publication, *General Competencies of Teaching Profession*, prepared by the Ministry of Education (2004). It is especially stated no matter what department the teacher is- under the name of "Individual and Professional Values" (MEB, 2008).

Teachers are a key component in the education system. At this point, their expectations and beliefs have an impact on students' behaviors and, accordingly, on concentration, attitudes and success (Ekici, 2006). When the teacher explores the differences in their own preferences and ways of thinking, it raises awareness of the learning preferences of students. On the other hand, pre-service teacher-education processes aim at enabling teacher candidates to attend to these processes with the skills of a good teacher (Erdem, 2008). In other words, to train qualified teachers, it is highly important to actively include pre-service teachers in teaching processes.

In order for the pre-service teachers to actively participate in teaching processes, proper learning environments should be provided. To achieve this, it should be considered that pre-service teachers may prefer different learning methods and materials. However, studies on learning styles (the individual's preference as to how she/he would learn the information; Zhang & Sternberg, 2006), cognitive styles (the way individuals acquire, process, remember and utilize the information; Kagan and Messick, 1976) and thinking styles (the way individuals prefer to achieve a given task; Sternberg, 2009) have supported this view. In other words, many studies conducted with pre-service teachers have shown that their styles vary and this difference is observed according to gender (Sternberg, 1997; Zhang and Sachs, 1997; Zhang, 2004; Wu and Zhang, 1999; Cilliers and Sternberg, 2001; Buluş, 2005; Dinçer and Saracaloğlu, 2011; Esmer, 2013), academic discipline (Zhang and Sach, 1997; Mert, 2003; Sünbül, 2004; Buluş, 2005; Emir, 2011; Esmer, 2013) and grade level (Zhang and Sachs, 1997; Buluş, 2006; Dinçer, 2009; Dinçer and Saracaloğlu, 2011).

When style is regarded as the way individuals process information and achieve tasks (Zhang and Sternberg, 2005, 2006), it is considered as being associated with individual differences. Each individual has a unique reasoning. For instance, when reading a book, the individual's mind is full of impressions about it. While summarizing the book, the person reasons and transfers the information; as a result, we have some ideas about the book and the person's reasoning (Allport, 1937). At this point, reasoning is the result of processing the information. However, the fact that individuals prefer methods of carrying out the task shows that they have different mental processes and ways of thinking, learning, problem-solving and decision-making (Esmer, 2013). It is

assumed that, in order to train qualified teachers, these differences should also be taken into account in the preferences of teaching methods and education materials within teacher training programs. Consequently, the aim of the present study is to investigate the preferences of pre-service teachers on teaching methods and materials, and to answer these questions: (1) What are the preferences of pre-service teachers on teaching methods and education materials suitable for their own learning? (2) Do pre-service teachers' preferences of teaching methods and education materials differ according to their departments, grade level and gender?

It is thought that this will contribute to the organization of pre-service education settings and therefore to the enhancement of functionality in education.

METHODS

Research model

Since the present study aims to investigate perceptions of education faculty students on teaching methods and materials in terms of its conformity with their own learning, a descriptive method was utilized.

Sample of the study

In the present study, 691 female, 364 male students and 2 students who did not specify their gender were chosen randomly (total sample size of 1057) from freshman, sophomore and junior years in seven different departments, including primary school, science, mathematics, religion culture and moral education, foreign language, social sciences and music teaching.

Research instruments

The research data consisted of personal information forms and Likert-type questionnaires in order to determine the preferences of teaching methods and materials.

Personal information form

The personal information forms included three questions to identify the department, grade level and gender of the participants.

Teaching methods preference questionnaires

A 5-point Likert-type questionnaire (1 = absolutely inappropriate to 5 = absolutely appropriate), consisting of eight items, was utilized for determining the preferences for education faculty students towards teaching methods.

Teaching materials preference questionnaires

A 5-point Likert-type questionnaire (1 = absolutely inappropriate to

Table 1. Findings of normal distribution.

S/N		Skewness	Kurtosis
1.	Lecturing	-.207	-.578
2.	Question–Answer	-.715	.431
3.	Group Work	-.393	-.386
4.	Individual Work	-.739	.117
5.	Deductive Method	-.256	-.374
6.	Inductive Method	-.401	-.361
7.	Brainstorming	-.686	.039
8.	Discussion	-.881	.182
9.	Case Study	-1.257	1.750
10.	Project Method	-.574	-.301
11.	Problem-Solving	-.833	.416
12.	Presentation	-.453	-.605
13.	Drama—Role Play	-.708	-.205
14.	Demonstration	-.746	-.064
15.	Cooperative Learning	-.540	-.289
16.	Research Method	-1.030	.609
17.	Books and Written Materials	-.466	-.617
18.	Illustrations	-.989	1.085
19.	Schemas and Graphics	-.796	.352
20.	Models	-.715	.224
21.	Film demonstrations	-1.191	1.353
22.	Computer Software—CD-VCD	-.519	-.433
23.	PowerPoint	-.453	-.558
24.	Over-head Projector	-.310	-.675

5 = absolutely appropriate), consisting of eight items, was utilized for determining the preferences of education faculty students towards teaching materials.

Data collection and analysis

Using the personal information form, teaching method preference and teaching material preference questionnaires was developed by researchers, the study was conducted with 1057 education faculty students. In the process of questionnaire development, the opinions of 12 experts in the educational sciences field were taken. In order to determine the clarity of the questions, a pilot study was conducted with ten pre-service teachers and necessary adjustments were made according to their opinions.

A normality test was first conducted for data analysis; and skewness and kurtosis values of data were calculated. According to Tabachnick and Fidell (2013), the acceptable range of skewness and kurtosis values for normal distribution of data is between +1.5 and -1.5, while according to George and Mallery (2010), it is between +2 and -2. Therefore, it can be accepted that data collected for the study show normal distribution as seen Table 1.

Descriptive statistics techniques were utilized for analyzing the data and independent samples t-tests were used for analyzing the differences of teaching method and material preference according to gender. One-way ANOVA was used to investigate the differences of teaching method and material preference in terms of grade level and department.

FINDINGS

Tables 2 and 3 indicate the evaluations of education faculty students from different departments on teaching method and materials suitable for their own learning.

As a result, case study ($x = 4.31$) and discussion method ($x = 4.02$) were regarded as the most effective methods by pre-service teachers. However, group work, deductive and lecturing methods were considered as the least effective methods.

Tables 4 and 5 indicate the evaluations of education faculty students from different departments on teaching methods and materials suitable for their own learning. As a result, film demonstrations ($x = 4.31$) was regarded as the most effective material, followed by models, ($x = 4.04$), schemas and graphics ($x = 4.01$) and illustrations ($x = 4.00$). Over-head projector ($x = 3.35$), books and written materials ($x = 3.53$), PowerPoint demonstration ($x = 3.64$) and computer software ($x = 3.83$) had values below 4 points and were found to be less effective materials.

Table 6 indicates differences in perceptions of students on teaching methods suitable for their own learning in terms of their department. As a result, lecturing, question-

Table 2. Descriptive statistics of students' perceptions on teaching methods suitable for their own learning.

Teaching method and techniques	n	Min	Max	X	ss
Case Study	1054	1	5	4.31	0.822
Discussion	1055	1	5	4.02	0.989
Research Method	1054	1	5	3.97	1.067
Problem-Solving	1055	1	5	3.91	0.987
Demonstration	1055	1	5	3.90	1.052
Brainstorming	1055	1	5	3.88	0.99
Drama—Role Play	1055	1	5	3.83	1.097
Individual Work	1055	1	5	3.82	1.012
Question-Answer	1055	1	5	3.70	0.951
Project Method	1055	1	5	3.69	1.102
Inductive Method	1055	1	5	3.67	0.991
Presentation	1055	1	5	3.57	1.159
Cooperative Learning	1055	1	5	3.57	1.117
Group Work	1055	1	5	3.44	1.055
Deductive Method	1055	1	5	3.38	1.026
Lecturing	1055	1	5	3.23	1.048

answer, group work, individual work, inductive, discussion, case study, problem-solving and presentation methods have shown significant differences at 0.01 level according to the students' departments. Deductive, drama, demonstration and cooperative learning methods have shown significant differences at the 0.05 level according to students' departments. However, brainstorming, project and research methods have shown no significant differences.

The results from LSD analysis concerning source of variants have been summarized below. All the students evaluated lecturing method at below 4.00 points on average. It has been seen that the lowest point has been awarded by primary school teaching students. Although, all students evaluated question-answer method below 4.00 points on average, significant differences were found among all the departments. All the students evaluated group work method to be below 4.00 points. The least points were awarded by mathematics teaching students. Individual work method gained the highest points from science and music teaching students, whereas other students evaluated it to be below 4.00 points on the average.

All the students have deductive method to be below 4.00 points on the average. It was shown that the lowest points were awarded by primary school and mathematics teaching students. All the students evaluated inductive method to be below 4.00 points on the average. The lowest points were awarded by primary school and social studies teaching students. However, discussion method is one of the methods considered to be the most positive. Most of the departments evaluated it to be over 4.00 points on the average. The highest points were awarded

by English teaching students whereas the lowest points were awarded by mathematics teaching students. Case study method was also considered as quite a positive method. The average of points awarded by all the students is over 4.00 points. In other words, case study method was evaluated as the most effective method. The highest points were awarded by English, music, and religion culture and moral education teaching students. Science and mathematics teaching students awarded the highest point to problem-solving, whereas the average points awarded by all other students were below 4.00.

All the students evaluated presentation method to be below 4.00 points on the average. English and social studies teaching students, in general, have reported average higher points than other students. Points awarded to drama were, in general, below 4.00 points on the average. The lowest point was by religion culture and moral education teaching students. The highest point for presentation method was awarded by music and primary school teaching students. However, the lowest point has been given by mathematics teaching students. All students evaluated cooperative learning to be below 4.00 points on the average. The lowest point was awarded by mathematics teaching students. The highest point for research method, however, was reported by music, religion culture and social studies teaching students. The lowest point was awarded by English teaching students. The points for brainstorming and project methods are below 4.00 points on the average within all departments. Furthermore, the preference level of both methods showed no significant difference according to department. Table 7 indicates differences in perceptions of students on teaching materials suitable for their own learning in

Table 3. Perceptions of students on teaching methods suitable for their own learning.

Variables		Absolutely inappropriate	Slightly appropriate	Appropriate	Strongly appropriate	Absolutely appropriate	Missing	Total
Case study	f	9	27	109	397	512	3	1057
	%	0.90	2.60	10.30	37.60	48.40	0.30	100.00
Discussion	f	16	79	173	389	398	2	1057
	%	1.50	7.50	16.40	36.80	37.70	0.20	100.00
Research Method	f	45	53	187	373	396	3	1057
	%	4.30	5.00	17.70	35.30	37.50	0.30	100.00
Problem-solving	f	28	57	223	416	331	2	1057
	%	2.60	5.40	21.10	39.40	31.30	0.20	100.00
Demonstration	f	30	72	243	335	375	2	1057
	%	2.80	6.80	23.00	31.70	35.50	0.20	100.00
Brainstorming	f	23	67	251	390	324	2	1057
	%	2.20	6.30	23.70	36.90	30.70	0.20	100.00
Drama—Role Play	f	39	86	247	326	357	2	1057
	%	3.70	8.10	23.40	30.80	33.80	0.20	100.00
Individual Work	f	29	83	226	424	293	2	1057
	%	2.70	7.90	21.40	40.10	27.70	0.20	100.00
Question- Answer	f	32	75	266	487	195	2	1057
	%	3.00	7.10	25.20	46.10	18.40	0.20	100.00
Project Method	f	48	93	290	335	289	2	1057
	%	4.50	8.80	27.40	31.70	27.30	0.20	100.00
Inductive Method	f	21	105	311	386	232	2	1057
	%	2.00	9.90	29.40	36.50	21.90	0.20	100.00
Presentation	f	59	129	290	304	273	2	1057
	%	5.60	12.20	27.40	28.80	25.80	0.20	100.00
Cooperative Learning	f	64	96	308	347	240	2	1057
	%	6.10	9.10	29.10	32.80	22.70	0.20	100.00
Group work	f	50	142	321	377	165	2	1057
	%	4.70	13.40	30.40	35.70	15.60	0.20	100.00
Deductive Method	f	45	144	379	336	151	2	1057
	%	4.30	13.60	35.90	31.80	14.30	0.20	100.00
Lecturing	f	57	204	342	342	110	2	1057
	%	5.40	19.30	32.40	32.40	10.40	0.20	100.00

terms of their departments. As a result, the points concerning schema and graphics, film demonstrations, computer software (CD-DVD), PowerPoint and over-head

projector have shown significant difference at 0.01, whereas books and written materials showed significant difference at 0.05. The points concerning illustrations and

Table 4. Descriptive statistic of students' perceptions on teaching materials suitable for their own learning.

Teaching materials	n	Min	Max	x	ss
Film Demonstrations	1055	1	5	4.31	0.814
Models	1055	1	5	4.04	0.883
Schema and Graphics	1055	1	5	4.01	0.894
Illustrations	1055	1	5	4.00	0.906
Computer Software—CD-VCD	1055	1	5	3.83	0.997
PowerPoint	1055	1	5	3.64	1.096
Books and Written Materials	1055	1	5	3.53	1.088
Over-head Projector	1055	1	5	3.35	1.164

Table 5. Perceptions of students on teaching materials suitable for their own learning.

Variables		Absolutely inappropriate	Slightly appropriate	Appropriate	Strongly appropriate	Absolutely appropriate	Neutral	Total
Film demonstrations	f	6	29	113	389	518	2	1057
	%	0.60	2.70	10.70	36.80	49.00	0.20	100.00
Models	f	10	36	221	420	368	2	1057
	%	0.90	3.40	20.90	39.70	34.80	0.20	100.00
Schema and Graphics	f	9	62	178	470	336	2	1057
	%	0.90	5.90	16.80	44.50	31.80	0.20	100.00
Illustrations	f	20	48	167	493	327	2	1057
	%	1.90	4.50	15.80	46.60	30.90	0.20	100.00
Computer Software— CD-VCD	f	14	94	262	371	314	2	1057
	%	1.30	8.90	24.80	35.10	29.70	0.20	100.00
PowerPoint	f	37	130	279	338	271	2	1057
	%	3.50	12.30	26.40	32.00	25.60	0.20	100.00
Books and Written Materials	f	38	180	216	422	199	2	1057
	%	3.60	17.00	20.40	39.90	18.80	0.20	100.00
Over-head Projector	f	82	158	316	309	190	2	1057
	%	7.80	14.90	29.90	29.20	18.00	0.20	100.00

models have shown no significant difference according to the students' departments.

The results from LSD analysis concerning source of variants have been summarized below. The average points awarded to books and written materials are below 4.00 points. The lowest points were awarded by English and primary school teaching students. The ones who have the most positive opinions on schema and graphics are science, social studies and primary school teaching students; the ones who have the most negative opinions are religion culture and English teaching students. Film

demonstrations had over 4.00 points within all the departments; accordingly, it is assumed that film demonstrations are one of the most preferred teaching materials. Among the departments, music and social studies teaching students garnered the most positive opinions. Generally, the fact that film demonstrations are regarded as a positive material is an expected result. Music and social studies teaching students had the most positive opinions on computer software, however, all other departments evaluated is below 4.00 points. As is considered that students are very interested in computers,

Table 6. Perceptions of students on teaching methods suitable for their own learning according to their departments.

Methods	Departments	n	x	ss	F	p	Resource of variants
Lecturing	Primary School Teaching	257	2.91	1.070	7.089	0.000	*Among Primary School and Science, Mathematics, Religion Culture, Music, Social Studies, English *Between Mathematics and Music *Among Music and Social Studies, English
	Science	126	3.37	1.009			
	Mathematics	125	3.21	0.970			
	Religion Culture	163	3.36	0.880			
	Music	103	3.59	0.954			
	Social Studies	150	3.28	1.094			
	English	130	3.26	1.178			
	Total	1054	3.23	1.048			
Question-Answer	Primary School Teaching	257	3.56	1.014	6.610	0.000	*Among Primary School Teaching and Science, Religion Culture, Music, Social Studies *Among Science and Mathematics, English *Among Mathematics and Religion Culture, Music, Social Studies, English *Between Religion Culture and English *Between Music and English
	Science	126	3.89	0.896			
	Mathematics	125	3.37	1.020			
	Religion Culture	163	3.85	0.848			
	Music	103	3.93	0.757			
	Social Studies	150	3.80	0.927			
	English	130	3.62	0.976			
	Total	1054	3.70	0.951			
Group work	Primary School Teaching	257	3.33	1.058	4.825	0.000	* Between Primary School Teaching and Music *Between Science and Music *Between Mathematics and Music *Between Religion Culture and Music *Among Music and Social Studies, English, Music
	Science	126	3.33	1.095			
	Mathematics	125	3.28	0.997			
	Religion Culture	163	3.43	1.048			
	Music	103	3.90	0.823			
	Social Studies	150	3.47	1.139			
	English	130	3.55	1.050			
	Total	1054	3.44	1.056			
Individual Work	Primary School Teaching	257	3.75	1.026	3.596	0.002	*Between Primary School Teaching and Music *Among Science and Mathematics, Social Studies, English *Between Music and English
	Science	126	4.09	0.912			
	Mathematics	125	3.76	0.902			
	Religion Culture	163	3.88	1.021			
	Music	103	4.00	0.950			
	Social Studies	150	3.80	1.003			
	English	130	3.58	1.153			
	Total	1054	3.82	1.012			
Deductive Method	Primary School Teaching	257	3.25	0.964	2.591	0.017	*Among Primary School Teaching and Science, Social Studies *Among Science and Mathematics, Religion Culture
	Science	126	3.62	0.995			
	Mathematics	125	3.29	0.914			
	Religion Culture	163	3.33	1.083			
	Music	103	3.47	0.927			
	Social Studies	150	3.51	1.060			
	English	130	3.37	1.189			
	Total	1054	3.38	1.026			
Inductive Method	Primary School Teaching	257	3.49	0.985	2.868	.009	*Among Primary School Teaching and Science, Religion Culture, Music, English *Between Science and Social Studies
	Science	126	3.90	1.003			
	Mathematics	125	3.67	0.914			
	Religion Culture	163	3.71	0.986			
	English	130	3.58	1.153			

Table 6. Cont'd.

	Music	103	3.78	0.885		
	Social Studies	150	3.62	1.014		
	English	130	3.70	1.076		
	Total	1054	3.67	0.991		
Brainstorming	Primary School Teaching	257	3.89	0.926	0.519	0.794
	Science	126	3.84	1.091		
	Mathematics	125	3.82	0.970		
	Religion Culture	163	3.94	0.914		
	Music	103	3.79	1.160		
	Social Studies	150	3.87	0.981		
	English	130	3.96	0.999		
	Total	1054	3.88	0.991		
Discussion	Primary School Teaching	257	4.02	.964	4.810	0.000
	Science	126	3.83	1.174		
	Mathematics	125	3.70	1.078		
	Religion Culture	163	4.18	0.818		
	Music	103	3.99	0.965		
	Social Studies	150	4.11	0.938		
	English	130	4.21	0.938		
	Total	1054	4.02	0.989		
Case Study	Primary School Teaching	256	4.35	.783	4.299	0.000
	Science	126	4.04	1.054		
	Mathematics	125	4.16	.745		
	Religion Culture	163	4.40	.759		
	Music	103	4.42	.846		
	Social Studies	150	4.29	.805		
	English	130	4.43	.715		
	Total	1053	4.31	.821		
Project Method	Primary School Teaching	257	3.57	1.095	1.795	0.097
	Science	126	3.64	1.196		
	Mathematics	125	3.57	1.042		
	Religion Culture	163	3.83	1.032		
	Music	103	3.83	1.086		
	Social Studies	150	3.79	1.027		
	English	130	3.66	1.230		
	Total	1054	3.69	1.102		
Problem-solving	Primary School Teaching	257	3.87	0.955	3.073	0.005
	Science	126	4.14	0.969		
	Mathematics	125	4.12	0.848		
	Religion Culture	163	3.93	0.985		
	Music	103	3.83	1.043		
	Social Studies	150	3.76	1.008		
	English	130	3.83	1.072		
	Total	1054	3.92	0.987		

Table 6. Cont'd.

Presentation	Primary School Teaching	257	3.58	1.153	3.558	.002	*Between Primary School Teaching and English *Among Science and Social Studies, English *Among Mathematics and Social Studies, English *Among Religion Culture and Social Studies, English *Between Music and English
	Science	126	3.42	1.105			
	Mathematics	125	3.39	1.039			
	Religion Culture	163	3.42	1.181			
	Music	103	3.53	1.327			
	Social Studies	150	3.74	1.102			
	English	130	3.89	1.163			
	Total	1054	3.57	1.160			
Drama–Role Play	Primary School Teaching	257	3.96	1.064	2.747	.012	*Among Primary School Teaching and Science, Mathematics, Religion Culture *Among Science and Music, Social Studies, English *Among Mathematics and Music, English
	Science	126	3.62	1.151			
	Mathematics	125	3.63	1.067			
	Religion Culture	163	3.74	1.121			
	Music	103	3.94	1.056			
	Social Studies	150	3.89	1.000			
	English	130	3.94	1.199			
	Total	1054	3.83	1.097			
Demonstration	Primary School Teaching	257	4.00	1.021	2.182	0.042	*Between Primary School Teaching and Mathematics *Between Science and Music *Among Mathematics and Music, Social Studies *Between Music and English
	Science	126	3.81	1.122			
	Mathematics	125	3.72	1.075			
	Religion Culture	163	3.83	1.067			
	Music	103	4.09	1.156			
	Social Studies	150	3.99	0.930			
	English	130	3.82	1.018			
	Total	1054	3.90	1.052			
Cooperative Learning	Primary School Teaching	257	3.49	0.993	2.359	0.029	*Between Primary School Teaching and Music *Between Science and Music *Between Mathematics and Music *Between Religion Culture and Music
	Science	126	3.48	1.269			
	Mathematics	125	3.43	0.970			
	Religion Culture	163	3.52	1.135			
	Music	103	3.84	1.100			
	Social Studies	150	3.69	1.147			
	English	130	3.68	1.239			
	Total	1054	3.57	1.117			
Research Method	Primary School Teaching	257	3.94	1.029	1.726	0.112	*Between Religion Culture and English *Between Music and English
	Science	126	3.99	1.062			
	Mathematics	125	3.92	0.955			
	Religion Culture	162	4.10	0.941			
	Music	103	4.12	1.231			
	Social Studies	150	4.00	1.036			
	English	130	3.75	1.258			
	Total	1053	3.97	1.067			

this result may be regarded as remarkable.

Music and social studies teaching students awarded the highest points for PowerPoint demonstrations, but the average points from other departments was below 4.00

points. This result shows consistency with the results for computer software. It is understood that music and social studies teaching students are more interested in computer-based programs and software. Music teaching

Table 7. Perceptions of students on teaching materials suitable for their own learning according to their departments.

Methods	Departments	n	x	ss	F	p	Source of variants
Books and Written Materials	Primary School Teaching	257	3.39	1.066	2.644	0.015	*Among Primary School Teaching and Music. Social Studies *Between Science and Music *Between Religion Culture and English *Between Music and English *Between Social Studies and English
	Science	126	3.69	1.113			
	Mathematics	125	3.58	1.010			
	Religion Culture	163	3.58	0.967			
	Music	103	3.69	1.020			
	Social Studies	150	3.64	1.101			
	English	130	3.33	1.302			
	Total	1054	3.54	1.089			
Illustrations	Primary School Teaching	257	4.07	.775	1.589	0.147	*Between Primary School Teaching and Mathematics *Between Mathematics and Social Studies
	Science	126	4.02	0.942			
	Mathematics	125	3.82	0.853			
	Religion Culture	163	4.02	0.850			
	Music	103	3.96	1.066			
	Social Studies	150	4.11	0.973			
	English	130	3.93	0.998			
	Total	1054	4.00	0.906			
Schema and Graphics	Primary School Teaching	257	4.02	0.815	3.581	0.002	*Between Primary School Teaching and Science *Among Science and Mathematics. Religion Culture. Music. English *Between Religion Culture and Social Studies *Between Social Studies and English
	Science	126	4.23	0.841			
	Mathematics	125	3.99	0.746			
	Religion Culture	163	3.85	0.985			
	Music	103	3.94	1.092			
	Social Studies	150	4.16	0.852			
	English	130	3.87	0.927			
	Total	1054	4.01	0.894			
Models	Primary School Teaching	257	4.05	.823	1.434	0.198	*Between Mathematics and Music
	Science	126	4.13	0.898			
	Mathematics	125	3.92	0.809			
	Religion Culture	163	3.97	0.878			
	Music	103	4.17	0.984			
	Social Studies	150	4.11	0.876			
	English	130	3.98	0.964			
	Total	1054	4.04	0.882			
Film demonstrations	Primary School Teaching	257	4.33	0.753	3.936	0.001	*Between Primary School Teaching and Mathematics *Among Science and Music. Social Studies *Among Mathematics and Religion Culture. Music. Social Studies. English
	Science	126	4.21	0.900			
	Mathematics	125	4.04	0.807			
	Religion Culture	163	4.32	0.887			
	Music	103	4.46	0.838			
	Social Studies	150	4.43	0.781			
	English	130	4.37	0.706			
	Total	1054	4.31	0.813			
Computer Software—CD-VCD	Primary School Teaching	257	3.68	1.053	7.817	0.000	*Among Primary School Teaching and Music. Social Studies *Among Science and Music. Social Studies *Among Mathematics Music. Social
	Science	126	3.73	0.983			
	Mathematics	125	3.60	0.889			
	Religion Culture	163	3.77	0.983			

Table 7. Cont'd.

	Music	103	4.27	0.842			Studies and English
	Social Studies	150	4.09	0.944			*Among Religion Culture and Music. Social Studies and English
	English	130	3.88	1.034			*Between Music and English
	Total	1054	3.83	0.997			
	Primary School Teaching	257	3.49	1.068			*Among Primary School Teaching and Science. Music. Social Studies. English
	Science	126	3.23	1.140			*Among Science and Religion Culture. Music. Social Studies. English
	Mathematics	125	3.45	1.012			*Between Mathematics and Music. Social Studies. English
	Religion Culture	163	3.64	1.052			*Among Religion Culture and Music. Social Studies
PowerPoint Demonstration	Music	103	4.08	1.073	11.042	0.000	*Between Music and English
	Social Studies	150	4.03	0.958			*Between Social Studies and English
	English	130	3.72	1.168			
	Total	1054	3.64	1.097			
	Primary School Teaching	257	2.98	1.202			*Among Primary School Teaching and Science. Mathematics. Religion Culture. Music. Social Studies
	Science	126	3.37	1.171			*Between Science and Music
	Mathematics	125	3.26	0.999			*Among Mathematics and Music. Social Studies
	Religion Culture	163	3.43	1.111			*Between Religion Culture and Music
Over-head Projector	Music	103	4.03	0.880	12.633	0.000	*Among Music and Social Studies. English
	Social Studies	150	3.60	1.135			*Between Social Studies and English
	English	130	3.20	1.229			
	Total	1054	3.35	1.164			

is the only department evaluated to be over-head projector of over 4.00 points on average; all other departments had below 4.00 points. As it is considered that the music department is more practice-based, this result is remarkable. However, the lowest points were awarded by primary school teaching students.

In light of these findings, it is, however, noted here that one of the department which shows the most significant difference is primary school teaching. If 4.00 points is taken as criteria, it was seen that primary school teaching students mostly prefer illustrations, schema and graphics, models and film demonstrations; Science teaching students mostly prefer illustrations, schema and graphics, models and film demonstrations; Mathematics teaching students mostly prefer film demonstrations; Religion Culture mostly prefer illustrations and film demonstrations; Music teaching students mostly prefer models, film demonstrations, computer software, PowerPoint presentations and over-head projectors; Social Studies teaching students mostly prefer illustrations, schema and graphics, models, film demonstrations, computer software and PowerPoint presentations; English teaching students mostly prefer film demonstrations.

According to Table 8, some teaching method preferences of education faculty students show

differences in terms of gender whereas others do not. In light of the findings, the preferences of case study, individual work and inductive methods show a significant difference at the 0.01 level in terms of gender and are favored by female students. The preferences of demonstration and research methods show significant differences at the 0.05 level and is favored by female students.

According to Table 9, some teaching material preferences of education faculty students show differences in terms of gender, whereas others do not. In light of the findings, students' perception on models show significant differences at the 0.01 level in terms of gender and are favored by female students. Students' perceptions on film demonstrations show significant differences at the 0.05 level in terms of gender, which is favored by female students. However, perceptions on books and written materials, illustrations, schema and graphics, computer software, PowerPoint demonstrations, and over-head projectors show no significant difference in terms of gender.

According to Table 10, some teaching material preferences of education faculty students show differences in terms of grade level, however, others do not. In light of the findings, students' perceptions of group

Table 8. Perceptions of students on teaching methods suitable for their own learning according to their gender.

	Gender	n	x	ss	t	sd	p																																																																																																																																																																																
Lecturing	Female	691	3.22	1.033	-0.297	1053	0.766																																																																																																																																																																																
	Male	364	3.24	1.077				Question-Answer	Female	691	3.73	0.957	1.269	1053	0.205	Male	364	3.65	0.940	Group Work	Female	691	3.43	1.051	-0.341	1053	0.733	Male	364	3.46	1.066	Individual Work	Female	691	3.89	0.974	3.008	1053	0.003	Male	364	3.70	1.069	Deductive Method	Female	691	3.42	0.985	1.414	1053	0.158	Male	364	3.32	1.098	Inductive Method	Female	691	3.74	0.981	3.121	1053	0.002	Male	364	3.54	0.997	Brainstorming	Female	691	3.90	0.980	1.056	1053	0.291	Male	364	3.83	1.011	Discussion Method	Female	691	4.00	1.009	-1.012	1053	0.312	Male	364	4.06	0.949	Case Study	Female	690	4.36	0.800	3.022	1052	0.003	Male	364	4.20	0.853	Project Method	Female	691	3.73	1.072	1.753	1053	0.080	Male	364	3.60	1.154	Problem-solving	Female	691	3.93	0.976	0.718	1053	0.473	Male	364	3.88	1.008	Presentation	Female	691	3.59	1.165	0.673	1053	0.501	Male	364	3.54	1.148	Drama	Female	691	3.87	1.092	1.432	1053	0.153	Male	364	3.76	1.106	Demonstration	Female	691	3.95	1.023	2.147	1053	0.032	Male	364	3.81	1.099	Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015
Question-Answer	Female	691	3.73	0.957	1.269	1053	0.205																																																																																																																																																																																
	Male	364	3.65	0.940				Group Work	Female	691	3.43	1.051	-0.341	1053	0.733	Male	364	3.46	1.066	Individual Work	Female	691	3.89	0.974	3.008	1053	0.003	Male	364	3.70	1.069	Deductive Method	Female	691	3.42	0.985	1.414	1053	0.158	Male	364	3.32	1.098	Inductive Method	Female	691	3.74	0.981	3.121	1053	0.002	Male	364	3.54	0.997	Brainstorming	Female	691	3.90	0.980	1.056	1053	0.291	Male	364	3.83	1.011	Discussion Method	Female	691	4.00	1.009	-1.012	1053	0.312	Male	364	4.06	0.949	Case Study	Female	690	4.36	0.800	3.022	1052	0.003	Male	364	4.20	0.853	Project Method	Female	691	3.73	1.072	1.753	1053	0.080	Male	364	3.60	1.154	Problem-solving	Female	691	3.93	0.976	0.718	1053	0.473	Male	364	3.88	1.008	Presentation	Female	691	3.59	1.165	0.673	1053	0.501	Male	364	3.54	1.148	Drama	Female	691	3.87	1.092	1.432	1053	0.153	Male	364	3.76	1.106	Demonstration	Female	691	3.95	1.023	2.147	1053	0.032	Male	364	3.81	1.099	Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123								
Group Work	Female	691	3.43	1.051	-0.341	1053	0.733																																																																																																																																																																																
	Male	364	3.46	1.066				Individual Work	Female	691	3.89	0.974	3.008	1053	0.003	Male	364	3.70	1.069	Deductive Method	Female	691	3.42	0.985	1.414	1053	0.158	Male	364	3.32	1.098	Inductive Method	Female	691	3.74	0.981	3.121	1053	0.002	Male	364	3.54	0.997	Brainstorming	Female	691	3.90	0.980	1.056	1053	0.291	Male	364	3.83	1.011	Discussion Method	Female	691	4.00	1.009	-1.012	1053	0.312	Male	364	4.06	0.949	Case Study	Female	690	4.36	0.800	3.022	1052	0.003	Male	364	4.20	0.853	Project Method	Female	691	3.73	1.072	1.753	1053	0.080	Male	364	3.60	1.154	Problem-solving	Female	691	3.93	0.976	0.718	1053	0.473	Male	364	3.88	1.008	Presentation	Female	691	3.59	1.165	0.673	1053	0.501	Male	364	3.54	1.148	Drama	Female	691	3.87	1.092	1.432	1053	0.153	Male	364	3.76	1.106	Demonstration	Female	691	3.95	1.023	2.147	1053	0.032	Male	364	3.81	1.099	Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123																				
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	Male	364	3.70	1.069				Deductive Method	Female	691	3.42	0.985	1.414	1053	0.158	Male	364	3.32	1.098	Inductive Method	Female	691	3.74	0.981	3.121	1053	0.002	Male	364	3.54	0.997	Brainstorming	Female	691	3.90	0.980	1.056	1053	0.291	Male	364	3.83	1.011	Discussion Method	Female	691	4.00	1.009	-1.012	1053	0.312	Male	364	4.06	0.949	Case Study	Female	690	4.36	0.800	3.022	1052	0.003	Male	364	4.20	0.853	Project Method	Female	691	3.73	1.072	1.753	1053	0.080	Male	364	3.60	1.154	Problem-solving	Female	691	3.93	0.976	0.718	1053	0.473	Male	364	3.88	1.008	Presentation	Female	691	3.59	1.165	0.673	1053	0.501	Male	364	3.54	1.148	Drama	Female	691	3.87	1.092	1.432	1053	0.153	Male	364	3.76	1.106	Demonstration	Female	691	3.95	1.023	2.147	1053	0.032	Male	364	3.81	1.099	Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123																																
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Drama	Female	691	3.87	1.092	1.432	1053	0.153																																																																																																																																																																																
	Male	364	3.76	1.106				Demonstration	Female	691	3.95	1.023	2.147	1053	0.032	Male	364	3.81	1.099	Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123																																																																																																																																												
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	Male	364	3.81	1.099				Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386	Male	364	3.61	1.167	Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123																																																																																																																																																								
Cooperative Learning	Female	691	3.55	1.089	-0.867	1053	0.386																																																																																																																																																																																
	Male	364	3.61	1.167				Research Method	Female	690	4.03	1.032	2.431	1052	0.015	Male	364	3.86	1.123																																																																																																																																																																				
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	Male	364	3.86	1.123																																																																																																																																																																																			

work method were evaluated to be below 4.00 points on average in terms of grade level. The perceptions of students show significant differences at the 0.05 level in terms of grade level. According to pairwise comparisons, freshmen have more positive opinions than sophomores.

The individual work method has been evaluated to be below 4.00 points on average by all grade levels. The points related to the level of preference of the methods show significant differences at the 0.05 level in terms of grade level.

Table 9. Perceptions of students on teaching materials suitable for their own learning according to their gender.

	Gender	N	X	Ss	T	Sd	P
Books and Written Materials	Female	691	3.58	1.061	1.942	1053	0.052
	Male	364	3.45	1.135			
Illustrations	Female	691	4.06	0.888	2.895	1053	0.004
	Male	364	3.89	0.931			
Schema and Graphics	Female	691	4.02	0.921	0.682	1053	0.496
	Male	364	3.98	0.841			
Models	Female	691	4.1	0.860	2.762	1053	0.006
	Male	364	3.94	0.916			
Film Demonstrations	Female	691	4.35	0.791	2.193	1053	0.029
	Male	364	4.24	0.852			
Computer Software—CD-VCD	Female	691	3.82	1.000	-0.481	1053	0.630
	Male	364	3.85	0.993			
PowerPoint Demonstrations	Female	691	3.65	1.091	0.25	1053	0.803
	Male	364	3.63	1.107			
Over-head Projector	Female	691	3.31	1.162	-1.413	1053	0.158

Table 10. Perceptions of students on teaching methods suitable for their own learning according to grade level.

Teaching methods	Grade level	n	x	ss	F	p	Source of variants
Lecturing	Freshman	343	3.26	1.108	2.524	0.081	
	Sophomore	362	3.30	1.037			
	Junior	350	3.13	0.993			
	Total	1055	3.23	1.048			
Question—Answer	Freshman	343	3.76	0.953	0.964	0.382	
	Sophomore	362	3.67	0.933			
	Junior	350	3.67	0.968			
	Total	1055	3.70	0.951			
Group Work	Freshman	343	3.55	0.990	3.235	0.040	Between freshmen and Sophomore levels
	Sophomore	362	3.35	1.166			
	Junior	350	3.43	0.989			
	Total	1055	3.44	1.055			
Individual Work	Freshman	343	3.71	1.041	4.171	0.016	Between freshmen and sophomore levels
	Sophomore	362	3.93	0.975			
	Junior	350	3.82	1.011			
	Total	1055	3.82	1.012			
Deductive Method	Freshman	343	3.35	1.037	0.282	0.754	
	Sophomore	362	3.41	1.020			
	Junior	350	3.39	1.023			
	Total	1055	3.38	1.026			

Table 10. Cont'd.

Inductive Method	Freshman	343	3.59	1.044	1.499	0.224	
	Sophomore	362	3.68	0.997			
	Junior	350	3.72	0.927			
	Total	1055	3.67	0.991			
Brain Storming	Freshman	343	3.77	1.033	4.269	0.014	Between freshmen and sophomore levels
	Sophomore	362	3.87	0.986			
	Junior	350	3.99	0.942			
	Total	1055	3.88	0.990			
Discussion Method	Freshmen	343	4.01	1.032	2.714	0.067	
	Sophomore	362	3.94	0.992			
	Junior	350	4.11	0.936			
	Total	1055	4.02	0.989			
Case Study	Freshmen	342	4.30	0.838	0.345	0.708	
	Sophomore	362	4.28	0.848			
	Junior	350	4.33	0.779			
	Total	1054	4.31	0.822			
Project Method	Freshmen	343	3.62	1.096	2.131	0.119	
	Sophomore	362	3.66	1.123			
	Junior	350	3.78	1.081			
	Total	1055	3.69	1.102			
Problem-solving	Freshmen	343	3.91	1.003	0.148	0.862	
	Sophomore	362	3.90	1.000			
	Junior	350	3.94	0.958			
	Total	1055	3.91	0.987			
Presentation	Freshmen	343	3.59	1.123	1.184	0.307	
	Sophomore	362	3.50	1.210			
	Junior	350	3.63	1.140			
	Total	1055	3.57	1.159			
Drama	Freshmen	343	3.80	1.154	2.93	0.054	
	Sophomore	362	3.75	1.088			
	Junior	350	3.94	1.042			
	Total	1055	3.83	1.097			
Demonstration	Freshmen	343	3.94	1.065	0.924	0.397	
	Sophomore	362	3.84	1.076			
	Junior	350	3.93	1.013			
	Total	1055	3.90	1.052			
Cooperative Learning	Freshmen	343	3.66	1.161	1.752	0.174	
	Sophomore	362	3.56	1.131			
	Junior	350	3.50	1.054			
	Total	1055	3.57	1.117			
Research Method	Freshmen	343	3.94	1.104	0.879	0.415	
	Sophomore	362	3.94	1.041			
	Junior	349	4.03	1.057			
	Total	1054	3.97	1.067			

Table 11. Perceptions of students on teaching materials suitable for their own learning according to grade level.

	Grade level	n	x	ss	F	p	Source of variants
Books and written materials	Freshmen	343	3.55	1.127	1.923	0.147	
	Sophomore	362	3.60	1.074			
	Junior	350	3.45	1.060			
	Total	1055	3.53	1.088			
Illustrations	Freshmen	343	3.98	0.955	0.907	0.404	
	Sophomore	362	3.98	0.920			
	Junior	350	4.06	0.841			
	Total	1055	4.00	0.906			
Schema and graphics	Freshmen	343	3.95	0.949	1.37	0.255	
	Sophomore	362	4.01	0.915			
	Junior	350	4.06	0.813			
	Total	1055	4.01	0.894			
Models	Freshmen	343	3.88	0.948	9.495	0.000	Between Freshmen and juniors
	Sophomore	362	4.07	0.862			
	Junior	350	4.17	0.814			
	Total	1055	4.04	0.883			
Film demonstrations	Freshmen	343	4.27	0.819	0.731	0.482	
	Sophomore	362	4.33	0.806			
	Junior	350	4.33	0.818			
	Total	1055	4.31	0.814			
Computer software—CD-VCD	Freshmen	343	3.82	0.983	0.176	0.839	
	Sophomore	362	3.82	1.021			
	Junior	350	3.86	0.988			
	Total	1055	3.83	0.997			
PowerPoint	Freshmen	343	3.71	1.085	1.165	0.312	
	Sophomore	362	3.58	1.102			
	Junior	350	3.63	1.101			
	Total	1055	3.64	1.096			
Over-head projector	Freshmen	343	3.39	1.167	1.587	0.205	
	Sophomore	362	3.26	1.190			
	Junior	350	3.40	1.130			
	Total	1055	3.35	1.164			

According to pairwise comparisons, sophomores have more positive opinions than freshmen. Students' perceptions of brainstorming method are below 4.00 points. The level of preference of the method shows significant differences at the .05 level in terms of grade level. According to pairwise comparisons, juniors have more positive opinions than freshmen. Students' perceptions of lecturing, question-answer, deductive, inductive, discussion, case study, project, problem-solving, presentation, drama, demonstration, cooperative learning and research methods show no significant

difference in terms of grade.

According to Table 11, the findings concerning differences in students' preferences of teaching materials in terms of grade level are summarized below. The perceptions of students of models of the teaching materials show significant differences at the 0.01 level in terms of grade level. According to pairwise comparisons, juniors have more positive opinions than freshmen. Although freshmen evaluated it to be below 4.00 points on average, sophomores and juniors evaluated it to be over 4.00 points on the average. The perceptions of

students on books and written materials, illustrations, schema and graphics, film demonstrations, computer software, PowerPoint and over-head projectors show no significant differences in terms of grade level.

DISCUSSION

That lecturing method was evaluated as the most ineffective method is an expected result. The common opinion that lecturing method is ineffective in terms of learning due to students' being passive during learning and teaching processes, the inability to provide them with the learning environment in which they are able to express their perceptions and insufficient feedback related to their learning level, is also shared by education faculty students. That case study and discussion methods are the most effective methods which may be interpreted as an indicator of students' desire to be actively involved in learning processes. Conversely, case studies are regarded as an effective method that allows pre-service teachers deal with some difficulties they may encounter within their profession during their inservice training (Şahin et al., 2010). In style research, memorization, considered to be a part of lecturing method, is more associated with conservative style as it has been expected that, as in traditional schools for a long time, a great deal of information is absorbed and repeated. In other words, a rote learning (memorization) approach will improve conservative style preference (Sternberg, 1997). Lecturing method supports a rote learning approach by its nature of evaluation (Esmer, 2013). However, this approach definitely, does not conform to constructivist teaching programs, carried out in Turkey since 2005. Constructivism, broadly speaking, is based on; (1) the nature of reality (knowledge belongs to the world), (2) the nature of knowledge (knowledge is shaped in human mind), (3) the nature of human (meanings are shared), (4) the nature of science (meanings are shaped thanks to humans' active participation) (Wilson, 1997; Erdem and Demirel, 2002).

As a reflection of constructivist learning approach, the main alteration in the view of learning- teaching seems to inevitably affect teacher education and teacher training programs in our country (Arslan, 2007). Therefore, it is assumed that the teachers who are trained to be guides in constructivist learning environments are expected to have grown up in a constructivist learning environment themselves. As a result, discussion and case study methods are assumed to be the most popular methods among education faculty students. However, the methods of lecturing, question-answer, group work, deductive and inductive methods, individual work, and project method have been regarded as the least preferred methods.

Although, the most effective material is film demonstrations, it is clear that over-head projector is the

most ineffective method. To some extent, students find it more effective to see the topics that they will learn through a film scenario; this can be evaluated as a natural result. Films appeal to all senses due to the scenarios, visuality and musical backgrounds, and they also stimulate feelings. Therefore, this highlights the importance of film demonstrations to education (İşcan, 2011). Films are also considered to help teachers develop teaching skills and deal with the problems they encounter. On the contrary, computer software (CD-VCD) materials are, broadly speaking, effective but not as much as films. It is understood from the research results related to material preferences that the context of the material is as crucial as the material itself. As a result, it is stated that computer software producers should create unique works on the purpose of having the same impression as film producers.

In summary, it is stated that, to students, the most popular and engaging materials are film demonstrations, illustrations and models and, then, schema and graphics, computer software, and PowerPoint presentations. Among the least interesting materials are books and written materials and over-head projectors. Both visual and audio environments involve film machines, animations, television and videos. This sort of learning environment consists of more than one kind of data as they appeal to more than one sense, and therefore they are called multimedia (Akkoyunlu and Yılmaz, 2005). It was shown that pre-service teachers prefer multimedia learning environments. The fact that multimedia learning environments have become prevalent in classroom activities both increases interest among pre-service teachers toward these materials and also requires them to have the necessary knowledge and skills about this kind of educational technologies (Yılmaz, 2007).

In light of the findings, it is possible to state that there is a difference in teaching method preferences by department. According to arithmetic mean, if 4.00 points is taken as a criteria, primary-school teaching students mostly prefer discussion, case study and demonstration methods; Science teaching students mostly prefer individual work, case study, and problem-solving methods; Mathematics teaching students mostly prefer case study, and problem-solving methods; religion culture teaching students mostly prefer discussion, case study, and research methods; Music teaching students mostly prefer individual work, discussion, and case study, research methods; Social studies teaching students mostly prefer discussion and case study methods; English teaching students mostly prefer discussion and case study methods.

The education faculty students' preferences related to individual work, inductive method, case study, demonstration, and research methods show differences in terms of gender; conversely, question-answer, group work, deductive method, brainstorming, discussion,

project method, problem-solving, presentation, drama, cooperative learning, and research methods show no difference. If the methods for which students have different perceptions are considered, it was seen that female students awarded more points. It is open to question whether this result is based on culture or learning processes as well as gender.

In light of findings related to differences in the perceptions of students in terms of grade level, it has been emphasized that group work, individual work and brainstorming methods show differences, although other methods do not. Group work preference decreases but individual work preference seems to increase while moving to the sophomore level. The average points related to brainstorming method show that the higher the interest, the higher the grade. It appears that when the students move to a higher grade, they tend to prefer methods that allow them to actively participate in the process individually.

Based on the findings mentioned above, it can be said that learning settings in teacher's training should be structured by taking individual differences into account. Therefore, it can be suggested that academicians in the teacher education field should use different methods and techniques in the courses they teach. Additionally, experimental research should be carried out to examine the effectiveness of learning settings organized in line with individual differences.

Conflict of Interests

The authors have not declared any conflicts of interest.

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Full Length Research Paper

Metaphors of teacher candidates' regarding the concept of "non-governmental organizations" (NGOs)

Tuğba SELANİK-AY

Afyon Kocatepe University, Turkey.

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In this study, a learning area in social studies curriculum called "Groups, institutions and social organizations" was used. It can be seen that an important role for teachers in a social studies programme is to benefit from non-governmental organizations. The aim of this study is to investigate primary school teacher candidates' social metaphors to describe the concept of non-governmental organizations. In the study, phenomenology method is used which is widely employed in a qualitative research approach. The participants of the study are 300 teacher candidates attending Afyon Kocatepe University, Faculty of Education. The Non-governmental Organizations (NGOs) Metaphor Form is used to collect data. The findings obtained show that the participants developed 47 NGO-related metaphors. The most commonly reported category is society (38.31%) followed by the category of others (34.48%) and values (26.81%).

Key words: Non-governmental organizations, education, teacher candidates, metaphors.

INTRODUCTION

Non-Governmental Organisations (NGOs) play an important role in the development process of countries. Their contributions are particularly significant in supporting literacy, community schools, health education, early childhood care, skills training and other forms of learning. By this way, they help people to improve their living conditions (Fielmua and Bandie, 2012).

There are many different definitions of NGOs: Keane (1994) defined these volunteer organizations as those which deal with unofficial activities, and which have pressure and control over public institutions through their activities. Doğan (2002) regarded NGOs as those organizations which are sensitive to social injustice, develop solutions, and contribute to social awareness.

Acı (2005) considered them to be a field of activity where attempts occur without any external force. The functions of NGOs can be given as follows (Talas, 2011):

1. Helping individuals to express their needs publicly through forming public opinion
2. Being a balancing item against market values in order to develop a pluralist society.
3. Producing individuals who have experience about participatory and pluralist culture as well as about management.
4. Developing pilot projects, finding sources for these projects, educational activities through these projects, assuming responsibility about governments' policies

E-mail: tsay@aku.edu.tr. Tel: +902722281418.

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about social welfare and employment.

Therefore, it can be seen that NGOs include relationship between the state and the individuals based on a legal framework, and they may employ informed knowledge, higher levels of trust and can be easily organized (Çaha, 2000, 54). It is possible to develop the following definition of NGOs based on the qualities stated earlier: "NGOs have volunteer workers who try to find viable solutions for social problems and are an integrated part of democratic life".

Teachers must not only be present and teach (prevailing teacher absenteeism rates are 33%) in class, they must engage the children in joyful activities, and strive to make education interesting for the rural poor through the use of new teaching/learning methods. Children must not only attain basic reading and writing skills, they should develop both cognitive and non-cognitive skills. The curriculum and pedagogy in schools should be relevant, and meaningful for the life situations of the children attending school.

In the face of such growing expectations from school education, the State finds it difficult to meet not only the basic needs of children (Jagannathan, 2001). Citizenship education and also social studies aim at helping students acquire higher levels of knowledge, understand the relationship between knowledge and action, develop a commitment to act to improve the world, and acquire the skills needed to participate in civic action. Thus, it should assist the students to learn to change the World (Banks, 2001). Benefitting from NGOs can help teachers with this aim.

NGOs may deal with educational problems and at the same time, these organizations may directly get involve in educational activities in which certain skills or values are focused with the aim of producing effective citizens. Such efforts seem to contribute to the integration of learning into real life, and to improve the quality of education. Educational cooperation with NGOs vary significantly in terms of producing effective citizens. In universities, NGOs have some activities, which have positive effects on university students and pre-service teachers. Examples of such positive effects on pre-service teachers include socialization and awareness both of which are necessary for their future teaching professions.

In recent years, active citizenship and participation in society have been in the forefront of debates in European societies. The number of people who vote and participate in activities in society is decreasing all the time. Many politicians are surprised as to the reasons why young people are so passive in this respect. Schools have an important role in increasing awareness of matters in society, and NGOs in turn have a very important role in educating teachers for future generations (Kallioniemi, 2011). In universities, there are some courses which have to benefit non-governmental organizations such as

"Community Service Practices Course (CSPC)". In CSPC, teacher candidates have to identify a problem in the society, and they have to solve this problem in cooperation with NGO which already works to solve the problem. Moreover, it can be stated that participating in the activities of NGOs can be used to produce active citizens. Students may acquire several citizenship skills such as developing a sense of citizenship, sensitivity about social problems, being aware of social roles and responsibilities and employing their rights as citizens through being a member of NGOs.

The field of Social Studies is that part of the elementary and high school curriculum which has primary responsibility for helping students to develop the knowledge, skills, attitudes and values needed to participate in the civic life of their local communities, the nation and the world (Banks, 1990). Social studies education employs information and methods from social sciences and humanities to produce effective citizens who can make informed decisions and solve problems (Öztürk, 2009). Safran (2008) argues that social studies courses provide students with the opportunity to acquire the values, attitudes and behaviors necessary for life in society. Erden (no date) stated that for social studies education process both their home, school and immediate environment are significant. In schools, students acquire theoretical information and skills which allow them to adapt to social life. All institutions in society have their unique functions which contribute to the continuation of society. Therefore, individuals should be familiar with institutions, aware of their responsibilities and expectations. In order for students to learn information, skills and values outside school, they should integrate their learning with real life. When learning acquired in social studies courses is employed in real life, the students can be effective members of a society. Therefore, learning acquired in social studies should be supported by extra curricular activities. On the other hand, the constructivist approach which dominates today's educational activities requires a change in the traditional teaching and learning process. Therefore, learning acquired in social studies cannot be limited to classroom environment, and should be supported by extra curricular activities (Çengelci, 2013).

Selanik-Ay (2010) argued that in order to produce qualified individuals and effective citizens in social studies courses, social institutions should be employed in terms of developing a relationship between schools and society or between schools and real life. NGOs are also part of social institutions. At the level of basic education, effective citizenship can be taught through social projects and social involvement activities.

NCSS (2016) stated that a social studies curriculum includes a theme called "individuals, groups, and institutions" which typically appears in units and courses dealing with sociology, anthropology, psychology, political science, and history. Young children should be given the

opportunity to examine various institutions that affect their lives and influence their thinking. They should be assisted in recognizing the tensions that occur when the goals, values, and principles of two or more institutions or groups conflict. They should also have opportunities to explore ways in which institutions (such as voluntary associations, or organizations, non-governmental organizations) are created to respond to changing individual and group needs. High school students must understand the paradigms and traditions that undergird social and political institutions. They should be provided with opportunities to examine, use, and add to the body of knowledge offered by the behavioral sciences and social theory in relation to the ways people and groups organize themselves around common needs, beliefs, and interests (<http://www.socialstudies.org/standards/strands>).

New concepts such as non-cognitive skills or development of positive attributes among children emotional intelligence have emerged, which need qualitative studies to establish causal factors leading to improved learning. Joyful learning may have an intrinsic value but evidence on link to learning achievements is required. Studies are needed to document learning outcomes of children in various settings so that best practices in teaching/learning at the primary stage can be identified. This calls for tools and methods for more broad-based student assessment. NGOs stress the need for school-based action research with teachers playing an important role (Jagannathan, 2001). All partners agreed that one of the most important successes of NGOs working in education has been the increased access to schooling and active local community involvement in the quality of education (Miller-Grandvaux et al., 2002).

Institutions are the formal and informal political, economic, and social organizations that help us carry out, organize, and manage our daily affairs. Schools, religious institutions, families, government agencies, and the courts all play an integral role in our lives. They are organizational embodiments of the core social values of those who comprise them, and play a variety of important roles in socializing individuals and meeting their needs, as well as in the promotion of societal continuity, the mediation of conflict, and the consideration of public issues. It is important that students know how institutions are formed, what controls and influences them, how they control and influence individuals and culture, and how institutions can be maintained or changed.

The study of individuals, groups, and institutions, drawing upon sociology, anthropology, and other disciplines, prepares students to ask and answer questions such as: What is the role of institutions in this and other societies? How am I influenced by institutions? How do institutions change? What is my role in institutional change? Students identify those institutions that they encounter. They analyze how the institutions operate and find ways that will help them participate more effectively in their relationships with these institutions.

Finally, students examine the foundations of the institutions that affect their lives, and determine how they can contribute to the shared goals and desires of society. Nummenpää (2012) aimed in his bachelor thesis to look at whether or not NGOs have the potential to improve primary education in New Delhi; the analysis of which will be based on qualitative, semi-structured interviews conducted on site.

The conclusion from the study is that these NGOs play an important role in primary education, not through directly providing education, but by raising awareness of the importance of education, advocacy and by preparing children for their studies. Furthermore, benefitting from NGOs for educational purposes is important for training teachers too. There is no study on the use of NGOs for educational purposes in Turkey. However, NGOs may contribute to numerous basic education courses, and also on social development of students. For instance, through such a cooperation with NGOs, students may get involved in activities which allow them to combine learning with real world. In this regard, teachers' perceptions about NGOs as well as their involvement in NGO-based activities are significant. The aim of this study is to reveal teacher candidates' perceptions about NGOs via metaphors.

METHODOLOGY

This study was carried out using the pattern of basic interpretive qualitative study. Merriam (2002) described interpretive qualitative research as the construction of meaning. Merriam (2002) stated that, symbolic interactionism informs this type of research.

Symbolic interactionism focuses on the interpretation of human beings within a certain context of the larger society as the individual interacts with other people. Symbolic interactionism emphasizes seeing the world through the other person's perspective and placing ourselves in the other person's situation. In a similar manner, interpretive qualitative research emphasizes subjectivity on people's behaviors, and realizes that people's interpretations are based on everyday experiences that has a meaning for them (Merriam, 2002).

In the study, basic interpretive qualitative study was employed to reveal the perceptions and views of the teacher candidates' about NGOs via metaphors. This study focuses on teacher candidates' perceptions of the "NGOs", and metaphorical analysis technique turns out to be an effective way to draw details from the collected qualitative data. Providing new understandings, metaphors which are defined simply as understanding something from another perspective, create our thoughts and actions at the same time (Lokoff and Johnson, 1980).

Metaphors are valuable research tools providing a new outlook into educational practices and theories (Jensen, 2006 cited in Argon, 2015). To determine participants, the accessible case sampling method was used, which is one of the sampling methods of qualitative research. In an accessible case sampling method, the researcher chooses a close and easy-to-access case. The participants of the study were 300 teacher candidates attending different departments such as classroom teaching, pre-service education and social studies education of the faculty of education at Afyon Kocatepe University. However, the data obtained from 40 participants were excluded from the analysis because they did not provide accurate justification for the metaphors. Therefore, the total

Table 1. Personal characteristics of participants.

Variable		N	Percentage
Gender	Male	109	41.92
	Female	151	58.08
	Total	260	100
Divisions	Elementary school teaching	136	52.30
	Social studies teaching	64	24.62
	Preschool teaching	60	23.08
	Total	260	100
Membership to NGOS	Member	38	14
	Thinking about it	152	58
	Not thinking about it	70	26
	Total	260	100
Involvement degree	Active	18	47
	Somehow active	5	13
	Passive	15	40
	Total	38	100

number of the participants were 260. Presents the personal characteristics of the participants. As can be seen in Table 1 of the participants, 109 were male and 151 were female. Of them, 136 attended the elementary school teaching department, 64 attended social studies teaching department and 60 were attending pre-school teaching department. It was found that a few pre-service teachers were members of NGO (38, 14%). On the other hand, 152 participants reported that they were planning to be a member of an NGO (58%), while 70 did not report such an intention (26%). Therefore, only half of them were NGO member. It can be argued that these pre-service teachers should be actively encourage to involve in NGO activities.

In order to collect data, a form was used. The form contained the expression "Non-governmental organizations is like/similar to because" which was prepared for this study. Firstly, the forms which were prepared to learn teacher candidates' perceptions towards non-governmental organizations by means of metaphors were delivered to the teacher candidates to be filled in. Before filling in the delivered forms, teacher candidates were informed about the subject and purpose of the study, and several explanations were made about how to fill forms by telling the metaphor concept according to the definitions in the literature.

Moreover, students who participated in the study were asked to explain the metaphor that they wrote in the relevant blanks after the comma by giving a reason. The forms filled in by the students in light of those explanations were recollected, and the data collection procedure ended. In the statements given above the word "like" is used to obtain a clear connection between "topic of metaphor" and "source of metaphor". The word "because" is used to reveal the justification for the metaphor (Saban, 2009). Apart of this, an interview was carried out with the participants about their views concerning NGOs. The obtained data was analysed following five steps (Saban 2009): coding and selection, developing a sample metaphor list, identifying categories, establishments of validity and reliability and transforming metaphors into quantitative data.

Coding and selection

At this step, the metaphors developed by the participants were

reviewed. Each metaphor identified was simply coded. 40 papers were excluded from the analysis in that there was no metaphors or no accurate justifications.

Developing a sample metaphor list

The metaphors selected were listed alphabetically and reviewed. In direct quotations, only related part were used, and three full stops were used to indicate it.

Identifying categories

At this step, the metaphors were classified under related categories. It was found that the metaphors developed by the participants belonged to three categories.

Reliability and validity

One of the requirements in qualitative studies to establish validity is to provide information about how the data were obtained (Yıldırım and Şimşek, 2006). Therefore, in the study, data analysis process was explained in detail and all metaphors identified under three categories were given. Concerning reliability, the data were analysed by the authors separately, and also by a field specialist. Experts' metaphor allocation was compared with the researchers', amounts of the similarities and contrasts were found, and reliability of the study was calculated on the "Reliability = ((Similarities) : (Similarities + Contrasts)) x 100" equation (Miles and Huberman, 1994). The intercoder value was found to be 92%, indicating the reliability of the study.

Quantitative data and interpretation

At this step, the metaphors developed by the participants were transformed into quantitative data. More specifically, the metaphors

were categorized and how many NGO-related categories covered in each category were found. Then their frequencies and percentages were found and presented with tables. Using these quantitative findings, the metaphor categories were discussed and interpreted.

FINDINGS

This section presents the discussion of findings. Findings acquired in relation with the teacher candidates' metaphors on the concept of the NGOs were tabulated, classified, analyzed and interpreted. In Table 2, the metaphors created by the teacher candidates are listed in alphabetical order, and the amount of teacher candidates and respective metaphors are given.

Students were provided 47 valid metaphors on the concept of NGOs. The most frequent metaphors were: social sensitivity (18), help (15), social order (15), solidarity (13), social awareness (12), responsibility (10) and sense of unity in society (10). The least frequent metaphors were: angel, power and vessels which was represented by one teacher candidate. The metaphors of the teacher candidates on NGOs are classified under three categories, which were: society based NGOs metaphors, values based NGOs metaphors and other metaphors. These categories are demonstrated in Table 3.

Table 1 shows that the participants have developed NGO-related metaphors which are classified into three categories, namely society, values and other. Of these three categories, the most commonly reported is the category of society (38,31%) followed by the category of others (34,86%) and others (26,81%). Table 3 indicates society-based NGOs metaphors.

Under the "society-based NGOs metaphors" category 100 teacher candidates created 11 following metaphors: social sensitivity (18), social order (15), social awareness (12), sense of unity in society (10), social solidarity (9), voice of society (9), basis of society (8), helper of needy in the community (6), lifeblood of society (5), social guide (4) and social peace (4). Explanations of the three most used metaphors under this category which are social sensitivity, social order and social awareness respectively are:

"NGOs are similar to social sensitivity. If you are disturbed by environmental pollution, if you could not sleep due to ill people or the poor, if you are happy to help children who could not go to school due to financial problems, then it means that for you society rather than yourself is the center of life. For me, each citizen should have the quality of social sensitivity. Sensitive citizens voluntarily take part in activities of NGOs to solve the problems of other people. Therefore, NGOs mean social sensitivity."

"NGOs are similar to social order. Because being an NGO member is the only way to seek justice and to have

legal power in democratic societies. Reacting against an improper practice legally through NGOs is a democratic right."

"NGOs are similar to social awareness. Because states cannot cope with everything themselves. NGOs make people happy and comfortable through their educational activities, economic activities and other activities. For instance, against improper practices of the state, NGOs may react to these. NGOs try to develop an awareness and consciousness to improve society among individuals."

Table 4 indicates the value-based NGO metaphors developed by the participants. Under the "values-based NGOs metaphors" category, 70 teacher candidates created 12 following metaphors: help (15), solidarity (13), responsibility (10), goodness (8), sensitivity (6), awareness (4), socialization (3), sharing (3), respect (2), fairness (2), devotion (2) and self-reliance (2). Explanations of the three most used metaphors under this category which are help, solidarity and responsibility respectively are:

"NGOs are similar to help. Because most the NGOs are based on the principle of voluntarism. These organizations are composed of individuals who want to help, make solidarity and be useful to others in society. In Turkey, NGOs such as TEGV and TOBB are important organizations for students."

"NGOs are similar to solidarity. Because the spirit of NGOs is solidarity. It is blankets and tents in earthquakes. They may find blood needed and help poor students. They support poor and ill people. Thus, NGOs are solidarity."

"NGOs are similar to responsibility. Because each citizen should assume responsibility in solving social problems. At least, they should feel responsibility in this regard. They can achieve it through coming together with other people with the same goal."

Table 5 indicates the other metaphors developed by the participants. Under the "other metaphors" category, 90 teacher candidates created 24 following metaphors: History (9), family (8), sun (6), mine (6), roots of the tree (6), need (5), sharing chain (5), inheritance (5), sycamore (4), life (4), lifting (3), one who extends hand (3), quality of life (3), book (3), good tree (3), humanity (3), home (2), hope (2), future (2), conscience (2), lantern (2), power (1), vessels (1) and angel (1). Explanations of the three most used metaphors under this category which are history, family, sun respectively are:

"NGOs are like history. Because the common point in all Turkish states are the foundations. Throughout the history, a problem of anybody has been regarded as a common problem. Therefore, foundations were established to help others and to solve problems."

Table 2. Amount of students and percentages representing the teacher candidates' metaphors on "NGOs" (by frequency).

Order	Name of the valid metaphor	Frequency (f)	Percentage
1	Social sensitivity	18	6.92
2	Help	15	5.76
3	Social order	15	5.76
4	Solidarity	13	5
5	Social awareness	12	4.61
6	Responsibility	10	3.84
7	Sense of unity in society	10	3.84
8	History	9	3.46
9	Social solidarity	9	3.46
10	Voice of society	9	3.46
11	Basis of society	8	3.07
12	Family	8	3,07
13	Goodness	8	3.07
14	Helper of the needy in the community	6	2.30
15	Mine	6	2.30
16	Roots of the tree	6	2.30
17	Sensitivity	6	2.30
18	Sun	6	2.30
19	Inheritance	5	1.92
20	Lifeblood of society	5	1.92
21	Need	5	1.92
22	Sharing chain	5	1.92
23	Awareness	4	1.53
24	Life	4	1.53
25	Social guide	4	1.53
26	Social peace	4	1.53
27	Sycamore	4	1.53
28	Book	3	1.53
29	Good tree	3	1.53
30	Home	3	1.53
31	Humanity	3	1.53
32	Lifting	3	1.15
33	Sharing	3	1.15
34	Socialization	3	1.53
35	One who extends hand	3	1.53
36	Quality of life	3	1.53
37	Conscience	2	0.76
38	Devotion	2	0.76
39	Fairness	2	0.76
40	Future	2	0.76
41	Hope	2	0.76
42	Lantern	2	0.76
43	Respect	2	0,76
44	Self-reliance	2	0.76
45	Angel	1	0.38
46	Power	1	0.38
47	Vessels	1	0.38

"NGOs are like a family. Because NGOs help every needy person and make them feel like they live in a

Table 2. Categories of metaphors by the teacher candidates' on the concept of "NGOs".

Categories	Metaphors	Total frequency (f)	Total percentage
Society based NGOs metaphors	social sensitivity, social order, social awareness, sense of unity in society, social solidarity, voice of society, basis of society, helper of the needy in the community, lifeblood of society, social guide, social peace	100	38.31
Value based NGOs metaphors	help, solidarity, responsibility, goodness, sensitivity, awareness, socialization, sharing, respect, fairness, devotion, self-reliance	70	26.81
Other NGOs metaphors	History, family, sun, mine, roots of the tree, need, sharing chain, inheritance, sycamore, life, lifting, one who extends hand, quality of life, book, good, tree, humanity, home, hope, future, conscience, lantern, power, vessels, angel	90	34.48

Table 3. Society-based NGOs metaphors.

Order	Name of the valid metaphor	Frequency (f)	Percentage
1	Social sensitivity	18	6.92
2	Social order	15	5.76
3	Social awareness	12	4.61
4	Sense of unity in society	10	3.84
5	Social solidarity	9	3.46
6	Voice of society	9	3.46
7	Basis of society	8	3.07
8	Helper of the needy in the community	6	2.30
9	Lifeblood of society	5	1.92
10	Social guide	4	1.53
11	Social peace	4	1.53

Table 4. Value-based NGOs metaphors.

Order	Name of the valid metaphor	Frequency (f)	Percentage
1	Help	15	5.76
2	Solidarity	13	5
3	Responsibility	10	3.84
4	Goodness	8	3.07
5	Sensitivity	6	2.30
6	Awareness	4	1.53
7	Socialization	3	1.15
8	Sharing	3	1.15
9	Respect	2	0.76
10	Fairness	2	0.76
11	Devotion	2	0.76
12	Self-reliance	2	0.76

Table 5. Other metaphors.

Order	Name of the valid metaphor	Frequency (f)	Percentage
1	History	9	3.46
2	Family	8	3.07
3	Sun	6	2.30
4	Mine	6	2.30
5	Roots of the tree	6	2.30
6	Need	5	1.92
7	Sharing chain	5	1.92
8	Inheritance	5	1.92
9	Sycamore	4	1.53
10	Life	4	1.53
11	Lifting	3	1.53
12	One who extends hand	3	1.53
13	Quality of life	3	1.53
14	Book	3	1.53
15	Good tree	3	1.53
16	Humanity	3	1.53
17	Home	2	0.76
18	Hope	2	0.76
19	Future	2	0.76
20	Conscience	2	0.76
21	Lantern	2	0.76
22	Power	1	0.38
23	Vessels	1	0.38
24	Angel	1	0.38

family.”

“NGOs are like the sun. Because the world cannot be brighten without the sun. In the night, the world becomes darker but the sun brightens it. Similarly, NGOs warm people and allow individuals to have a common goal.”

“NGOs are like vessels. Because they are going through Turkey’s heart. Given that NGOs are based on the principle of volunteerism and consist of individuals with a common goal, NGOs have vital importance for society. If we are aware of the significance of the activities of NGOs and make students acquired this information, I think we can produce future active members for NGOs. Like vessels, we may use these ways to be active in NGOs.”

DISCUSSIONS

According to the results, students have provided 47 valid metaphors on the concept of NGOs. The most frequent metaphors are: social sensitivity (18), help (15), social order (15), solidarity (13), social awareness (12), responsibility (10) and sense of unity in society (10). The least frequent metaphors are: angel, power and vessels which are represented by one teacher candidate. The metaphors of the teacher candidates on NGOs are classified under three categories, which are: society based NGOs metaphors, values based NGOs metaphors

and other metaphors. Of these three categories, the most commonly reported are the category of society (38,31%) followed by the category of values (26,81%) and others (34,48%).

It was also found that the participants developed numerous metaphors about NGOs. The reason for such a high number of NGO metaphors can be that these organizations require many definitions and perspectives. It may also reflect multi-dimensional structure and various activities of NGOs. At the same time, it may also reflect the fact that the participants have different perspectives about NGOs. In the study, it was also found that less participants were the members of NGOs (14%). Of them, only half were active members. Therefore, teacher candidates should be encouraged to get involved in the activities of NGOs.

As stated earlier, the most commonly reported NGO metaphor category is society based NGOs metaphors (38,46%), followed by value-based NGOs metaphors (34,62%) and other metaphors (26,92%). Within the society based NGOs category, there were eleven metaphors and the most frequent ones were social sensitivity, social order and social awareness. Boydak-Ozen et al. (2015) stated in their study that teachers’ views about NGOs are mainly focused on social awareness, too. Therefore it can be said that these results are coherent.

Conclusion

In regard to “values-based NGOs metaphors” category, the participants developed twelve metaphors. Of them, the most frequently stated ones were found to be help, solidarity and responsibility. Under other NGO metaphors category, there were twenty-five subcategories and the most frequently stated ones were found to be history, family and the sun. In Eraslan and Erdoğan's (2015) study called “Values, Youth and Non-Governmental Organizations” it was stated that teacher candidates views about benefitting from NGOs on values education was positive. Also, teacher candidates stated views as NGOs are value itself. In this study, teacher candidates create values based on metaphors. It can be said that these results are parallel, too. In addition to “other metaphors” category, 90 teacher candidates created 24 metaphors. The metaphors that are mainly focused are history, family, sun, mine and roots of the tree.

RECOMENDATIONS

Further qualitative studies can be carried out about the views of teacher candidates concerning NGOs and teaching of this concept. In addition, the views of elementary education students and teachers about NGOs can be analysed in future studies.

Conflict of Interests

The authors have not declared any conflict of interests.

Ethical rules

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Full Length Research Paper

University students' metacognitive failures in mathematical proving investigated based on the framework of assimilation and accommodation

Nizlel Huda^{1*}, Subanji², Toto Nusantara², Susiswo², Akbar Sutawidjaja² and Swasono Rahardjo²

¹PMIPA Mathematics Department, Jambi University, Jambi, Indonesia.

²Mathematics Department, State University of Malang, Indonesia.

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This study aimed to determine students' metacognitive failure in Mathematics Education Program of FKIP in Jambi University investigated based on assimilation and accommodation Mathematical framework. There were 35 students, five students did not answer the question, three students completed the questions correctly and 27 students tried to solve problems but unfortunately made the same mistake. Out of 27 students involved in the study, two students were taken as the research subjects. The research was a qualitative research; while the research instruments is the test items on proving the mathematical equations. The research data was the result of the students' works and transcripts of interviews about the activities of metacognition of the problem solving. The benefits of the research could be used as a material consideration and metacognitive information regarding the failure of students in mathematical proofs. The results were obtained from the data from two research subjects, namely student one (S1) and student two (S2). The S1 used assimilation process as much as 7 times and the accommodation process as much as 4 times with failure metacognitive, such as metacognitive blindness, mirage metacognitive, and metacognitive vandalism. The S2 used a process of assimilation as much as 12 times and accommodation process as much as 6 times with the metacognitive failure only the metacognitive vandalism.

Key words: Metacognition failure, the framework of assimilation and accommodation, mathematical proofs.

INTRODUCTION

Proving was an activity that could not be separated from mathematics. This was because the structure of the mathematical form was the theorems which must be substantiated or proved related to its truth. Mathematical

proving was taught to learners when they were dealing with a problem that was not commonly encountered in problems solving task (Zaslavsky et al., 2012).

According to Hernadi (2013), the proofs in mathematics

*Corresponding author. E-mail: nizlel@yahoo.com.

include: What the evidence was (what was the proof), the reason we prove (why do we prove), what do we need to prove (what do we proof) and the mechanism to prove (how do we prove). Further Hernadi explained that there were at least six motivational importance to prove, namely: To prove a fact with certainty (to establish a fact with certainty), to gain an understanding, to communicate the ideas with others, to challenge, to be creative to create something beautiful, to construct a mathematical theory that was much broader.

Proving and reasoning had an important role in the learning of mathematics (Verghese, 2009). The statement was coherence with NCTM (2000) that stated that the proving and reasoning become one of the standard processes in the school of mathematics. Process standard contains several indicators, among others, so that the students could develop ideas and explore a phenomenon. There was a relationship between the proving and problem solving. According to Savic (2015) there was an overlap between the proving and problem solving, while Downs et al. (2013) suggested that the problem solving aspects were within the proving. The test item for proving could also be seen as an item for problem solving. This was in accordance with the opinion of Weber (2001) who argued that the proving could be seen as a process of problem solving.

Problem-solving activities were closely related to the metacognitive activity called metacognition. The metacognitive function which was to encourage or trigger the problem solver to switch to the various problem-solving stages used in understanding a problem, planning the completion strategy, making decisions about what to do, and make the decision about it.

Metacognition was thinking to think (Schoenfeld, 1992; Toit and Kotz, 2009; Flavel, 1979; Brown, 1978; Garofalo and Lester, 1985). Metacognition components consist of metacognitive knowledge and metacognitive regulation (Brown et al., 1978; Veenam et al., 2006; Scott and Leviy, 2013).

There were three functions of metacognition, namely (1) metacognitive awareness relating to individual awareness of where they were in the learning process, (2) metacognitive regulation which occurs when individuals modify their thinking (3) metacognitive evaluation refers to the individual could make a decision on the effectiveness of thinking and the strategy chosen (Wilson and Clarke, 2004; Magiera and Zawojewsky, 2011).

Based on the opinion of Magiera and Zawojewski (2011), the indicators of metacognition activity could be structured as follows: (1) An indicator of metacognitive awareness include: (a). Consciousness in the process of thinking about what was already known; (b) Awareness in the thought process of trying to remember had to solve the problem like that before; (c) Awareness in the thought process to remember what had been done by past could help the problem solving at the time; (d) Awareness in the

Prove:

$$1^2 + 2^2 + 3^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$$

Figure 1. Proving of the test item.

thought process to find out what had been done, and (e) Awareness in the thought process to determine the type of problem; (2) Indicators of metacognitive regulation include: (a) Setting the thought process to make the settlement plan; (b) Setting the thought process to create a different way to solve the problem; (c) Setting process of thinking about what to do next, and (d) Adjustment of the process was thought to change the way work; (3) An indicator of metacognitive evaluation include: (a) Evaluate the process of thinking about how to do it; (b) Evaluate whether the thought process had done what was planned; (c) Evaluating whether the thought process of thinking was correct; (d) Evaluate the process of thinking to be able to do.

Metacognitive process was intended to make people keep thinking on the right track. Some researchers had suggested that metacognitive process could improve the results of solving the problem (Artz and Amour-Thomas, 1992; Goos and Galbarath, 1996).

The problems encountered among the under-graduate students of Mathematics Education department were that they could not produce the valid proof of a statement. The researcher of the recent study gives a test item of proving to the 5th semester of under-graduate students of Jambi University in Mathematics Education department as in Figure 1.

One of the students' answers on the questions above could be seen in Figure 2. In the figure, the particular student failed to do the metacognitive thinking process that resulted in the wrong answer in proving the equation.

The metacognition process failure could lead to failure of metacognitive. According to Goss (2002) and Stillman (2011), there were three types of failure metacognitive, namely: (1) Blindness metacognitive was a failure of metacognitive when someone made a mistake in the process of problem solving and was not aware of the "red flag". Its indicators: (a) Use strategies wrong; (b) Ignore the incorrect calculations. (2) Mirage metacognitive was a failure of metacognitive when someone does not make mistakes but realize it as a "red flag". Its indicators: (a) Any work causing the deadlock; (b) Change the problem so it was not in accordance with the structure of the concept. (3) Vandalism metacognitive a failure metacognitive marked discrepancies to the concept and context of the issue when responding to "red flag". Its indicators: (a) Change the problem so that the degree of difficulty to be lost; (b) An error to use the strategy; (c) Changing the calculation but contain errors; (d) Reject the correct answer. Metacognitive failures could occur

Jwb: $\frac{n(n+1)(2n+1)}{6}$

$n = 1^2 + 2^2 + 3^2 + \dots + n^2$

maKa: $\frac{14(14+1)(2(14)+1)}{6}$

$= \frac{240}{6}$

$= 40$

Mahasiswa mengalami kesalahan dalam proses berpikirnya

Translated version

Answer: $\frac{n(n+1)(2n+1)}{6}$

$n = 1^2 + 2^2 + 3^2 + \dots + n^2$

than: $\frac{14(14+1)(2(14)+1)}{6}$

$= \frac{240}{6}$

$= 40$

Students experience an error in his thinking process

Figure 2. The student's answer.

accompanied by the activity of metacognition (Stillman, 2011).

In doing the problem solving activities using metacognitive processes, it could occur "red flag". The metacognitive "Red flag" indicated a need for someone to stop or re-examine the problem solving process (Goos, 2002; Stillman, 2011). "Red flag" may appear on the stage of the problem solving process and could happen in metacognitive activities (Stillman, 2011). According to Goss (2002) and Stillman (2011), there were three "red flags" that happened and could identify the metacognitive failures, as it was mentioned as follows: (1) There was no progress in the process of finding a solution (lack progress); (2) Detection of an error (error detection) in the troubleshooting process; (3) Their ambiguous on the final answer (anomalous result).

Metacognitive failures in problem solving could be assessed based on the framework of assimilation and accommodation. Piaget explained that in the case when a person interacted with the environment, there would be a cognitive process, namely assimilation and accommodation (Rajiden and Ahman, 2015). In the case, when a person interacted with the environment, there

would be a process of adaptation. At the time of adapting, someone experienced two cognitive processes, namely assimilation and accommodation, as shown in Figure 3.

According to Piaget, the assimilation process occurred when a child brought new knowledge into their existing schemes and the accommodation process occurred when children replaced their scheme to match new information or knowledge (Ultanir, 2012). The balance between assimilation and accommodation was called state of equilibrium and disequilibrium occurred when the child was in a new environmental phenomenon that did not fit into the child mental schemes (Blake and Pope, 2008). In research, the researcher investigated the failure of metacognitive based on the theory of Goos (2002) and Stilman (2011) and the subsequent failure was analyzed based on the framework of assimilation and accommodation.

RESEARCH METHODS

The research was a qualitative research. Researchers conducted the study toward the under-graduate students of Mathematics Education Department in Jambi University. Out of the thirty-five

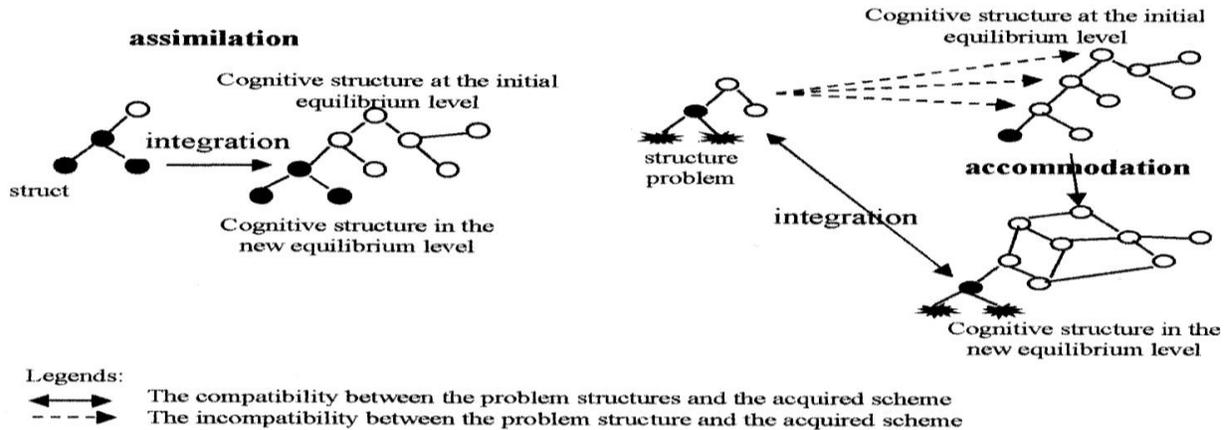


Figure 3. The Process of assimilation and Accommodation (Adopted from Rajiden et al, 2015).

students involved in the recent study, five students did not answer the question, three students completed the questions correctly and twenty-seven students unfortunately were found to make the same mistake to solve the test item. Therefore, it had been decided to select two college students from those twenty-seven students as the research subjects. The answers of the students were analyzed to investigate the students' metacognitive failures based on the framework assimilation and accommodation that include; (1) metacognitive blindness, (2) mirage metacognitive and (3) metacognitive vandalism. The data was collected by providing the proving test items to the students, and then they were interviewed about the activities of metacognition in solving those test items which were characterized by the "red flags" that occur while the students worked on the test items.

FINDINGS

The findings in the research on metacognitive failures investigated based on the framework of assimilation and accommodation was gained through investigating the process of students' thinking in mathematical proving, which includes; (1) metacognitive blindness, (2) metacognitive mirage and (3) metacognitive vandalism by "red flags" that occurs during the process of the test items solving.

The notations used to describe the findings of the recent study are given in Table 1.

The thinking process of student one (S1) investigated based on assimilation and accommodation framework

The thinking process of the student one (S1) investigated based on assimilation and accommodation framework in solving the test items could be seen in Diagram 1.

Based on the Diagram 1, the process of student thinking was dominated by the process of assimilation. At the beginning of the process of metacognition the student one (S1) realized in the thinking process that the test item was familiar, and then to try to recall what she already

knew. In the case there was a process of assimilation in the process of thinking of metacognition of student one. The particular student realized that she might have ever worked on a matter like this. The student also set up her thinking processes to recall what he had done before when solving the problems like what he had in the present. The student could recall what she had been done but she forgot how to solve the problems. It was known from research interview with the student as follows:

Researcher: "Were you trying to remember if you ever worked on a matter like this?"

Student one (S1): "I remember I once worked on a matter like this in the Introduction to Basic Math course. I know what was known and what was asked in this matter, but I forgot how to solve this problem (Awareness)".

During the time of solving the test items, the student one (S1) experienced the disequilibrium stage about what to do first. The student then adjusted her thinking process for making a settlement plan that started from the equation a was more than b , as shown in Figure 4.

The student one (S1) realized if a was more than b then b must be added to something, say for example x was added to b , the value of b would remain the same if c was smaller or equal to 0 . By performing the setting and evaluation on the thinking process, the student was in the process of accommodation of the thinking process. This was proven from the finding of interview with research subject, the student, as follows:

Researcher: "What do you think about $a > b$?"

Student one (S1): "If a was greater than b , then b must be added to something, say for example x , but I got confused about c was less than or equal to 0 (regulator and evaluation)".

Furthermore, the student one (S1) evaluated her thinking processes if x was less than or equal to 0 then the

Table 1. The notations and the notations' meanings.

Notations	Meanings
A	Test item: Mathematical proving
B	The first given requirement: $a, b, c \in R$
B'	The second given requirement: $a > b$
C	The requirement that must be fulfilled: $ac \leq bc$ and $c \leq 0$
D	The average requirement: $ac \leq bc$
E	The necessary requirement: $c \leq 0$
F	The meaning of: a was more than b
G	The multiplication of the negative number
H	Finish
I	The multiplication of the real number
J	The multiplication of one real number with zero
K	The multiplication of one positive real number to one negative real number.
L	When a was more than b , and then multiplied to c was 0 (zero)
M	When a was more than b , and then multiplied to c the result was less than 0 (zero).
N	The combination of l and m
O	c was equal to 0 (zero)
O'	c was less than 0 (zero)
As	The process of assimilation happens
Dis	Disequilibrium
Ak	The process of accommodation.
Rf	Red flag
Eq	Equilibrium

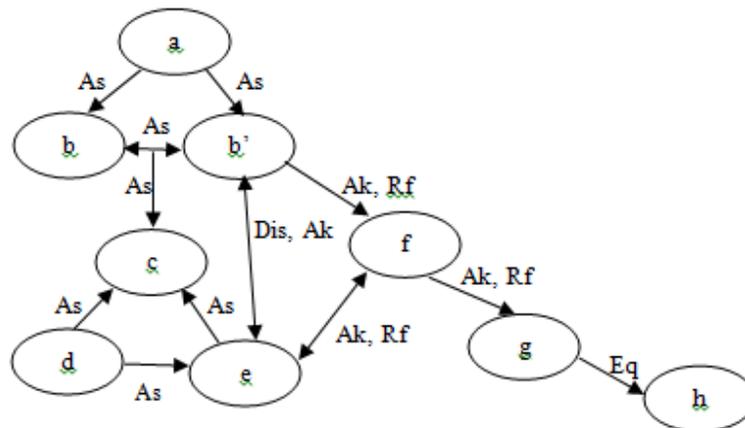


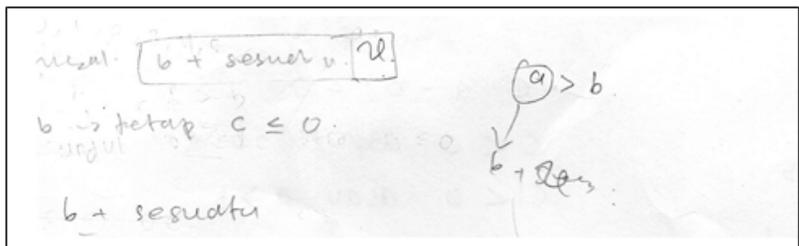
Diagram 1. The metacognition process of the under-graduate students investigated based on assimilation and accommodation framework.

equation c was less than 0 could be applied. If c was less than 0 then the result obtained was negative c . This could be seen in Figure 5. In this case there was a process of accommodation on the process of metacognition of the research subject, student one (S1).

The student one (S1) evaluated if c was less than 0 , then b was multiplied by negative c , it was equal to c was

less than or equal to negative b multiplied by c . Here also aesthetically seen that the student had a process of accommodation in her thinking process. It could be seen from interviews with research subject, the student one, as follows:

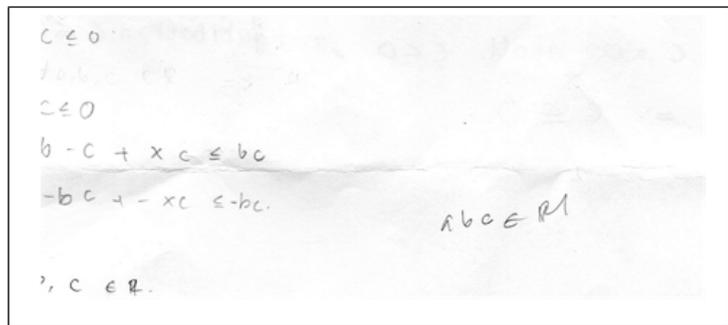
Researcher: "Were you sure that you had the correct



Translated version

For example, $b + \text{something } (x)$.
 The value of b constant if c is less or equal to 0 .
 b is added by something.
 a is bigger than b , it means that b should be added by x

Figure 4. The student one (S1)'s statement about a was more than b .



Translated version

c is less or equal to 0
 c is less or equal to 0
 b multiplied by negative c added to x multiplied to c which is less or equal to b multiplied to c
 negative b multiplied by c added by negative x multiplied by c which is less or equal to negative b multiplied by c .
 b and c are the members of R
 a, b, c are the members of R

Figure 5. The student's answer about the equation $c \leq 0$.

answer?"

Student one (S1): "I was confused and not sure of the answer I gave. I was trying to recall if there were other ways I could do to solve the problem".

Metacognition thinking process of student two (S2) investigated based on the framework assimilation and accommodation

Metacognition thinking process of student two (S2) investigated based on the framework assimilation and

accommodation in solving the test items could be seen in Diagram 2.

In the beginning the process of metacognition of student two (S2) was dominated by the process of assimilation. Student two (S2) realized in the process of thinking that the test items were familiar and tried to re-evaluate what he already knew and whether he had ever worked on a matter like this and what he had done before when solving problems like this. It was known from interviews with the student two (S2) as follow:

Researcher: "Had you ever worked on a matter like this?"

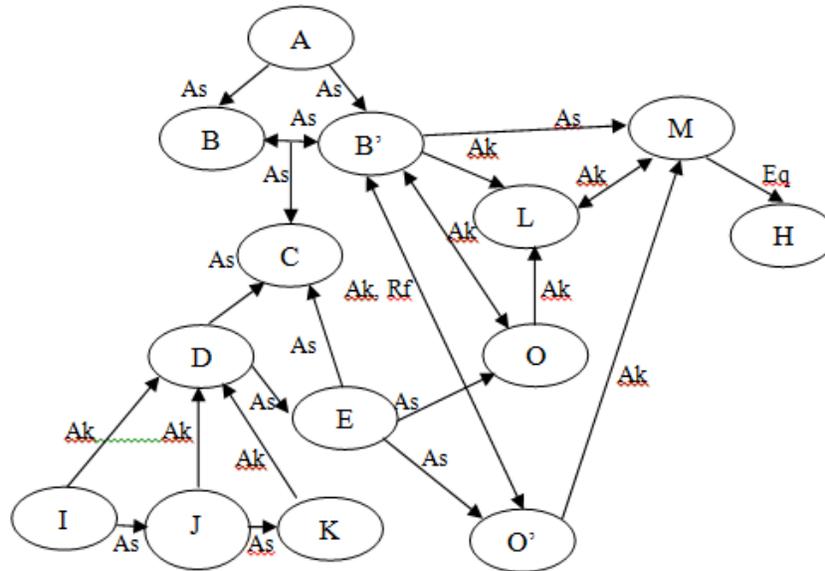


Diagram 2. Metacognition thinking process investigated based on the framework assimilation and accommodation.

Misalkan $a, b, c \in R$ dan $a > b$.

- $a \in R$ dan $c \in R \leq 0$
 $b \in R$
- Maka setiap perkalian 2 bilangan riil selalu menghasilkan bilangan riil
- Dan setiap perkalian 1 bilangan riil dengan bilangan riil 0 selalu menghasilkan 0
- Untuk setiap perkalian 1 bilangan riil positif dengan bilangan riil negatif selalu menghasilkan bilangan riil negatif.

Translated version

For example $a, b, c \in R$ and $a > b$. While $a \in R, b \in R$ and $c \in R \leq 0$.
 It can be concluded that every multiplications real numbers will always produce the real number.
 And every one multiplication of real number to the zero real number will always produce zero.
 For every multiplication positive one real number to negative will always produce negative real number.

Figure 6. Student two (S2) about the meaning of a, b, c as the members of R.

Student two (S2): “I once worked on a matter like this in the Introduction to Basic Math course. I try to recall what I had ever done to solve problems like this (awareness)”.

Furthermore, student two (S2) experienced a process of accommodation in his metacognition process. Student two (S2) then adjusted his thinking process of interpreting a was a member of R, b and c were the member of R as shown in Figure 5.

The student two (S2) evaluated if a was a member of the real numbers, b and c were the members of real

numbers, then the result of multiplying two real numbers as was obtained shown in Figure 6. The student two (S2) also evaluated whether he did it right. The information was obtained from interviews with the student two (S2) as follows:

Researcher: “What do you do after reading the test item?”

Student two (S2): “I know a, b and c were the members of the real numbers. I did check the results of multiplication of two real numbers based on the

dengan demikian, jika $a > b$ dikalikan dengan $c = 0$ maka
 $a = b = 0$. -- ①
 jika $a > b$ dikalikan dengan $c < 0$ (bil. negatif) maka
 berlaku $ac < bc$. karena jika bil. negatif semakin besar
 maka nilainya semakin kecil. -- ②

Translated version

Therefore, if a is greater than b , and then multiplied by c which is equal to 0 means that a is equal to be equal to 0 .
 If a is greater than b , and then multiplied by c which is less than 0 (negative number) means the value of a multiplied by c is less than the value of b multiplied by c . it is because if the bigger the negative number, the smaller the value.

Figure 7. Student two (S2)'s answer for the equation c was equal to 0 and c was less than 0 .

Dari ① dan ② dapat disimpulkan jika $a, b, c \in \mathbb{R}$ dan $a > b$.
 Jika $ac \leq bc$ maka $c \leq 0$.

Translated version

Based on statement (1) and (2), it can be concluded that a, b, c are the member of \mathbb{R} , and a is greater than b . If the value of a multiplied by c is less or equal to the value of b multiplied by c , then c is less or equal to 0

Figure 8. Student two (S2)'s final statement.

requirements given (*regulation and evaluator*)”.

In the process of disequilibrium, the student two (S2) evaluated what would happen if a was more than b and c was equal to 0 . Furthermore, student two (S2) also evaluated what would happen if a was more than b and c was less than 0 . It could be seen from the results of the student two (S2)'s work in Figure 7.

As shown in Figure 8, student two (S2)'s answer for the equation c was equal to 0 and c was less than 0

The student two (S2) experienced disequilibrium process when student two (S2) organized and evaluated his thinking process in completing the equation a was more than 0 multiplied by c was equal to 0 . The finding could be seen from the result of interview between the researcher of this recent study and student two (S2) as follow:

Researcher: “Then what do you think?”

Student two (S2): “If a was more than b , then multiplied by c which was equal to 0 then the result obtained was a was equal to 0 , b was equal to 0 ”.

Researcher: “Why was a equal 0 and b equal to 0 ?”

Student two (S2): “It was because c was equal to 0 ”.

At the end of problem solving, the student two (S2) organized was thinking process to combine two things that might happen when he multiplied a which was more than b to c which was equal to 0 and multiplied a which was more than b to c which was less than 0 as shown in Figure 8.

DISCUSSION

In the beginning, the process of metacognition of student one (S1) was dominated by the assimilation process because the student one (S1) uses her knowledge when there was a new problem. This was in accordance with the opinion of Piaget (Utanir, 2012) which said that a child brings new knowledge into their own scheme.

Furthermore, student one (S1) was in the accommodation process marked by when student one (S1) declared that $a > b$ by adding b with something (eg

x). In facing this case, the student one (S1) replaced her schemes of thinking to match the new information or knowledge (Ultair, 2012) so the student was able to make the different ways of solving problems (Magiera and Zawojewsky, 2011). This resulted in a red flag occurred as a detection of an error (error detection) on the process of student one (S1) metacognition which was an indicator of metacognitive blindness. Therefore, it could be said that student one (S1) experienced the blindness metacognitive which it was some metacognitive failures when someone made mistakes in the problem solving process and did not realize the occurrence of the "red flag" (Goos, 2002). At the time of making the inequality of $b + x \leq b$, student one (S1) experienced a metacognitive failure in the thinking process in evaluating whether she figured it out correctly (Goos, 2002). It also caused the "red flag" changed the problem so it did not correspond to the concept of structure (Goos, 2002) which led to the mirage metacognitive which meant some metacognitive failures when one considered himself did nothing wrong but be aware as a "red flag".

In the next accommodation process, the student one (S1) adjusted her thinking process by taking $c < 0$ and the result was the multiplication of $-bc -xc \leq -bc$. This phenomenon was marked with a "red flag" as a detection of an error (error detection) and there was no progress in the process of finding a solution (lack progress) (Goss, 2002). Thus, we could say that student one (S1) experienced vandalism metacognitive which meant some metacognitive failures that were marked by the noncompliance within the concept and context of the issue when responding to "red flag". The indicator was the errors in using the strategies (Goos, 2002).

Student two (S2)'s metacognition process was dominated by the assimilation process since the student (S2) used his knowledge when there was a new problem. This was in accordance with the opinion of Piaget (Ultanir, 2012) which says that a child brought the new knowledge into their own scheme.

Furthermore, when student two (S2) knew $a \in R$, $b \in R$ and $c \in R$ then the student (S2) adjusted his thinking process to multiply two real numbers. There were three possible occurrence of the multiplications of two real numbers, namely (1) a positive real number was multiplied by a positive real number, (2) a positive real number was multiplied by a real number 0, and (3) the number real positive number was multiplied by real negative numbers. In this case, there was a process of accommodation since the student two (S2) replaced the scheme of thinking to match the new information or knowledge (Ultair, 2012) so that student two (S2) decided to make a different way of solving problems (Goos, 2002).

Student two (S2) adjusted his thinking process and evaluated when using $a > b$ to $c = 0$ which resulted the student (S2) concluded that $a = b = 0$. In this case there was a process of accommodation (Goss, 2002) which led

to the "red flag" that was characterized by the detection of an error (error detection) because the student two (S2) adjusted his thinking process to obtain results that were not in accordance with the requirements of $a > b$. Thus the metacognitive vandalism occurred which meant some metacognitive failures that marked by the noncompliance within the concept and context of the issue when responding to "red flag". The indicator was the student changed calculation but it contained some errors (Goos, 2002).

Conclusion

The research subject, the student one (S1) used assimilation process as much as seven times and the accommodation process four times with metacognitive failures were the metacognitive blindness, mirage metacognitive and metacognitive vandalism. The research subject, the student two (S2) used a process of assimilation were as much as twelve times, and the accommodation process were as much as six times with the metacognitive failure was only vandalism metacognitive.

Conflict of Interests

The authors have not declared any conflicts of interests.

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Full Length Research Paper

Principal's perceived leadership effectiveness and its relationship with academic achievement among students in secondary school: The Ethiopian experience

Dessalegn Feyisa, Bekalu Ferede and Frew Amsale*

College of Education and Behavioral Sciences, Jimma University; Ethiopia.

Jimma University College Of Education and Behavioral Sciences Department of Educational Planning and Management, Ethiopia.

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The school principal's role in determining the academic achievement of students has been an agenda of controversy among scholars in the field of educational leadership. Several studies, have been carried out, over the years, to resolve this controversy. However, the findings so far have not produced consistent outcomes pointing to the need for further research in differing socio-cultural settings. The main objective of this study was to investigate the relationship between secondary school principals' leadership effectiveness as perceived by secondary school teachers and students' academic achievement West Hararghe Zone, Oromia Regional State, Ethiopia. For this, the study employed correlation design comprising of eight randomly sampled secondary schools. In this study, a total of 190 teachers were selected using a proportional random sampling technique to fill in a standardized questionnaire on the leadership effectiveness of their school principals. Out of 3321 students who sat for Grade 10 national examinations in 2014, the Cumulative Grade Point Average (CGPA) scores of 440 students was selected from the sampled schools using proportional random sampling technique. A standardized questionnaire with five-point Likert scales was used to measure the leadership effectiveness of principals whereas CGPA of students on Grade 10 national examination was used to measure students' academic achievement. The findings of the study showed that the experience of principals was not significantly correlated with their corresponding leadership effectiveness. The findings also showed that the principals level of education was significantly negatively correlated with principals' leadership effectiveness ($R = -0.866, p < 0.05$). Furthermore, the study findings showed that there was no significant correlation between a school principal's leadership effectiveness and students' academic achievement. The latter finding implies that there was no direct relationship between school leadership and students' academic achievement. In addition, the findings suggest that the relationship between principals' level of education, service year, and leadership effectiveness was not direct. The researchers, therefore, recommended further research on a large scale and in different contexts to come up with more valid and generalizable finding.

Key words: Leadership, effectiveness, students' academic achievement, secondary school principal.

INTRODUCTION

The aspirations of the policy makers' across the globe to minimize the persistent disparities in educational achievements observed among students with diversified backgrounds coupled with "the idea that leadership especially that of the principal, matters in determining levels of school effectiveness and of student achievement" (Ribbins, 2002: 6) have been yielding in growing interests among researchers to study on how educational leaders influence an array of student academic outcomes (Robinson et al., 2008). Consequently, various studies have been carried out in different countries and at different schools levels to investigate the correlations between educational leaders and student academic outcomes, (Gaziel, 2007; Louis et al., 2010; Mphale and Mhlauli, 2014; Tatlah et al., 2014; Yesuf, 2016).

Moreover, as indicated by Robinson et al. (2008) "at least five reviews of empirical research on the direct and indirect effects of leadership on student outcomes have appeared recently" (P. 636). Despite such massive effort to study the influences of the principals effectiveness over students' academic achievement, the issue of whether such influences are direct or indirect is still controversial and debatable (Leithwood et al., 2006).

Hallinger and Heck (1998) reviewed studies pertaining to principal effects on students' academic achievement appeared in between 1980 and 1998. Accordingly, they classified the findings of their review into three models by adopting Pinter's framework of organizing and conceptualizing studies on principals' effects. These three models are the direct effect model, the mediated effect model, the reciprocal effect model.

The direct effect model presumes that not only leaders place effects on school outcomes but also such outcomes can be measured without taking other related variables into consideration. Due to this underlying assumption of the direct effect model that "the leader's effects on school outcome occur primarily in the absence of intervening variables," most studies adopting this model tend to be bivariate (Hallinger and Heck, 1996: 18)

According to these reviews, though the combined direct and indirect effects of principals' on students' outcomes are small, they are educationally significant (Hallinger and Heck, 1996). The authors emphasized that administrative leadership in which principals are engaged in such activities as setting expectations and staff selection was among the factors that made the greatest difference in student understanding and learning. In this regard, Waters and Marzano (2006: 6) stated that "Principal leadership does have discernable effects on

student achievement. In fact, we found the correlation between school-level leadership and average student achievement in schools to be 0.25". The 0.25 correlation between the principals' leadership and students' academic achievements indicates that school leaders that are highly effective can intensely influence the overall academic achievement of students (Waters et al., 2005). Despite significant differences between the responses of the principals and the teachers involved in the study, the study by Tatlah et al. (2014), also underpinned a significant effect of principals behavior on students' academic achievement.

Researches in the second category are those who claim that the effects of principals over students' academic achievement are only indirectly and through other variables. These studies of the mediated effects model emphasize that principals influence some intermediary variable(s), which in turn affect the students' academic achievements (Hendriks and Steen, 2012). As reported in these studies, principals influence the academic achievements of students through affecting such intermediary variables as the school's environment (Al-Safran et al., 2013) teachers' satisfaction, commitment to work (Ibrahim and Al-Taneiji, 2013) and teachers' beliefs (Ross and Gray, 2006). This, in turn, relies, among other things, "on how well these leaders interact with the larger social and organizational context in which they find themselves." (Leithwood et al., 2004: 25).

The third categories of researches, instead of examining overall leadership effects of the principals, inquire about the effects of specific leadership practices or styles. These studies are labeled as the reciprocal effect models (Al-Safran et al., 2013). For these studies, as the relationship between the principals and the characteristics of schools and their environment are interactive, the effects of the principals over students' academic achievements are attributed to the specific practices of the principals or the particular leadership style of the principals as per the particular demands of the school situations (Hallinger and Heck, 1996, 1998). A meta-analysis of all studies involving district leadership in the USA from 1970 until 2003, carried out by Waters et al. (2003) could be a leading work in this category. The meta-analysis examines the effects of principals' on student achievement and came up with 21 leadership responsibilities that are believed to be significantly associated with student achievement (Waters and Cameroon, 2007). Waters and Cameroon (2007: 7), pointed out that they "found statistically significant correlation between school-level leadership and students' academic achievement" and as a result, they hope that

*Corresponding author. E-mail: frew.amsale@ju.edu.et/ efukoye@gmail.com. Tel: +251911712535.

"No longer is there a question about the effect of leadership on students' achievement".

Within the reciprocal-effect category, there are still segments of studies that attribute the effects of principal's leadership on students' academic achievement to the particular leadership style that the principals adopt. Marks and Printy (2003), for example, pointed out that significant achievement of students are evident when transformational and shared instructional leaderships coexist in an integrated form of leadership. Bolam et al. (1993) also have identified that participative leadership mediated through teacher activity contributed effectively to student outcomes.

In general, studies in the reciprocal model attribute students' academic achievement to either particular leadership styles (Marks and Printy, 2003) or to certain leadership practices sought to be effective in enhancing students' academic achievement (Waters et al., 2003). Put it another way, what principals' do and the way they do it in a particular school setting affects the academic achievements of their students.

The above lines of argument, suggest the need for further research investigating the correlation between principals' leadership effectiveness and students' academic achievement as being vital for theoretical as well as practical reasons. Such studies are vital in various cultural and political contexts as culture has a substantial impact on the principal's leadership style (Al-Safran et al., 2013), on one hand. On the other hand, previous researches carried in different countries yield in divergent findings pertaining to the effects of principals over students' academic achievements (Waters et al., 2003). This study therefore attempted to investigate the relationship between principals leadership effectiveness and students academic achievement in secondary schools of Ethiopia with a focus on West Harage Zone Secondary Schools.

STATEMENT OF THE PROBLEM

Among the major persistent education-related challenges that Ethiopia has been facing, over the years, is the issue of quality education. Following the formulation of Education and Training Policy (MOE, 1994), the Ethiopian government has taken different measures to alleviate those educational problems and remarkable changes have been exhibited in education expansion. According to Ministry of Education (MoE, 2010), the efforts made to strengthen professional skills of school principals and the school improvement process which has been in place is part of the endeavor to looking for the solutions of education quality problems. Despite all the efforts made the question of whether a school principal can impact the students' academic achievement is still not clearly figured out.

The relationship between principals' effectiveness and students' academic achievement is debatable. There have been inconsistent findings in the studies on how school leadership is related to students' academic achievement. Some studies claim that principals can contribute a significant positive impact, be it direct or in direct, on school improvement in general and student academic achievement in particular (Branch et al., 2013; Louis et al., 2010). Long ago, others argued that the effectiveness of school principals in contributing to students' achievement remains a topic of debate that is yet to be resolved (Firestone and Herriott, 1982; Grift, 1990; Rowan et al., 1982). These conflicting results suggest that there needs to be a further investigation regarding the issue in focus. This study was, therefore, designed to investigate the relationship between leadership effectiveness of school principals as perceived by secondary school teachers and students' academic achievement in Ethiopian Secondary schools, with a focus on West Hararghe Zone. Accordingly, the study was designed to answer the following basic questions:

- (1) What is the level of principal's leadership effectiveness of secondary school principals at West Hararghe Zone, Oromia Region, Ethiopia?
- (2) What are the determinants of principal's leadership effectiveness in the secondary schools at West Hararghe Zone, Oromia region, Ethiopia?
- (3) How does principal's leadership effectiveness affect student's academic achievement in secondary schools at West Hararghe Zone, Oromia region, Ethiopia?

PURPOSE OF THE STUDY

The purpose of this study was to investigate the level of leadership effectiveness in the secondary schools at West Hararge Zone, Oromia, Ethiopia and examine whether the principal's leadership effectiveness can significantly influence the students' academic achievement in the secondary schools at West Hararghe Zone, Oromia, Ethiopia.

Study variables

Leadership effectiveness

Leadership effectiveness is the successful exercise of personal influence of one or more people with the aim of accomplishing organizational objectives through obtaining the followers' approval (Cooper et al., 2004). In line with this, scholars in the field of educational leadership have made several attempts to identify components of effective school leadership of which Leithwood (1994) is the one who has six components.

Table 1. Population and sample size by sample schools.

Schools	Teachers 2007			Students 2006		
	N	n	%	N	n	%
Badessa	52	31	59.6	616	70	11.4
Barkume	30	21	70	329	65	19.8
Burka	10	9	90	48	24	50
Chercher	77	42	54.5	1046	81	7.7
Dabaso	24	18	75	226	40	17.7
Galamso	59	34	57.6	598	75	12.5
Mechara	36	23	63.9	324	55	17
Wachu	14	12	85.7	134	30	22.4
Total	302	190	63.6	3321	440	13.2

N= Population size, n= Sample size.

The tool contains six major dimensions of effective school leadership. These are: building school vision and goals; providing intellectual stimulation; offering individualized support; symbolizing professional practices and values; demonstrating high-performance expectations; and developing structures to foster participation in school decisions. The leadership effectiveness of the secondary school principals was measured as perceived by the teachers in the schools. The 5-point rating scale with 1 = ineffective, 2 = minimally effective, 3 = effective, 4 = highly effective and 5 = outstandingly effective was also adopted from Porter et al. (2010) to indicate the level of effectiveness of the principals. The target of the rating scale was chosen to be "effectiveness," rather than frequency [or agreement], to point to effectiveness, because of the belief that some behaviors might be important but infrequent (Porter et al., 2010).

Students' academic achievement

According to Ward et al. (1996), academic achievement is the outcome of education-the extent to which a student, teacher or institution has achieved their educational goals and is commonly measured by examinations or continuous assessment. For the purpose of this study, academic achievement was measured by students' grade 10 national examination results. The examination results were cumulative grade point average (CGPA) on a four-point scale in which Mathematics, English and Civics subjects are compulsory of the 10 subjects included in the examination.

RESEARCH DESIGN AND METHODOLOGY

Research design

Correlation study design was used in order to examine the relationship between the principal's leadership effectiveness and students' academic achievement in secondary schools.

Sample size and sampling technique

From the total of 23 schools found in the zone, 8 of them were excluded as their principals did serve for less than 2 years in those schools. Similarly, teachers with less than 2 years of stay in those schools were excluded from the sample as they were supposed not to have adequate stay in the school to rate the effectiveness of principals' leadership.

Sampling was conducted at two stages. First, 8 out of the remaining 15 schools were selected by lottery method. Secondly teachers and students were selected from the sampled schools. Accordingly from the total of 302 teachers teaching in the sampled schools, 192 (63.6%) were selected using stratified proportional random sampling technique. In addition, 10th grade national examination result of 440 (13.2%) students, were selected from the sampled schools using proportional simple random sampling technique. Table 1 shows the distribution of the samples in relation to their respective population for each of the 8 schools.

Instruments of data collection

Questionnaire was used to collect data from teachers on the leadership effectiveness of the secondary school principals. The questionnaire used for measuring leadership effectiveness was the one which was developed by Leithwood and Jantzi (1999). The questionnaire consists of 32 items designed to measure six major components of leadership, namely; promoting professional practice, participatory decisions, providing support, intellectual stimulation, high performance expectations and setting school vision. The items were rated on 5-Point Likert-type scale ranging from Ineffective =1 to Outstandingly Effective = 5.

Students' achievement records

Students' academic achievement was measured by CGPA of students on grade 10 national examination. The researchers have obtained the CGPA of student from record offices of the respective schools. The scale of CGPA of students on national examination ranges from 0 to 4.

Data analysis procedures

The data gathered through questionnaire was analyzed by using

Table 2. Mean score leadership effectiveness of principals.

School	Mean effectiveness of principals on the six variables												Grand mean	
	Professional practice		Participatory decisions		Supporting		Stimulation		High Expectations		School vision			
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Badessa	4.23	0.77	3.96	0.82	3.81	0.98	4.10	0.72	4.15	0.82	4.07	0.88	4.05	0.83
Barkume	4.16	0.95	3.74	1.11	3.78	1.14	3.88	1.07	3.84	1.21	3.64	1.20	3.84	1.11
Burka	4.17	0.64	4.17	0.75	3.64	0.99	4.16	0.88	4.44	0.58	4.33	0.51	4.16	0.77
Cherchar	3.71	1.00	3.39	1.13	3.34	1.04	3.32	1.03	3.48	0.94	3.25	1.01	3.41	1.04
Dabaso	4.13	1.16	4.29	0.90	4.07	0.88	4.29	0.84	4.18	0.98	4.11	1.00	4.19	0.97
Galamso	4.06	0.84	3.93	0.90	4.09	0.76	4.11	0.74	4.08	0.70	4.10	0.71	4.06	0.78
Machara	4.33	0.75	3.90	0.98	3.90	1.00	4.00	0.97	4.00	0.86	3.97	1.00	4.03	0.94
Wachu	4.05	0.89	3.88	0.78	3.75	0.87	3.86	0.89	3.83	0.75	3.83	0.85	3.88	0.85
Total	4.07	0.92	3.83	1.00	3.77	1.00	3.90	0.95	3.94	0.93	3.84	0.99	3.89	0.97

Principal is not satisfactorily effective for $\bar{X} < 2.75$, satisfactorily effective for $2.75 \leq \bar{X} < 3.5$, and highly effective for $\bar{X} \geq 3.5$.

descriptive statistics such as frequency counts, mean and standard deviation. Similarly, the student CGPA was analyzed by using frequency counts, mean and standard deviation. The researchers also run analysis of variance (ANOVA) to see if there are significant differences among sampled schools in terms of leadership effectiveness and students' academic achievement. Correlation analysis was computed for the total sample to see if there is significant relationship between principals' experience, length of stay in the same school, level of education and their leadership effectiveness. In addition, the correlation analysis was used to see the extent of relationship between the six dimensions of leadership effectiveness and students CGPA.

RESULTS

In this part the results of the study will be presented in two sections. While the first presents demographic characteristics of principals and teachers, the second will present results pertaining leadership effectiveness of principals, relationship between demographic variables of principals and their leadership effectiveness and the relationship between students' academic achievement and leadership effectiveness of principals.

Characteristics of the study participants

Characteristics of the secondary school principals

The principals participated in the study had served as a school principal for 3 to 17 years ($M=5.63$) and every principal in the sample has worked for at least 2 years at the present school ($M=3.63$). Pertaining the principals' educational levels, 87.5% of them hold Bachelor Degree while the remaining 12.5% hold Master's Degree.

Characteristics of respondent teachers

Out of 165 teachers who returned the questionnaire with

complete information, 19 (11.5%) were females indicating few numbers of female teachers in the sampled schools. The great majority, 162 (98.2%) of respondent teachers hold Bachelor degree. The rest 2 (1.2%) were diploma holding teachers and 1 (0.6%) was masters' degree holding teacher. Besides, regarding the teaching experiences of teachers participated in the study, the majority, 55 (33.3%) of them have served between 6 to 10 years, while 48 (29.1%), 32 (19.4), 12 (7.3%), of them have served for 2 to 5 years, 21 and more years and 16 to 20 years respectively.

Leadership effectiveness of school principals

Brief note on school principal's leadership effectiveness. Table 2 presents the mean score values of principals' leadership effectiveness scores. As shown in Table 2, the school principals were generally perceived to be highly effective in their leadership by the teachers ($\bar{X} = 3.89$, $SD = 0.97$). However, principals of Dabaso ($\bar{X} = 4.19$, $SD = 0.97$) and Burka ($\bar{X} = 4.16$, $SD = 0.77$) secondary schools were relatively perceived to be highly effective while principals of Charchar ($\bar{X} = 3.41$, $SD = 1.04$) and Barkume ($\bar{X} = 3.84$, $SD = 1.11$) were rated to be relatively less effective. Coming to individual variables of leadership, professional practice ($\bar{X} = 4.07$, $SD = 0.92$) and high performance expectation ($\bar{X} = 3.94$, $SD = 0.93$) were highly rated with compared to others.

In order to see if there is a significant leadership effectiveness difference among the sample school principals, ANOVA was used to get the results of Table 4. In this table it was shown that there were leadership effectiveness differences between groups. Table 3 shows that there is a significant difference between the leadership effectiveness of the sample school principals $F(7, 157) = 4.88$, $p < 0.05$. In order to see the differences between pairs of principals' effectiveness Post Hoc Test

Table 3. ANOVA for leadership effectiveness of principals.

Groups	SS	Df	MS	F	P
Between Groups	11.839	7	1.691	4.880	0.000
Within Groups	54.409	157	0.347		
Total	66.248	164			

Table 4. Post hoc test for leadership effectiveness of principals.

School	Charchar	Dabaso	Galamso	Machara	Wachu
1. Badessa	0.63*				
2. Barkume	0.42*				
3. Burka	0.73*				
4. Charchar		-0.76*	-0.64*	-0.60*	-0.45*

*. The mean difference is significant at the 0.05 level.

Table 5. Inter correlation matrix for leadership effectiveness of principals and demographic variables.

Variables		1	2	3	4
1. Effectiveness	P. Correl.	1			
2. Education level	P. Correl.	-0.87**	1		
3. Total Experience	P. Correl.	0.37	-0.05	1	
4. Stay in Same School	P. Correl.	-0.52	0.14	-0.46	1

**Correlation is significant at 0.01 level (1-tailed).

was conducted. Table 4 shows that the difference in leadership effectiveness of principals was significant between Badessa and Charchar, Barkume and Charchar, Burka and Charchar, Charchar and Dabaso, Charchar and Galamso, Charchar and Machara and Charchar and Wachu schools only.

Correlation between demographic variables of principals and their leadership effectiveness

From Table 5, it can be seen that only the educational level of principals significantly correlate with the leadership effectiveness of principals, $p < 0.05$. Experience and stay of principals in the school did not significantly relate with their leadership effectiveness in the sampled schools. The result shows that level of education negatively correlated to leadership effectiveness of principals. That is the higher the educational level, the lower the leadership effectiveness of the principals. This might be due to the fact that some principals assume leadership position without having adequate experience though they possess relatively higher education level. However, the study showed that

there is no significant relationship between leadership effectiveness of principals and their total service year and stay in the current school.

Students' Academic achievement measured in CGPA

As depicted in Table 6, the highest students' CGPA values was observed in Burka ($\bar{X} = 2.64$, $SD = 0.42$), Badessa ($\bar{X} = 2.45$, $SD = 0.63$) and Wachu ($\bar{X} = 2.41$, $SD = 0.72$) secondary schools. And the smallest student CGPAs was observed in Barkume ($\bar{X} = 2.03$, $SD = 0.54$) and Charchar ($\bar{X} = 2.07$, $SD = 0.63$) secondary school. ANOVA was run in order to see if there is between schools differences in terms of the CGPAs attained at school levels. From Table 7, GPAs of sample students indicated that there is significant mean difference between the school level CGPAs of the students ($F = 2.88$, $p < 0.05$). To further identify between which pairs the differences occurred among the school CGPAs, Post Hoc Test was carried out as shown in Table 8.

There is a significant difference between Badessa and Barkume, Badessa and Charchar, Barkume and Burka, Barkume and Galamso, Barkume and Wachu, Burka and

Table 6. Sample Student CGPAs by sample schools (N = 440).

School	N	\bar{X}	SD
Badessa	70	2.45	0.63
Barrkume	65	2.03	0.54
Burrka	24	2.64	0.42
Charchar	81	2.07	0.63
Dabaso	40	2.19	0.81
Galamso	75	2.37	0.77
Machara	55	2.17	0.61
Wachu	30	2.41	0.72
Grand Mean		2.29	0.64

A pass GPA is judged to be 2.00 or above for grade 10 national exams, according to the rules of the MoE.

Table 7. ANOVA for sample student CGPA for the sampled schools.

Groups	Sum of squares	df	Mean square	F	P
Between Groups	7.066	7	1.009	2.880	0.007
Within Groups	55.021	157	0.350		
Total	62.086	164			

Table 8. Post Hoc test for sample students' GPAs.

Variables	Barkume	Burka	Charchar	Dabaso	Galamso	Machara	Wachu
Badessa	0.46 [*]		0.37 [*]				
Barkume		-0.73 [*]					
Burka			0.64 [*]	0.52 [*]	-0.48 [*]	0.50 [*]	-0.46 [*]
Charchar					-0.39 [*]		

*. The mean difference is significant at the 0.05 level.

Charchar, Burka and Dabaso, Burka and Machara, and Charchar and Galamso schools (Table 8). The highest difference in the same table was observed between Burka and Barkume whereas, the lowest was observed between Badessa and Charchar schools. A relatively better CGPAs were observed in Burka school, where as the lowest was observed in Charchar school.

Students' CGPA and principals' effectiveness dimensions

In order to see the correlation among the principals' leadership variables and student GPAs, inter correlation analysis was made (Table 9). Table 9 depicts that there is no any leadership dimension which is significantly correlated with student GPA 2006. The result therefore shows that there is no significant relationship between

principals' leadership effectiveness and students' academic achievement in the sampled schools.

DISCUSSION

One of the major finding of this study is that there is significant negative relationship between level of education of principals and their leadership effectiveness. This finding must be understood with caution because in the study area teachers can assume principal position without having the required experience and track record but having the required level of education. In this case principals with more teaching and leadership experience may perform better even though they have the minimum required level of education.

This finding contradicts with the finding of several studies. A related study by Eyike (2001) for instance

Table 9. Inter Correlation Matrix for Leadership Effectiveness and students' GPAs.

Variables	1	2	3	4	5	6	7
1. GPA 2006	1						
2. Prof. Practice	-0.033	1					
3. Involve in Decisions	-0.076	0.563**	1				
4. Support	-0.054	0.447**	0.692**	1			
5. Stimulating	0.021	0.529**	0.681**	0.744**	1		
6. High expect	0.045	0.583**	0.569**	0.617**	0.693**	1	
7. School vision	.046	0.581**	0.721**	0.685**	0.731**	0.771**	1

** Correlation is significant at the .01 level (1-tailed).

showed that principals who completed in-service trainings were more effective than those who did not. An important implication of his study is that professionally trained principals perform their roles better than non-professionals. Amanchi (1998) also reported that teachers who complete degrees in education more professional outputs than those who do not. It is believed that specialized training empowers and motivates such teachers for better performance. Amanchi (1998) also reported that teachers who complete degrees in education more professional outputs than those who do not. It is believed that specialized training empowers and motivates such teachers for better performance. For the purpose of this study, only the number of years that the principals have worked shall constitute experience.

The study also showed that there is no significant relationship between leadership effectiveness of principals and their total service year and stay in the current school. This finding is in line with the findings of the study carried out in Pennsylvania in that the contributions of the principal's service year and stay in the current school to the students' academic achievements found out to be statistically indistinguishable from the average value-added of all school leaders in the state (Teh et al., 2010). However, this finding contradicts with the findings of some similar studies. For instance a study by Okolo (2001) on the performances of primary school headmasters, results showed that there was a significant difference in performance between primary school head teachers with duration of experience ranging from 4 to 11 years and those with 20 years of experience and above. One can thus infer that experience significantly contributes to difference in head teachers' performances. Alily's (2000) study, also showed that there is a significant difference between medium-experienced and short-experienced teachers. Trained principals perform their roles better than non-professionals.

We have also found no significant relationship between principals' leadership and students' academic achievement. This finding is in line with the finding of several studies which showed that there is no direct

relationship between school leadership and students' academic achievement (Al-Safran et al., 2013) Cheng (cited in Bell et al., 2003).

Conclusions

The study found out that students' academic achievement is not a direct function of principals' leadership effectiveness. This implies that there is no direct relationship between school leadership and students' academic achievement. Leadership may indirectly affect students' academic achievement through improving school climate, teachers' morale, commitment and motivation.

IMPLICATIONS

This study was undertaken by taking sample schools from one zone in Ethiopia. In order to come up with more valid findings the researchers recommend further research on large scale in different contexts.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

Psychological skills development and maintenance in professional soccer players: An experimental design with follow up measures

Bülent Okan Miçoğulları

Department of Physical Education and Sports, Faculty of Education, Nevşehir Hacı Bektaş Veli University, 50300 Nevşehir, Turkey.

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Psychological skills training and Psychological well-being (PWB) are two essential concepts not only for general mental health but also for athletic performance in sport settings. However, the effects of problems in Sport Training Scale (PSTS) on sport performance and general psychological well-being have not been systematically examined through experimental designs, especially in professional soccer teams. Consequently, the goal of this research was to investigate the relationship between performance related psychological skills (team cohesion, confidence, and anxiety) and PWB and the effects of twelve weeks of cognitive-behavioral conceptual framework-based PST program on psychological skills of a professional soccer team. Results showed improved psychological skills and PWB after 12 weeks of PST. Follow up measurements indicated that improved psychological skills were preserved up to six months. Finally, psychological skills and PWB were found to be interconnected parameters, with congruence components. Overall, the PST program improved athletes' team cohesion, self-confidence, anxiety and PWB levels.

Key words: Psychological skill training, psychological well-being, soccer.

INTRODUCTION

Over the years, many trainers, coaches and sport scientists have acknowledged the fact that psychological characteristics of athletes are one of the primary determinants of success and sustained performance in sports (Whelan et al., 1991; Gould et al., 1999; Ritz, 2012). In today's elite level sport contexts, daily alterations in athletic performance are mostly attributed to psychological factors, such as lack of concentration, having poor arousal management, low motivation,

confidence and high trait anxiety, rather than physical training parameters (Orlick and Partington, 1988; Van Raalte et al., 1994; Ravizza, 2001; Vealey 2005). In this regard, specific mental preparation practices aims at adjusting and improving certain psychological skills which has become an essential components of current training regimens in many professional and semi-professional sports (Bacon, 1989). As defined by Weinberg and Gould (2007), PST means the "systematic and consistent

E-mail: omicoogullari@nevsehir.edu.tr. Tel: +090384 2281000.

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practice of mental skills for the purpose of enhancing performance, increasing enjoyment, or achieving greater self satisfaction in sport and physical activity”.

Initial PST applications in professional sport contexts have mostly focused on practicing single psychological skills including physiological and cognitive arousal, use of mental parameters, sustained attention, self-talk, confidence, goal setting and motivation (Wann and Church, 1998). However, such unidimensional approach to psychological skill training was criticized for having conceptual limitations and, thus, subjected to reconsideration by later studies (Williams and Davids, 1998; Tenenbaum and Eklund, 2007). More recent studies, for example, suggested that package PST programs training multiple set of psychological skills in a coherent manner produce more promising results than unidimensional PST programs in terms of reaching and maintaining optimum psychological performance (Hanton and Jones, 1999; MacDougall et al., 2001; Thelwell and Maynard, 2003). The main argument underlying multidimensional approach to PST is to provide both broaden and in-depth practice opportunities for combined set of task relevant to psychological skills, and thus, improve different aspects of sports performance (Edwards and Steyn, 2008). Previous research in team sports, for example, indicated that team players need to develop not only individual psychological characteristics such as ‘self-confidence’ and ‘anxiety management’ but also psychosocial skills facilitating optimum inter group interactions such as ‘team cohesion’ (Green, 1992; Weinberg and Williams, 2001; Morgan, 2006; Paiva, 2006).

Probably the most important question about PST is the effectiveness of it. Comprehensive reviews of the psychological skill training literature have supported the effectiveness of PST in improving the performance and personal growth of athletes (Tenenbaum and Eklund, 2007). Reviews examined all published studies using either group or single subject research designs. Checking within hierarchical order, the first review was published by Greenspan and Feltz (1994). They aimed to test effectiveness of various psychological interventions in sport settings, including golf, karate, skiing, boxing, basketball, volleyball, gymnastics, baseball, tennis and figure skating.

The result of this study indicated that 17 of the 20 studies had positive effect on intervention groups’ performance. In the second review related with effectiveness of PST interventions on performance and personal growth, Vealey (1994) analyzed studies that performed on until 1992. In her study she stressed that 75% (9 of 11) studies employing psychological interventions improved performance in a variety of team and individual sports. Within that same year Weinberg and Comar (1994) analyzed 10 more studies using PST to develop competitive performance. The study’s results showed that 8 of 10 had a positive effect on performance and personal growth (Cox, 2007).

While these studies have provided valuable insights regarding the effectiveness of package programs on relevant psychological skills, longitudinal studies with experimental designs are still very limited for team sports, especially in developing countries like Turkey (Miçooğulları, 2013). Although, for example, professional soccer is the mainstream team sport in Turkey, no experimental studies have been conducted to examine long term effects of package PST programs on performance related psychological skills. Moreover, most of the previous research was conducted with adult and elite athletes providing no research data on the psychological development of young and promising athletes (Jones and Hardy, 1990; Locke and Latham, 1990; Burton et al., 2001; Orlick and McCaffrey, 1991; Miller and Kerr, 2002; McCarthy et al., 2010). Finally, previous meta analyses on PST programs have indicated lack of follow up measures on longitudinal designs, leaving open the question of whether acquired psychological skills can be maintained in athletes. Therefore, the prior goal of this research is to evaluate long term effects of PST program on selected set of psychological skills in young professional Turkish soccer players.

Theoretical basement of Well Being phenomenon showed that it has subjective part (hedonic tradition) and objective part (eudaimonic) (Ryff, 1989). The concept of PWB has been defined – in eudaimonic part - as the realizing potential through some form of struggle (Edwards and Steyn, 2008). As mentioned earlier, PST is directly related with mental health process also PWB draws on mental health too. In addition to practical applications in the sport contexts, researchers have also emphasized the importance of training psychological skills in PWB.

In one of their earlier study, Bacon (1989) found that the essentials of psychological skills can be learned, and also the perspectives acquired from skills can be converted into domains in daily settings. Moreover, in another study -it has been also emphasized- learning psychological skills and employing positive mental perspectives can enhance not only athletic performance in specific but also psychological well being and perceived quality of life in general (Orlick and McCaffrey, 1991). Previous PST studies, however, have seldom focused on well being outcomes of the interventions in professional athletic populations (Edwards and Steyn, 2008).

Therefore, the secondary goal of this research is to examine changes in PWB parameters as a function of PST interventions in young professional Turkish soccer players. Based on the previous studies among track and field (Kirschenbaum et al., 2005), basketball (Edwards and Steyn, 2008), volleyball (Morgan, 2006), rugby (Maynard and Howe, 1987), karate and jogging (McGowan et al., 1991), swimming (Berger and Owen, 1998), it was predicted that PST programs will improve mental health and PWB in soccer players.

METHODOLOGY

Participants

Forty eight male soccer players aged between 16 to 28 years old ($M_{age}= 20.9$, $SD=3.2$) voluntarily participated in this study. None of the participants had previously worked with a PST consultant. Participants were selected from two professional soccer teams in Turkish Football Federation Spor Toto 3. League. The teams were selected purposively. Same category teams were chosen for not having any bias between teams. Initially, there were totally 48 athletes; 24 athletes for the experimental group and 24 athletes for the control group. At the end of the study, there were 48 participants in total, 24 athletes for experimental group with an average of 3.80 years ($SD=0.42$) professional sport experience and 24 athletes for control group with an average of 5.33 years ($SD=3.12$) professional sport experience.

Measuring instruments

Group environment questionnaire

A group environment questionnaire (GEQ; Carron et al., 1985) was used to assess cohesiveness. In this research, GEQ was utilized to investigate cohesion level of professional soccer players. The 18-item GEQ assesses four dimensions of cohesion: individual attractions to the group–social domain reflects an individual's personal desire to remain within the group for social reasons (ATG-S; five items); individual attractions to the group–task assesses an individual's attraction to the group's task, productivity, and goals and objectives (ATG-T; four items); group integration– task measures of the individual's perceptions of the similarity, closeness, and bonding within the group around the task (GI-T; five items); and group integration–social reflects the perceptions of similarity, closeness, and bonding within the group around social orientations (GI-S; four items). All items were rated on Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*). Responses for each of the four concepts were calculated separately, providing an average score for ATG-S, ATG-T, GI-S and GI-T. The original Cronbach's alpha values of the four scales were 0.70 for (ATG-T/S) and 0.73 for (GI-T/S). The adaptation process of the Turkish version of the Group Environment Questionnaire (GEQ) was applied by Öcel and Aydın (2006). The Cronbach's alpha obtained for total values and sub-dimensions' scores ranged from 0.69 to 0.79. Internal consistency values for the present research showed acceptable values of the four scales were ranged between 0.70 (ATG-T/S) and 0.76 (GI-T/S).

Trait sport-confidence inventory

Trait sport-confidence inventory (TSCI) was designed to evaluate self-confidence level of athletes. TSCI is a measure of the degree of certainty how confident athletes generally feel when they compete in their sport. The TSCI is comprised of 13 items measured on a 9- point Likert scale anchored by *Low* (1) and *High* (9). Adequate internal consistency (0.93) has been reported (Vealey, 1988). Reliability and validity of the Turkish version of the Trait – Sport Confidence Inventory was determined by Engür et al. (2006), and TSCI was used on high school graduate students and internal consistency values were found 0.78 for the their sample.

State-trait anxiety inventory

In this study, trait anxiety was measured by trait form of the State - Trait Anxiety Inventory (STAI) which includes 20-items (Spielberger,

1970). Participants responded to each item according to how they generally feel using a four-point scale ranging from “Almost Never” (1) to “Almost Always” (4). The original Cronbach's alpha value for the trait anxiety scale was 0.83. Original scale was developed on 982 high school and collegiate students but the scale is reported as reliable (internal consistency 0.80) for young players by Carter and Kelly (1997), Griciūtė and Cibulskaitė (2009). Adaptation study of the Turkish version of the State-Trait Anxiety Inventory was applied on 1534 youth and adult, and its internal consistency reliability was 0.94 (Öner and Le Compte, 1983).

Ryff's psychological well-being scale

In this research, psychological well-being was evaluated by Ryff's PWB scale (1989a) on the six dimensions of psychological well-being: purpose in life, positive relations with others, autonomy, personal growth, environmental mastery and self-acceptance. The original version consists of six dimensions of 20 items each but however, the shortened version proposed by van Dierendonck (2004) was used in this research. Totally, there were 39 items for six dimensions. The subscale length varied between six items (Self-acceptance, Positive relations with others, Environmental mastery, Purpose in life), seven items (Personal growth) and eight items (Autonomy). A six-point answering scale was used for all scales, ranging from 1 (totally disagree) to 6 (totally agree).

Procedure

In this research, the cognitive – behavioral consultation model by Murphy and Murphy (1992) was used. An emphasis of Murphy and Murphy's model is designed to view the athlete as a person, not just a competitor, and the evaluation of the athlete's functioning in sports and general family life form all parts of the evaluation. This study used the evaluation of the athlete's functioning in sports.

The program was designed to reveal long term effects of PST on participants by follow up tests. Overall presentation of PST program with its specific time table is presented in Table 1. The program described here involved three different mental abilities: anxiety control, self-confidence and team cohesion (team building). The three psychological skills were selected in the current program because of two factors. Firstly, it is understood that these three skills are the lacking ones in soccer players. Secondly, these skills are particularly important for optimal performance in athletics (Singer et al., 1993; Wann, 1997; Weinberg and Gould, 2007). Components of the psychological skills training program were respectively team cohesion, self-confidence and anxiety.

Weinberg and Gould's (2007) PST program phases (education, acquisition and practice) were pursued to design the general structure of the study. In this part of the study, single psychological skill is explained by the structure of the PST program below. On the whole, author followed a-12-week psychological skills program during the season. Single psychological skill's application continued for three weeks. Weinberg and Gould's (2007) PST program levels were followed to apply skills. The 12 weeks PST program included 48 sessions totally. For single psychological skill, 16 sessions were made. The first four sessions of each skill were for the education phase, 10 sessions were for the acquisition phase and two sessions of the program were for the practice phase.

For each skill, the initial phase of the PST program was the educational phase because many athletes were unfamiliar with theoretical part of the psychological skills and how psychological skill can enhance learning and performance (Weinberg and Gould, 2007). The education phase helps the athlete in identifying basic psychological skills/methods, and realizing their own personal use or patterns regarding each skill/method (Vealey, 1988). The important part of the education phase involves improving athletes'

Table 1. The macro time schedule of procedure.

Week 0	Week 1 – Week 12	Week 13	Week 17	Week 25
Pre-data team cohesion self-confidence anxiety (PWB)	Intervention time period	Post -data	First retention	Second retention

awareness of the role that psychological skills play in performance and personal life's excellence (Ravizza, 2001).

The educational sessions of the program were made in the meeting room of the Club facilities. First weeks (four sessions) for each skill are separated for educational phase. Every educational session was set for twenty minutes. The curriculum of the educational sessions was set to give theoretical basement of the skill (for example; definition of skill), importance of the skill, determinants (for example; correlates of skill) of the skill and relationship between related skill and performance (Self-Confidence and Performance).

The second phase of the PST program is the acquisition phase that adjusts on strategies and techniques for learning various psychological skills (Weinberg and Gould, 2007). While choosing techniques for participants, some scientific clues were followed including shorter training sessions, simpler verbal instructions, and turning the exercises into games. Moreover, some of the related assignments were given to the participants to have regular practice. Detailed information related to those processes was given within each skill's explanation. The acquisition phase continued for ten sessions for each single skill. The last phase of the PST program was the practice phase. The practice phase has three primary objectives:

1. To automate skills through over-learning.
2. To teach players to systematically integrate psychological skills into their performance situations.
3. To simulate skills that athletes will apply in actual competition (Weinberg and Gould, 1997).

PST program phases ranged from 15 to 30 minutes per session. Within this study, it was expected that certain cognitive-behavioral techniques would be utilized, such as team building, goal setting, self-talk, pep talk, breathing, imagery. By this way, athletes' and coaches' inputs guided the development of the PST program.

Data analysis

Obtained data from participants questionnaires' were analyzed and exhibited. Initially, arithmetic averages (means) and standard deviations for demographic information and scale scores were calculated and presented. In this research, only team cohesion skill has sub-dimensions and because of this detail, a mixed design multivariate analysis of variance (MANOVA) was utilized to analyze possible changes from pre-season to post-season and follow up tests. In order to evaluate changes in the measures for self confidence and anxiety skills from pre-season to postseason and follow up tests, a mixed design analysis of variance (ANOVA) was utilized (Thomas and Nelson, 2001). Before applying MANOVA and ANOVA, four assumptions of those were controlled independent observation (Wilks Lambda), multivariate normality, homogeneity of population (Box M test) and interval/ratio scale on DVs (Levene's test). Within-Subjects analysis was used to evaluate the effect of time on experimental and control group. Pairwise comparison was conducted for further analysis within-subjects effects. Between-Subjects analysis was used to measure effect of group between experimental and control group. Follow-up Tukey post-hoc was

used when needed. Significant level was determined as $p < .05$.

RESULTS

As it was stated earlier, the relationship between selected psychological skills and psychological well-being was examined in this current study. Moreover, the impact of a twelve-week psychological skills training program (PST) was assessed. This PST program was constructed on cognitive-behavioral conceptual framework on the team cohesion, confidence, anxiety and psychological well being of an intact team. This part provided results according to their applied rank.

Initially, the effect of PST on team cohesion level was analyzed using a mixed model Multivariate Analysis of Variance. The analysis (4 (time; pre- post-test follow up 1 follow up 2) x 2 (group)) showed a significant time x group interaction effect; *Wilks' Lambda* = .39. $F_{(4, 43)} = 16.61$ $p < .05$. Moreover, time; *Wilks' Lambda* = .30. $F_{(12, 35)} = 6.96$, $p < .05$ and group main effects; *Wilks' Lambda* = .15. $F_{(4, 43)} = 16.98$ $p < .05$ were found to be significant. Follow-up pairwise comparison test for both experimental and control groups in four subscales (ATG-T, ATG-S, GI-T and GI-S) were conducted. The result revealed that whereas ATG-T for experimental group significantly changed from pre-test ($M = 5.24 \pm 1.73$) to post-test ($M = 6.65 \pm .96$), from pre-test to follow-up 1 ($M = 6.72 \pm 1.09$), from pre-test to follow-up 2 ($M = 7.31 \pm 0.62$) ($p < .05$), ATG-T for control group did not significantly change among four measurements (Figure 1).

The other subscales of group cohesion, ATG-S, also displayed similar findings to ATG-T. That is, ATG-S for experimental group changed significantly from pre-test ($M = 5.45 \pm 1.85$) to post-test ($M = 7.02 \pm 1.44$) from pre-test to follow-up 1 ($M = 6.96 \pm 1.21$), from pre-test to follow-up 2 ($M = 6.78 \pm 1.19$) ($p < .05$). However, this pattern was not observed for control group (Figure 2). The third subscale, GI-T and the fourth subscale, GI-S, of group cohesion had also the pattern like ATG-T and ATG-S subscales. The result for GI-T for experimental group significantly changed from pre-test ($M = 6.07 \pm 1.82$) to post-test ($M = 7.46 \pm 1.26$) from pre-test to follow-up 1 ($M = 7.53 \pm 0.83$), from pre-test to follow-up 2 ($M = 7.52 \pm 0.80$) ($p < .05$). However, the result of GI-T for control group did not display a significant difference among 4 measurements (Figure 3). Similarly, although the result for GI-S for experimental group significantly changed from pre-test ($M = 5.92 \pm 0.87$) to post-test ($M = 6.23 \pm 0.87$), from pre-test to follow-up 1 ($M = 7.33 \pm 0.74$), from pre-test to follow-up 2

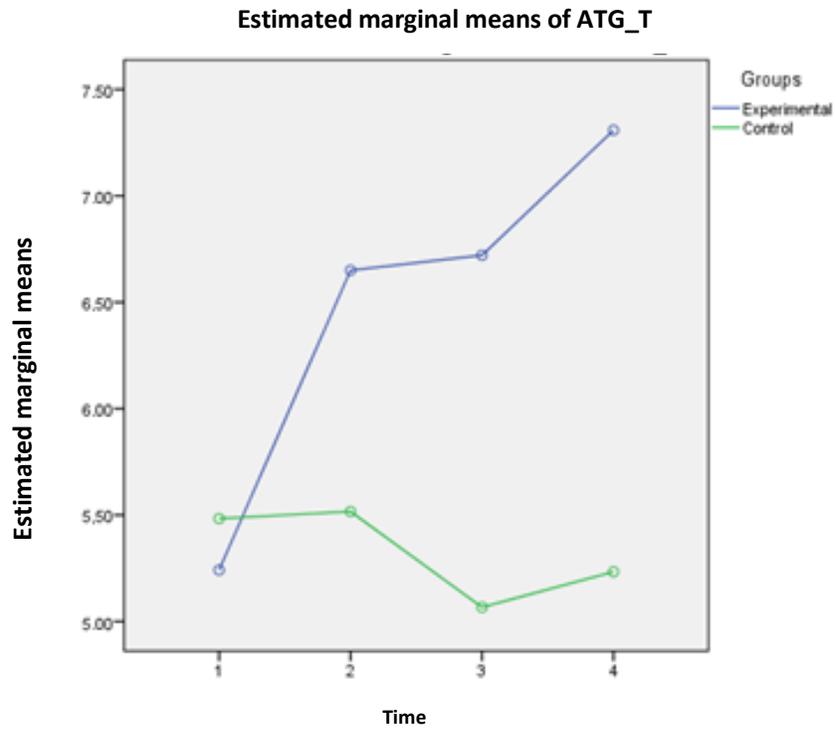


Figure 1. Estimated marginal means of ATG-T between experimental and control group over measurements

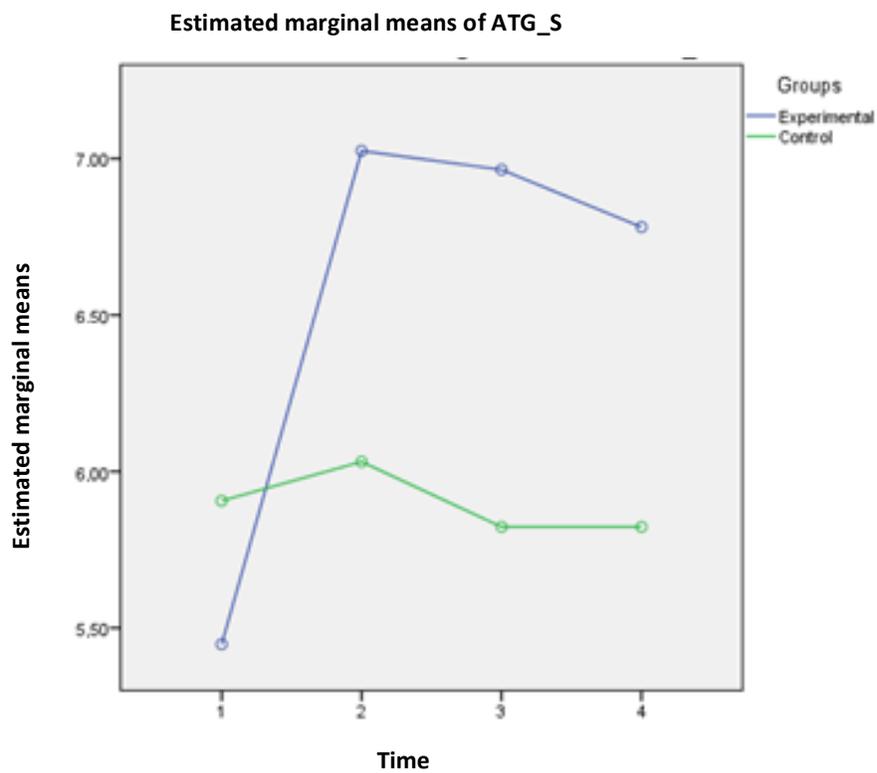


Figure 2. Estimated marginal means of ATG-S between experimental and control group over measurements.

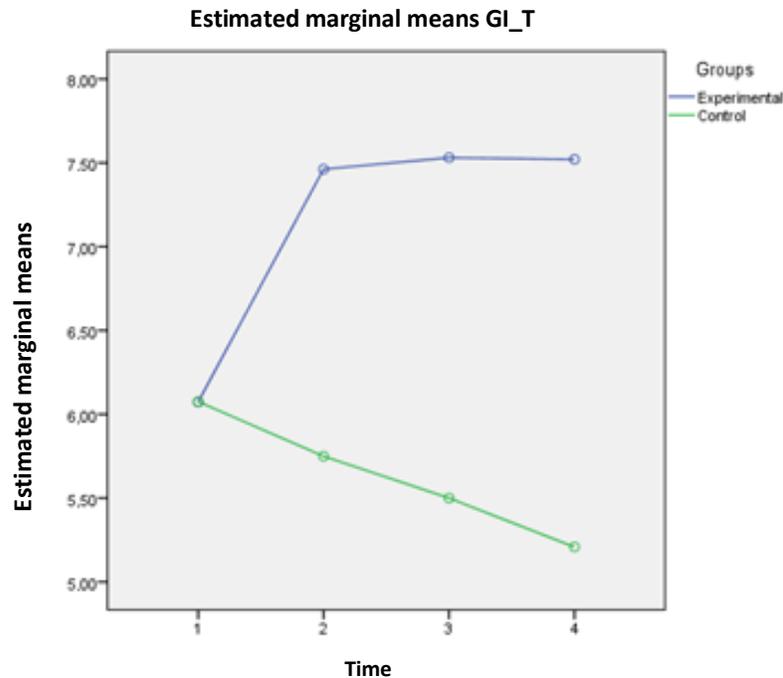


Figure 3. Estimated marginal means of GI-T between experimental and control group over measurements.

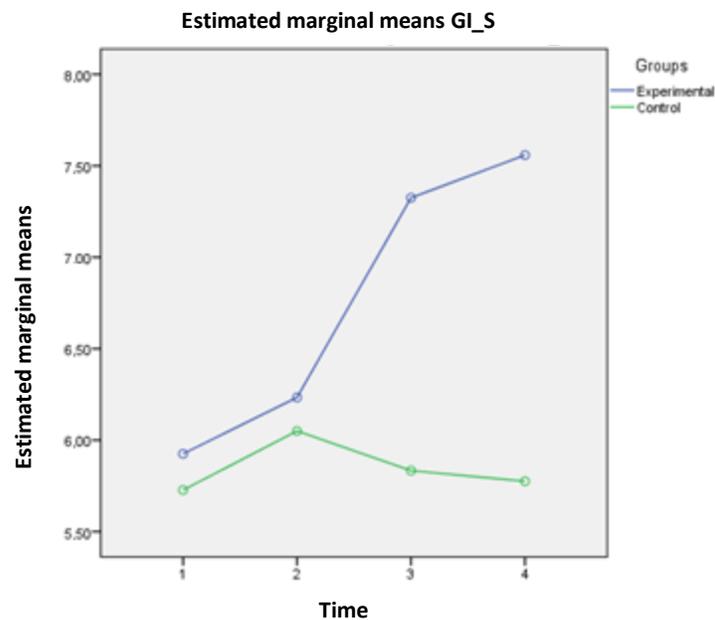


Figure 4. Estimated marginal means of GI-S between experimental and control group over measurements

($M = 7.55 \pm 0.55$) ($p < 0.05$), and the result of GI-S for control group did not significantly change among 4 different measurements (Figure 4).

Secondly, another statistical analysis was conducted to

find out the effects of PST on SC. The result of this analysis displayed a significant group x time interaction $F_{(3, 44)} = 6.39$, $p < .05$ $\eta^2 = .30$, and significant time $F_{(3, 44)} = 3.93$, $p < 0.05$ $\eta^2 = 0.21$ and group $F_{(1, 46)} = 6.37$, $p <$

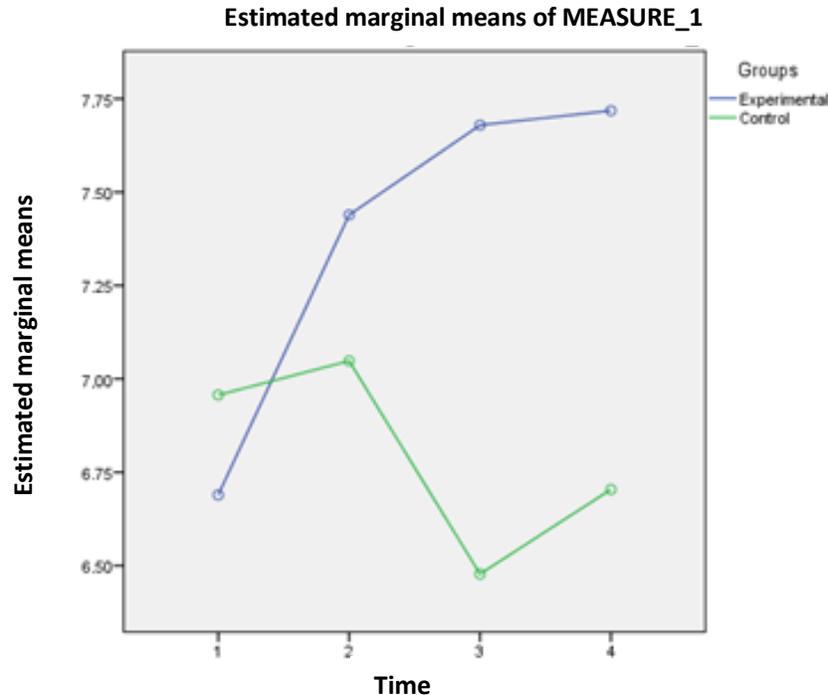


Figure 5. Estimated marginal means of SC between experimental and control group over measurements.

0.05 $\eta^2 = 0.12$ main effects. According to the result of group x time interaction, experimental group obtained positive implications about SC. Follow-up pairwise comparison displayed a significant change for experimental group from pre-test ($M = 6.69 \pm 1.30$) to post-test ($M = 7.44 \pm 0.95$), from pre-test to follow-up 1 ($M = 7.67 \pm 0.70$), from pre-test to follow-up 2 ($M = 7.71 \pm 0.68$) ($p < .05$). Nevertheless, the result of SC for control group did not display a significant difference among 4 measurements (Figure 5).

Thirdly, a mixed design analysis of variance was conducted to test the effects of PST on anxiety. The result for this analysis revealed a significant group x time interaction $F_{(3, 44)} = 4.50$, $p < .05$ $\eta^2 = 0.24$, and significant time $F_{(3, 44)} = 8.60$, $p < .05$ $\eta^2 = .37$, and group $F_{(1, 46)} = 18.54$, $p < .05$ $\eta^2 = .29$, main effects. Significant time x group interaction refers that experimental group obtained positive implications about anxiety. Follow-up pairwise comparison displayed that whereas anxiety for experimental group significantly dropped from pre-test ($M = 2.33 \pm 0.21$) to post-test ($M = 2.30 \pm 0.22$), from pre-test to follow-up 1 ($M = 2.14 \pm 0.23$), from pre-test to follow-up 2 ($M = 2.14 \pm 0.15$) ($p < .05$), and anxiety for control group did not show any significant change among 4 measurements (Figure 6).

Final statistical analysis was conducted to test the effects of PST on PWB. The result for this analysis revealed a significant group x time interaction $F_{(3, 44)} = 220.01$, $p < 0.05$ $\eta^2 = .94$, and significant time $F_{(3, 44)} =$

267.17, $p < .05$ $\eta^2 = 0.95$, and group $F_{(1, 46)} = 18.11$, $p < 0.05$ $\eta^2 = .28$, main effects. Significant time x group interaction refers to the fact that experimental group acquired positive implications about PWB. Follow-up pairwise comparison displayed that although PWB for experimental group displayed significant improvements from pre-test ($M = 16.21 \pm 1.87$) to post-test ($M = 18.14 \pm 1.87$), from pre-test to follow-up 1 ($M = 18.97 \pm 1.78$), from pre-test to follow-up 2 ($M = 18.49 \pm 1.66$) ($p < .05$), PWB for control group did not show a significant difference among 4 measurements (Figure 7).

DISCUSSION

After implemented interventions of psychological skill trainings, results revealed that players in experimental group significantly increased perceptions of team cohesion over the intervention time period more than control group. That is to say, soccer players who took part in the Psychological Skill Training had a significant improvement in their perceptions of team cohesion in general from pre-test to two follow-up tests. In particular, results indicated significant improvement in all subscales of team cohesion which is ATG-T, ATG-S, GI-T and GI-S. The increasement of ATG-T scale showed that implied PST program significantly enhanced athletes' individual perceptions about having enough motivation to be a part of team and team's tasks and shared belief to success.

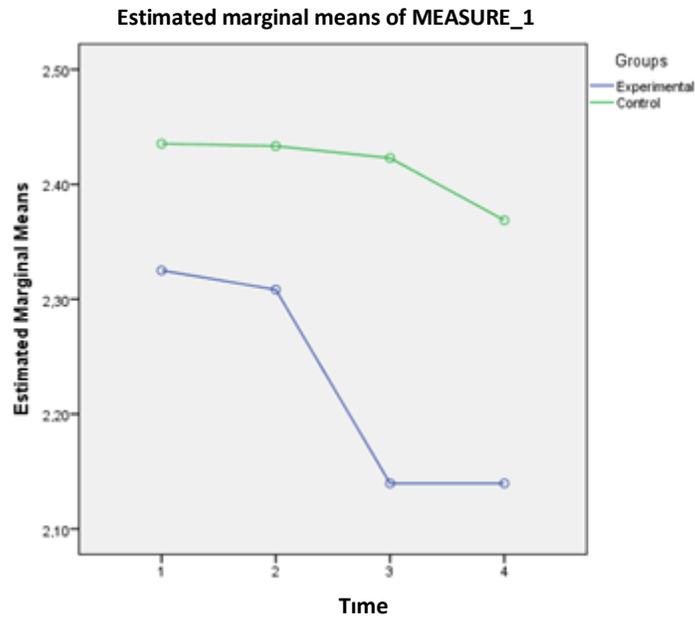


Figure 6. Estimated marginal means of Anxiety between experimental and control group over measurements

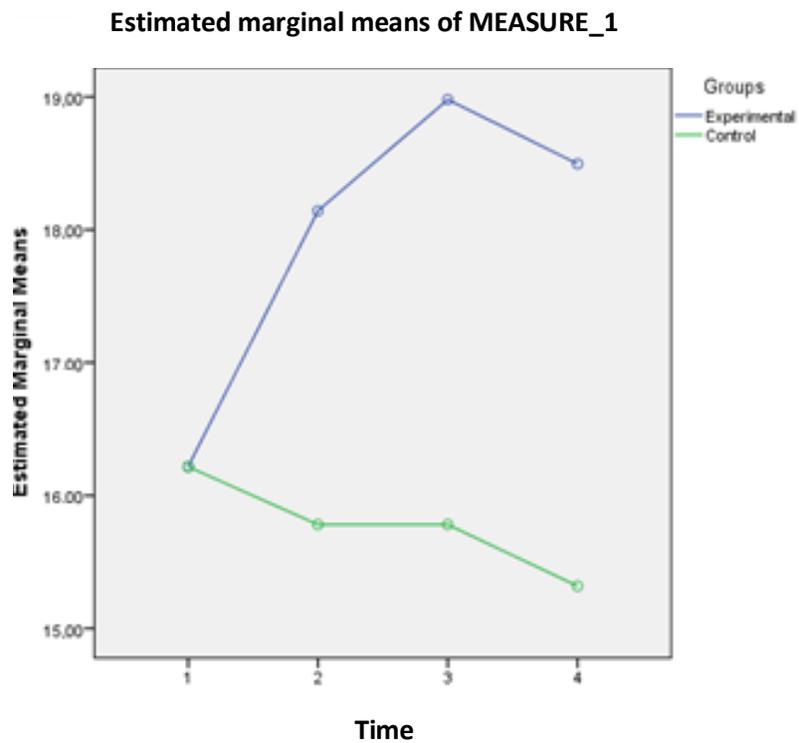


Figure 7. Estimated marginal means of PWB between experimental and control group over measurements

The enhancement of ATG-S scale approved that there was a significant enhancement on athletes' individual

perceptions about having a good social interaction. The improvement of GI-T scale showed that practiced

strategies related with team cohesion have significantly enhanced athletes' individual perceptions about having a support from other team members. In consistent with the hypothesis of this study, the development in GI-S subscale was significant. This means that goal setting and communication interventions did affect the experimental groups' perceptions about being a social unit as a team.

In relation to the study hypotheses, the findings with regard to the significant increase in team cohesion were generally supported by other researches. Studies indicated that enough long duration PST program significantly increased experimental groups' team cohesion through the use of and the realization of the importance of setting common goals, and other methods applied could enhance the team cohesion level by putting all athletes in the exact ways (goals) to reach the teams goal (Burton, 1989; Brawley et al., 1993; Cogan and Petrie 1995; Voight and Callaghan 2001; Carron et al., 2002; Stevens and Bloom 2003; Senecal et al., 2008).

Results also lend support to the perceptions of self-confidence level of soccer players in experimental group significantly increased over the intervention time period. The level of self-confidence of control group remained stable. Follow up tests results showed that experimental group had a significant increase in perceptions of self-confidence from pre-test to post-test. The study also indicated that the increase in the perception of self-confidence was maintaining over two follow-up tests.

The positive change of self-confidence revealed that applied psychological interventions to improve self-confidence significantly enhanced athletes' perceptions and feelings about living and acting in a more secure sportive environment, being more encouraged to behave according to soccer principles, having a better ability on performing motor skills, and having a better ability to deal with stressful sportive situations. These results could be attributed by some reasons which include; creating enthusiastic sportive environment with the help and support of all athletes, developing perceptions of athletes about inspiration for success, trying to establish more positive manners in a team, and directing the athletes to have better level attentional focus within all sport settings.

The results of the current study with regard to the significant increase in self-confidence have been indicated by various researches (Gipson et al., 1989; Cohn et al., 1990; Daw and Burton, 1994; Savoy and Beitel, 1997; Zinnser et al., 1998; Garza and Feltz, 1998; Hanton and Jones, 1999; Hatzigeorgiadis and Morgan, 2006; Edwards and Steyn, 2008; Gucciardi et al., 2009).

Conclusion

Findings from the present investigation lend support for the notion that athletes in experimental group significantly decreased perceptions of their anxiety level over the intervention time period. The perception level of anxiety

of control group remained stable. Follow up tests results showed that experimental group significantly decreased in perceptions of anxiety from pre-test to post-test. The study also indicated that there was a decrease in the perception of anxiety maintaining over two follow-up tests.

The decreasing of anxiety indicated that implied psychological strategies to reduce anxiety significantly enhanced athletes' feelings about being more powerful in front of a stressful sportive environments, being more comfortable to behave according to soccer principles, having a better ability on performing motor skills, and having a proper acceptance opinions to deal with win-lose understanding in sports. These results could be attributed by some reasons which include; applied strategies may modify perceptions of anxiety and those help the athletes achieve a relaxed state of body and mind; also interventions associated with improving self-esteem levels of athletes affected levels of anxiety; and lastly, efficiency of cognitive-behavioral interventions in decreasing anxiety could be explained by athletes' better ability to calm their mind and body by implying relaxation techniques.

The results of some studies with regard to the significant decrease in anxiety have been indicated by various researches (Meyers et al., 1982; Romero and Silvestri, 1990; Holm et al., 1996; Shaffer and Wiese-Bjornstal, 1999; Poland 2007; Wadey and Hanton, 2008). The results produced by the study revealed that athletes in experimental group significantly improved in perceptions of their psychological well-being level over the intervention time period. The level of psychological well-being of control group remained stable. Follow up tests findings showed that experimental group significantly increased in their psychological well-being levels from pre-test to follow up tests.

Intervention implications developed PWB levels significantly. The findings of the various studies with regard to the significant enhance in PWB have been indicated by various researches. The underlying mechanisms accepted to be responsible for results could be applied strategies, and interventions may positively changed constructs of psychological well-being by improved independency and self-determination levels; by helping to develop more efficient ability to manage their life; by having a chance to be open to new experiences; by facing high quality relationships; by believing theirs and others' lives are meaningful and trying to show positive attitudes towards their and others' past life and lastly participants' good intentions to have new approach about their life (Ryan and Deci, 2001; Hair et al., 2003; Marchetti-Mercer, 2003; Abbott et al., 2006; Edwards and Steyn, 2008; Zheng et al., 2014).

Conflict of interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Analyzing parental involvement dimensions in early childhood education

Zeynep Kurtulmus

Division of Early Childhood Education 06500, Educational Faculty, Gazi University, Besevler, Ankara, Turkey.

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The importance of parental involvement in children's academic and social development has been widely accepted. For children's later school success, the first years are crucial. Majority of the research focuses on enhancing and supporting parental involvement in educational settings. The purpose of this study was to analyze dimensions of parental involvement in early childhood education. It was seen that parents have tendency to attend parent conferences at school. Study also indicated that parents' involvement level was moderate regarding to children's learnings at school. Parents reported low involvement level in terms of participating in classroom activities with their children and encouraging them. Study also showed that parents were in need of being supported in redirecting children's activities and attending classroom activities with them.

Key words: Parental involvement, early childhood education.

INTRODUCTION

Parental involvement in child education has been accepted as a crucial element of early childhood education. Studies concerning parental involvement not only proved its positive effect on child development, but also presented specific links among the structure of the involvement and children's academic achievement and social emotional outcomes (Gadsden, 2013; Aksoy, 2002; Fan and Chen, 2001).

Parental involvement is explained as parental participation in the educational processes of their children (Jeynes, 2005). Currently, evidence based researches suggest three family involvement dimensions in promoting healthy outcomes: parenting, home-school relationships and responsibility for learning outcomes (McWayne and Owsianik, 2004). Parenting is the parental involvement dimension that includes the

attitudes, values, and practices of parents in raising young children. Nurturing, warm, and responsive parent-child relationship in child-centered activities relate to positive learning outcomes in early childhood (Figure 1). Play is also important for children's social and emotional development. Children who play at home and whose parents give importance to play in their development are likely to demonstrate prosocial and independent behaviors in the classroom (Fantuzzo and McWayne, 2002). Parent participation with their children in arts and crafts activities has an influence on children's literacy development as well (Nord et al., 1999).

Home-school relationship refers to the formal and informal connections between parents and their young children's educational settings (Figure 1). Both participation in preschool-based activities and regular

E-mail: kzeynep@gazi.edu.tr. Tel: +90 (312)202-1864.

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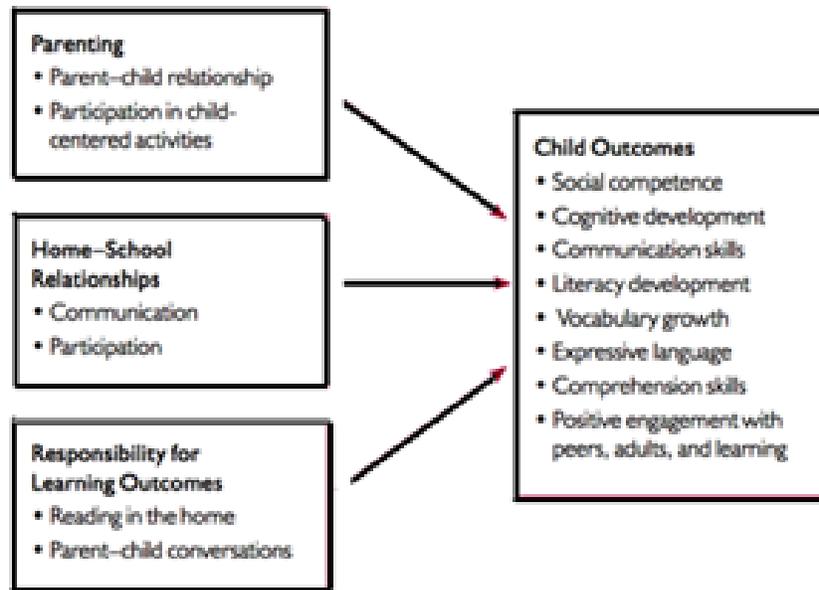


Figure 1. Processes of family involvement and young children's outcomes.

communication between parents and teachers have an impact on young children's outcomes (Marcon, 1999). Parent participation practices can include attending parent-teacher conferences, participating in extended class visits, and helping class activities. The frequency of parent-teacher contact in these activities affects the child's preschool performance. Parents who maintain direct and regular contact with the early educational setting and experience fewer barriers to involvement have children who demonstrate positive engagement with peers, adults, and learning (McWayne et al., 2004).

Responsibility for learning outcomes refers to an aspect of parenting that involves placing emphasis on educational activities that promote school success (Figure 1). During early years of children, learning outcomes tend to focus on how parents can support children's language and literacy. Reading with children is one of the most recommended activities for parents during early years. Children whose parents read to them at home recognize letters of the alphabet and write their names sooner than the others (Nord et al., 1999). Research also indicated that mothers who use more complex sentences and a wider range of different words in their everyday conversations have children with richer expressive language and higher scores on literacy-related tasks in kindergarten (Britto and Brooks-Gunn, 2001). In addition, children of parents who emphasize problem solving and curiosity for learning develop long-term individual interests and the ability to attend to tasks for longer periods of time (Fantuzzo et al., 2004).

Parent's first responsibility is to make children go to school and keep them safe. Parents are also required to help their children to increase their academic functioning

(Anderson and Minke, 2007). One of the early childhood education programs purpose is to build relationships with parents to develop equally beneficial learning environments for young children at home and at school (NRC, 2001). Home and school relationships include formal and informal connections between the family and educational setting. Parents' higher levels of involvement in their children's educational experiences at home have been associated with children's higher achievement scores in reading and writing (Epstein, 2001). Besides, parents' higher level of involvement at school activities and interaction with the teachers is associated with better achievement in mathematics and reading (Griffith, 1996). It is clear that parental involvement is a key factor for academic achievement and relatively self-competence of a child. Due to its importance on child development, research on parent involvement focuses on relationship between levels of parent behavior and children's outcomes.

Studies indicated that both parents and teachers have concerns regarding to the lack of parental involvement (Temel, 2001; Parker et al., 1999). For this reason, dimensions of parental involvement in early childhood education need to be analyzed. Understanding the distinct multidimensional character of parental involvement would allow researchers to increase level of parental involvement and its outcomes.

Parents' involvement behaviors in early childhood education settings are also analyzed as home-based involvement and school-based involvement (Deslandes and Bertrand, 2005). Home-based parent involvement includes practices related to children's education that take place outside school, usually within their homes.

These practices may be directly related to schoolwork, including assisting homework, responding to children's academic choices, and talking about academic issues (Eccles and Harold, 1993). School-based involvement occurs when parents actually make contact with the school and includes participating in general school meetings, communicating with teachers and administrators, attending school events, and volunteering at the school (Herrold and O'Donnell, 2008).

Parental involvement in Turkish early childhood program

Early childhood institutions are obligated to follow the Ministry of National Education guidelines. These guidelines are presented and standard forms are supplied in the National Early Childhood Education Program. This program considers two portions for parental involvement: Parental involvement and parent education. In terms of involvement, each play activity has a parental involvement extension. There are also home visits and school-based activities for parents. These activities are intended to establish relationships between teachers and parents. In terms of parent education, families are educated about child development, child education, affective communication and behavior modification. It is significant that researchers should focus on how to increase the level of parental involvement and its quality. For this, dimensions of involvement needs to be known, and parents' behavior in these dimensions needs to be analyzed.

MATERIALS AND METHODS

Dimensions of parent involvement in preschool programs have been distinguished in the literature by several researchers (Sanders and Epstein, 2000; Deitchma et al., 1977; Fantuzzo et al., 2004; McWayne and Owsianik, 2004). All the studies mainly follow three dimensions:

1. Contact with the school
2. Learning at home, and
3. Participation at school (Bakker and Denessen, 2007).

Most of the studies measuring dimensions of parental involvement report mean scores on scales to construct the level of involvement. Mean scores can be interpreted in terms of levels of involvement in general or in terms of distinct aspects, such as the frequency of contact that parents have with their child's school. High scores on items referring to the frequency of contact with the school can thus be interpreted as 'parents report to have frequent contact with their child's school' or 'parents are highly involved' (Bakker et al., 2007). Because there are contextual differences among educational settings and programs in different societies, this study attempted to stay close to the national preschool program. For this principle, while using current research knowledge, recent concepts from the national preschool program has been applied. Besides, semi-structured interviews with Turkish mothers were held to well distinct dimensional items.

Parental Involvement Survey for Early Childhood Education (PISEC) was given to participants to obtain their parental

involvement evaluation. PISEC was developed using a content analysis approach following guidelines presented by Yildirim and Simsek (2006). First, 10 female parents who have a child in kindergarten participated in semi-structured interviews. Participants were asked the types of activities they accomplish with their children at home and at school. Two researchers independently identified each statement from the participants that indicated parental involvement. Inter observer reliability was 0.90 for the involvement types between two researcher. Researchers then compiled the list of involvements and categorized them among behaviors. It was categorized as five involvement behaviors under three dimensions: development based dimension, activity based dimension and involvement based dimension. These dimensions and their survey items were sent to three specialists. Necessary corrections were made and the survey was finalized. Five point Likert scale was employed (1-never, 2-rarely, 3-sometimes, 4-often, 5-always) for the data collection purposes.

Participants were 300 parents who have a five years old child. Father participants were excluded from the data due to their very small number of contribution. The participants were selected in an effort to equally represent a variety of preschool settings across the city of Ankara. These preschool settings were independent preschools and public kindergartens. Before completing the survey, the participants received a cover letter explaining the purpose of the study. Answers were analyzed descriptively using Statistical Package for Social Sciences (SPSS).

RESULTS

Data was distributed in three dimensions: Development based dimension, activity based dimension and involvement based dimension. Each dimension consisted 5 items. Means and standard deviations of items are presented in Tables 1, 2 and 3.

Among five items of the development based dimension, parents scored the item 'they closely follow what their children learn at school' ($\bar{x}=3.96$) in the highest level. Parents illustrated the item 'they praise their children when they accomplish a good job' ($\bar{x}=3.85$) in the second highest level. It was also found that parents respond to the item 'talk to their children to understand their interest domain' ($\bar{x}=2.44$) in the third and the item 'talk to their children to correlate their interest domains with life experiences' ($\bar{x}=2.30$) in the fourth highest level. Results showed that parents' lowest involvement was to the item 'redirecting school based activities to do at home using different model and concepts' ($\bar{x}=1.74$). The overall mean score was found 2.86 for the development based dimension.

Among five items of the activity based dimension, parents scored the item 'they help their children to understand how to successfully complete their activities at home' ($\bar{x}=3.67$) in the highest level. Parents answered to the item 'they involve their children's activities to help them accomplishing a better job' ($\bar{x}=2.60$) in the second highest level. It was also observed that the item 'encourage their children to change the activity when they lost their interest to the current activity' ($\bar{x}=2.45$) in the third and the item 'they asked their children how they finished the activity when they bring it home' ($\bar{x}=2.40$) in the fourth highest level. Results showed that parents'

Table 1. Development based dimation.

Behavior	Mean	δ
Close follow up	3.96	0.36
Praising	3.85	0.14
Interest domain	2.44	0.22
Correlating with life experiences	2.30	0.30
Redirecting activity	1.74	0.31
Overall mean	2.86	-

5 points scale (1-the least consistent, 5-most consistent).

Table 2. Activity based dimension.

Behavior	Mean	δ
Helping to understand	3.67	0.38
Involving in activity	2.60	0.280
Encouraging when no interest	2.45	0.24
Asking about the activity	2.40	0.16
Encouraging when failed	2.35	0.20
Overall mean	2.70	-

5 point scale (1-the least consistent, 5-most consistent).

Table 3. Involvement based dimension.

Behavior	Mean	δ
Attending to parent conference	4.55	0.41
Reading books	3.77	0.24
Doing activity at home	3.65	0.32
Talking about expectations	2.42	0.17
Attending to classroom activities	1.25	0.30
Overall mean	3.13	-

5 point scale (1-the least consistent, 5-most consistent).

lowest involvement was to the item 'encouraging their children to accomplish a different activity when they are failed in an activity' (\bar{x} =2.35). The overall mean score was found 2.70 for the activity based dimension.

Among five items of the involvement based dimension, parents stated the item 'they attend parent conferences' (\bar{x} =4.55) in the highest level. Parents also reported the item 'they read books with their children' (\bar{x} =3.77) in the second highest level. It was also found that the item 'do activities with their children at home' (\bar{x} =3.65) in the third level and the item 'talk to their children about their expectations from their children' (\bar{x} =2.42) in the fourth level. Results showed that parents lowest involvement was to the item 'attending to classroom activities' (\bar{x} =1.25). The overall mean score was found 3.13 for involvement based dimension.

DISCUSSION

This study showed that parents moderately involve in their children's education during early childhood. It has been found that parents regularly attend parent conferences at school as an involvement based behavior. Parent conferences are usually hold once at the beginning of the semester and once at the end of the semester. These meetings are formal and mainly about child's progress and school policies. Attendance of these meetings are also considered to be compulsory.

It can be concluded that the reason for having higher level of involvement in parent meetings was its margin of formal responsibility. Study also indicated that parents were participating in reading books and home type of activities with their children frequently. On the other hand, they did not tend to participate in classroom activities with their children. Many early childhood education programs welcome parents in the classroom (Bohan-Baker and Little, 2002). Turkish national early childhood education program encourage parents involving in classroom activities as well. However, early childhood education teachers have difficulties complying with the idea of having parents in the classroom (Bayraktar et al., 2016). It can be suggested that policy makers should focus on the practice side of the in classroom activities to enhance parents' involvement with their children in classroom.

Study indicated that parents help their children to understand how to complete their activities successfully. On the other hand, parents reported lower level of involvement in the activities. It can be assumed that parents have difficulty with actively being in child games. Parents also stated that they closely monitor their children's learnings at school. It has also seen that they tend to praise their children's work. When the behaviors of the parents were analyzed in terms of encouraging their children in activities, their involvement decreased. Another result is that they praise their children during the play but their tendency to encourage their children when they fail decreases. It can be assumed that parents only give importance for their children to be engaged in activities or games. Parents have tendency to let their children only play and not encourage them in failure. Besides they find school based activities enough for their children to engage and they need guidance to understand their children's interest and how to correlate these interests with life experiences.

Study showed that while parental involvement was moderate for all three dimensions, the highest involvement was observed for the involvement based dimension. This dimension mainly regulates the school related tasks and responsibilities. When it comes to activity based behaviors, parents involvement decreases. It can be concluded that parents need assistance on why and how to effectively involve in their children's activities (Aral and Yurteri, 2012; Temel, 1998). This issue should also be a subject for the school based parent education meetings. It's expected that parental involvement in child

activities would positively affect development based dimension as well.

The study provided some preliminary information about parental involvement in early childhood education. Findings suggested that parental involvement in Turkish early childhood settings needs to be supported and improved. Parents are especially in need of being supported to be able to redirect children's activities and attend classroom activities. Further research is recommended on effective methods to develop better parental involvement in early childhood settings in Turkey. Researches should examine on parent-teacher interaction and the reasons why parents are not welcomed in classroom activities by the teachers.

Conflict of interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Philosophy for children: Capacity evaluation of humorous stories in *Masnavi* based on “Lipman's views on philosophical thinking components”

Fateme Azamat madar Fard, Hassan Ali Bakhtiyar Nasrabadi* and Mohammad Hossein Heidari

Department of Educational Sciences, Faculty of Educational Sciences and Psychology, University of Isfahan, Isfahan, Iran.

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The aim of this research is to study humorous tales in *Masnavi* according to Lipman's views on “Philosophical thinking components”. To achieve this goal, first, Lipman's components of philosophical thinking were identified and divided into three dimensions of critical, creative and caring thinking components. In the second part, using deductive analysis method and based on the theoretical framework provided in the first part, the triple components were identified and analyzed in three humorous tales of *Masnavi*. Research findings showed that critical thinking components, in terms of frequency, have given more richness to stories. In the next stage, caring thinking components were more present in stories and components of creative thinking were also in the final stage. It is suggested that teachers in their lessons use stories that have more philosophical potential due to more components. In addition, it is recommended that children's literature authors interested in creating stories with intellectual and philosophical themes, be inspired by the components of this research to write their stories. Children's literature authors are also recommended to rewrite the stories of this research for two age-groups of children and adolescents. Rewriting stories should not neglect any component of the source texts.

Key words: Philosophical thinking components, Lipman, *Masnavi*, Philosophy for children.

INTRODUCTION

If philosophy is questioning and searching for the truth and is trying to ask the main questions of life, it can be said that some children's questions are philosophical. Children to explore the realities of the world around them, ask questions that are philosophical in nature: “Where did

grandfather go after his death? My mother asked me to tell the truth, what is the truth? My father said that my reason is not satisfying, how can I provide a satisfying reason?” These are some examples of children's philosophical questions and their need for philosophy.

*Corresponding author. E-mail: H.nasrabadi@edu.ui.ac.ir.

Reflection on these apparently childish questions reveals basic concepts of philosophy including ontology, epistemology and axiology clearly. Gareth B. Matthews, prominent expert of children's literature and philosophy, reckons that "children are natural philosophers". They ask philosophical questions and want to discover the truth personally" (Matthews, 1995:17, 18). Karin Murriss (2012) in response to the question "can children do philosophy?" says: "my temporary answer to this question is poignantly formulated by Sharp and Splitter. They write: "...abstract concepts to do with conservation, causality, the mind, reality, personhood and truth may be within the grasp of young children *provided that they can find pathways to and from their own more concrete experiences. It is up to adults to lay the groundwork for the construction of these pathways*" (Splitter and Sharp, 1995: 22).

In the past few decades, many activities have been done in the field of teaching intellectual skills. One of the most recent activities is the program of "Philosophy for children" designed by Matthew Lipman in the seventh decade of the twentieth century to develop philosophical thinking.

The pioneers of this program, with two different approaches assume that the best way to develop children's philosophical thinking is enjoying the stories.

The first group is related to those like Lipman, Sharp and Cam. They think that popular children's literature is not written to develop children's philosophical thinking (Naji, 2004B:15). For example, Lipman assumed that available children's stories are useful for literary and symbolic goals not for philosophical inquiry (Fisher, 2006:160). He presumed stories are suitable for strengthening philosophical thinking that encompass diverse philosophical views and various aspects of the philosophical thinking such as judgment, reasoning, respect, appreciation and compassion (Lipman, 1980:72).

In contrast to this view, Fisher and Matthews reckoned that common stories in children's literature contain philosophical concepts and can be effective in increasing children's philosophical thinking (Fisher, 2006:63; Matthews, 1995:79). Khosrownejad (2010: 169) also assume that popular children's stories due to their decentralizing properties are inherently philosophical and can reinforce philosophical thinking in children even if they did not aim to create philosophical challenges.

In this regard, a third approach with more compatibility with the second one could also be extracted. This approach states that some ancient literary texts have philosophical and literary richness and rewriting them in simple and attractive language, with guide book codification for each story, can develop children and teenagers philosophical thinking in a community of inquiry. It is noteworthy that feasibility of such an approach to use these stories in the community of inquiry necessitates trained teachers who could arise philosophical and challenging questions and be familiar with thinking skills.

Having all said, the present study aims to investigate the third approach and find an adequate answer to the question that "do the ancient stories, created to serve different purposes, have the capability to reinforce philosophical thought in children?" This study seeks to find this answer through analyzing the character element in three of the humorous tales in *Masnavi*. This analysis is conducted based on Lipman's theory on philosophical thinking components. Lipman's views are important because in his views caring is one of the dimensions of philosophical thinking and is of a moral aspect.

What follows is a review over previous literature and an introduction to Lipman's views toward philosophical thinking.

LITERATURE REVIEW

Panahi (2011) examined Attar's *Manteqo tair*, and demonstrated that the bilateral dialogue method of Attar in this work is very similar to Lipman's method. Akbari (2012) in his doctoral dissertation examined philosophical contents in stories of Persian classical literature. In this study fundamental questions of philosophy in three realms of ontology, epistemology and axiology have been specified and for each of the questions provided a story from classical Persian literary texts. Hamidi (2013) in his master's thesis, used philosophical, literary and educational indicators, and selected stories of *Shahnameh* to be used in the p4c program. Habibi Araqi et al. (2013), according to the criteria compiled by leaders of the program, examined four selected works of classical literature namely *Klile and Damne*, *Masnavi*, *Golestan* and *Bostan*. In their paper, did Hesampour and Mosleh (2014) investigate text and image in some popular and available stories for children based on Mathews theory and found that stories not only possess literary elements like imagination and eloquence but also had philosophical indices like ethics, identification and classification.

PHILOSOPHICAL THINKING COMPONENTS IN LIPMAN'S VIEWS

Lipman initially thought that teaching critical thinking enables us to actualize all children's faculties, but later found that critical thinking is not enough for development of thinking because it does not include conceptualization and other skills in the official philosophy and formal logic. Thus, after a while, he came to the conclusion that to improve thinking, different aspects of thinking including critical, creative and caring thinking must be taught (Naji, 2004A:102). Thinking in Education (2003) is the latest Lipman's formation of the new paradigm. In this book, he explained different aspects of philosophical thinking and for each he mentioned components that are examined in this section.

Critical thinking

According to Lipman, "critical thinking is the thinking that facilitates judgment because it relies on criteria, is self-correcting, and is sensitive to context" (Lipman, 2000:212). He supposed that good judgment requires an open and flexible mind that in the face of new ideas and events shows different behaviors and responses (Lipman, 1980:37). Moreover, in a judgment, comparing things and identifying their relationship is too important (Jahani, 2003:90). A good judgment requires clear understanding, convincing argument and avoiding fallacy (Lipman, 2003:235).

Another major feature of critical thinking is its reliance to criteria. According to Lipman, criterion is "a rule or principle utilized in the making of judgments" (Lipman, 2003:212). In fact, "criteria are reasons and when we have to sort things out descriptively or evolutionally, we have to use the most reliable reasons we can find" (Lipman, 2003:213).

Self-correction is another trait of critical thinking. One benefit of converting the classroom into the community of inquiry is that in such circles, students not only think on various philosophical, moral and social subjects, but also investigate thinking about thinking to rectify one's own and other's procedures and methods (Jahani, 2003:42). This is what is called "meta-cognition" and consists of questioning one's own thinking process, discovering its weaknesses and rectifying them (Lipman, 2003:242). Moreover, identifying inconsistencies in discussions, pointing out fallacious assumptions or invalid inferences in reasoning of others and clarifying vague expressions in texts are examples of thinking about thinking (Lipman, 2003:224).

Sensitivity to context is the last feature of critical thinking. Thinking that is sensitive to context involves recognition of:

- A. Exceptional or irregular circumstances (For example, we normally examine statements for truth or falsity independent of the character of the speaker. However, in a court trial, the character of a witness may become a relevant consideration).
- B. Special limitations.
- C. Overall configurations (individual situations need to be examined on their own terms and not forced into some procrustean bed of general rules and regulation. Therefore, details and exceptions of each sample should invoke sensitivity and general rules ought not to be imposed on details).
- D. The possibility that some meanings do not translate from one context or domain to another (Lipman, 2003:219).

Creative thinking

Lipman assumed that creative thinking is "thinking how to say what merit's saying, how to make what merit's

making, how to do what merit's doing" (Lipman, 2003:248). The most important features of creative thinking include: Originality, imagination, independence, experimentation, holism, expression, self-transcendence, surprise, productivity, generativity, maieuticity and inventiveness (Lipman, 2003:246, 249).

Caring thinking

Lipman presumed that "caring thinking involves a double meaning, for on the one hand it means to think solicitously about that which is the subject matter of our thought, and on the other hand it is to be concerned about one's manner of thinking" (Lipman, 2003:262). Without caring, thinking is devoid of a values component. Lipman (2003:264-269) has divided caring thinking into following types:

Appreciative thinking

To appreciate is to pay attention to what matters, to what is of importance.

Affective thinking

Lipman thinks that "at least some emotions are not merely the physiological consequences of human judgments: They are those judgments themselves".

Active thinking

In addition to emotions, Lipman thinks that some actions are cognitive since they sometimes require judgment and must be conducted for the sake of maintaining the valuable affairs.

Normative thinking

Education should lead thought to norms and values. Child must learn to be interested in something that is interest-worthy.

Empathic thinking

For Lipman, the term "empathy" means "put ourselves into another's situation and experience that person's emotions". This enables us to understand much better how that person views his or her situation. The features mentioned, were foundations of set-out a self-made table in order to accommodate the stories. Accordingly, components described in *Thinking in Education* (2003) summarized and several other components from *Philosophy in the Classroom* (1980) were added to

Table 1. Philosophical thinking components.

The dimensions of philosophical thinking	Philosophical thinking components		
Critical thinking	Thinking about thinking (meta-cognition)	Self –corrective Rectification of Other’s thought process	Questioning one’s own thinking process, discovering its weaknesses and rectifying Identifying inconsistencies in discussions, pointing out fallacious assumptions or invalid inferences in reasoning of others and clarifying vague expressions
	Good judgment		Open and flexible mind, comparing things and identifying their relationship, clear understanding heard, logical reasoning, avoiding from fallacy and using criteria
	Sensitivity to context		Recognition of: exceptional or irregular circumstances, special limitations, overall configurations, some meanings do not translate from one context to another
Creative thinking	Originality, productivity, imagination, independence, experimentation, holism, expression, self-transcendence, surprise, generativity, maieuticity and inventiveness		
Caring thinking	Appreciative, affective, active, normative, empathic		

Table 1. On the left column of the table, dimensions of philosophical thinking are represented including critical thinking, creative thinking and caring thinking. Critical thinking is of three parts of meta-cognition (covering self-correction and correcting thinking process of others), good judgment and sensitivity to context with each of them having various components. Creative thinking and caring thinking both have several components listed in front of their cells in the table as well.

RESEARCH METHODOLOGY

This research has chosen "Qualitative Content Analysis" method to achieve its goal through a variety of methods. Qualitative content analysis is divided into two forms of Inductive Qualitative Content Analysis and Deductive Qualitative Content Analysis based on Mayring’s classification (Mayring, 2000:5). In the present study, the deductive form has been applied. Deductive pattern uses previous theories and studies. In other words, concepts, categories and analysis structures are defined and compiled before entering the text and analyzing it. The induction is of deduction type and moves from whole to parts. Its aim is to test and examine the categories and patterns and their applications in various situations or enrich the theories (Elo and Kyngass, 2008:109- 112).

In the present study, deductive analysis is used as the contents of the stories were adapted with the table developed based on Lipman’s works in the early stages of the research, and hidden thinking components behind them were identified and inferred.

In order to ensure reliability of the table made by the researcher, expert views from two scholars in the field of philosophy for children were considered along with views from the members of the research committee of this study were taken.

The table was first given to them along with the resources and references used to extract them and after several meetings with them, differences were tackled and agreement was reached over components of the table. The stories were later analyzed according

to the final edition of the table. Analyzed stories were given to the research team and one prominent children literature expert. Some modifications were also made on the analyses based on their suggestions. Thus, reliability of the components of the table and the method of analyzing the stories were all evaluated in this way. Lincoln and Guba (1985) cited in Maykut and Morehouse (1995:25) stated that working with a research team increases reliability of the study. The present study is taken from a doctoral dissertation under supervision of supervising and reading professors, along with expert views from several scholars in both fields of philosophy for children and children literature to give it a high degree of validity.

Sample of this study included three humorous tales from *Masnavi* selected purposefully, that is, the stories selected for this study had at least one of the components of philosophical thinking.

In this research, analysis units are sentences, paragraphs and the whole text, and researchers tried to consider every sentence in addition to the whole work and measured the presence of philosophical thinking components in fictions. Considering the whole work in analysis helped researchers find components with no clear phrase or sentence in stories to explain them and the whole story connoted them implicitly.

ANALYZING THE SYNOPSES OF STORIES

The Mouse and the Camel (Mirhashemi, 2013: 371)

Once upon a time, a mouse caught a rope tied to a camel to pull his legs. When this big animal began to walk, the mouse imagined that he was pulling him. “How strong and powerful I am”, he thought and felt proud. The mouse did not understand that the camel was walking by himself. The two animals then arrived at a river. Here, the mouse came to a stop because he was afraid of the deep water ahead of him.

“Why have you stopped, dear friend?” asked the camel”.

"Keep leading me on, for you are my guide."
 "But this is a profound ocean. If I go further, I'll drown,"
 replied the mouse.
 "Let me measure how deep it is," said the camel, walking
 into the river.
 "Why? It only comes up to my knee," the camel
 answered. "Do go on, sir."
 And it was obvious that the mouse could not pass the
 river by himself.
 "Oh great camel," mouse said, "Your knee is different
 with mine."
 He took pity on mouse. "Jump up and sit on my hump,"
 camel said,
 "And strongly prevent him from being so proud in future."

This story, with subtle and pleasant humor, teaches the addressee to consider his limits and avoid doing something beyond his ability. Therefore, if others give the opportunity to do something to him, he should consider this a kind of opportunity to experience and know that more difficult tests are on the way. So, narcissism and pride must be avoided. As the mentioned story, in a childly atmosphere teaches moral and valuable points such as Identifying weaknesses and avoiding arrogance and narcissism to child, it has "normative" components and provides a fertile ground for caring thinking training.

Another component in the story is the "active thinking" component. As noted earlier, Lipman knows some actions as cognitive and within caring thinking category since they require judgment and are taken in order to preserve the valuable affairs. In the story above, after the mouse finds its inability, the false pride created in him is lost. Since teaching these things is done by camel character, as a coach, empirically, the story enjoys component of "active thinking" and introduces children to the concept of caring thinking. In addition, fear of mouse when exposed to river is one of the instances of "affective thinking" component. As already mentioned, Lipman considers some emotions as a form of judgment or, more broadly, a kind of thinking that like any other type of judgment or thinking can go wrong. By saying "water is very deep and if I go further, I'll drown" does the mouse show his fear and this fear is resulting from a judgment about his inability to enter the water and endangering his life. Therefore, the story involves "affective thinking" component and hence introduces children to the concept of caring thinking.

"Comparing things and identifying their relationships" and the "logical reasoning" are from the other components in the characterization of story. The creator of story, on behalf of the mouse, says that "your knee is different with mine, if the water is up to your knee, much higher than my height" and points at one of the required and primary skills of philosophical thought, that is, comparing two or several things and finding out their differences and similarities.

According to Lipman, in a good judgment "comparing

things and identifying their relationships" are of great importance. If there were not anything connected with other things, relationships would not be meaningful and judgment would not exist (Jahani, 2003:90). In addition, saying the aforementioned phrase the mouse is trying to provide a convincing reasoning for the camel through which he could save his soul from the dangerous situation. Thus, benefiting from components of "comparing things and identifying their relationships" and "logical reasoning" the story has the necessary capability of developing critical thinking in children.

The story of the jackal that fell into the pit of dye (Ghasem Zadeh, 2011: 218)

Once upon a day, a jackal fell into a dye-vat, and his skin was dyed of various colors. Proud of his marvelous appearance, he returned to his friends, and desired them to address him as a peacock. Have you ever seen such a beautiful jackal? "I am a peacock as beautiful as Jupiter", he answered. Nevertheless, they decided to test his pretensions, saying, "can you appear like a peacock?", "can you scream like a peacock, or do you have beauty feathers like peacock?".

Therefore, he was forced to give up and admit that he did not, whereupon they rejected him and said that the peacock's beauty is heavenly and colors do not change the nature. Thus his friends did not believe his talks.

The creator of this story has expressed one of the important philosophical issues on behalf of the story characters, that is, essential and accidental features. The jackal with his skin accidentally dyed with various colors, in his dreams, reckons that changing his appearance can change his nature and so become a beautiful peacock.

However, friends of the Jackal are sensitive to details and are not deceived by his appearance. This characteristic comes for their sensitivity to context. So, his friends, with raising questions such as "can you appear like a peacock?", "can you scream like a peacock?" and so on, are trying to free him from this error and amend his wrong thinking. Accordingly, in this story, the component of "rectification of other's thought process" is highly projected. In addition, because the rectification of jackal's thinking process is together with expressing reasons and criteria from behalf of other jackals, the story has components of "good judgment" and question from this components in the community of inquiry, provides a context for children's development of critical thinking. "Comparing things and identifying their relationships" is other components that can be derived from the dialogue among jackals. This dialogue about comparing the properties of jackals and peacocks that familiarizes the child with the concept of similarities and differences and how to use them in proper judgment. Thus, the presence of this component in the story provides a context for children's development of critical thinking.

In the aspect of caring thinking, designing story is in a way that teaches a child to avoid superficial judgments. In fact, the main purpose of the story is the formation of this intellectual belief that decorating appearance is sometimes a way to hide defects and wise man should not be seduced by appearance. Avoiding superficial judgments is fully obvious by other jackals by the phrase: "colors do not change your nature and we do not believe your talks". Accordingly, in terms of inspiring quiddity of this great idea, the story encompasses "normative" component and plays a crucial role in strengthening children's caring thinking.

Mud-eating man and apothecary's balance stones (Ghasem Zadeh, 2011:348)

This story is about a man accustomed to eat mud. Someday, he went to apothecary's shop to buy some sugar. However, the seller was a cunning man and his balance stones were made of mud. He put the stone in a pan of balance and took the other pan to fill it with sugar from the warehouse of his shop. When the customer saw the mudstone, began to eat it out of sight of the seller. In contrast, the apothecary was seeing him from the warehouse and prolonged his absence to give this chance to the man to eat more and more. "Eat more and more" the seller said, "do you think you are stealing from my property? You are in fact stealing from your own property! As much as you eat from stone scales, you have reduced the weight of sugar. Then eat more".

Despite simplicity and briefness, the story of mud-eating man and apothecary's scale stone contains this profound and thoughtful point that cheater man just deceives himself and one who thinks is harming others, has harmed himself at the same time. In a broader look, this story is the example of the famous saying "whatsoever a man soweth, that shall he also reap" which teaches us every good thought and act of good and evil that we do will return to us sooner or later. Because of this valuable and moral education, the story contains a "normative" component and this component is one of the things that demonstrates the philosophical potential of the story in developing child's caring thinking.

In addition, "comparing the things and understanding their relationships" as well as "logical reasoning" are from components of good judgment that can be derived from the term "as much as you eat from stone scales, you have reduced the weight of sugar". Therefore, the story in this respect also provides a good context to foster critical thinking.

"Holism" and "expression" are from other themes of the mentioned story. Holism feature refers to the apothecary's overall insight who knows if his scale stone is diminished, instead, he will make more profit from selling sugar. The author of story expresses this general insight with an expressive language in the final few lines on behalf of apothecary. Accordingly, the story provides

the ground for developing a child's creative thinking and familiarizes him with mentioned components in this regard.

Conclusions

This study aimed to investigate and identify Lipman's philosophical thought components in humorous stories of ancient texts. For this purpose, three stories of humorous anecdotes of *Masnavi* were selected and analyzed with the inductive method. Despite the fact that the stories of *Masnavi* not written specifically for the purpose of developing philosophical thinking, the researchers' main belief was based on the assumption that these stories contain elements and capabilities that reading them subtly and gradually leads to forming and strengthening philosophical thinking skills in children and adolescents. In the early stages of research, based on Lipman's works, a table was developed by the researchers in which the philosophical thinking components were included. "Inductive Content Analysis" method was then used to analyze the content of anecdotes, the stories were adapted with the content of aforementioned tables and the hidden thinking components in characters of the stories were inferred. The results of analyzing stories can be seen in Table 2.

In terms of frequency, as it can be seen in Table 2, critical thinking components have given more richness to stories. Consequently, the analyzed stories have more philosophical potential in fostering critical thinking. Among the components of critical thinking, "good judgment" component was observed in all stories and "meta-cognition" and "sensitivity to the context" were components that observed only in one story.

In the next step, caring thinking components were more abundant in the stories. "Normative" component was the only one that was observed in all three stories and two components of "appreciative" and "empathic" were not seen in any of the stories.

Regarding creative thinking, two stories involved components of "holism", "expressive" and "imagination" and in one of the stories no component was observed. Thus, the creative thinking components were less present in stories than other ones.

It should be noted that this conclusion is obtained with respect to this research sample and to achieve more accurate results, we need to analyze more stories of this work. However, it also should be noted that the higher frequency of components in a work could not be considered a sufficient reason for any preference. Other factors such as the diversity of components and richness of literature also contribute to better quality of a work and this also needs another opportunity for research.

PRACTICAL SUGGESTIONS

It is suggested that teachers in their lessons use stories

Table 2. Analysis of stories.

Masnavi stories	Philosophical thinking components		
	Critical thinking	Creative thinking	Caring thinking
The Mouse and the Camel	Good judgment (comparing things and identifying their relationship and logical reasoning)	Not seen	Normative (Identifying weaknesses and avoiding arrogance), affective thinking and active thinking.
Jackal who fell into the pit of dye	Good judgment (logical reasoning, regard to criteria and comparing things and identifying their relationship), Meta-cognition (rectification of other's thought process) and Sensitivity to context	Imagination	Normative (avoiding superficial judgments)
Mud-eating man and apothecary's balance stones	Good judgment (comparing things and identifying their relationship & logical reasoning)	Holism, expression	Normative (receiving the reaction of humans actions)

that have more philosophical potential due to more components. Teachers should have sufficient teaching methods available in each of these three philosophical thinking components.

Since the components identified in this study, are the same components emphasized by Lipman as the pioneer of philosophy for children, it is suggested that children's literature authors interested in creating stories with intellectual and philosophical themes, be inspired by the components of this research to write their stories.

Children's literature authors are also recommended to rewrite the stories of this research as purposive sample of *Masnavi* for two age-groups of children and adolescents. Rewriting stories should not neglect any component of the source texts.

Notes

Essential feature is referred to as the property that "consolidates the nature of subject and the nature of the subject is not realized without it. For example, rationality is an essential feature for human beings (Mozaffar, 1995: 152). Accidental features are those out of the nature of the subject and attached to it after completion of the "inner" categories of a human being such as "smiling" (Muzaffar, 1995: 152).

Conflict of interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

Teachers' loyalty to their supervisors and organizational commitment

Nurhayat ÇELEBİ^{1*} and Mithat KORUMAZ²

¹Department of Educational Administration Supervision Planning and Economics, Faculty of Literature, Karabuk University, Turkey.

²Department of Educational Administration, Supervision, Planning and Economics, Faculty of Education, Yıldız Technical University, İstanbul, Turkey

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A numbers of studies on teachers' organizational commitment based some findings of western context in Turkey. But some of the characteristics prove that organizational issues cannot be resulted with the terms in Western World. One of the new concepts in organizational issues for Eastern culture is loyalty to supervisor (in school context supervisor means principals). That new term focus on employees' commitment to a person rather than system or organization. Therefore this research aims to reveal relationship between the teachers' loyalty to supervisors and commitment to their organizations. The participants of the study consist of 412 teachers who serve in a city in Turkey. The results of the study showed that there were strong and significant relationships between the dimensions of loyalty to supervisors and teachers' organizational commitment in Turkish context. But one of the most fundamental result showed that affective, continuance and normative commitments were predicted by different dimensions of teachers' loyalty to their principals.

Key words: Loyalty to supervisor, organizational commitment, teachers, Turkish context.

INTRODUCTION

In 21st century, organizational paradigms have resuscitated in the light of the terms such as governance, collaboration, effectiveness and competition with the effects of post-modernist point of view. Over the years, loyalty in organization and organizational commitment has gained a reasonable reputation among the topics in organizational behavior research and educational administration. Most of the studies have focused on employee outcomes such as organizational effectiveness (Carmeli and Freund, 2004), performance and turnover (Ceylan and Doganyılmaz, 2007; Hartmann and

Bambacas, 2000), job satisfaction (Mc Guinness, 1998), motivation (Becker et al., 1996) and so on as a result of their loyalty. Two of the most effective ways of getting success are organizational commitment and loyalty to supervisor. These two terms have been discussed in education administration studies. Especially organizational commitment has been commonly investigated by the researchers (Gupta and Gehlawat, 2013; Steyrer et al., 2008; Wasti, 2003). On the other hand loyalty to supervisor is a hot topic for the studies in education and educational organizations. First organizational commitment

*Corresponding author. E-mail: nurcelebi@karabuk.edu.tr.

Table 1. Participants.

Variables		f	%	N
Gender	Female	210	51	412
	Male	202	49	
Level of Education	Undergraduate	311	75	412
	Graduate	101	25	

sounds so familiar with the organizational theories. But its meaning is being discussed nowadays. Before discussing about the theories of “commitment” and “loyalty”, a brief definition and origin of the terms should be made clear. The term commitment dates back 15th century in the meaning of “action of officially consigning to the custody of the state,”. The term is a combination of commit + -ment (Anglo-French had *commettement*). The current meaning of the word is “the willingness to work hard and give your energy and time to a job or an activity”. Another key word of this research is “loyalty” which originally stems from a French word (*loyauté*). The original meaning of “loyalty” includes “fidelity; legitimacy; honesty; good quality”. The current meaning of loyalty is “a strong feeling of support or allegiance”. The definition and the origin of the words are supposed to contribute the discussions about the terms organizational commitment and loyalty to supervisors in organizational contexts.

The theory of organizational commitment includes two different points of views. The first one assumes organizational commitment as behavior. According to behavioral perspective organizational commitment is observable and measurable behavior. This model is revealed and developed by Meyer and Allen (1991) and called as three-component model of commitment⁰. This is most commonly used perspective in organizational research. In this study researcher preferred to use this model as theoretical framework. This perspective suggests commitment as an attitude towards organization. And it stresses the goals of the organization and individual's commitment to these goals (Blau and Boal, 1987). The most common definition of organizational commitment has been made by Mowday et al. (1979). They defined commitment consists of an individual to combine with the goal of organization and retention. This combination and retention includes three factors; perfect belief for organizational goals; readiness to work for organization; and willingness to become a part of the organization. Setting the fundamentals of organizational commitment both individual need to understand organizational goals, value, requirement and organizational structure take importance of individual's goals, value and needs (Morrow, 2011). Organizational commitment has three dimensions; affective, continuance and normative commitment (Allen and Meyer, 1990).

Recent discussions on loyalty concentrate on how much the concept covers all of the contexts in different cultures. According to Xie et al. (2012), in western

cultures, loyalty refers to employees' loyalty to organization. But in eastern cultures is it enough? Chen et al. (2002) do not think so. The concept of loyalty to supervisor comes from the study of commitment to supervisor. But with a little difference. Commitment refers the mutual dependence but loyalty refers unilateral dependence from subordinate to leader. Based on a study conducted in a Chinese setting, Chen et al. (2002) suggested that loyalty to supervisor is composed of five dimensions. The first of the dimensions is *dedication*⁰. That includes subordinate's willingness to dedicate him or herself to the supervisor and to protect the supervisor's welfare even at the expense of personal interests. The second dimension is *effort*. This dimension contains a subordinate's willingness to exert considerable effort on behalf of the supervisor. The third dimension is *following supervisor*. This focus on subordinate's desire to be attached to and follow the supervisor. The forth of the dimensions is *identification with supervisor*. This dimension includes subordinate's respect for the accomplishments of the supervisor, and a feeling of pride in being a subordinate to that supervisor. And the last dimension is *internalization*. It refers to value congruence between the subordinate and the supervisor. In Turkish culture or context teachers' loyalty to their supervisors might affect the commitment of teachers to their schools. In educational context employee refers teachers and supervisor refers school principals. Hence, the studies which investigated teachers' loyalty to their supervisors and their organizational commitment together in Turkish setting hasn't been found out up to now. But loyalty to supervisor can be a key mediating concept for schools with organizational commitment in Turkey. The widely used and investigated terms such as organizational commitment in educational research needs to be related with contextual based term which is commitment to the supervisor for Eastern cultures like Turkey to understand teachers' organizational behaviors. The results of the study are expected to contribute both for the decisions of the policy makers and other researchers for further research on loyalty to supervisor in educational context. Loyalty to supervisor might directly influence the organizational outcomes, so the study aims to answer these following questions:

1. What is the level of teachers' loyalty to their supervisors?
2. What is the level of teachers' organizational

commitment?

3. Is teachers' loyalty to supervisor the significant predictor of their organizational commitment?

METHODS OF THE STUDY

This descriptive study was conducted in correlational design. The correlational design examines the relations between at least two separate phenomenon (McMillan and Schumacher, 2006). It examines the significance of correlation between teachers' loyalty to their supervisors and their organizational commitment. At the same according to some organizational and personal variables the level of teachers' loyalty to their supervisors and their organizational commitment are investigated.

Participants

Convenience sampling as one of the probability sampling type is used in this exploratory research where the researchers are interested in getting an inexpensive approximation of the truth. "This category of sample relies on available subjects who are close at hand or easily accessible. Under certain circumstances this category is an excellent means of obtaining preliminary information about some research question quickly and inexpensively" (Berg, 2001, s.32). Data was collected just before a meeting of teachers for an official district seminar in the fall semester.

Participants in the current study are 412 teachers who serve in state schools in Kadıkoy, Uskudar and Umranıye provinces in İstanbul. 210 (51%) of the participants are female and 202 (49%) of them are males. Another personal variable is teachers' academic level of education that can change the loyalty and commitment. 311 (75%) of the teachers have undergraduate level of education and other 101 (25%) of the teachers have graduate level of education. All of the participants take part in the study voluntary.

Instruments

Loyalty to supervisor (LS) was measured by the 17-item scale with five dimensions developed by Chen et al. (2002). This scale was adopted into Turkish by Ceylan and Doğanyılmaz in 2007. Another scale is "Organizational Commitment Scale" originally developed by Meyer and Allen (1997) and adopted into Turkish by Pelit et al. (2007). Both of the questionnaires consist of five-point Likert scale ranging from "strongly agree" to "strongly disagree." Factor analyses showed that Loyalty to supervisor (LS) scale and Organizational Commitment Scale have the same dimensions as suitable for the original scales. Cronbach Alpha α was measured for each of the dimensions. Loyalty to Supervisor's dimensions; *dedication's* Cronbach Alpha value is 0.87; *Effort's* Cronbach Alpha value is 0.82; following supervisor's Cronbach Alpha value is 0.77; Identification with supervisor's Cronbach Alpha value is 0.89 and *Internalization's* Cronbach Alpha value is 0.87. On the other side the dimensions of organizational commitment are *affective commitment's* Cronbach Alpha value is 0.90; *continuance commitment's* Cronbach Alpha value is 0.89 and *normative commitment's* Cronbach Alpha value is 0.81. For reliable test scores, the magnitude of Cronbach's alpha is suggested to be at least 0.70 (Büyüköztürk, 2013; Pallant, 2001).

Before the research questions were tested, whether the distributions related to dependent variables had normal distribution according to independent variable levels (gender and level of education) was examined and the values of standard deviation, skewness, and kurtosis belonging to distributions were analyzed together with histogram graphics and it was determined that the distributions of both of the dependent variables provided the

conditions of normality according to the levels of the independent variables. Whether the distributions were linear was examined with scatter plots, and it was observed that dependent variables showed a linear distribution for each independent variable. Additionally, in order to determine the homogeneity of the variances, the Levene test was performed, and it was determined that the test results met the homogeneity in the independent variables.

Process

The data collection tools used in the study were applied to total 412 voluntary teachers by visiting the schools in the sample after taking permission from the Directorate of National Education in İstanbul in the fall and spring semester of 2014-2015 academic year.

FINDINGS

The findings of the research as a result of statistical analysis of the data are presented in this section. First of all descriptive values of the scales are measured via descriptive test in dimensions. Descriptive values are shown in Table 2.

Table 2 shows descriptive statistics for observed variables of the present study. Dimensions of loyalty to supervisor's minimum and maximum scores, means and standard deviation scores are presented. Participant teachers' minimum score is 5 in the dimensions of dedication, effort and following supervisor. In the dimensions of identification with supervisor and internalization minimum score is 30. Maximum scores show the same results except for the dimension of effort. Teachers get 20 maximum scores in the dimensions dedication and following the supervisors and 15 maximum score in the dimensions of effort, identification with supervisor and internalization. The means of the dimensions are quite different. Mean of the dimensions; the dedication is 14, 23; effort is 8,48; following the supervisor is 16,77; identification of the supervisor is 9,87 and internalization is 9,970. Another result presented in table 2 is the descriptive scores of the dimensions of organizational commitment. Minimum and maximum scores of affective and continuance commitments are the same. Minimum value is 10 and maximum score is 350. Minimum scores teachers get in the dimension of normative commitment is 6 and maximum value is 270. Mean scores of the dimensions; affective commitment is 21, 85; continuance is 20, 31; normative is 18,200.

Prediction level of teachers' loyalty to supervisor to affective commitment

Researchers used multiple regression analysis to test the prediction level of teachers' loyalty to their supervisor dimensions to their affective commitment. The results of multiple regression analysis are presented in Table 3. The result of multiple regression analysis showed that there is a significant relationship between two of the dimensions of loyalty to supervisor and affective

Table 2. Descriptive values of the dimensions.

Scale		N	Min.	Max.	\bar{X}	SS
Loyalty to Supervisors	Dedication	412	5	20	14.23	1.244
	Effort	412	5	15	8.48	1.028
	Following supervisor	412	5	20	16.77	2.629
	Identification with supervisor	412	3	15	9.87	1.854
	Internalization	412	3	15	9.97	1.445
Organizational Commitment	Affective commitment	412	10	35	21.85	4.730
	Continuance commitment	412	10	35	20.31	4.821
	Normative commitment	412	6	27	18.20	3.988

Table 3. Regression results of teachers' loyalty to supervisor to their affective commitment.

Independent variables	Dependent variables	B	Standard Error	β	T	p	Zero Order r	Partial R
Constant		310.498	10.082	-	290.104	00.000	-	-
Dedication	Affective commitment	-00.387	00.075	-00.466	-50.143	00.356	-00.657	-00.425
Effort		-00.295	00.088	-00.356	-40.465	00.225	-00.421	-00.329
Following supervisor		-00.355	00.102	-00.366	-40.867	00.135	-00.488	-00.402
Identification with supervisor		-00.312	00.097	-00.295	-30.877	00.001	-00.571	-00.500
Internalization		-00.335	00.109	-00.280	-30.085	00.003	-00.598	-00.271
R=0.660	R ² =0.215							
F ₍₅₋₄₀₈₎ =54.062	p=0.000							

commitment ($R=0.660$, $R^2=0.215$) his relationship addresses ($F_{(5-408)}=540.062$, $p<0.01$). That means all of the independent variables together explain 210.5% of the change in affective commitment. According to standardized regression coefficient, the order of importance of predictor variables are dedication ($\beta=0.466$), following the supervisors ($\beta=0.366$), effort ($\beta=0.356$), identification with supervisor ($\beta=0.295$) and internalization ($\beta=0.280$). In view of the regression coefficient significance, as predictor variables identification with supervisor and internalization are found to be significant predictors ($p<0.05$). The correlation level between significant predictors and dependent variable (controlling the effects of other independent variables) shows that correlation level is $r=0.500$ between identification with supervisor and affective commitment; $r=0.271$ between internalization and affective commitment. The regression equation is: Affective Commitment = $(00.312 \times \text{Identification with Supervision}) + (00.335 \times \text{Internalization}) + 31.498$.

Prediction level of teachers' loyalty to supervisor to continuance commitment

Researchers used multiple regression analysis to test the prediction level of teachers' loyalty to their supervisor dimensions to their continuance commitment. The results of multiple regression analysis are presented in Table 4.

The result of multiple regression analysis showed that there is a significant relationship between two of the dimensions of loyalty to supervisor and continuance commitment ($R=0.432$, $R^2=0.154$). This relationship addresses ($F_{(5-408)}=470.695$, $p<0.01$). That means all of the independent variables together explain 150.4% of the change in continuance commitment. According to standardized regression coefficient, the order of importance of predictor variables are dedication ($\beta=0.221$), following the supervisors ($\beta=0.256$), effort ($\beta=0.663$), identification with supervisor ($\beta=0.381$) and internalization ($\beta=0.476$). In view of the regression coefficient significance, as predictor variables effort and following the supervisor are found to be significant predictors ($p<0.05$). The correlation level between significant predictors and dependent variable (controlling the effects of other independent variables) shows that correlation level is $r=0.387$ between effort and continuance commitment; $r=0.322$ between following the supervision and continuance commitment. The regression equation is: Continuance Commitment = $(00.465 \times \text{effort}) + (00.233 \times \text{Following the Supervision}) + 32.124$.

Prediction level of teachers' loyalty to supervisor to normative commitment

Researchers used multiple regression analysis to test the

Table 4. Regression results of teachers' loyalty to supervisor to their continuance commitment.

Independent variables	Dependent variables	B	Standard error	β	T	p	Zero order r	Partial R
Constant	Continuance Commitment	320.124	20.100	-	300.821	0.000	-	-
Dedication		-0.455	0.149	-0.221	-30.551	0.332	-0.521	-0.465
Effort		-0.465	0.133	-0.663	-40.663	0.002	-0.555	-0.387
Following supervisor		-0.233	0.091	-0.256	-50.855	0.003	-0.375	-0.322
Identification with supervisor		-0.356	0.478	-0.381	-40.741	0.855	-0.965	-0.490
Internalization		-0.299	0.102	-0.476	-40.663	0.445	-0.426	-0.562
R=0.432 $F_{(5-408)}=47.695$		R ² =0.154 p=0.001						

Table 5. Regression results of teachers' loyalty to supervisor to their normative commitment0.

Independent variables	Dependent variables	B	Standard error	β	T	p	Zero order r	Partial R
Constant	Normative Commitment	300.564	10.758	-	320.021	0.000	-	-
Dedication		-0.223	0.185	-0.521	-30.560	0.000	-0.489	-0.366
Effort		-0.335	0.169	-0.452	-30.932	0.125	-0.462	-0.415
Following supervisor		-0.562	0.123	-0.462	-30.569	0.352	-0.655	-0.466
Identification with supervisor		-0.196	0.099	-0.469	-30.711	0.221	-0.854	-0.422
Internalization		-0.285	0.142	-0.511	-30.533	0.345	-0.425	-0.365
R=0.341 $F_{(5-408)}=44.451$	R ² =00.112 p=00.001							

prediction level of teachers' loyalty to their supervisor dimensions to their normative commitment. The results of multiple regression analysis are presented in Table 5.

The result of multiple regression analysis showed that there is a significant relationship between one of the dimension of loyalty to supervisor and normative commitment ($R=0.341$, $R^2=00.112$). This relationship addresses ($F_{(5-408)}=44.451$, $p<00.01$). That means all of the independent variables together explain 110.2% of the change in normative commitment. According to standardized regression coefficient, the order of importance of predictor variables are dedication ($\beta=00.521$), following the supervisors ($\beta=00.462$), effort ($\beta=00.452$), identification with supervisor ($\beta=00.469$) and internalization ($\beta=00.511$). In view of the regression coefficient significance, as predictor variables effort and following the supervisor are found to be significant predictors ($p<00.05$). The correlation level between significant predictors and dependent variable (controlling the effects of other independent variables) shows that correlation level is $r=0.489$ between dedication and normative commitment. The regression equation is: Normative Commitment = ($00.521 \times$ Dedication)+32.124.

RESULTS AND DISCUSSION

The findings of the study show that there is a significant

relationship between dimensions of loyalty to supervisor and organizational commitment of teachers. Identification with supervisor and internalization as dimensions teachers' loyalty to their supervisor are the significant predictors of affective commitment. On the other side effort and following the supervisor as dimensions of teachers' loyalty to their supervisors are the significant predictors of continuance commitment. Finally the results show that dedication as a dimension of teachers' loyalty to their supervisor is a significant predictor of normative commitment. Chen et al. (2002) states loyalty to a person (supervisor or principal) is much more important for the employee (teacher in this research) than committing a system or an organization.

Teachers' affective commitment to their organizations or schools contains their characteristics and perceptions towards their schools. It addresses their support to the goals of school (Mir et al., 2002). Yung et al. (1998) and Lyons et al. (2006) suggest that organizational commitment for the ones who work in public organizations is effected by their inner thoughts and perceptions. So teachers' identification with their supervisor and internalization the thoughts and feelings of their own supervisors address the inner thoughts and perceptions of teachers. Meyer et al. (1993; 2002) argue that strong affective commitment to an organization arises because teachers share values with both the organization and its members and principals and it is therefore predicted to be

positively associated with the loyalty of teachers to their supervisors in eastern culture. Teachers' commitment and loyalty thus arguably play an important role in the principal-agent issues surrounding the separation between the ownership and control of an organization (Brown et al., 2011).

Continuous commitment is explained as teachers' preferences to keep on working for their organization and their needs to stay in their workplace (Sezgin, 2010). Weng et al. (2010) suggest that teachers' continuous commitment become stronger and stronger via social networks at workplace but career expectations can be defined as fundamental determinants as continuous commitment. As a relational-oriented culture in Turkish context principals or supervisors might be more important factors to effect teachers' commitment. The effort of teachers and their followings to their supervisors may be one of the most important determinants of continuance commitment. That means these factors keep teachers in their school and strengthen their continuance commitment. Teachers' normative commitment can be explained as a combination of an individual values and school values. Ensuring normative commitment means to have individuals ready to keep their commitment for a long time. Chowwen (2012) addresses normative commitment as an upper degree of other dimensions of the organizational commitment. McDonald and Gandz (1991) state that in case of consolidation of individual and organizational expectation normative commitment becomes stronger naturally. With the result of the study it can be assert that teachers' dedication to themselves to their supervisor strengthen teachers' normative commitment in Turkish context.

Depending on the results of the study, researchers suggest that organizational commitment is not enough to explain teachers' behaviors, perceptions and attitudes at schools in Turkey. Subsequent research should be focus on teachers' loyalty to their supervisors. And these studies should be designed according to qualitative research paradigm to get knowledge about the phenomena deeply. Second suggestion of the researcher is that organizational commitment should be raised by enhancing the loyalty level of teachers to their supervisors. Therefore new ways to promote teachers' loyalty to their supervisor should be investigated.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

Influence of cooperative integrated reading and composition technique on foreign students' reading and writing skills in Turkishⁱ

Behice Varişoğlu

Faculty of Education, Gaziantep University, Turkey.

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The purpose of this study was to reveal whether the technique of Cooperative Integrated Reading and Composition (CIRC) in Turkish Language teaching had influence on students' skills in reading and writing. In the study, the mixed method, which included quantitative and qualitative dimensions together, was used. The study group was made up of 16 students learning Turkish language in Estonia. In the study, the participants were determined based on their accessibility at the time of the study. Depending on the mixed method applied in the study, both quantitative and qualitative data collection tools were used. In the study, for the analysis of the quantitative data, Wilcoxon's test of order of sings was applied. As for the analysis of the qualitative data, descriptive analysis technique was used. The findings obtained in the study revealed that the CIRC technique was influential on the students' academic achievement in such skills as writing, comprehension and reading aloud.

Key words: Teaching Turkish language to foreigners, cooperative learning, CIRC, reading, writing.

INTRODUCTION

Cooperative learning is a way of studying lessons in which students study in groups, interact with each other on face-to-face basis and demonstrate high levels of positive attachment (Johnson and Johnson, 1979). According to Kagan (1989), cooperative learning is, first of all, a structure, which can be used in a number of educational institutions ranging from preschool period to university level independently of the curriculum. Almost all teachers have their own cooperative learning technique appropriate to their own teaching style and philosophy.

Cooper et al. (2002) stated that cooperative learning is based on a structure designed to achieve student-student solidarity; that cooperative learning emphasizes individual responsibility; and that, as one of the most prominent feature of cooperative learning, students' success as a group is as important as their individual success. Although language teaching depends on individual efforts, it is a field in which cooperative learning can be quite productively applied since it includes a process based on face-to-face interaction and communication. The cooperative learning method could provide several

E-mail: bvarisoglu@gmail.com.

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suggestions as an appropriate solution to the issue of how to teach a language, which is among the problems language educators have focused on so far in relation to language teaching. Students internalize the new information more easily by sharing and discussing this new information with other students and instructors (Oxford, 1996; Oxford et al., 2004).

The technique of Cooperative Integrated Reading and Composition (CIRC), one of cooperative learning methods basically applied to develop reading and writing skills, is one of the techniques used in language teaching. The purpose of this technique is not only to find solutions to the problems experienced in traditional teaching of reading and writing skills but also to develop these skills (Slavin, 1995). During reading and writing activities carried out in traditional teaching, when the teacher is engaged with one student, other students might lose their interest in the lesson, which then demolishes the productivity of the lesson; or in case of reading aloud activity, all students except for one student who reads aloud become passive learners. While studying on texts, the emphasis is on the dictionary meanings of concepts without any focus on their contextual meanings. The time allocated to writing skills is spent on teaching mechanical skills individually. CIRC makes use of cooperative groups to solve such problems (Açıköz, 2006).

The CIRC technique was put forward to develop especially the reading and writing skills as well as the speaking and listening skills in upper classes in elementary schools (Açıköz, 1992). This technique was developed to support the traditional approach (teacher-centered approach) to skill-based reading groups. First, reading groups are formed in class. Following this, from each reading group, teams with two members in each are formed. The teacher, while working with one reading group, the two-member teams try to develop each other's reading and writing skills with the help of the mutual teaching technique. During such activities carried out in relation to learning skills such as reading aloud, making predictions about the text, asking questions, summarizing and writing compositions regarding the story, students help one another, and most of the time, the booklets prepared by the groups are published. The teams are awarded based on their performance in the reading and writing assignments. In this way, equal opportunities for success as one of the basic features of cooperative learning can be obtained; group support for learning can be provided; and individual responsibility in the last performance can be accomplished (Senemoğlu, 2005; Slavin, 1980; Yaman, 1999).

In literature related to the CIRC technique, the first study was carried out by Madden et al. (1986). In this experimental study, a significant difference was found in favor of the experimental group in terms of the skills in vocabulary learning, writing and reading comprehension. In addition, Stevens et al. (1987) in their study, reported

that the CIRC technique was influential on such skills as speaking, reading comprehension and explaining the meanings of words. Other similar studies, giving theoretical information about the CIRC technique, demonstrated that the technique had positive influence on students' reading and writing skills as well as on their success in vocabulary learning (Slavin et al., 1991; Skeans, 1991; Stevens and Slavin, 1995; Calderon et al., 1997; Calderón et al., 1998; Slavin, 1999; Yaman, 1999; Yeh, 2007; Güreş, 2008; Yurdabakan and Cihanoğlu, 2011; Durukan, 2011; Bozpolat, 2012).

In his ethnographic study, Golmic (1992) held interviews with students regarding the applicability of CIRC. In the study lasting six months, activities involving games were prepared based on CIRC, and the instructors were asked to evaluate these activities. The results obtained in the study revealed positive findings in relation to the technique, and demonstrated that CIRC was a useful technique.

In another study, Rapp (1991) investigated the influence of CIRC on reading comprehension, speaking, vocabulary knowledge and academic achievement. In the study carried out with 88 students who had learning disorder and whose reading pace was slow, no significant difference was found between the experimental and control groups in terms of the development of such skills as reading comprehension, vocabulary knowledge and speaking. Besides all these studies, there are still other studies conducted to examine the influence of cooperative learning on reading and writing skills in the field of language teaching (Bromley and Modlo, 1997; Veenman et al., 2000; Liang, 2002; Ghaith and Bouzeineddine, 2003; Ghaith, 2003; Bölükbaş et al., 2011).

Learning a foreign language in the best way requires achievement in a number of skills in the language being learned. The reason is that foreign language teaching is, at the same time, a process of skill development. Any education given with appropriate methods and techniques could contribute to language developments of individuals. Language teachers' use of the most effective and contemporary methods and techniques to reach the intended success helps save the time spent and the efforts made in the education process. There is a need for theoretical studies on teaching basic language skills to foreign students as well as for other studies investigating whether student-centered methods and techniques requiring in-class applications are influential in the application process.

In this respect, determining whether the CIRC technique is influential on teaching Turkish as a foreign language could be an alternative to the methods to be used in future studies or could help develop new techniques. In addition, this could also lead other studies focusing on reading and writing skills as well as on other language skills.

Purpose of the study and research questions

The purpose of this study was to investigate whether the Cooperative Integrated Reading and Composition technique was influential on the reading and writing skills of foreign students learning Turkish Language. In line with this purpose, the following research questions were directed:

1. Is there a significant difference between the achievement scores of the students participating in Turkish Language teaching practices in relation to the development of their skills in reading comprehension and reading aloud before and after the application?
2. Is there a significant difference between the academic achievement scores of the students participating in Turkish Language teaching practices in relation to their skills in reading comprehension and writing after the application?
3. Is there a significant difference between the academic achievement scores of the students participating in Turkish Language teaching practices in relation to the development of their writing skills before and after the application?
4. What are the results of the observations of the researcher teaching Turkish language, and what are the results obtained via the open-ended questions related to the activities applied?

METHODOLOGY

In the study, the mixed method involving qualitative and quantitative dimensions was used. Mixed method involves the use of both quantitative and qualitative research methods in a study in a way to support each other (Johnson and Onwuegbuzie, 2004). It was researched the effects of experimental method (quantitative research method) and these effects were enriched with student activities, and the researcher's observation report (qualitative research method) and the mixed method was used in this study.

Study group

The study group was made up of students learning Turkish Language in Tallinn University in Estonia, and the volunteers involved in the experimental process. All the participants were female at the proficiency level of B2 in Turkish Language, aged between 21 and 35. The participants were selected on the basis of their accessibility at the time of the study. The convenience sampling technique was used in this study. In other words, the participants constituting the research sample were those whom the researcher reached easily. This method of determining the research sample is applied for several reasons such as low cost, ease of taking the necessary consents, saving time and lack of human force (Büyükoztürk et al., 2011).

Data collection tools and validity-reliability analyses

In the study, the quantitative and qualitative data collection tools

were used together.

Reading comprehension achievement test (RCAT)

This test was developed by the researcher in line with the related literature. The test was made up of questions according to the cognitive levels of the students (B2 Level) considering the goals and outcomes of the Common European Framework of References for Languages. The test included a total of 28 questions: 4 true-false questions, 4 fill-in-the-blank questions, 12 multiple-choice questions, and 8 open-ended questions. This test was used as pretest and posttest in the study. The content validity of the test and the scientific appropriateness of the questions included in the study were determined in line with expert views (In the fields of reading skills development and language education). In order to determine the experts' views, a three-choice answer sheet (valid, not much valid and not valid) was used (Büyükoztürk, 2009). In relation to the answer sheet coded by three experts, the coder consistency was calculated as 0.84.

Reading aloud evaluation form (RAEF)

The RAEF developed by the researcher in line with the related literature is one that can be applied based on the evaluation of the records kept via observation or with technical devices. The coder consistency was examined for the answer sheet coded by four experts (In the fields of reading skills development and language education), and the consistency was calculated as 0.96. Following this, for the analysis of the items in the form, a pilot application of the study was conducted. The item-total correlations for the form were examined. The results of the item analysis revealed that there was not item with a negative or quite low correlation and that the values ranged between 0,561 and 0,874. In other words, it was seen that all the items demonstrated a high level of correlation with the total scale score and that the correlation was found significant at the level of $p < .01$. In order to determine the internal consistency of the form, the Cronbach Alpha value was examined. The Cronbach Alpha reliability coefficient was calculated as 0.89. This value shows that the form was quite reliable. The RAEF is a 5-point Likert-type form made up of 14 items that aimed at determining such a number of reading aloud behaviors of students as body language, pronunciation and eyesight.

Writing evaluation form (WEF)

The writing evaluation form was developed by Gregg and Mather (2002) to evaluate students' writing skills. This form was translated and adopted into Turkish by Akyol (2010) and made up of 10 sub-parts and 38 items in total. The highest score to be produced by this 4-point Likert-type form was 152, and the lowest was 38. There was no reversely-scored item in the form. In the study, the necessary changes were done in WEF in line with the purpose of the present study. In Akyol's study (2010), no information was provided about the validity and reliability analyses regarding the form. In the present study, the internal consistency coefficient was calculated, and the Cronbach Alpha value was found to be 0.76.

Application process observation form (APOF)

In order to evaluate the influence of the CIRC technique in more detail, a semi-structured observation form was used throughout the application process. Before the application, a semi-structured

observation form was prepared. In this semi-structured observation form, the situations to be observed in the education process were determined in advance, and a related blank section was left in the form for the observer to make explanations or comments regarding these situations.

Data analysis

For the analysis of the qualitative data in the study, descriptive analysis and mistake analysis (for wrong answers and incomplete activities) methods were used. In the study, for the analysis of the quantitative data, Wilcoxon test (non-parametric statistical technique) was used.

Application phases of CIRC technique

At the beginning of the application process, the students were informed about the purpose of the study, about CIRC technique and about the procedure to be followed. After the necessary communication was established between the eight students participating in the study and eight students attending classes regularly, the groups were formed and the duties were shared. While forming the cooperative groups, the students' individual characteristics (age, ethnicity, mother tongue etc.) were taken into account. As a result, four groups were formed with four members in each. In the six-week teaching process, special attention was paid not only to the dialogue within groups for the sake of an effective study environment but also to the fact that the group members would not change their groups. The CIRC technique activities prepared by the researcher were introduced to the students, and they were informed about the outcomes regarding reading and writing skills. It was pointed out that the application was carried out not to investigate the students' knowledge but to develop their language skills. The students were asked to participate in all the activities and to avoid demonstrating any behavior that would have negative influence on their friends in their group. The application was carried out in 10 class hours a week in a period of six weeks, making 60 class hours in total. The whole application was conducted by the researcher. The application phases of the CIRC technique were as follows:

1. **Determining the instructional goals and measurement tools:** In this phase, the knowledge and skills to be acquired by the students with the help of the CIRC technique were determined.
2. **Forming the groups:** The duties were shared by the students in a way to increase their attachment to one another.
3. **Organization of the classroom for group work:** The classroom was organized in a way to facilitate intergroup and intragroup interaction and communication.
4. **Informing the students about the goals, the measurement tools and the achievement criteria:** At the beginning of the process, the students were informed about the goals and outcomes in relation to comprehension of a text with the CIRC technique. Parallel to the activities carried out regarding the text, quizzes were given. According to the results of these quizzes, the most successful group was declared.
5. **Determining the subject-related materials to be used by the students and informing them about their use:** The material to be used by each student was provided by the researcher. When considered necessary, a presentation related to the subject was made to provide background information.
6. **Starting and maintaining the in-group study process:** The steps taken in the application process of the CIRC technique to be used for reading comprehension and writing activities in teaching

Turkish as a foreign language:

1. Teacher's preliminary presentation regarding the subject and preparations for the subject
2. Teacher's reading aloud
3. Group members' reading aloud in pairs
4. Group members' reading silently and determining the unknown vocabulary
5. Guessing the meanings of vocabulary, looking up a dictionary for the meaning of the vocabulary, and making sentences using the vocabulary
6. Group members' reading silently
7. Giving worksheets and studying on them
8. Answering the questions in the worksheets individually, and group members' checking and evaluating the answers given.
9. Carrying out individual writing activities related to the upper-level comprehension questions in the worksheet, and group members' checking the written compositions
10. Making whole-class discussion regarding the group works and completing the teacher's inefficacies.
11. Groups' preparing a specific and common writing activity according to the writing method determined.
12. Students' taking the exam related to the subject individually.
13. Determining the successful group according to the results of the exam regarding the subject
7. **Evaluation:** The group ranking first was determined and awarded.

FINDINGS

Quantitative findings regarding the influence of CIRC technique on reading

Table 1 presents the results of Wilcoxon test conducted to see whether there was a significant difference between the reading comprehension academic achievement scores of the students before and after the application carried out in relation to Turkish language teaching. The Wilcoxon test results presented in Table 1 demonstrated that there was a significant difference between the students' scores in the reading comprehension achievement test before and after the application ($Z = -3.526$; $\text{Sig.} = 0.000$; $p < 0.05$). When the rank mean and totals for the difference scores were taken into account, it was seen that the difference was in favor of the positive rank, that is the posttest score ($\text{pos. rank} = 8.50$; $136.00 > \text{neg. rank} = 0.00$; 0.00).

Table 2 presents the results regarding whether there was a significant difference between the participants' post-application reading comprehension achievement scores and their post-application writing scores. When Table 2 is examined, it is seen that there was a significant difference between the participants' reading comprehension achievement posttest scores and their writing achievement posttest scores ($Z = -2.705$ and $\text{Sig.} = 0.007$, $p < 0.05$). When the rank mean and totals for the difference scores were taken into account, the difference was found to be in favor of the negative rank, that is the reading comprehension achievement posttest

Table 1. Wilcoxon test results regarding the reading comprehension academic achievement scores before and after the application.

Variable		N	Rank mean	Rank total	Tests	N	Mean	Standard deviation
Last reading	Negative ranks	0 ^a	0.00	0.00	First reading	16	64.38	5.10
	Positive ranks	16 ^b	8.50	136.00	Last reading	16	69.94	4.58
First reading	Ties	0 ^c	-	-	-	-	-	-
	Total	16	-	-	-	-	-	-
Z	-3.526	-	-	-	-	-	-	-
Asymp. Sig. *	0.000	-	-	-	-	-	-	-

*p< 0.05, a. Last reading< First reading, b. Last reading > First reading, c. Last reading = First reading.

Table 2. Wilcoxon test results regarding the post-application reading comprehension and writing achievement scores.

Variable		N	Rank mean	Rank total	Tests	N	Mean	Standard deviation
Last writing	Negative ranks	11a	8.68	95.50	Last reading	16	69.94	4.58
	Positive ranks	3b	3.17	9,50	Last writing	16	64.44	4.69
Last reading	Ties	2c	-	-	-	-	-	-
	Total	16	-	-	-	-	-	-
Z	-2.705	-	-	-	-	-	-	-
Asymp. Sig. *	0.007	-	-	-	-	-	-	-

*p< 0.05, a. Last writing < Last reading; b. Last writing > Last reading; c. Last writing = Last reading.

Table 3. Wilcoxon test results regarding reading aloud performance scores before and after the application.

Variable		N	Rank mean	Rank total	Tests	N	Mean	Standard deviation
Last reading aloud	Negative ranks	0a	0.00	0.00	First reading aloud	16	2.63	0.81
	Positive ranks	10b	5.50	55.00	Last reading aloud	16	3.38	0.81
First reading aloud	Ties	6c	-	-	-	-	-	-
	Total	16	-	-	-	-	-	-
Z	-2.972	-	-	-	-	-	-	-
Asymp. Sig. *	0.003	-	-	-	-	-	-	-

*p< 0.05; a. First reading aloud < Last reading aloud; b. First reading aloud > Last reading aloud; c. First reading aloud = Last reading aloud.

score (pos. rank=3.17; 9.50< neg. rank=8.68; 95.50). Based on these results, it could be stated that the activities involving the use of CIRC technique applied in a setting of Turkish Language teaching had more significant influence on the participants' reading comprehension achievement posttest score than on their writing achievement score. Table 3 presents the results regarding whether there was a significant difference between the participants' reading aloud performance scores before and after the application.

The Wilcoxon test results presented in Table 3 revealed a significant difference between the participants' pre-application and post-application scores in terms of their reading aloud performance ($Z = -2,972$; Sig. = ,003; $p <$

0.05). When the rank mean and totals for the difference scores were taken into account, it was seen that the difference was in favor of positive rank, that is the post-application score (pos. rank=5.50; 55.00>neg. rank=0.00; 0.00). Based on these results, it could be stated that the activities carried out with the CIRC technique had significant influence on the development of the participants' reading aloud performance.

Quantitative findings regarding the influence of CIRC technique on writing

Table 4 presents the results regarding whether there

Table 4. Wilcoxon test results regarding writing achievement scores before and after the application.

Variable		N	Rank mean	Rank Total	Tests	N	Mean	Standard deviation
Last writing	Negative ranks	0a	0.00	0.00	First writing	16	54.31	6.25
	Positive ranks	16b	8.50	136.00	Last writing	16	64.44	4.69
First writing	Ties	0c	-	-	-	-	-	-
	Total	16	-	-	-	-	-	-
Z	-3.519	-	-	-	-	-	-	-
Asymp. Sig. *	0.000	-	-	-	-	-	-	-

*. $p < 0.05$, a. First writing < Last writing; b. First writing > Last writing; c. First writing = Last writing.

was a significant difference between the participants' writing achievement scores before and after the application. According to the Wilcoxon test results presented in Table 4, there was a significant difference between the participants' pre-application and post-application writing achievement scores ($Z = -3.519$; $Sig. = 0.000$; $p < 0.05$). When the rank mean and totals for the difference scores were taken into account, it was seen that the difference was in favor of the positive rank, that is the posttest score (pos. rank=8.50; 136.00>neg. rank=0.00; 0.00). Based on these results, it could be stated that the activities carried out with the CIRC technique had significant influence on the development of the participants' writing skills.

Qualitative findings regarding the application process of the CIRC technique

The results of the researcher's observations regarding the application process were obtained with the descriptive analysis method (frequency and percentage values), and those related to the open-ended questions regarding the process of the activities were obtained with the method of mistake analysis. The data collected are presented in Tables 5 to 8 using percentages (%) and frequencies (f). The headings under the category of reading comprehension were formed in line with meaning structuring skills adapted by Akyol (2010) from Cramer (2004), and the questions in the activities were organized depending on these skills. Akyol (2010) gathered meaning structuring skills under four sub-headings as follows:

- 1. Simple skills:** Main idea, putting the information in order, following directions, restatement, providing evidence, finding out the real details, determining the place of information.
- 2. Skills based on implication and comparison:** Inferencing, prediction, practice, reason-result, explanation, finding differences, making comparisons, interpretation, drawing conclusion, making generalizations and finding the implied main idea.

3. Vocabulary knowledge: Knowing the dictionary meanings of vocabulary, associated meanings of vocabulary, different meanings, contextual meanings of vocabulary, synonyms and antonyms, homophones, roots of words, figurative meanings, etymology of words, idioms and metaphors as well as understanding the combined words.

4. Judging, appreciation and evaluation skills: Understanding the spiritual state, demonstrating appropriate the attitudes and styles, understanding the descriptions and definitions, making evaluations, making judgements, demonstrating one's own feelings, stating one's own ideas, demonstrating a humorous and indulgent attitude, and appreciating the beauty.

Table 5 presents the data regarding the findings of the reading comprehension activities developed in line with the sub-headings in this categorization. The results presented in Table 5 represented the total of the correct responses of the students to the reading comprehension activities in the same category in a period of six weeks. In other words, the number of correct responses for an activity in a category could be equal to 16 at most, which was the total number of students. For instance, since the activity of *summarizing the text* received 12 correct responses in six weeks, the related frequency value in Table 5 was 12. This result might have been obtained either via the correct responses of 12 of all the 16 students during the activities in just one week or via different numbers of correct responses to the activities in six weeks. Therefore, according to Table 5, it is seen that all the sub-headings under the category of reading comprehension received different numbers of correct responses and that there was no unresponded activity. When Table 5 is examined in terms of the number of correct responses, it is seen that the number of activity categories including the "vocabulary knowledge" and "simple skills" was higher than that of the activity categories including the "comparison skills" and "evaluation skills". Considering the fact that the students' reading skill level in foreign language was B2, these results could be said to be quite good. The reason is that

Table 5. Descriptive results based on the activities related to reading comprehension skills.

Reading comprehension category	Number of activities carried out correctly	
	Frequency	Percentage (%)
Finding the places of certain information in the text	64	12.57
Determining the unknown words/finding their meanings	63	12.38
Scanning/skimming the text	60	11.79
Using one's background knowledge about the text	54	10.61
Making predictions	47	9.23
Making sentences using the words	42	8.25
Expressing thoughts about the characters	30	5.89
Making interpretations	29	5.70
Making connections between real life and the fictional text	21	4.13
Finding the main idea	18	3.54
Putting the information/events/ideas in the text in the correct order	17	3.34
Reading the whole text fluently	16	3.14
Making generalizations regarding the conclusion	16	3.14
Findings the differences in the text	13	2.55
Summarizing the text	12	2.36
Recognizing/stating the emotions in the text	7	1.38
Total	509	100

Table 6. Results of mistake analysis regarding reading aloud skill.

Mistake category in reading aloud	First recording		Last recording	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Skipping	28	10.11	21	9.05
Addition	49	17.69	43	18.53
Repetition	53	19.13	48	20.69
Failure to read	19	6.86	20	8.62
Self-correction	33	11.91	25	10.78
Wrong emphasis	61	22.02	54	23.28
Changing the places of phonemes/syllables	34	12.27	21	9.05
Total	277	100	232	100

comparison and evaluation activities, which could be regarded as an upper-level comprehension skill, are in categories that can be achieved only by upper-level students. With this application, it was revealed that B2 students managed to carry out upper-level activities with the help of the CIRC technique based on group work and solidarity. The reading comprehension activities carried out with the CIRC technique could be said not only to contribute to the students' reading comprehension skills but also to support the quantitative findings.

Another step of CIRC technique applications includes activities related to reading aloud performance. The activities carried out as group work were related to the students' peer support and pair reading performances. As there were four students in each group, the reading

activities were carried out by pairs of students. The performances involving both peer-supported individual reading and pair reading were audio recorded by the researcher; also, reading aloud evaluation forms filled out in class were used to evaluate these performances. The performances scored according to the items in the reading aloud evaluation form were evaluated under the sub-hearing of quantitative findings in the study. The results of mistake analysis conducted on the audio records constituted the qualitative findings obtained to support the quantitative findings.

In this study, after the reading aloud performances of 16 students were recorded, the first and last reading aloud recordings were examined. In this process, the students' mistakes in reading were noted down in the

Table 7. Results of mistake analysis based on the activities related to writing skill.

Mistake category in writing	First writing		Last writing	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Mistakes at the level of phonemes and syllables	192	27.35	189	28.72
Mistakes at the level of vocabulary and concepts	187	26.64	182	27.66
Mistakes at sentence level	203	28.92	188	28.57
Spelling and punctuation mistakes	58	8.26	40	6.08
Mistakes related to transfer from the mother tongue	62	8.83	59	8.97
Total	702	100	658	100

Table 8. Descriptive results regarding the CIRC technique based on observation.

Behavior category for CIRC technique	Number of repetition of the behavior	
	Frequency	Percentage (%)
Sharing materials	36	15.86
Confidence in group members	34	14.98
Self-confidence	32	14.10
Organizing the group	27	11.89
Effective use of time	27	11.89
Taking individual responsibility for the group	23	10.13
Willingness to work together	18	7.93
Organizing the communication within the group	18	7.93
Spending time together out of class	12	5.29
Total	227	100

form, and the frequency of each type of mistake was determined, which revealed the total mistakes. This would help determine the change in the number of mistakes made at the end of 6-week application when compared to the number of mistakes made at the beginning of the application. In the study, several mistakes were identified in the categories of “skipping, addition, repetition, failure to read, self-correction, wrong stress, changing the places of phonemes-syllables” (Akyol, 2010, p.103). The data gathered can be seen in Table 6.

When the data presented in Table 6 were examined, it was seen that the students made reading aloud mistakes mostly because of the process of learning vocabulary in the target language. It was seen that during the CIRC technique applications, there was quite a striking change in the percentage values of the mistake difference between the first and last reading recordings of the students who read in pairs within the group and who received instant feedback from the teacher and from peers when necessary. Depending on this finding, it could be stated that the CRC technique applications changed the students’ reading aloud performances positively and supported the quantitative data related to

reading aloud.

The last step of the qualitative dimension of CRC technique applications includes activities related to writing skill. Just as in the qualitative analysis process for reading aloud, mistake analyses were involved in the qualitative analysis process for writing skill as well.

The writing mistakes made by the students were grouped and presented under the headings earlier mentioned. When the data in Table 7 were examined, it was seen that there was a little but positive change between the frequency values for the students’ writing mistakes at the beginning of the application and those at the end of the application. Another point regarding the qualitative analysis dimension of CIRC applications is to describe the research process in line with the observation reports. Table 8 presents the findings obtained via the observation forms filled out in the process by the researcher who observed the influence of CIRC technique on the participants’ attitudes and behavior.

When Table 8 is examined, it is seen that material sharing, one of cooperative behaviors according to the observation form, was common mostly between the students, which was followed by confidence in group members, self-confidence, organizing the group and

effective use of time, respectively.

DISCUSSION AND CONCLUSION

The present study tried to reveal whether CIRC was influential on the reading and writing skills of students learning Turkish as a foreign language. The research data collected in the experimental process demonstrated that the change between the participants' academic achievements before and after the application was in favor of the CIRC technique. A number of studies carried out with the CIRC technique (Steven and Slavin, 1995; Slavin, 1999; Slavin et al., 1991; Yaman, 1999) revealed that the technique had positive influence on the students' academic achievements. Therefore, the results reported in these studies support those obtained in the present study.

The findings obtained via the applications carried out regarding the reading skills of the students learning Turkish language as a foreign language revealed that the pretest and posttest achievement mean scores of the experimental group which the CIRC technique was applied to were 64.38 and 69.94, respectively. The change in these mean scores was considered to cause a significant difference at the significance level of 0.05, and demonstrated that the CIRC technique increased reading comprehension achievement of the students in the application. Regarding the development of reading skills, it is reported that in a cooperative class environment, in which teacher-student and student-student interactions are quite common, students can not only understand and interrogate what they read but also think critically, put forward creative ideas and become active learners (Güngör and Açıkgöz, 2006).

Many studies revealed that as in other fields of education, the cooperative learning method develops reading skills in foreign language teaching. In one study carried out by Ghaith (2003), it was found that the experimental group students' reading comprehension skills were developed significantly when compared to the same skills of the control group students. According to Klinger and Vaughn (1996), cooperative group works make important contributions to the development of students' reading comprehension strategies. In another study conducted by Kılıç (2004), it is reported that cooperative learning is quite influential both on the development of students' reading skills and on the increase in their interest in lessons. Parallel to these results, it could be stated that the cooperative learning method has positive influence on reading comprehension.

The present study also investigated whether there was a relationship between the students' reading comprehension achievement scores and their writing achievement scores in relation to the CIRC technique.

The results revealed that the students' writing achievement posttest mean score (64.44) was lower than their reading comprehension achievement posttest mean score (69.94). The difference between the mean scores was found significant in favor of reading comprehension achievement. Among the causes of this difference might be the fact that writing is a process-based skill which is quite difficult to develop, and that the CIRC technique allocated more time to reading activities and to writing activities.

In addition, the difference could also be attributed to the fact that writing skill in a foreign language is based more on individual characteristics than on other language skills. Writing in a foreign language has a close relationship with the student's knowledge of grammar and vocabulary and with his or her ability to transfer his or her thoughts. In one study, Deneme (2008) focused on similar problems and pointed out that writing in a foreign language requires an upper-level organizational skills and the capability of structuring one's knowledge of that language.

While examining the influence of the CIRC technique on reading skills, the present study also focused on the results of the change in the students' reading aloud performances. The findings revealed that the students' reading aloud pretest performance mean score (2.63) was lower than their reading aloud posttest performance mean score (3.38), and that the difference was significant in favor of the posttest. Depending on this result, it could be stated that the CIRC application increased the students' reading aloud performances and helped develop this skill. In one study carried out by Alhaidari (2006), it was found that cooperative learning developed students' reading performances in English, and contributed especially to their reading fluently and to their vocabulary acquisition. This result is consistent with the finding obtained in the present study that reading fluently has a relationship with reading aloud performance.

The findings obtained via the applications regarding the writing skills of the students learning Turkish language as a foreign language revealed that the pretest and posttest achievement mean scores of the experimental group, which the CIRC technique was applied to, were 54.31 and 64.44, respectively. It was seen that the students' writing achievement posttest mean score was higher than their writing achievement pretest mean score. Although the posttest achievement mean score was 64.44, which could be regarded as quite a moderate score, there was still a considerable increase in the posttest scores when compared to the pretest scores. These posttest scores could be said to be fairly good for foreign language learners. As mentioned in a study conducted by Çakır (2010), since foreign language is one that is learned, not acquired, later in life by individuals, writing in a foreign language is a skill which is quite difficult to develop. In this respect, it was confirmed that the change in the mean scores caused a significant difference at the

significance level of 0.05, and that the CIRC technique increased achievement in practice.

The qualitative findings regarding the reading comprehension skill were obtained via the activities related to meaning structuring skills. Accordingly, the activities with the highest frequency value belonged to the *vocabulary skills* and *simple skills*, which covered the categories of *scanning/skimming the text* (f=60), *using one's background knowledge about the text* (f=54), *determining the unknown words/finding their meanings* (f=63) and *finding the places of certain information in the text* (f=64).

The frequency values regarding the upper-level comprehension and interpretation skills for the reading activities were low. However, the fact that the total number of activities correctly carried out throughout the process reached such a high number as 509 supported the quantitative findings. Therefore, the results related to reading comprehension achievement revealed by the qualitative analyses demonstrated that the students' comprehension skills developed based on the CIRC technique. In related literature, there are several research findings consistent with this result. In one study conducted by O'Donnell (1999), it was found that students in foreign language classes in which the cooperative learning method was used demonstrated such positive behaviors as guessing the meaning of words and recognizing the newly-learned words more easily and rapidly.

In relation to the qualitative research findings regarding the change in the reading aloud performances of the students, the mistakes made by the students during the reading activities were analyzed. According to the frequency values obtained via the first recordings of the reading aloud mistakes, the most frequent mistakes were related to *wrong emphasis* and *repetition* among all the types of mistakes: *skipping* (f=28), *addition* (f=49), *repetition* (f=53), *failure to read* (f=19), *self-correction* (f=33), *wrong emphasis* (f=61) and *changing the places of phonemes/syllables* (f=34). According to the frequency values obtained via the last recordings, it was seen that there was an improvement in almost all the types of mistakes, and that there was a one-point increase only in the mistake type of *failure to read*. When the total mistakes in the first recording (f=277) and the last recording (f=232) of the audio reading mistakes were examined, it was seen that there was a 45-point improvement. This result could be said to support the quantitative findings as well. Accordingly, it was concluded that the CIRC technique changed the students' reading aloud performances positively. Similarly, in literature, related studies pointed that reading aloud performance develops depending on the CIRC technique (Slavin, 1986).

The qualitative findings related to the change in the students' writing skills were obtained via the mistakes

made by the students in their writings. The frequency values for the mistakes in the first writings were evaluated according to the categories of *mistakes at the level of phonemes and syllables* (f=192), *mistakes at the level of vocabulary and concepts* (f=187), *mistakes at sentence level* (f=203), *spelling and punctuation mistakes* (f=58) and *mistakes related to transfer from the mother tongue* (f=62). There was a 44-point improvement in the total mistake frequency in the last writings (f=658) when compared to the total mistake frequency in the first writings (f=702). Depending on this finding, it could be stated that CIRC applications had positive influence on writing skill, and this result was found to support the quantitative findings.

It is thought that the mistake categories revealed by the mistake analyses had a relationship with the students' learning strategies and with the language use processes they acquired in their mother tongue. Carson et al. (1990), in their study examining the relationship between reading and writing skills, stated that transfers from one language to another could occur in reading and writing activities, and that the success of this transfer could change in line with the level of proficiency in the use of mother tongue. The researchers also pointed out that this transition between languages creates a relationship, and that the relationship between reading and writing skills in the two languages is not always necessarily perfect. Slavin et al. (2009) claimed that the language strategies developed by students in their mother tongue will also be used while learning other languages in future, and that this situation is related to the reinforced language skill system. All these research results clarify the issue of transfer from the mother tongue, which is among the types of mistakes made by the students learning Turkish as a foreign language in Estonia.

According to the findings obtained via the researcher's observation of the reflection of the students' responses to the CIRC applications upon their attitudes and behaviors, the students behaved in accordance with the cooperative learning process and with the intended behaviors to be developed by the technique. Therefore, the impact expected from the CIRC applications was reinforced by the students' behaviors.

SUGGESTIONS

Depending on the results obtained in the present study, the following suggestions were put forward by the researcher:

1. Since the study was carried out with a limited research sample, similar studies could be conducted with more comprehensive research sample groups.
2. The present study focused on reading and writing skills. Future studies could focus on all the language skills.

3. In this study, only the CIRC technique was applied. Multiple experimental studies could be designed involving the integrated use of different techniques of cooperative learning.

Conflict of interests

The author has not declared any conflict of interests.

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ⁱ This study included the use of some of the data gathered in the researcher's doctorate thesis with references updated.



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