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Full Length Research Paper

The effect of fire context on the conceptual understanding of students: “expansion-contraction”

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The aim of this study is to investigate effects of the guiding materials developed based on the “fire context” and related to “expansion-contraction” concepts in the conceptual understanding of students. A quasi-experimental method has been used in the study. The sample group of the study consists of 5th grade students selected from elementary school. A total of 56 (experiment group 27, control group 29) students from two classes have participated in the study. A concept test, an interview consisting of semi-structured questions, and a drawing test, have been utilised in the research. While no significant difference ($U=345$, $p>0.05$) has been found between the pre test scores of the control group and experiment group students, a significant difference ($U= 238$, $p<0.05$) has been found in favour of the experiment group in the post test. A great majority of the students have explained the “expansion-contraction” concept as “mass change”. The findings obtained from student drawings support this as well. For future studies, development of materials which emphasise the distinction of the concepts of flexibility and mass change and the concepts of expansion and contraction can be suggested.

Key words: Expansion, contraction, fire context, conceptual understanding.

INTRODUCTION

Students are not able to use the scientific concepts they have learned to explain the contexts they encounter (Burbules and Linn, 1991; Gilbert, 2006; Stolk et al., 2009; Ültay and Çalık, 2012). This situation leads to academic failure in science lessons. If students are able to explain the contexts they encounter by using concepts, this means that they have learned that concept and science (Özmen, 2003). Context-based learning theory emphasises that it is possible to eliminate academic failure by establishing a relationship between life and science (Bennett et al., 2003; King, 2012).

According to context-based learning theory, the best

way to establish the relationship between life and science courses is to carry them out within a context. This is due to the relating of extrascholastic experiences by using contexts students encounter through the concepts of science, which facilitates the learning of scientific subjects (Mayoh and Knutton, 1997).

The organisation named the center of occupational research and development (CORD) has conducted an investigation which involves teachers applying different models of constructivism; this is intended to address the difficulties experienced in the fields of mathematics and science. As a result of this investigation, they have

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determined that teachers use different strategies by using contexts (Crawford, 2001). The relating, experiencing, applying, cooperating and transferring (REACT) teaching model has been created on the basis of REACT strategies. The most important feature of REACT, which distinguishes it from other teaching models, is the fact that it has been developed to address the question of “why do I have to learn this subject?” which students try to answer themselves. Students find the scientific concepts they have learned in everyday life (Gilbert, 2006; Stolk et al., 2009), but then have difficulties in explaining the events they encounter with scientific concepts (Gilbert, 2006). The academic failure which emerges as a result of this led researchers to gravitate towards the concept of “context” in teaching models (Gilbert, 2006; Gilbert et al., 2011).

Relating and transferring, which are the first and last steps of REACT respectively, focus on these problems. Students also use the concepts they have learned in explaining both experiment activities and the given scenarios in the experiencing and applying steps. They further use the concepts they have learned by discussing everyday life problems with their group mates in the cooperating step. To sum up, contextual learning is included in every step of REACT (Navarra, 2006). There is a context in teaching designed according to the REACT teaching model and teaching is shaped in the framework of this context. Having said that, teaching is also enriched with different contexts (CORD, 1999). It is therefore clear that REACT is different from other teaching models with these features.

Why the Concepts of Expansion and Contraction?

We use the concepts of expansion and contraction to explain many events we see in our environment. For instance, events such as the formation of thunder, cracks which emerge on buildings, ascents of hot air balloons, submerging a jar into hot water to open it, ascent and descent of the mercury level in a thermometer, transformation of rocks to soil, cracking of a glass when a hot beverage is poured in it and blow-up of a perfume bottle when it is thrown into a bin; all of these can be explained by using the concepts of expansion and contraction. The science curriculum emphasises that 5th grade students should relate expansion and contraction of the concepts with daily life examples. However, students find it difficult to explain contexts by using scientific concepts (Bennett, Hogarth & Lubben, 2003). This situation leads to academic failure in science lessons.

Alternative concepts are another cause of academic failure. When the related literature is examined, it is seen that students have alternative concepts on this issue. For instance, students think that the particles, not the

substance, expand and contract (Adbo and Taber, 2009; Ayas and Özmen, 2002; Adadan et al., 2010; Valanides, 2000). They consider that the size of particles changes in the heating and cooling processes, thereby ascribing the substance’s characteristics to the particles (Griffiths and Preston, 1992; Valanides, 2000). The reason for this may be related to the fact that students are not able to learn the concepts of expansion and contraction at a macroscopic level (Nakhleh, 1992).

When the attainments related to the subject are examined, it is observed that they are at the macroscopic level. The same concepts are explained at the particle level in the 6th grade. Therefore, it is important to firstly comprehend these concepts at the macroscopic level. Considering that knowledge to be learned is built on previous knowledge, it is necessary for students to learn the concepts of expansion and contraction for their consequent learning.

Why the context of “fire”?

King et al. (2011) define context as “the scientific application of real world phenomena”. If the use of concepts is preferred to explain real world applications, scientific concepts are learned. Hence, the need for knowledge is felt. Context can be defined as applying a concept, discussing the results in the application, and revealing the importance of the concepts in a given event (Gilbert, 2006).

The context of “fire” has been considered as a basis in the scope of this study because the news of fire outbreaks in forests and buildings are on TV news channels almost every day in Turkey. Therefore, “fire” has been used as context for “heat and temperature”, which are the primary concepts of the project, while “fire alarm systems” has been used as context for “expansion and contraction”, which are the secondary concepts. Fire alarm systems contain a heat sensitive substance. With the heat increase that occurs in a fire, the substances within alarm systems quickly expand and lead to the operation of the stimulant mechanism. As the heat energy in the environment decreases after the fire is extinguished, this liquid within the alarm system contracts. By utilising this characteristic of fire alarm systems, the place of expansion and contraction in our everyday lives has been emphasised.

In this context, the research attempts to answer the following question: do guiding materials developed based on the “fire context” relating to “expansion-contraction” concepts effect students’ conceptual understanding?

Purpose of the study

The aim of this study is to investigate the effects of the

guiding materials developed based on the “fire context” and related to “expansion-contraction” concepts in the conceptual understanding of students.

METHODOLOGY

Research design

As the measurement of the effect of guiding materials developed based on the “fire context” in the sample and comparison of the obtained results are the focus in this study, a quasi-experimental method has been used. The groups have been established through a non-random selection during the formation of the sample (Tharenou et al., 2007).

Groups were composed as experiment and control groups through equitable assignment using a quasi-experimental method (Büyükoztürk, 2004). The experiment and control groups' obtained test scores are measured before and after the intervention and the results are compared with each other below.

Sample

The sample group for the study consists of 5th grade students selected from elementary school. A total of 56 (experiment group 27, control group 29) students from two classes have participated in the study. One control group (with 29 students—16 girls and 13 boys, mean age: 11.68) and one experimental group (with 27 students—14 girls and 13 boys, mean age: 12.08) have participated in the research. Two voluntary teachers from the same school have participated in the research. The teachers have both graduated as science teachers from university. The experimental group teacher had six years experience and the control group teacher had seven years of experience. Both teachers were provided with information by the researchers, with the aid of the materials, before the intervention.

Data collection tools

A concept test, an interview consisting of semi-structured questions and a drawing test have been utilised in this research. Students were asked two open-ended questions (shown below) in the concept test.

1. What does the concept of expansion mean to you? How would you describe this concept? Please explain.
2. What does the concept of contraction mean to you? How would you describe this concept? Please explain.

Drawings can be very useful in uncovering what a student thinks and his/her level of understanding; drawings are able to slightly limit the answers of the students (Çepni, 2005). Students were asked to draw the aim of investigating the effect of developed materials on conceptual understanding. The questions the students were asked are as follows:

1. What do you understand by the concept of expansion? Please show by drawing.
2. What do you understand by the concept of contraction? Please show by drawing.

The interviews were conducted to investigate the effectiveness of

the materials on the conceptual understanding of students. Individual interviews were used in this study and interviews were conducted by the researchers. Semi-structured questions were prepared by selecting two random samples from the categories which had emerged for the expansion and contraction concepts in the drawing test. Preliminary and final interviews were conducted with 10 of the experiment group students (E3, E7, E11, E13, E16, E17, E20, E21, E25 and E27). The questions are as follows:

1. A glass cup cracks when hot tea is poured in it on a cold winter day. What is the reason for this in your opinion? Please explain.
2. Ali stored his plastic ball on the balcony when winter came. One winter day, Ali saw that the ball was not as inflated as he had left it. How would you explain this situation?

Validity and reliability

Semi-structured interview questions were administered one week before the intervention as a pre interview for 10 of the experiment group students. The same questions were employed as a post interview immediately after the intervention. Questions were evaluated by two science educators and one science teacher to enhance validity. To measure the reliability of the semi-structured questions, three 6th grade students were interviewed. A concept and drawing test were administered one week before the intervention as a pre test to the experiment and control groups. The same tests were employed as a post test immediately after the intervention for these groups. To enhance content and face validity, the tests were evaluated by two science educators and two science teachers. To measure reliability of the concept and drawing tests, they were implemented on 15 6th grade students, who learned these concepts at 5th grade. Interviews were recorded. Each interview took approximately 10 to 12 minutes.

Data analysis

Marek (1986) categorisation outlined in Table 1 has been utilised in the analysis of the concept test and interviews. The following criteria; complete understanding (Code A) (3 points), partial understanding (Code B) (2 points), alternative concept (Code C) (1 point) and no response or irrelevant responses (Code D) (0 points) has been utilised. The data obtained from the experiment and control groups has been compared by utilising the Mann–Whitney U-test. Groups were composed as experiment and control groups through an equitable assignment quasi-experimental method (Büyükoztürk, 2004). The data obtained from the drawing test has been examined by taking the student answers into consideration. The frequency values of the data analysed in the correct drawing (electric wire, train track, the heated ball, cracking glass cup, gravzant ring, expansion/contraction of balloon), incorrect drawing (phase change, flexibility, crushing, mass change, fermentation of the dough) and no answer categories have been presented as a table. In addition, samples from student drawings have been included. Students were coded in line with research ethics. For instance, student number 1 from the experiment group has been shown as E1_{PT} in the preliminary test and as E1_{LT} in the final test. student number 1 from the control group has been coded correspondingly, as C1_{PT} and C1_{LT}.

Intervention

In this research, materials were prepared according to the REACT teaching model, which was taken into consideration in the

Table 1. Teaching design in the control and experiment groups.

L.	Experiment group	Control group
1st lesson	Relating: It was attempted to engage the attention of students on the subject by asking them the relationship between fire alarm systems and expansion-contraction on the basis of the fire context in the relating step (Appendix 1)	Entering: After being shown photographs of rails, students were asked why metal sections are used in bridges and why gaps are left between sections
2nd lesson	Experiencing: students were made to conduct the "let's bounce the coin" experiment in groups to demonstrate how expansion and contraction concepts occur. The experiment was presented in a worksheet (Appendix 2) format. The drawing attention and active occupation sections of the worksheet were utilised	Exploring: An experiment which demonstrates the change in the length of a copper wire with heat was conducted. This experiment's name is "let's heat and cool" (Bayram and Kibar, 2014)
3rd lesson	Applying: Assessment section of the worksheet was used	Explaining: The subject was exemplified by showing a support ring photograph to students. Then, the experiment "What happened to our balloon?" was conducted by students
4th lesson	Cooperating: The drama activity (Appendix 3) was used in the cooperating step to facilitate the students' sharing of what they had learnt and ensure their cooperative work	Elaborating: Examples related to everyday life about the subjects were given and the concepts of dilatation-contraction were explained to students
5th lesson	Transferring: Two example phenomena (Appendix 4) were utilised for students to explain different contexts. The two phenomena related to everyday life	Evaluating: The teacher summarised the subject in the last lesson and included the matching questions in the book

L.: Lesson.

experiment group. The 5E (Entering/Engagement, Examining, Explaining, Elaborating and Evaluating) teaching model from the constructivist approach was used in the control group and the teacher used the coursebook (Bayram and Kibar, 2014) in the process. The observation notes obtained from the teaching process by one of the researchers – a non participant who observed – are summed below. The intervention process consisted of five classes of 40 min in two groups. The intervention process in the experiment and control group has been presented in Table 1.

RESULTS

The findings obtained from the concept test, drawing test and interview questions have been presented below. The Mann Whitney U-Test results from the concept test pre test and post test scores according to the experiment and control groups have been presented in Table 2.

Analysis results indicate that there is no significant difference between the pre test scores of the concept test implemented on the experiment and control group ($U=345$, $p>0.05$). There is a significant difference in favour of the experiment group between the post test scores

implemented on experiment and control groups ($U= 238$, $p<0.05$). Frequency distribution of the answers given to the concept test has been presented in Figures 1 and 2.

Table 3 shows example statements from each categories related to expansion and contraction concepts.

When Table 3 is examined, it is observed that identified alternative concepts emerge in the flexibility, phase change, mass change and crushing codes. Findings obtained from the student drawing test have been presented below. Frequencies of the data obtained from drawing test related to the expansion and contraction concepts have been presented in Table 4. When the pre test results of the experiment group related to the expansion concept are examined, it is observed that most of the students answered in the incorrect drawing codes.

While the concept of expansion is mostly confused with concepts of phase change, mass change and flexibility, it is noted that most of the student drawings in the post test are correct. Control group students confused the concept of expansion with those of flexibility and mass change in the post test, incorrectly drawing their answers. The expansion of the electric wire example was drawn by

Table 2. Results of the Mann Whitney U-Test.

Test	Groups	n	Mean Rank	Sum of Rank	U	p
Pre test	Experiment	27	26.78	723.00	345	0.42
	Control	29	30.10	873.00		
Post test	Experiment	27	34.19	923.00	238	0.00
	Control	29	23.21	673.00		

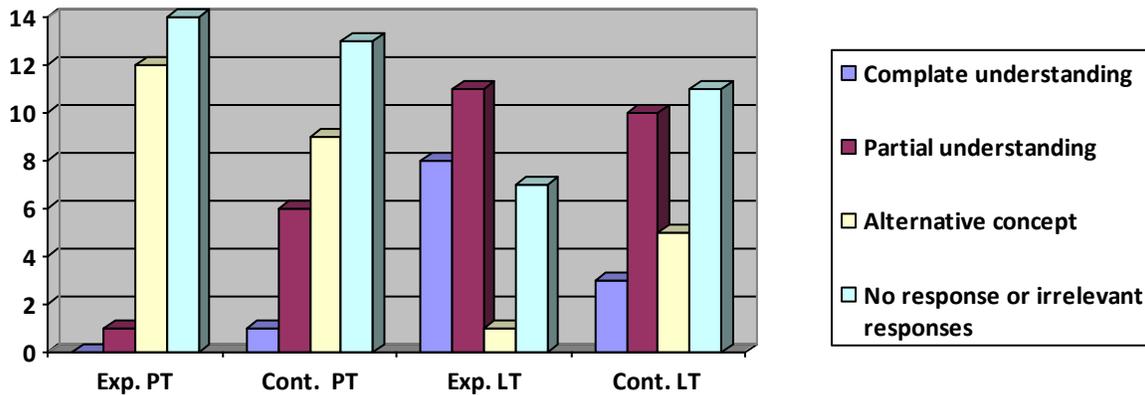


Figure 1. Students' frequency distribution in each categories relate to expansion concept (Exp. PT: Experiment group pre test; Cont. PT: Control group pre test; Exp. LT: Experiment group post test; Cont. LT: Control group post test).

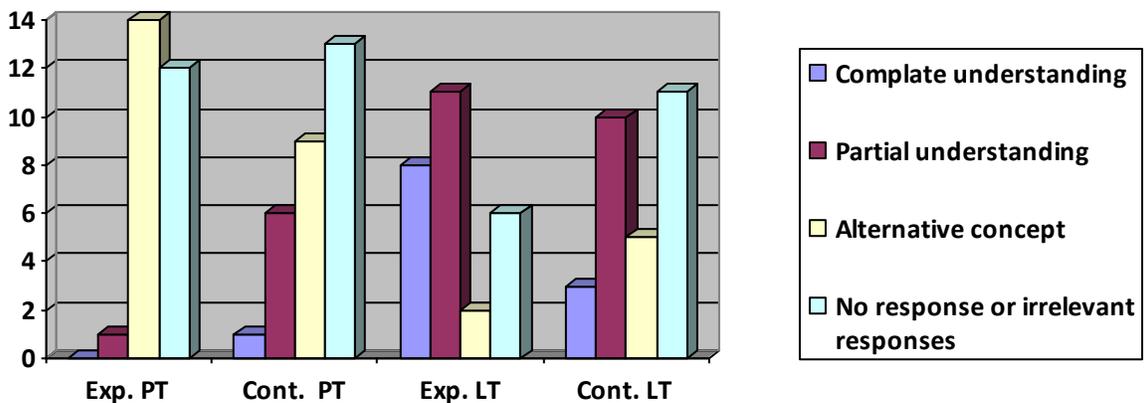


Figure 2. Students' frequency distribution in each categories relate to contraction concept.

most students in both groups in the last test. When the pre test results of the experiment group related to the contraction concept are examined, it is observed that most of the students answered in incorrect drawing codes. While the concept of contraction is mostly confused with those of mass change and flexibility,

most of the student drawings in the post test are correct. Control group students confused the concept of contraction with those of flexibility and crushing in the post test, incorrectly drawing their answers. The contraction of the electric wire example was drawn the most in both groups in the post test. Samples of the

Table 3. Example statements from each category.

Ct.	Concept	Example statements
A	Exp.	The increase in volume of the substance with heat absorption (E7 _{LT} , C21 _{LT})
	Cont.	The decrease in volume of the substance with heat emission (E10 _{LT} – C22 _{LT})
B	Exp.	Electric wires expand in the summer with heat absorption (E21 _{LT} , C6 _{LT})
	Cont.	Formed when the substance emits heat (E11 _{LT} – C27 _{LT})
C	Exp.	Flexibility The tension of rubber (E1, 4, 18 _{PT} – C1, 3, 11, 26 _{PT} - C7, 11, 20, 25, 26 _{LT})
	Cont.	
	Exp.	Phase change The melting of something (E15, 23 _{PT})
	Cont.	
	Exp.	Mass change Expansion is similar to the increase in length of a person (plant) (E6, 7, 8, 10, 13, 14, 19 _{PT} – 15 _{LT} – C12, 14, 20, 28, 29 _{PT})
	Cont.	
Cont.	Crushing If something is crushed, it contracts (E1, 3, 6, 7, 8, 9, 12, 14, 15, 19, 21 _{PT} – E03 _{LT} , C3, 12, 20 _{PT})	
D	Exp.	Reminds us that it is a hot day (C28 _{PT})
	Cont.	Reminds us that it is a cold day (C28 _{PT})

PT: Pre Test; E: Experiment Group Students; A: Complete Understanding; C: Alternative Concept; LT: Post Test; C: Control Group Students; B: Partial Understanding; D: No or Irrelevant Answer; Ct.: Categories.

Table 4. Frequencies and codes of the findings obtained from the drawing test

Concepts		Expansion				Contraction			
		Experiment Group		Control Group		Experiment Group		Control Group	
		PT (f)	LT (f)	PT (f)	LT (f)	PT (f)	LT (f)	PT (f)	LT (f)
Correct Drawing	Electric wire	1	13	4	10	-	13	3	11
	Train track	2	7	-	-	-	5	1	-
	The heated ball	-	7	1	2	-	5	1	1
	Cracking glass cup	-	2	-	-	-	-	-	-
	Gravzant ring	-	-	-	3	-	-	-	1
	Expansion/contraction of balloon (ball)	-	-	-	2	-	-	-	5
Incorrect Drawing	Phase change	5	-	2	-	1	-	-	-
	Flexibility	5	1	8	5	5	1	7	3
	Crushing	-	-	-	-	3	-	6	2
	Mass change	6	-	5	1	5	1	-	-
	Fermentation of the dough	-	-	1	-	-	-	-	-
No drawing		8	2	8	6	13	2	11	6

PT: Pre Test LT: Post Test

student drawings – correct and incorrect drawing categories relating to expansion and contraction – have been presented in Table 5.

When Table 5 was examined, it is observed that

students have incorrect drawings. The concepts of expansion and contraction are mostly confused with those of mass change and flexibility. Student E7_{PT} drew concepts associated with the flexibility of suspension.

Table 5. Samples of the student drawings which belong to the correct-incorrect drawing categories relate to expansion and contraction.

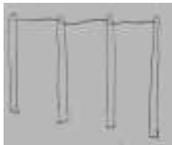
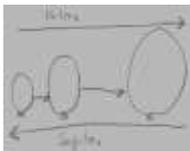
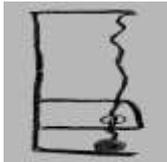
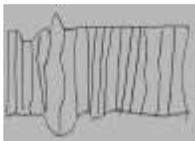
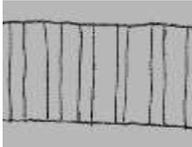
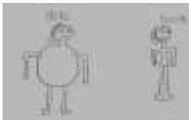
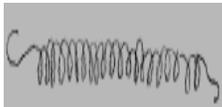
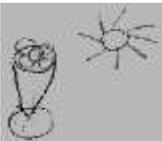
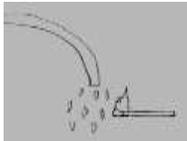
Codes	Correct drawing	
	Expansion	Contraction
Electric wire	 E4 _{LT}	 E4 _{LT}
Expension of balloon	 C21 _{LT}	 C21 _{LT}
Gravzant ring	 C4 _{LT}	 C4 _{LT}
Train track	 E23 _{LT}	 E23 _{LT}
Mass change	 E24 _{PT}	 E5 _{PT}
Flexibility	 E7 _{PT}	 E7 _{PT}
Phase change	 E2 _{PT}	 E15 _{PT}
Crushing/ fermentation of the dough	 C1 _{PT}	 E3 _{PT}

Table 6. Categorisation of the answers given to the interview questions and example statements.

Categories	Example of students' statements
A	Exp. The glass expands with heat absorption. Expansion is the increase in the volume of the substance by heat absorption. Therefore, the glass has cracked (E11, 20, 25, 27 _{PI})
	Cont. The ball decreases in volume by losing heat and, hence, it contracts (E11, 20, 21, 25, 27 _{LI})
B	Exp. The cup cracks because it expands (E7, 13, 17 _{LI})
	Cont. The air in the ball contracts and, hence, the ball gets smaller (E3, 7, 13, 16, 17 _{LI})
C	Exp. The cup may have cracked because it could not accept heat (E11 _{PI})
	Cont. The cold takes the air in the ball (E20 _{PI}) The heat inside it has been lost due to the cold (E21 _{PI})
D	Exp. The cup cracks because tea heats it (E3, 7, 13, 16, 17, 20, 21, 25, 27 _{PI} - E3, 16, 21 _{LI})
	Cont. May be due to the cold (E3, 7, 11, 13, 16, 17, 25, 27 _{PI})

PI: Pre Interview; LI: Post Interview; Exp.: Expansion; Cont.: Contraction.

suspension. Similarly, student E5_{PT} explained contraction by drawing fat and thin people. We saw that students associated contraction with mass change. Findings obtained from interviews and related to the concepts of expansion and contraction have been presented in Table 6.

When the answers students gave to the interview question related to expansion are examined, it is observed that students have no answers included in the A and B categories. In the post interview, seven of the students gave answers in the complete and partial understanding categories. No alternative concept has been found among students in the post interview. When the answers students gave to the interview question related to contraction are examined, it is observed that students provided no answers included in the A and B categories. In the post interview, all of the students gave answers in the A and B categories. In the post interview, no student answers fitted the C and D categories.

DISCUSSION

The findings obtained from the concept test, drawing test and interview questions have been discussed in light of the literature presented. While no significant difference ($U=345$, $p>0.05$) has been found between the pre test scores of the control group and experiment group students when Table 2 is examined, a significant difference ($U= 238$, $p<0.05$) has been found in favour of the experiment group in the post test. The teaching carried out in the experiment group is determined to have been effective in contributing to the conceptual understanding of students. This can be attributed to the

materials developed based on the "fire context" in the framework of the context-based teaching theory and the utilised fire context effect.

In a similar vein, studies that state that teachings designed on the basis of context-based theory effectively impact the conceptual understanding of students, are available (Ramsden, 1997; Barker and Millar, 1999; Barker and Millar, 2000; Belt et al., 2005; King, 2009; King et al., 2011). When the interviews conducted are examined, the positive effect of the "fire context" on alternative concepts is observed. The reason for this may be the context-based teaching's facilitation of an effective conceptual change (Gilbert et al., 2011).

In this study, the fire context utilised in the REACT teaching model was presented to students by beginning with an example case. We attempted to emphasise how important fire alarm systems are in our lives by utilising the expansion-contraction concept. Belt et al. (2005) have stated that contexts consisting of example cases have positive effects on the increase of students' interest and success in the subject. The fact that the experiment group was more successful than the control group may be attributed to the context facilitation of the students' use of concepts they learn in everyday life (Richey, 2000). In this model, students' explanation of the phenomena they encounter in everyday life has been emphasised.

When the findings related to the first and second questions of the concept test are examined, the fact that students in both groups have alternative concepts in the pre test is observed, as shown in Table 3. The alternative concepts identified in students as related to the expansion and contraction concepts are flexibility, phase change, crushing and mass change. The number of students who linked the flexibility concept with expansion and contrac-

tion concept is high in the preliminary implementations of the concept and drawing tests for both groups. However, after intervention, the experiment group is observed to be more successful than the control group (Tables 3 and 4). The reason for this may be attributed to the contextual teaching carried out on the basis of the “fire context” because contextual learning facilitates the students’ relating of their daily life experiences with scientific concepts (Bennett et al., 2005).

In the concept test, it has been determined that students think substances can expand and contract, without taking the heat exchange into consideration. When student drawings are examined, the fact that they explained the expansion-contraction concept by drawing the lengthening and shortening of a bow indicates that they could not understand the expansion-contraction concept. The reason for the students’ explanation of the expansion-contraction concept with the concept of flexibility may be the activity addressed in the coursebook of the control group. In the coursebook (Bayram and Kibar, 2014), how metal pairs in exothermic tools, such as flat irons etc., are used as thermostat is explained with a schematic drawing. The expansion and contortion of the wire with its heating up when the current passes through the heater wire has been related by students to the flexibility of the wire. Students have focused on the lengthening and shortening of the bow more than the expansion of the wire with the heat effect. The drawings by the students support this (Table 5). Therefore, coursebooks are observed to have a predominant role in the teaching of concepts (Kikas, 1998; Aşçı et al., 2001).

When Table 4 is examined, a great majority of the students are observed to have explained the expansion-contraction concept using mass change. The findings obtained from student drawings support this as well. The fact that the expansion concept has been stated as the “increase in the volume of substances with heat” (Bayram & Kibar, 2014, p.96) may have led to students forming alternative concepts with regard to increase in mass. The students’ focus on the increase in “volume” by disregarding the heat effect may have created the idea of “increase in mass”. This situation may be attributed to the explanation of this concept to students on a macroscopic level. Er Nas (2013) has stated that students think the number of particles increase and the particles grow in size with heat effect in the expansion concept. This can be observed in the drawing of student E5_{P_T} in Table 5.

Students’ use of the crushing concept instead of contraction in the pre test can be considered as an indicator of how important daily life experiences are in the teaching of concepts. Moreover, explanations that are removed from scientific statements but used among the public are known to be effective in the formation of alternative concepts in students (Akgül and Şentürk, 2001; Moore and Harrison, 2007; Ünal and Coştu, 2005).

When the studies carried out on macroscopic level in the literature are examined, it has been determined that students think the particles of compressed objects shrink (Özmen and Kenan, 2007). The reason for this may be attributed to the inability of students to learn the expansion and contraction concepts on a macroscopic level (Nakhleh, 1992). This alternative concept is another indicator of how important learning on a macroscopic level is for microscopic level learning.

Students explained the concept of expansion-contraction by relating it with phase change in the pre test implementations in both the experiment and control groups; no answer in this category has been found when the post test implementations of both concept and drawing test are examined. It is observed that the conducted teaching has been effective in the elimination of this category for both groups.

CONCLUSIONS AND SUGGESTIONS

The results of this study reveal that the materials developed based on the “fire context” in the framework of the context-based teaching theory are effective in students’ conceptual understanding. In accordance with the results, the following is recommended: when post test implementations are examined, the expansion-contraction concept has been explained with the concepts of flexibility and mass change by the students. For future studies, development of materials which emphasise the distinction between the concepts of flexibility and mass change and the concepts of expansion and contraction are suggested.

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Appendix 1. Material used in the Relating step.

Heat affects substances



The photograph you see on the side is of a fire alarm system. It warns the people in the building by operating immediately after a fire breaks out. People evacuate the building. Moreover, the fire department is also notified early. Hence, loss of life and property is prevented.

Fire alarm systems must be placed in ever building

Does your school have a fire alarm system?

How do you think the systems which warn us that a fire has broken out work?

What kind of change does heat cause in substances?



Appendix 2. Material used in the experiencing and applying steps.

Do gases expansion?

Solids and liquids expanse with the effect of heat.

So, do gases expanse also?

Let's carry out our activity stated below and seek answers to this question

Activity 1: Let's Bounce the Coin

Activity Procedure:

Firstly, let's form groups of 4.

Let's place the coin on mouth of the bottle.

Let's pour hot water into the washbowl and submerge the bottle in it.

Tools and materials: 1 washbowl, 1 soda bottle, 1 coin, 1 lt hot water



Our Observations: What have you observed about the coin?

Let's Draw Conclusions:

Is air a substance? Why?

Does air expanse? Why?

Let's try to answer the questions below by means of what we have learned.



- How do you explain the inflation of the balloons according to the picture on the side?

- What are fields of profession and lines of business in which the expansion and contraction phenomena are taken into account? What are the intended purposes of the expansion and contraction phenomena in fields of profession?

Appendix 3. Material used in the cooperating step.

Heat affects substances

Process:

Preparation / Heating

Activity 1



- Students are called to the chalkboard.
- Students are formed into groups of 5-6.
- Students are told that each group represents gas substances.
- It is stated that these substances are heated.
- Students are asked to represent the heated gas substance and demonstrate this condition.

Explanation: The most important aspect which needs to be paid attention to here is to not intervene in the animations to be done by students. They should be ensured to use their bodies however they want.

Animation

Emir has just come home from school. He wants something to eat. He opens the refrigerator and searches for something to eat. He wants to eat the pickles in the jar. However, he cannot open the glass jar with metal lid. He immediately thinks of his mother. His mother turns the jar upside down and waits it in hot water in situations like these. Emir also heats up some water and puts the lid of the jar in hot water after turning it upside down. Students are told that they represent the lid of the jar and they are in hot water. Students are asked to improvise about this subject.

Mid-assessment:

A mid-assessment is carried out here. Students are ensured to discuss with the questions below.

1. Who were in the animation?
2. What have we watched?
3. How did our friends who represented the lid of the jar behave after being put into hot water? What may be the reason behind that?

Assessment/Discussion

-Certain intervals are left between rails during the construction of railroads. What may be the reason behind that?

-How do hot air balloons fly?

Appendix 4. Material used in the Transferring step.**Let's use what we have learned**

Example 1:



The "Wish balloon" which has begun to be widespread in our country recently and is flied by lighting a candle has caused fire. A wish balloon which rose to the sky became a fireball and fell into a wheat field. The fire was extinguished with the timely intervention of the fire department teams before spreading to other wheat fields in the vicinity. Fortunately, no one has been injured in the fire outbreak but an area of 3 decares has turned to ashes.

- **What kind of a relationship is there between the inflation of the wish balloon and lighting a candle in your opinion?**

Example 2:

Soil is very important in the lives of humanbeings. The provision of our food depends on soil. Soil is important for all living beings and not for humanbeings only. Did you know that rocks are one of the reasons behind the formation of soil which is so important for living beings?

- **How does a enormous rock turn into soil in your opinion?**



From Rock to Soil



Full Length Research Paper

Arranged Bursa folk songs for fourhands piano and their practice in music education departments

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The article presents the results of a study carried out within the scope of a project entitled, “Arranged Bursa Folk Songs for Fourhands Piano Extended Piano Techniques and Teaching in Music Education Departments.” It is number KUAP (E)-2014/28 of the Uludag University Scientific Research Projects Unit and was supported by the Bursa Metropolitan Municipality. Six Bursa Folk Songs- were arranged for fourhands piano by composer Berkant Gençkal. Five of them were taught and played by six students in chamber music lessons in the Uludag University Music Education Department at the undergraduate and graduate level during the 2015 spring semester. The practice finished with a concert. All pieces were recorded by two teachers. The aim of the project is to enrich the Turkish piano literature and examine the effects on student education. The results were analysed with the N-Vivo Qualitative research programme. According to answers provided by six students to semi-structured interview questions, all students found the project positive in terms of having them acquire a different in chamber music repertoire with its own traditional rhythm and notation.

Key words: Folk song arrangement, fourhands piano, piano education, piano pedagogy, music education, Bursa, Turkey.

INTRODUCTION

Fourhands piano repertoire includes different challenges, with two pianists playing on one piano, compared to the solo pianiste. The individual technical achievements of the two pianists are not enough: fourhands piano compositions require simultaneous interpretation. Fourhands piano literature in Europe is as old as works written for solo piano. Since the beginning of the 18th century, Haydn, Mozart, Schubert and Beethoven have composed fourhands piano pieces for education and the concert piano repertoire. In addition, Brahms, Dvorak,

Hindemith, Debussy and Ravel composed pieces for fourhands. Turkish piano literature composed for fourhands include Cemal Reşit Rey's¹ *Sonata for Fourhands* (1924),

¹ Cemal Resit Rey (October 25, 1904, Jerusalem -7 October 1985 in Istanbul), one of the Turkish Five Composers who are among the first generation in the history of the Turkish Republic. Tenth Anniversary Anthem, Luxury Life, is like the creator of the famous operetta. (https://tr.wikipedia.org/wiki/Cemal_Re%C5%9Fit_Rey, 04.05.2016)

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Kamran Ince's² *Cross Scintillations* (1986), Sıdıka Özgül's³ *Love and Emotions* (1986), Ali Damar's *Two Dances for Fourhands* (1993) (Say, 2012, 533), and Mesruh Savaş⁴ *Fourth piece from On The Wire* (2012), which is a six-piece composition set.

According to the literature review, there are also pieces composed for solo piano but arranged for fourhands: for examples for pianist Şirin Akbulut Demirci and Birce Arsan Asman, *Horon* (2010) was arranged for fourhands, and *Bundle* by Ahmet Adnan Saygun⁵ (suite for violin and piano Op.33, 1956) was played as a fourhands piece for the first time in the Turkish Republic of Northern Cyprus, and it has been performed at the International Bellapais Spring Festival. Aleksander Makaev⁶ arranged Ahmet Adnan Saygun's solo piano pieces *Game* and *Meşeli*⁷ for fourhands. *Game* was played in 2012 to mark the composer's 105th birth anniversary by Şirin Akbulut Demirci's piano class students Eda Nergiz and Göktaş Varyozdöken at U.Ü.'s Fine Arts Education Department, in its Music Education Department's Traditional Fall Semester Concert.

One of the very few studies on this topic is a paper by Şirin Akbulut Demirci that was presented at the 2012 World Conference on Design, Art and Education. According to the published abstract of that study, entitled, "The Limited Literature of Four Hands Piano Repertoire," there are few fourhands piano works of Turkish literature (Demirci, 2012).

This article presents the results of a 2014 study carried out within the scope of a project entitled, "Arranged Bursa Folk Songs for Fourhands Piano Extended Piano Techniques and Teaching in Music Education Departments," number of KUAP (E)-2014/28 of the Uludağ University Scientific Research Projects Unit, a small-scale applied research project. The project was also promoted by the Bursa Metropolitan Municipality.

Six Bursa folk songs were arranged for fourhands piano by composer Berkant Gençkal. Born in Bulgaria in 1977, Berkant Gençkal took his first lessons from his father, Yusuf Gençkal. Then, he continued his piano education under Prof. Nergis Şakirzade Sarı. He studied harmony with Zarife Bakihanova and composition with

Elhan Bakihanov, then continued to work on compositions with Peter-Jan Wagemans. He took electronic music courses from René Uylenhoet and studied Advanced Theory with Michael Ellison and ethnomusicology with Robert Riegle.

In 2000, he won a mention for his piece "Suite for Piano, Strings and Percussion" in the British Council's "The Musician of the Year" competition. In 2002, he won second prize with "Virgin Stories" in the Eczacıbaşı Competition, and in 2006, he won first prize with "Suite Trakia" in the same competition. A national entry, "2 Views Orient," earned great success in the festival organized by ISCM in Stuttgart in 2006. In 2008, he won third prize with "A Song from the Cave of Eternity" in a competition organized by "Culturscapes" in Basel, Switzerland. In 2014 he won fourth prize in Mersin with his trio "The Earring and the Child". Berkant Gençkal does not depart from traditional techniques in his works. In adding contemporary and modern timbres, he reveals a post-modern texture by synthesizing those techniques in his works. Melodies are always his primary and persistent structures. Since 2004, he has worked in Eskişehir.

Five of the arranged Bursa folk songs for fourhands piano were taught and played by six students during chamber music lessons in Uludağ University's Music Education Department at the undergraduate and graduate level during the 2015 Spring Semester (One was a second degree undergraduate, two were third degree students, and three were graduate students). The rehearsal ended with a concert, with the composer in the audience. All pieces were recorded by two piano teachers of Uludağ University's Music Education Department Şirin Akbulut Demirci and Emine Bilir, in Babajim Studios in Istanbul on 21 April 2016, with financial support of the Uludağ University Scientific Research Projects Unit.

The aim of the project was to enrich the Turkish piano literature, and examine the effects on student education in their chamber music and piano lessons.

METHODOLOGY

The results were analysed with the N-Vivo 11 Qualitative research program including answers given by the six students to the semi-structured interview questions. Two questions were researched: "Do these compositions enrich Turkish piano literature or not?" and "What are the effects of the project on student education?" All the students found the project positive, as it allowed them to acquire a different repertoire in chamber music, with its own traditional rhythm and notation.

FINDINGS

These findings contain information on the pieces and interview results in two sections.

² Kamran N. Ince (born May 6, 1960) is a Turkish-American composer (https://en.wikipedia.org/wiki/Kamran_Ince, 04.05.2016)

³ Sıdıka Özgül (b. 1960, Istanbul), Turkish conductor and composer. (https://tr.wikipedia.org/wiki/S%C4%B1d%C4%B1ka_%C3%96zdil, 04.05.2016)

⁴ Mesruh Savaş (d. 1978 Kardzhali, Bulgaria), Turkish composer and academician. (https://tr.wikipedia.org/wiki/Mesruh_Sava%C5%9F, 04.05.2016)

⁵ Ahmet Adnan Saygun (September 1907 – 6 January 1991) was a Turkish composer, musicologist and writer on music. (https://en.wikipedia.org/wiki/Ahmed_Adnan_Saygun, 04.05.2016)

⁶ Aleksander Makaev (b.1960) is a composer born in the town of St. Volhov, near St. Petersburg. (<http://www.todotangorquesta.com/gallery/galeri/amekev-2/>, 04.05.2016)

⁷ Meşeli is a neighborhood in the Çubuk district of Ankara. (https://tr.wikipedia.org/wiki/Me%C5%9Feli_%C3%87ubuk, 04.05.2016)

Moderato quasi Andante ♩=70

Moderato quasi Andante ♩=70

pp molto

Figure 1. Bursa Guvende measures 1-3.

About 6 folk songs from bursa province

The information is taken from the concert programme notes of the composer. "The arrangement of 6 folk songs for 4 hands piano was proposed by Assoc.Prof. Şirin Akbulut Demirci. The common characteristics of these 6 songs are that all of them belong to Bursa province. When we put them all together they create a suite that constitutes 6 movements. At the same time, these folk songs, which are in dance form, may have been performed in order or randomly, according to the desire of the performers. For the purposes of the work, which started in 2014 within the scope of the Uludağ University Scientific Research Projects Unit, these songs were arranged with recomposing methods and were added to the literature (Gençkal, 2016 Project Final Concert Programme Notes). The composer also has also written the following information about each composition.

Bursa Guvende

There is no poetry in this folk song, which is actually a dance rather than vocal music. It appears as a powerful demonstration of men hitting their knees to the ground. It creates the prelude section of the suite. It is in a 4/4 time signature. Usually, it is danced in a circular form. Women dance slowly. In some villages of Bursa province, the dance is known as a flat dance. The melody is transcribed by Mustafa Sarısözen and includes 2 comas in B flat. Instead of this pitch, a B natural is used. The periods are repeated twice with variations, and there is a coda at the end. The principle of the development relies

on polymodality, and at the same time, there are tonal chords used in the arrangement. The existence of a significant axis is avoided (Gençkal, 2016) (Figure 1).

The small little stones of the Bursa

The song has a 9/8 irregular time signature, and its original form is in couplet-refrain alternation. While reconsidering the folksong again, compound ternary form is adapted according to the need of interest, and atonal elements were used in the middle section, contrasting the first and the last sections. The first and the third sections are established on two primary elements, such as melody and accompaniment. The middle section is more about the call and response relationship. In this famous song, the story is based on the love of an adolescent for a young girl (Gençkal, 2016) (Figure 2).

Ah my fadime... (let's run away together)

This is another example from Bursa province that has a 9/8 time signature. It is based on couplet-refrain alternation with an opening section, and the text relies on a love of an adolescent for Fadime. Except for a small bridge in 5/8, there is no significant change in the formal design of the arrangement. Sometimes, the melody moves from the first pianist's right hand to the second pianist's left hand, respectively. Thus, using the entire register of the piano, a larger sonority was achieved. The 1 coma in B flat (bakiye) in the original manuscript was replaced with B natural in the arrangement. Starting with

Figure 2. The Small Little Stones of the Bursa measures 1-3.

Figure 3. Ah My Fadime... (let's run away together) measures 1-4.

a G axis, the music ends in F# with a gradual increase in the dynamic. In this song, we also witness the existence of a non-constant axis and transitions in-between the mediant (Gençkal, 2016) (Figure 3).

I want my cheesecloth red (sekme of Bursa)

This folk song has a 9/8 time signature. After a small introduction, a couplet and refrain follow, respectively.

The original form of the song is Introduction + A + B + A + B. This form is replaced with a compound ternary form in the arrangement. The middle section is an invention of a theme. Due to the rhythmic vividness, the axis is constantly changing with modulations. For instance, in the opening section we are introduced to A Dorian that creates a stable resultant in our ears.

In the recapitulation part, there is fluctuation from the G# axis to F that creates a non-constant sensation. Thus, the same melody was repeated several times in different

Figure 4. I want my cheesecloth red (sekme of Bursa) measures 1-4.

Figure 5. I want my cheesecloth red (Sekme of Bursa) measures 66-68.

axes ending up in B, respectively. The song was transcribed by M. Sarsözten, and it is usually sung in henna festivals of wedding ceremonies by women playing wooden spoons and dancing. Imitating the rhythmical phrases of the spoons is done by hitting the piano with the right and left hand. The aim was to preserve the original exotic appearance of the sound event of the original form (Gençkal, 2016) (Figure 4 and 5).

Mint – parsley in front of the houses

The folk song is in an A + B + B formal design that constitutes a single period where the second phrase is

repeated twice. When the first pianist plays the plainsong, the second one sings it, according to her/his style. This theme is a cell of 12 variations. In the first variation, the theme is presented without any change, together with an abstraction of the low register chords. In the second variation, with a slightly accelerated tempo, we hear the same melody but with the fragments of these abstracted chords. In the third variation, the melody and its accompaniment is in classical mould. Presenting the theme by the second pianist in the fourth variation, there occurs polyphony between two melodies. Adding 12-tone-row to the theme, there occurs different perspectives of the melody in the fifth variation. In the sixth variation, the axis slides down from G to F, while the 12-tone-row

Figure 6. Mint – parsley in front of the houses measures 4-12.

speeds up, generating its own evolutionary path. Using cluster chords, the theme is cut in parts and divided into smaller units, and there are many multiphonic effects that colour the process. Besides the melody, atonality is the main principle. Using the $q=h$ equitation, the rhythmical value is doubled while twice decreasing the tempo of the melody. The accompaniment is in ostinato fashion, and it continues to develop its figures beneath. The ninth variation has dense contrapuntal lines that follow each other. The tenth variation is a change of the axis from F to B, creating a B minor tone. It is thought in a classical manner, putting a minor variation as a formal element to the piece. The eleventh variation is a contrast to the tenth one. It is in major mode. The twelfth variation is a sort of final coda to the entire work. Firstly, the theme is presented in pentatonic mode, and secondly, within octatonic formation. The tempo is quite accelerated. According to this, many changes in axes were done in this variation (Gençkal, 2016) (Figure 6).

Pinch of violet

The arrangement is far from its original form and includes two folk songs. It is in compound ternary form. It is arranged as fast – slow – fast movements, and in the middle section there is a folk song entitled, “Birds are Singing in the Twilight of the Morning.” The first movement has the same formal design as the original folk song “Pinch of Violet.” It is quite fast and in a 9/16 time signature. It is in bar form. The rhythmic vividness is

quite clear. The middle section, “Birds are Singing in the Twilight of the Morning,” is rather slow and bears mystic character. The song is from Tokat province and is transcribed by Mehmet Erenler. The D – E# - (F) – F# - G tetrachord resembles the Saba maqam and has contrast to the first and third sections.”(Gençkal, 2016) (Figure 7).

Findings obtained from the semi-structured questions results

As a result of the analysis of the answers given by the participants to the interview questions, themes were identified, and then codes and sub-codes, determined by the researcher for these themes, were analysed with the N-Vivo 11 Qualitative research programme. Findings related to the determined codes and sub-codes were examined below.

Background of the participants’ piano education

All participants have played and studied piano pieces by Turkish composers. They said they had played Turkish piano pieces as part of their piano-curriculum (P1⁸, P2, P3, P4, P5, and P6) (Figure 8).

“I played pieces by Ahmet Adnan Saygun, Ulvi Cemal

⁸ P: Participant.



Figure 7. *Pinch of Violet* measures 5 and 8.

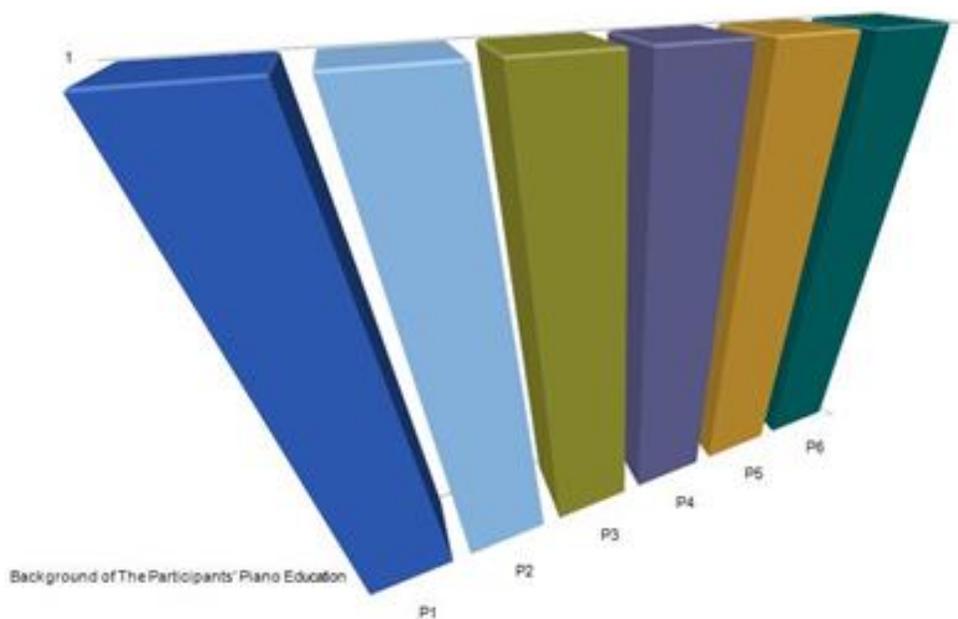


Figure 8. Background of the Participants' Piano Education Results Preview.

Erkin, and İlhan Baran" (P2).
 "I have practiced a variety of pieces according to their degree of difficulty" (P3).

Background of chamber music education of the participants

According to the data, three of the participants had

studied fourhands piano previously(P3, P4 and P6), and one of them had played fourhands piano pieces, but this was not practiced in chamber music but, in piano lessons (P3); one of them studied fourhands piano in high school and university lessons, but the pieces were not from the Turkish piano repertoire (P4), and while P6 studied fourhands piano in chamber music lessons, the pieces were not from the Turkish piano repertoire (Figure 9).

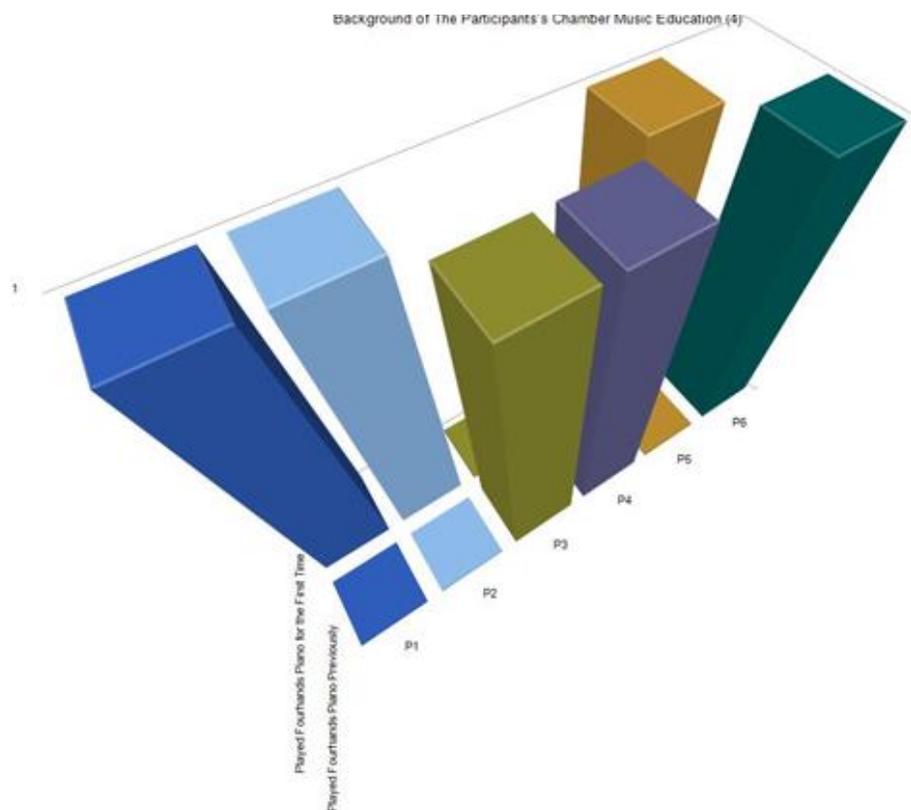


Figure 9. Background of the Participant's Chamber Music Education.

Participants opinions about the arrangements

According to the data, the opinions of the participants about the arrangements are as follows (Figure 10):

Arrangements at different levels

"The pieces are arranged with different styles, like extended piano techniques, so it is more interesting to play" (P3).

Different experiences

Participants also had different experiences in studying these pieces (P1, P3 and P5);

"They were atonal, but it was nice." "I recognize a different repertoire" (P1). *"The piece impressed me in two ways: the first pieces were arrangements of Turkish folk songs, with which we are very familiar, and second, some pieces were also influenced by contemporary styles and contemporary techniques. Because of these two monitory breaking elements with practicing different styles, our*

enthusiasm was maintained until the end of the project" (P3). *"I studied that kind of repertoire for the first time, and I like it"* (P5).

Had to work on notations

According to the data from P1, P2, P4, P5, and P6, the notation is difficult, so it needs to be further studied, and this node shared the second highest frequency.

Learned extended piano techniques

According to the data from P3 and P4, with these arrangements, they learned extended piano techniques and practiced them.

Level eligibility

P2 stated, "I think the arrangements level suits the education faculty for music education at the graduate level."

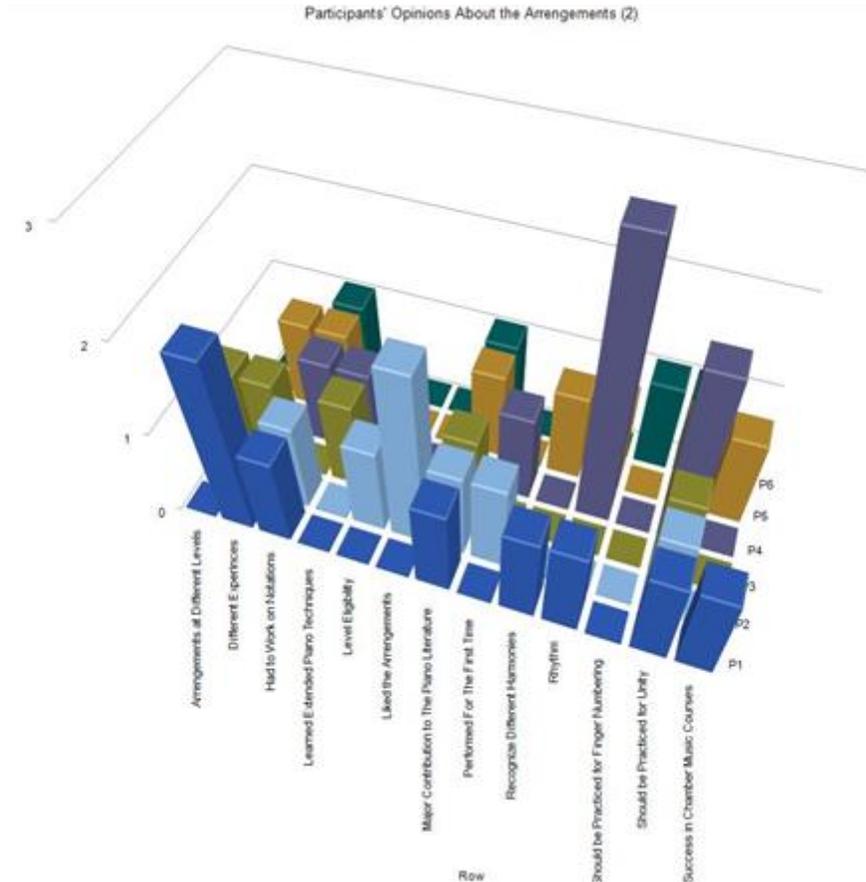


Figure 10. Participants' Opinions about the Arrangements Results.

Liked the arrangements

According to P2, “The pieces I studied under the project was very nice.” “They forced me to study, and I like that.”

Major contribution to the piano literature

According to the data, this node shared the second highest frequency: P1, P2, P3, P5 and P6. The contribution of the arrangements to the piano literature can be summarized as follows: “Recognition of new repertoire” (P1, P5, P6); “I think that greatly contributes to the piano literature provide” (P2, P3) and “Turkish piano literature should continue to be developed” (P2).

Performed for the first time

According to the data, “It was very valuable to us to make the first performance of the arrangements” (P2) and “to arrange the folk songs for the music education department chamber music lessons and to perform the songs for the first time” (P3).

Recognized different harmonies

According to the data, “Besides, tonal music education recognizes different harmonies and polyphony methods” (P1), “I studied atonal music for the first time” (P5).

Rhythm

According to the data, “The rhythm was not very difficult” (P1, P5); “Different rhythm patterns are played together, so they need to be practiced, and also, aksak⁹ measures need to be practiced more for equalization” (P4).

Should be practiced for finger numbering

According to the data from P6, “Finger numbering was

⁹ Aksak Measure: When irregular meters are defined, different terms are used to describe them including “irregular”, “mixed”, “odd” (Gates, 1962), “asymmetric” or “aksak” (Moelants, 2006; Polak, 2015) meters. (Şenol & Öztürk, 2016, p.883)

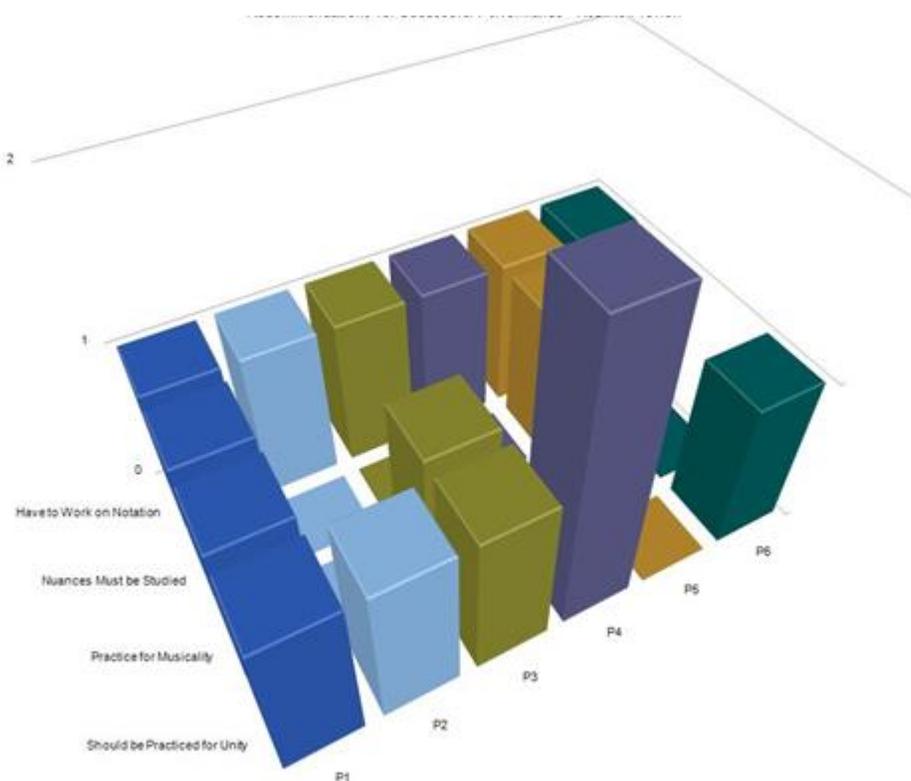


Figure 11. Recommendations for successful performance results.

difficult because the pieces are the arrangements of Turkish music”.

Should be practiced for unity

According to the data, this node had the highest frequency, with all participants agreeing that the arrangements should be practiced for unity.

Success in chamber music courses

According to P1 and P5, the pieces improved their success in chamber music.

Recommendations for Successful Performance

Have to work on notation

According to the data all the participants said that for a successful performance they had to work on notation: “We should work most on the notation”(P1);“In the pieces I studied for the project, I needed to practice mostly the

cords with which I have not been very familiar. For example, I am used to playing classical polyphonic cords and arpeggios, so it was not easy to play them for me. I had to study everyday regularly in different styles, like legato, staccato, non-legato. But now, I think I can play similar passages and cords successfully” (P2);“Though, I can say that I’ve had very few problems in terms of the notation.”(P3);“Notation should be practiced” (P4, P5); “Notation was too complex for me, and I think it can be arranged easier and more simply. I have not studied 12-tone music before” (P6) figure 11.

Nuances must be studied

P1 and P5 suggested that nuances must be practiced.

Practice for musicality

According to the data, “*The musicality should be practiced*” (P1); “*It improved your habit of playing with good musical expression*” (P3); “*They should practice musicality and must make the necessary efforts to show the effects of Turkish music*” (P5).

Should be practiced for unity

According to the data, this node had the highest frequency. "It would require compatible work with your partner in terms of unity, and we managed it" (P1); "Playing together at the same time on behalf of a lot but I can say that I won. Listening to each other and specifying the elements at the same time as exemplified" (P2); "The pieces are works that require a lot of practice together" (P3); "Aksak measurements need to work with partners, starting from slow metronome bites, we developed our habit of listening to each other" (P4); "Turkish music has different difficulties of unity"(P6).

The final concert of the project

The results can be seen at figure 12.

Exciting

According to the data, the final concert of the project was exciting for P1, P4, and P5.

Final concert duration

According to P3, "*The Project's final concert duration was perfect*".

Good feedback about the final concert

According to the data, there was good feedback about the final concert. "*Positive feedback came after the concert. Because the arrangements were based on Bursa folksongs, and extended techniques were used, the concert was very interesting*"(P3); "*I played fourhands for the first time with my sister on stage. The compliments rejoiced us*"(P4).

Good memories

According to P6, the concert performance was good, they played well, and left with good memories.

Participation of the composer as a listener

According to P1, P2, P3, P4 and P5, the composer came to the concert, and this excited the performers, but the success of the concert and playing for the composer has pleased them.

Positive outcomes of the project

The results can be seen at figure 13.

Became conscious of turkish music

According to the data, the participant became conscious of Turkish Music (P2, P3, and P4). "At first, the music made me feel close to Turkish Music" (P2); "Playing arranged folk songs with which I am very familiar mad me play with better musicality in a short time" (P3).

Concert experience

All participants played the arrangements in front of an audience and the composer. According to the data, this node has the third highest frequency in positive outcomes of the project (P1, P2, P4, and P5).

Development of playing together

This node shares the second highest frequency in positive outcomes of the project (P1, P2, P3, P4, and P5). "Playing this arrangement developed playing together in chamber music lessons" (P1); "With this project, not only did my playing develop, but I also go used to listening to my partner and playing together with unity" (P2).

Different repertoire for fourhands

According to the data, this node shares the second highest frequency in positive outcomes of the project (P1, P2, P3, P5, and P6). Participants recognized distinctive characteristics in the repertoire (P1, P5, and P6). "I think the arrangements' contribution to the piano literature is really high, and similar studies should be done, and the repertoire should improve more" (P2); "I can say that it greatly contributes to the piano literature" (P3).

Learned extended piano techniques

P3 and P4 learned how to perform extended piano techniques.

More fun and loved the semester

According to the findings from P4 and P5 because of the arrangements this semester they had more fun, and they loved it.

Performed for the first time

According to the findings from P2 and P4, it is valuable to perform these arrangements for the first time, which were composed for chamber music lessons of the Music Education Department.

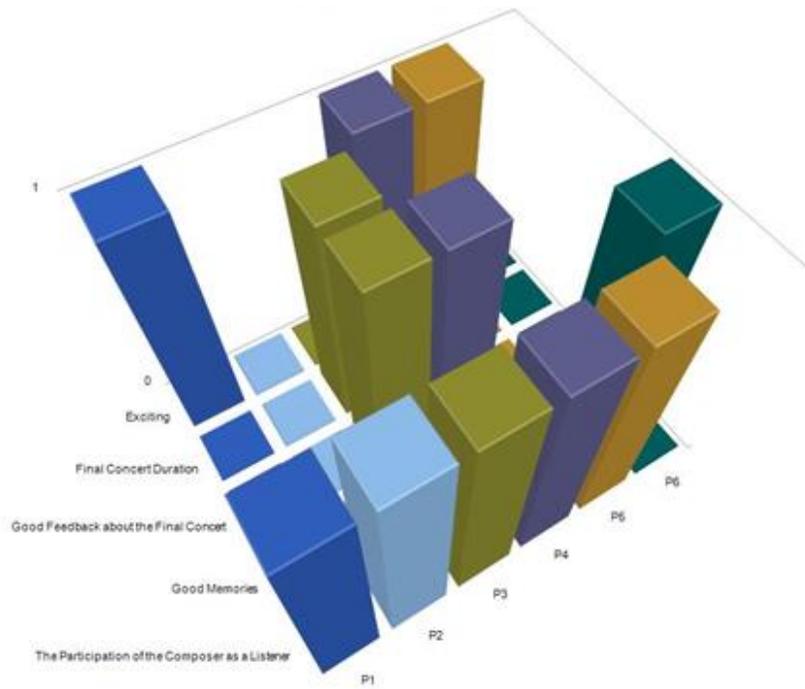


Figure 12. The Final Concert of the Project Results.

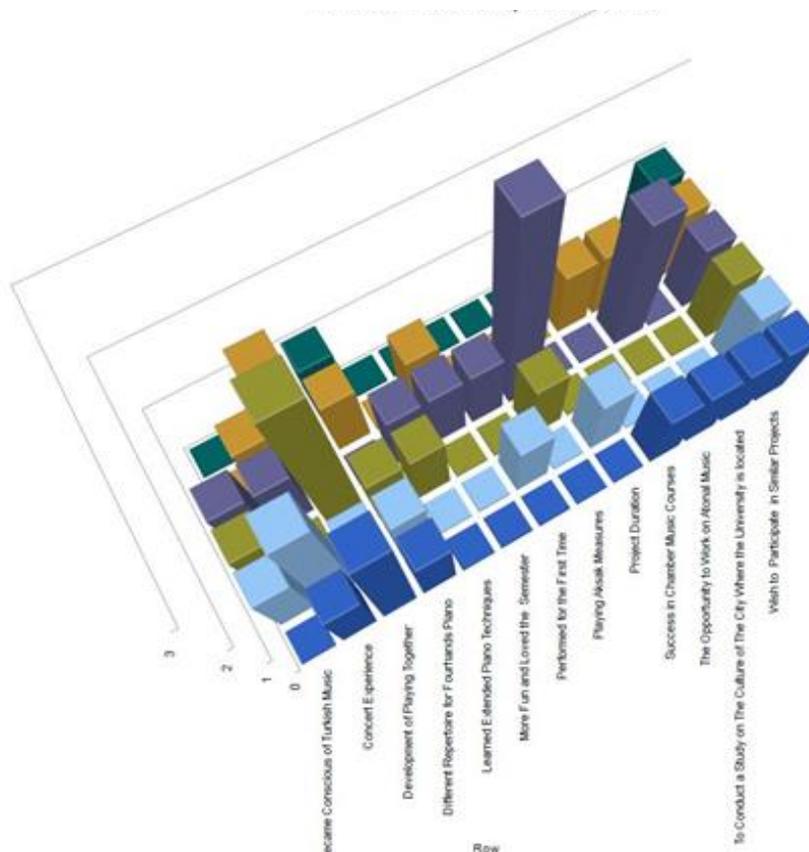


Figure 13. Positive outcomes of the project results.

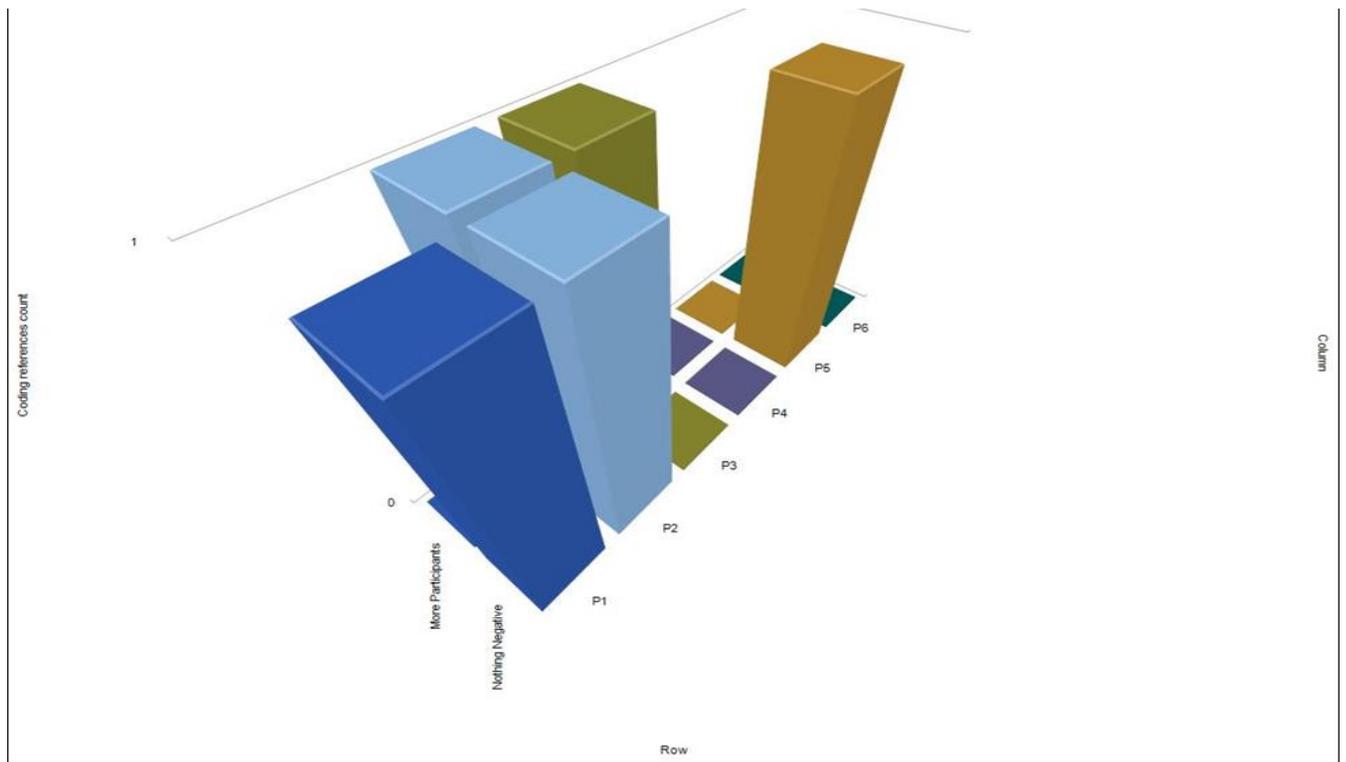


Figure 14. Negative outcomes of the project results preview.

Playing Aksak measures

According to P3 and P4, this project developed their playing with aksak measures: “I gained a positive perspective in rhythmic habits and playing together” (P3); “Aksak measures need to be practiced with your partner, and this gained good habits in listening to each other” (P4).

Project duration

According to P2, “This project duration and concert duration were perfect”.

Success in chamber music courses

According to P1 and P5, this project improved their success in chamber music courses.

The opportunity to work on atonal music

According to P1, P4 and P5, with this project, they had an opportunity to work on atonal music.

To conduct a study on the culture of the city where the university is located

According to P1, “It is nice to work with Bursa folk songs in Bursa University”.

Wish to participate in a similar projects

This node has the highest frequency: all the participants wish to participate in a similar project.

Negative outcomes of the project

The results can be seen at figure 14.

More participants

According to P2 and P3, more students should participate in the project. “If more students had participated in the project, it could reveal richer performance and diversity. Also, the project can reach everyone” (P2).

Nothing negative

P1, P2 and P5 thought there were no negative outcomes

for the students.

Suggestions

According to the data, these are some suggestions for the project (Figure 15).

Arrangements could be easier

According to P6, "I think the arrangements can be easier, and also, polyphonic Turkish music is still being developed, so I prefer to play other pieces. It can be easier to learn with easy pieces".

Concert should be played elsewhere

According to the data, this node has the highest frequency. P1, P2, P3, P4 and P5 said that this concert should be played elsewhere so that "Contemporary composers and their pieces can reach more audiences" (P2); "The same projects can be generated" (P4).

Fourhands piano literature should be added to the piano curriculum

According to P4 and P5, fourhands piano literature should be added to the piano curriculum. "If it was thought from the first grade of the university to the end, it would support the piano lessons because these pieces developed piano performance" (P4); "These pieces definitely should be used in similar lessons. Because besides tonal music education, the students should learn different harmonies and polyphonies" (P5).

More participants

According to P2 and P3, more students should participate in the project. "If more students participate in the project, it can reveal richer performance and diversity. Also, the project can reach everyone" (P2).

Project duration should be longer

According to P3, the project duration should be longer.

Should be used in similar courses

According to P1 and P3, similar pieces should be used in similar courses.

Similar projects should be performed more often

P1 and P2 suggested that similar projects should be

undertaken more often "Similar projects should be done more often" (P1); "I can suggest making similar projects for fourhands or sixhands piano by using ethnic music from Africa, Asia etc." (P2).

CONCLUSION

"The arrangement of 6 folk songs for 4 hands piano was proposed by Assoc.Prof. Şirin Akbulut Demirci. The common characteristics of these 6 songs are that all of them belong to Bursa Province. When we put them all together, they create a suite that constitutes 6 movements. At the same time, these folk songs that are in dance form may have been performed in order or randomly, according to the desire of the performers. For the purposes of the work, which started in 2014 on the scope of Uludağ University Scientific Research Projects Unit, these songs were arranged with recomposing methods and were added to the literature (Gençkal, 2016 Project Final Concert Programme Notes).

"In this context, 6 Folk Songs from Bursa, which was arranged for fourhands piano, encountered problems, and solutions related to my suggestions were determined by modelling Bartók, and the high culture of the issues reflected in the analysis of public production are carried out" (Gençkal, 2016). According to the answers given by six students to the semi-structured interview questions, the results gotten are as follows:

- According to the findings from the data, all participants had played and studied piano pieces by Turkish composers'. They should have played compulsory Turkish piano pieces from the piano education curriculum in music education departments.
- According to the findings, even if three participants (P3, P4, P6) had previously studied fourhands piano, none of them had studied fourhands Turkish piano literature in chamber music.
- According to the opinions of the participants about the arrangements, they should be practiced for unity, which had the highest response frequency (P1, P2, P3, P4, P5, P6). Additionally, the arrangements must be practiced for notation (P1, P2, P4, P5, P6) and are a major contribution to the piano literature (P1, P2, P3, P5, P6) which, had second highest frequency. They should be practiced for finger numbering (P6). Arrangements are in gradual levels, which suits chamber music education in music education departments (P2); playing them was a different experience for students (P1, P3, P5); they learned how to play extended piano techniques and different styles (P3) with these arrangements, and recognized different harmonies (P1, P5) and rhythm (P1, P4, P5). Participants liked the arrangements (P2), and it was good for them to play the arrangements for the first time (P2, P3); they thought the arrangements improved

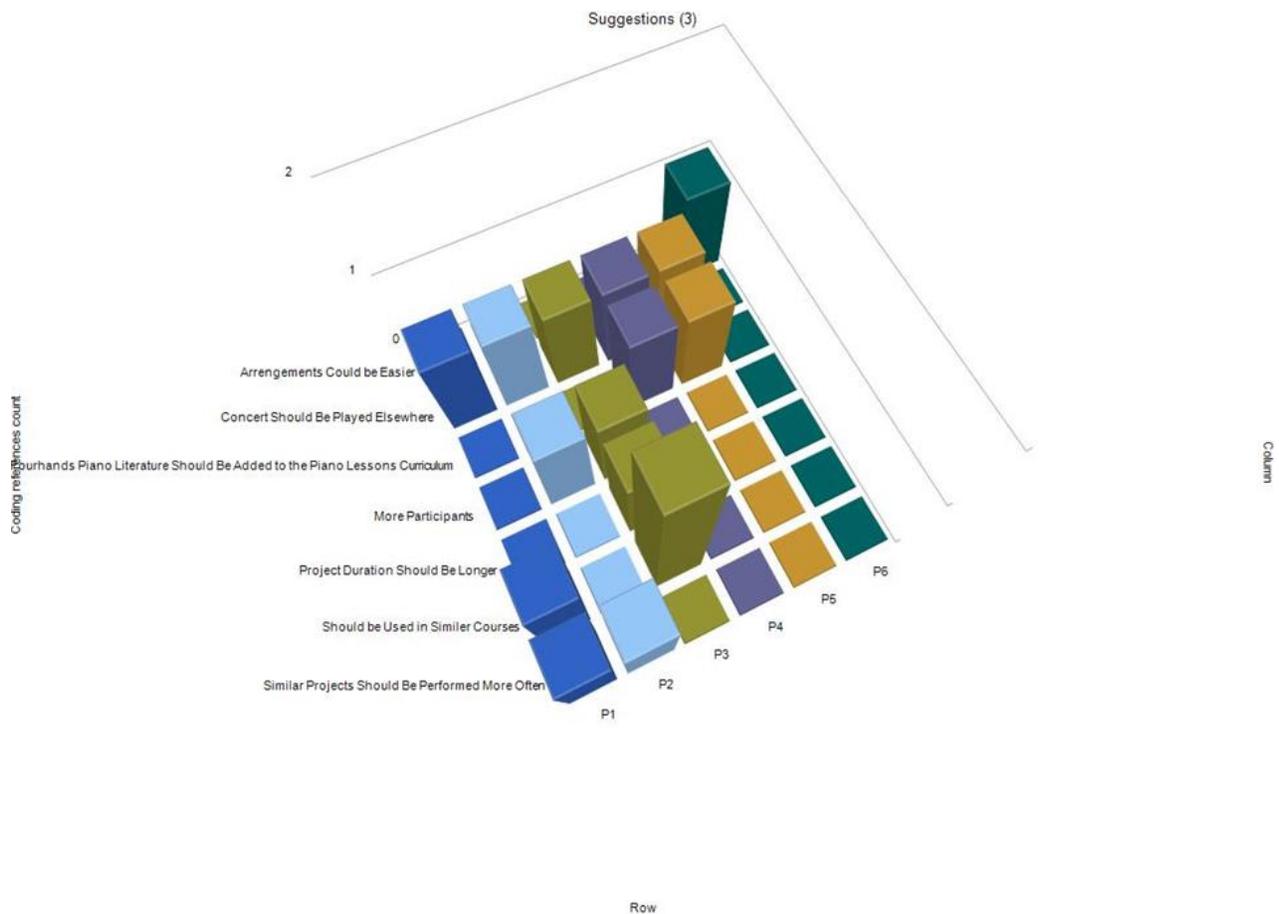


Figure 15. Suggestions results preview

the success of chamber music (P1, P5).

- According to the findings, to be able to perform arrangements, the performer should work on notation (P1, P2, P3, P4, P5, P6): this had the highest frequency. The arrangements should also be practiced for unity (P1, P2, P3, P4, P6) and, for musicality (P1, P3, P5), and nuances must also be studied (P1, P5).

- According to the findings of the opinions of the participants about the project final concert, to play for the composer was exciting for them (P1, P2, P3, P4, P5), playing was also exciting, but they managed it (P1, P4, P5); there was good feedback (P3, P4); the concert duration was of good length (P3) and the participant left with good memories (P6).

- According to the findings, the positive outcomes of the project are that the participants have been made conscious of Turkish Music (P2, P3, P4), and with concert experience, all participants played the arrangements in front of an audience and the composer (P1, P2, P4, P5); they developed playing together in chamber music lessons (P1, P2, P3, P4, P5), recognized different distinctive characteristic repertoire (P1, P2, P3, P5, P6), and learnt how to play extended piano techniques (P3, P4). Because of these piano arrangements, this semester

they had more fun, and they loved it (P4, P5); it was valuable to perform the arrangements for the first time, which were composed for chamber music lessons of the music education department (P2, P4). This project also developed their playing with aksak measures (P3, P4); the project duration was perfect (P2) and this project improved their success in chamber music courses (P1, P5); with this project, they had the opportunity to work on atonal music (P1, P4, P5); it was also nice to conduct a study on the culture of the city where the university is located (P1). Finally, all the participants wish to participate in a similar project, which received the highest frequency.

- According to the findings, there was nothing negative about the project (P1, P2, P5), but they did suggest that more participants should participate (P2, P3) so that the project can offer richer performances and diversity, and reach everyone (P2).

SUGGESTIONS

According to the answers given by the six students to the semi-structured interview questions, suggestions are as follows:

1. The concert should be played elsewhere (with highest frequency of P1, P2, P3, P4, and P5).
2. Fourhands piano literature should be added to the piano curriculum (P4, P5).
3. More students should participate in the project (P2, P3).
4. Similar pieces should be used in similar courses (P1, P3).
5. A similar project should be performed more often (P1, P2).
6. The project duration should be longer (P3).
7. Arrangements could be easier (P6).

Conflicts of interest

The authors have not declared any conflicts of interest.

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Full Length Research Paper

Mathematical representation by students in building relational understanding on concepts of area and perimeter of rectangle

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Representation is an important aspect of learners in building a relational understanding of mathematical concepts. But the ability of a mathematical representation of students in building relational understanding is still very limited. The purpose of this research is to description of mathematical representation of students who appear in building relational understanding on concept of area and perimeter of a rectangle. This research is a case study. The research instrument is tests and interviews. The participants in this study were Grade seven students. Two students are selected based on the characterization of the mathematical representations that appear. The study results a visual and symbolic representation used by students in building relational understanding on the concept of area and perimeter of a rectangle. Visual and symbolic representation suggests students to build relational understanding.

Key words: Representation, relational understanding.

INTRODUCTION

National Council of Teachers Mathematics (NCTM, 2000) explains that the learning process of mathematics should emphasize student to enable them to learn with understanding, actively building new knowledge from experience and knowledge. Effective mathematics learning requires students' understanding of what they know and what they need to learn and then provide challenge and support them to learn more. The understanding can be done by reviewing the results of the representation of the students in understanding and solving a mathematical problem. Representation is an important aspect of the learners in developing

mathematical understanding. Each student has a different way of building understanding so it allows students to form various types of representations in understanding the concept. In NCTM (2000) there are five standard processes, namely problem solving, reasoning and proof, connection, communication and representation. Representation as one of the standard process, it is because the representation of the mathematical knowledge construction process that is very important to develop and optimize the ability to think. Besides mathematical object more abstract and require representation to understand mathematical ideas.

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Representation is the disclosure of mathematical ideas by using various means such as spoken language, written language, symbols, pictures, diagrams, models, charts, or using physical member (Goldin, 2002). NCTM (2000) explains that the use of a mathematical representation forms, such as charts, graphs, tables and symbols as well as transition between the representation of an important capital in expressing mathematical thinking. Use of representation reinforces students' understanding to construct concepts and solve problems in mathematics (Tripathi, 2008; Stylianou, 2010; and BAL, 2014). So in the learning process of mathematical representation is one aspect that must be emphasized. This is due to the ability of a good representation of the students then students can expand its capabilities in solving mathematical problems. Research related to the importance of representation in mathematics, among others, performed by Dündar (2015), BAL (2014), Villegas (2009), these studies found that the ability of the student representation is the key to success in understanding mathematical concepts and problem solving.

The process of building a relational understanding can be perceived by connecting the mathematical concepts to the representation of images, symbols or words. Skemp (1976) describes relational understanding "knowing both what to do and why". It can be interpreted that relational understanding is the understanding of the students to find out the procedures to be used and has the reason and be able to associate between mathematical concepts. According to Woodruff (2005) that to understanding seen as a phenomenon arising from the interaction of a relational perspective. Forms of understanding as it is called relational understanding type. Besides, Van de Walle et al. (2014) describe the relational understanding means that any concept or a new procedure not only learned, but also connect with the ideas that have been held in order to obtain connections rich ideas. While in one of the goals of mathematics courses in Indonesia in BSNP (2006: 148) states that learners should possess the ability to understand a mathematical concept, explain the link between concepts and apply concepts or algorithms, are flexible, accurate, efficient, and precise, in the breakdown problem.

Learning mathematics towards achieving the relational understanding generating meaningful learning for students. The main purpose of teaching is to reach an understanding which help students to develop a relational understanding of mathematical ideas. Due to the development of relational understanding is infinite and more complex as someone making connections between ideas, understanding of this type requires a longer time and must have a purpose in every teaching (Van de Walle et al. 2014:5). While based on insights from developmental psychology, understanding of relational roles for children in learning mathematical next (Langhorst and Fritz, 2012; Krajewski and Schneider, 2009; Resnick,

1983) in Tubach and Nührenböcker (2014). Thus, relational understanding is one of the objects that are very important in learning mathematics. The studies related to relational understanding have been conducted by: Sahin et al. (2014), Keene et al. (2011), Beswick (2005) and Weber (2002). This article highlights the problems of mathematical representation which are done by students in building a relational understanding through mathematical problem solving. The study related to the measurement of the material is still very limited. The study of the measurement is important in mathematics curriculum from kindergarten through high school because of the usefulness and application of measurement covering aspects very much in our daily lives (NCTM, 2000). The ideas related to the concept of area and perimeter of a rectangle is presented in Figure 1.

METHOD

This research uses a case study design. According to Creswell (2009) "is a strategy case studies that explore in depth investigation of the program, activities, processes, one or more individuals". Cases in this study are related to the phenomenon of a mathematical representation of students in building a relational understanding in resolving issues raised in the matter of measurement. Subjects in this study were students in grade 7 were selected on the basis of considerations have spoken and written communication skills are good. To obtain a mathematical representation, individual subjects were asked to solve the problem as outlined on the worksheet. The problem is solved by the subject is "known area of a rectangle is 32 cm^2 . Pictures and specify rectangular perimeter equal to the perimeter of the rectangle". After completing the subject matter were interviewed to explore linkages between concepts based on the results of his work. The study involved two subjects were selected based on the characterization of mathematical representations that appear. Characterization of mathematical representations that appear is the visual representation embodied in the form of pictures and symbols embodied representation formula for the area and perimeter of a rectangle.

RESULTS

The results of this study report the results of the work of students in solving mathematical problems in measuring material. The results of the student's work are characterized in order to obtain two things: the visual representation embodied in the form of images and symbolic representations are realized formula for the area and perimeter of a rectangle.

The visual representation

The visual representation embodied subject 1 (S1) to draw a few rectangles. The rectangular image obtained after the subject to understand the meaning of the

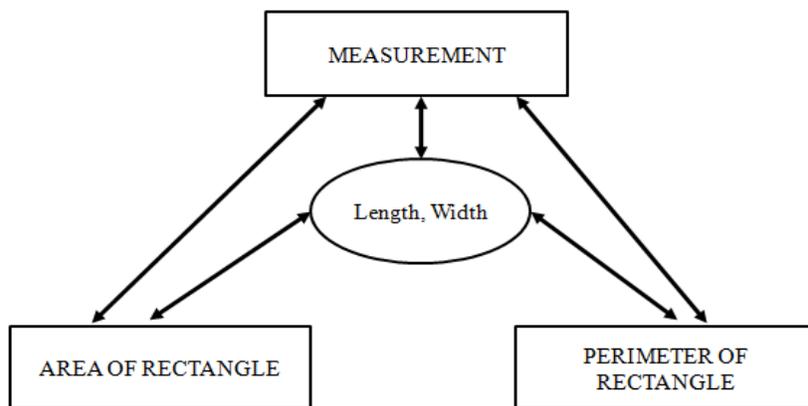


Figure 1. The ideas related to the concept of area and perimeter of a rectangle.

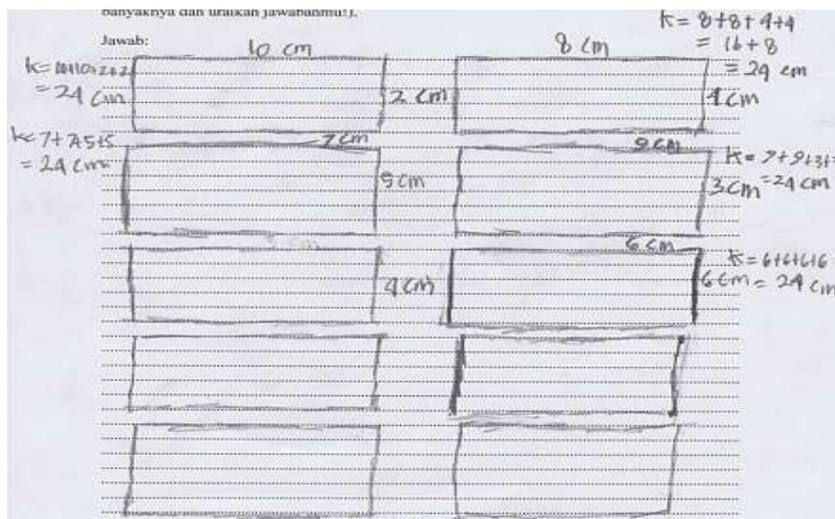


Figure 2. Visual representation in problem solving.

problems presented in the form of a sentence. The problem solving process of the subject is figured out from the students' drawing of a few rectangles, determine the square footage that corresponds to problem solving, determining perimeter (solution of problems), determine the size of the rectangular perimeter equal to the perimeter size of the rectangle on the problem solution. Visual representation of S1 in solving the problem is presented in Figure 2.

The symbolic representation

Symbolic representation embodied subject 2 (S2) by writing a formula for the area and perimeter of a rectangle. Formula area and perimeter of rectangles appear after

the subject understand the significance of the problem. The process of resolving the problem of the subject is to write the formula area of a rectangle and determine the value of the length and width, based on the length and width of a predetermined subject entering into the formula around the rectangle to obtain the perimeter of a rectangle (solution of problems), then the subject determine the size rectangles perimeter the same length with rectangle size on the problem solution. S2 mathematical representations to solve problems are presented in Figures 3 and 4.

DISCUSSION

The results of this study associate with a framework of

Table 1. Description of mathematical representation and relational understanding on the concept of area and perimeter of a rectangle.

No	Stages of Relational Understanding	Mathematical Representation by Subject	
		Visual	Symbolic
1.	Students can guess the results of using the procedure without having to actually do it and they can expect the relationship of the results expected on the results of other procedures.	Subject can guess length (8cm) and width (4 cm) from the area of a rectangle on the problems presented. From the results of these allegations, the subject relates to the concept of a rectangular perimeter.	Subject can guess rectangle size (length and width) by entering the size of the rectangular perimeter formula.
2.	Students can identify with the right to use a specific procedure.	Subject can identify procedures (perimeter rectangular) and use it appropriately.	Subject were able to identify problems, may determine and use the formula for the area and perimeter of a rectangle (area and perimeter formulas written).
3.	Students can correctly use the whole procedure or the selected step in the procedure.	Subject can use the procedure (rectangular perimeter formula) to resolve the problem.	The results of the identification of the problem, the subject can determine the size (length and width) of the area of the rectangle. Based on this subject can associate with a perimeter of a rectangle and use the rectangular perimeter formula to obtain the value of the perimeter of the rectangle.
4.	Students understand the reasons why the procedure works as a whole.	Subject to understand the problem solving process, involving linkage length and width of the rectangle.	Subjects may explain the link between the length and width of the rectangle to complete the area and perimeter of a rectangle.
5.	Students can symbolically or graphics verify the correctness of the result which is claimed as the procedure without repeating the procedure.	When verifying the use of rectangular perimeter formula to solve the problem, the subject did not verify his work carefully and thoroughly. Because there is a rectangular figure that is not right between a rectangular figure and size.	When verifying the results of the work by using a rectangular perimeter formula to solve the problem, the subject does not verify symbolic or graphics, but only to check back with rereading.
6.	Students can make connections and is represented in the form of numerical, graphical and symbolic.	Subject can make connections between mathematical ideas obtained through the identification of problems (length and width) to determine the perimeter of the rectangle. The results of these connections are represented in visual form (picture). Visual representation of the subject shown a visual representation is inaccurate. Subject only using a visual representation as a tool to determine the perimeter of the rectangle, without regard to the correspondence between the figure and size.	Subject can make connections between mathematical ideas obtained through the identification of problems (length and width) to determine the circumference of the rectangle. The results of these connections is represented in the form of verbal (written) and visual (pictures).

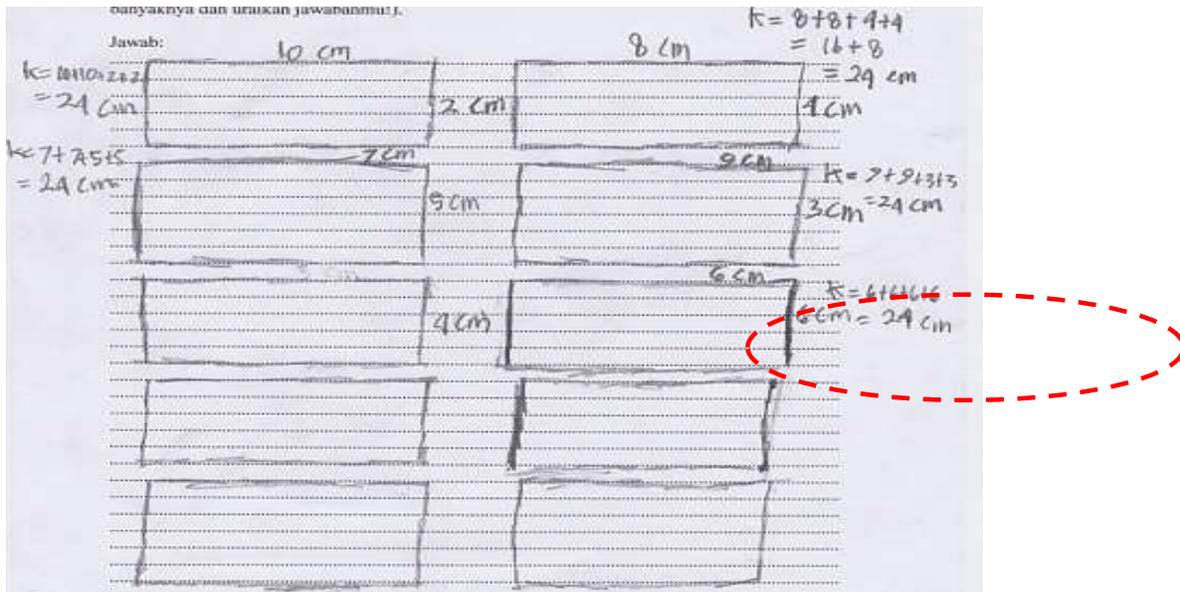


Figure 5. Representation inaccurate on the size of the rectangle.

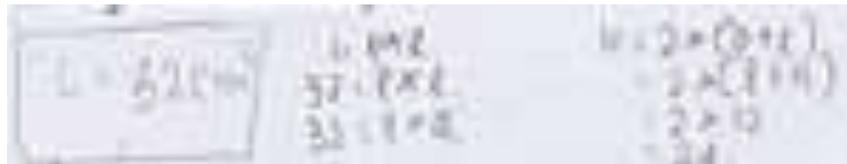


Figure 6. Symbolic representation by S2.

and size, is inaccurate. S1 only using a visual representation as a tool to make it easier to determine the perimeter of the rectangle. These results supported the research Boonen, et al. (2014) found in the schematic representation that there are inaccurate visual mistakes in drawing or in which some parts are missing. The subject to the symbolic representation (S2) has a relational understanding to the concept of area and perimeter of a rectangle. The S2 is able to determine the procedure or formula for the area and perimeter of a rectangle that is obtained when identifying problems. Formula area and perimeter of a rectangle are represented symbolically (written). With a symbolic representation of S2, it determines the length and width of the rectangle to solve problems (Figure 6).

Additionally, the symbolic representation, in solving the problems S2 also has a visual representation. This is shown by drawing a rectangle with the same size but with different positions (Figure 7). Results of visual representation by S2 indicates that the S2 attention to the concept of measuring the length and width of the rectangle to the right. S2 uses a visual representation

and the size of the rectangle to help determine the circumference of the rectangle. The visual representation shows that S2 is quite accurate.

Conclusion

The results obtained in this study indicate that the subject of representation used in building relational understanding on the concept of area and perimeter of a rectangle is a visual and symbolic representation. Subjects with visual and symbolic representation can build relational understanding. Although, the visual representation displayed by the subject on the concept of measurement is inaccurate. The visual representation is inaccurate by reason of any error committed in making the subject representations. If this is ignored indeed affects the problem-solving skills and relational understanding students' mastery. This is a problem that needs to be studied by other researchers on the next studies, because the mathematical representation is the key to success in understanding mathematical concepts and

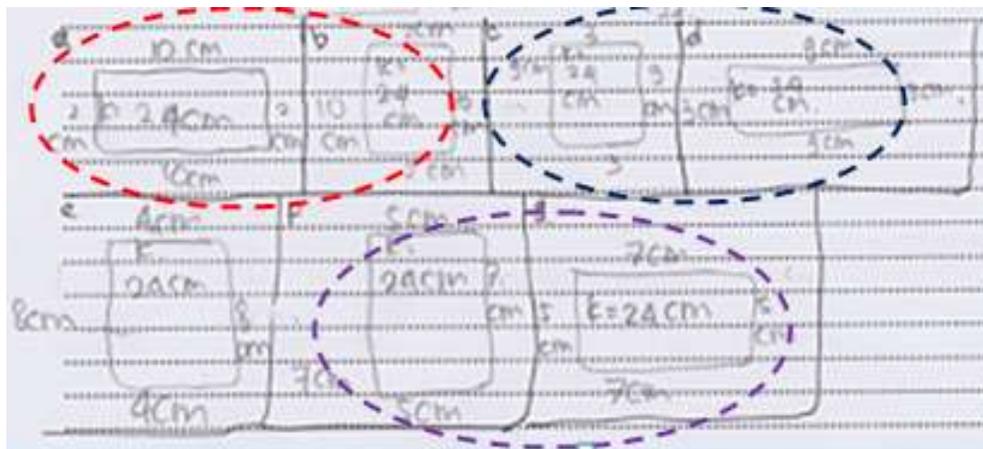


Figure 7. Visual representation by S2.

problem solving.

Conflict of interests

The authors have not declared any conflict of interest.

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Full Length Research Paper

Examining the organizational cynicism among teachers at schools: A mixed methods study

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The purpose of this study is to examine the organizational cynicism among teachers at schools. In this study, which was conducted by a mixed method, “the Organizational Cynicism Scale for Teachers” was used in the quantitative dimension, while a semi-structured interviewing technique was used in the qualitative dimension. The quantitative part of this research population consists of 348 teachers who worked in public schools on the Anatolian side of Istanbul in 2014 to 2015 academic year. In the qualitative part of this research, 30 teachers were interviewed concerning factors that affect teachers in terms of interaction, process and assignment of duties in the organizational sense. In the analysis of quantitative data, descriptive statistical techniques were used, while qualitative data was worked out by content analysis. According to the results obtained in the quantitative dimension of the research, it was seen that the organizational cynicism level of teachers was at low and medium level. It was determined that this result was also supported by the findings obtained by means of qualitative analysis.

Key words: Cynicism, organizational cynicism, teacher, school.

INTRODUCTION

Cynicism is a philosophical movement which emerged in Ancient Greek Era. The history of cynicism concept dates back to the 4th century B.C. Cynicism, which has started to take its place in the literature of administration since 1980s, is regarded as a negative attitude that has cognitive, affective and behavioral components. Cynicism, which has started to be the subject of some studies in the field of educational administration and supervision lately, can lead to a change in the organization and a resistance towards administrative control.

Founded by Antisthenes, known also as an epicurean and his antipathy for vanity, each member of the cynicism movement is called a “cynic”. They believe that happiness

can be achieved by developing apathy for earthly ambitions and goods. In this sense, they bring forward the thesis that people cannot own earthly goods for a long time. The most famous cynic is Diogenes who lived in a barrel (Dean et al., 1998).

A cynic believes that as long as the interests are not a matter of question, it is out of question for others to exhibit selfless behaviors. A real cynic accepts the freedom to attack popular beliefs for his/her personal interests, belittles social norms and brings individualism forward. S/he has difficulties in accepting the principles of the government and society, and acts reluctantly to play a part in a structure that adopts them (Horton, 2004).

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Therefore, cynics need to rely on a life style which is completely purified of elements like fame, power and wealth; and to protect themselves from the devastating effects of social contracts, laws and traditions by refusing them (Andersson, 1996).

The data obtained regarding Greek cynics rests on myths and legends which were put forth and handed on from generation to generation rather than documents. This situation is a result of their ideological attitudes so much so that not only they reject everything that is earthly, but also they do not care about what is written (Cutler, 2000). On the other hand "eudaimonia", which could be defined as the highest good that a person can attain, is regarded as the common purpose of cynics. Eudaimonia can be explained as endless happiness. To achieve this, a cynic needs to live in harmony with nature, avoid feelings like arrogance and peevishness and prefer a freedom away from lust (Sayre, 1945).

In Oxford English Dictionary, cynicism is defined as an inclination to question whether something will happen or whether it is worthwhile; pessimism (Oxford Dictionary, 2014). In Turkish Language Association Dictionary, cynicism is defined as the Antishenes's doctrine which argues that one can attain virtue and happiness on his/her own by getting rid of all needs without being attached to any values (Turkish Language Association, 2014). The concept of cynicism has gained different meanings apart from its original use in Ancient Greece. The Cynic School, since its foundation in the 5th century B.C., has criticized materialist elements such as well-being, power and wealth harshly and was not slow to heap ridicule on these elements.

Ancient Greek cynics are the defenders of high virtue on ethics and morals basis. Conversely, cynics in the modern world have turned into determinant individuals who show that they will do anything to protect themselves from the possible dangers posed from the rest of the society, instead of relying on what is moral and ethical. Contemporary cynicism is treated as a form of conception that could possibly bring the applications of organizations and leaders to a standstill (Godfarb, 1991; Wu et al., 2007).

Organizational cynicism

Dean et al. (1998) who presented different approaches to treat cynicism based on other researchers' studies, brought the concept of cynicism under five headings:

1. Personality-oriented cynicism
2. Society or Institution-oriented cynicism
3. Occupation-oriented cynicism
4. Employee-oriented cynicism
5. Organizational change-oriented cynicism.

Table 1 shows the sub-headings of the taxonomy put

forth by Dean et al. (1998) in treating cynicism.

Personality-oriented cynicism

In personality-oriented cynicism, the dominant point of view is human nature. Primary studies have revealed that cynics are selfish, do not care about others, question the purpose of others in a skeptical way, and are protectionist, insecure individuals. In its most general sense, this approach suggests that cynic individuals are unlikely to free themselves of these characteristics since cynicism is the result of one's personality structure (Dean et al., 1998).

Society/Institution-oriented cynicism

Social/institutional-oriented cynicism focuses on cynicism in a situational sense. According to the results of a study carried out by Kanter and Mirvis (1989), with the start of industrial era, the fluctuations in the social domain has been facing us as a situation created by problems such as unmet expectations of employees. According to social/institutional approach, frustrations experienced in different levels of relations in the social domain play a triggering role in the rise of cynicism (Andersson, 1996; Andersson and Bateman, 1997).

Occupation-oriented cynicism

Occupation-oriented cynicism is a cynicism type which comes out as a result of organizational effect, type of the service given and laws. Dean et al. (1998) states that occupational cynicism is more intense in:

1. Ordinary jobs, in other words uncomplicated jobs,
2. Repetition-based jobs,
3. Jobs restricting intervention in terms of the work process,
4. Shift working jobs.

In occupation-oriented cynicism, elements such as the quality of the work, its complexity and the participation level in decision making processes related to the job are determinative (James, 2005). A weak organizational climate, anxiety for dismissal, high level of job insecurity, unfair assignments and failings in ethical standards are also triggering factors that cause occupation oriented cynicism (Khan, 2007).

Employee-oriented cynicism

Employee-oriented cynicism is a cynicism type which

Table 1. Points of view towards conceptualizing cynicism.

Variable	Personality-oriented	Society or institution-oriented	Occupational cynicism-oriented	Employee cynicism-oriented	Organizational change-oriented
Focus in conceptualizing	Negative perceptions and hostile attitudes towards others.	Unmet expectations of society, institutions or other authorities.	Occupational responsibilities	Administration in organizations and other ranks.	Organizational change efforts
Definitions	Tendency to describe others as hostile, unethical and ugly, low level of trust in others.	Cynicism (1) feeds on society, institutions, authorities, unrealistic and high expectations for the future (2), experiences that result in frustration and (3) the feeling of betrayal.	Underestimating and despising what others do, losing respect and pride felt for the job.	The feelings of anger, despair and frustration caused by the job, and tendency to mistrust and underestimate the administration and other constituents of the job.	An inappropriate, pessimistic point of view that causes laziness regarding changing efforts which is based on the belief that positive results can come out in the organizational sense.

Source: Dean et al. (1998); Organizational cynicism. The academy of management review 23(2):341-352.

characterized by frustration, hopelessness, and disillusionment, as well as contempt toward and distrust of business organizations, executives and other objects in the workplace (Andersson, 1996; Andersson and Bateman, 1997).

Organizational change-oriented cynicism

Organizational change-oriented cynicism rests on a negative point of view asserting that the efforts for change are futile (Vance et al., 1995). The most important argument in organizational change-oriented cynicism is that individual efforts for the solution of the problems in the organizational context are not sufficient, and there are factors beyond the control of the individual which become effective on the problem (Reichers et al., 1997).

High expectations and frustrations are the main factors causing organizational cynicism in the organization. Slighting employees and considering

their work as worthless paves the way for cynicism to arise (Kanter and Mirvis, 1989; Andersson, 1996; Andersson and Batemann, 1997). Organizational cynicism has cognitive, affective and behavioral dimensions (Dean et al., 1998). It rests on the idea that others are unfair (Twenge et al., 2004; James, 2005; Bommer et al., 2005; Bernerth et al., 2007; Tayfur et al., 2013). These organization members are skeptical because of their hurt and disappointed feelings, and these doubts turn into cynicism in time. These people find themselves embittered and eventually turn into threatening elements for organizations (Bommer et al., 2005; Lee and Ashforth, 1996). Andersson (1996) states that cynicism reduces the faith in change and destroys hope for the future.

In this sense, Senge (2010) by specifying that organizational cynicism is a resistance point in the organization, emphasizes that the cynic in the organization is actually an idealist who is

disappointed and his/her experiences transform him/her into a cynic resisting to change.

While personal characteristics come to fore in some cases, it is also seen that external factors are also influential in the rise of cynicism such as the effect of social domain, organizational structure, changing efforts and management structure apart from the personality structure (Kanter and Mirvis, 1989; Andersson, 1996; Reichers et al., 1997; Andersson and Batemann, 1997). Andersson (1996) gives the causes and results of cynicism in Figure 1.

Besides causes stemming from the work environment such as unearned gains, offensive dismissals and excessive power owned by administrators; factors like organizational communication problems, rude behaviors, administrative inadequacies, role conflicts and work overload also give rise to cynicism. These problems are named as the violation of the contract, which damage intra-organizational

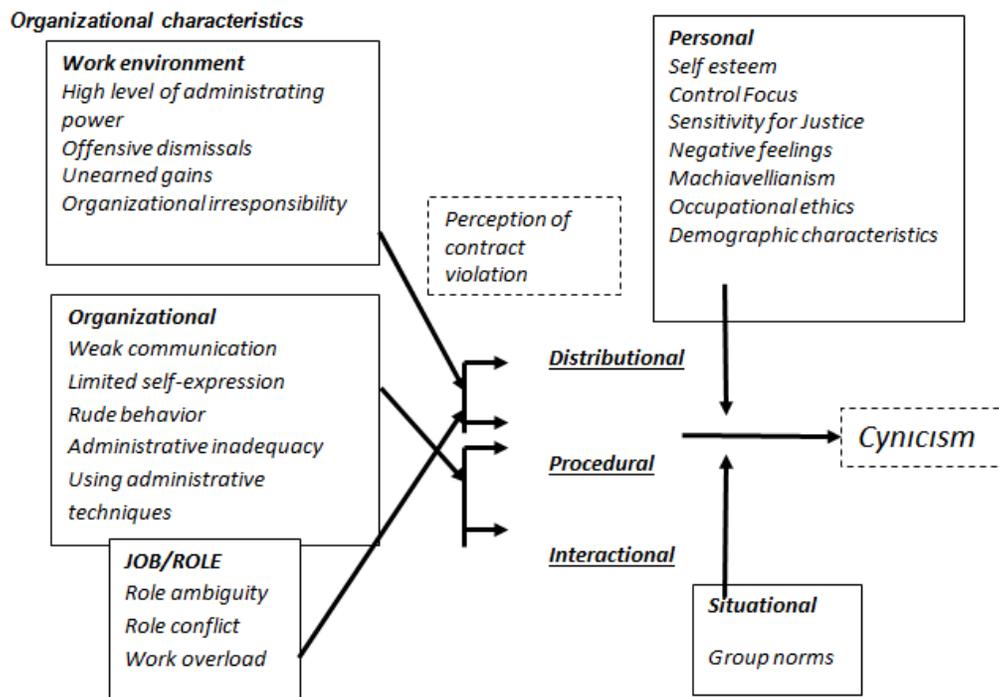


Figure 1. Causes of cynicism (Source: Andersson, 1996. Employee cynicism: an examination using a contract violation framework. Human Relation. 49(11):1395-1418).

procedures and the interaction among organization members (Andersson, 1996).

Violation of the contract does not always lead to cynicism in every case. As can be seen from Figure 1, if violation of a contract is to bring out cynicism, personal and situational characteristics need to be inclined to create cynicism. Alongside with personal characteristics such as self-esteem, being controlled, sensitivity to equality demand and being negative; situational elements like group norms are also effective on how a person will react to contract violation and at what level s/he will bring forth cynicism.

Educational organizations living in a dynamic system are influenced by the attitudes, belief systems, preferences, interests, life styles, cultures values and personal traits of their members (administrators, teachers, students, parents). In this context, as a result of negative factors, a negative attitude born of the negative reflections, beliefs and images appears. This negative attitude raises both the individual's personality traits to the fore cynicism caused by working conditions (Kalagan and Guzeller, 2010).

Thus a teacher or a manager who exhibit cynic attitudes may imagine that school development efforts are ignored by other stakeholders, and may tend to be reluctant to contribute to development of school

effectiveness. And also these stakeholders who tend to exhibit cynic behaviors get out of expressing their opinions, keep them and choose to share their feelings about how s/he feels while working at school with others out of school context (Korkut and Aslan, 2016).

Having an efficient education environment can be possible by minimizing factors that form the basis for cynic tendencies stated by Andersson (1996) like injustice, communication problems and rude behaviors. A school where these factors are minimized can become an organizational environment in which each member have faith in organizational integrity, where mutual positive feelings are dominant and genuine relations that rest on constructive criticism are developed (Nair and Kamalanabhan, 2010a).

The purpose of this study is to examine the organizational cynicism among teachers at schools. In accordance with this purpose, teachers' opinions regarding factors which affect them in terms of organizational interaction, process and assignment of duties were received.

METHODOLOGY

In this study, a mixed research model was applied where qualitative and quantitative research methods were used together. The mixed

model requires the use of both methods respectively (Johnson and Christensen, 2008). The aim of using mixed method in this study is improving validity of research, contributing to development of perspectives and strengthening links between theoretical and practical areas. Because of these reasons of collecting both quantitative and qualitative data, proposals of research are going to be more realistic. Since this model makes it possible to use scales consisting of structured questions and open-ended questions together, it gives the opportunity to obtain versatile data. In addition to this, the mixed model strengthens the research more than the use of other models separately since it provides a basis for the interpretation of data analysis both on a statistical and thematic level (Creswell, 2009). In this study, sequential exploratory research design was used in mixed methods type. The sequential exploratory research design involves a first phase of qualitative data collection and analysis, followed by a second phase of quantitative data collection and analysis that builds on the results of the first qualitative phase (Creswell, 2009).

Study group

In determining the qualitative study group, a purposeful sampling method was employed to collect qualitative data. As the study group, 30 teachers from different majors were reached with the purposeful sampling method to enable determining situations that are considered to hold rich information. Participant views are given by using codes to ensure privacy for participant credentials. Demographic information of participant teachers is given in Table 2. In the quantitative dimension, the population of the research consists of teachers who worked in public schools of Ministry of Education on the Anatolian side of İstanbul, in 2014 to 2015 academic year. The research sample was formed by 348 teachers, determined by simple random sampling, who worked in public schools on the Anatolian side of İstanbul in 2014 to 2015 academic year.

Data collection tool

In collecting qualitative data, the phenomenology was applied, which focuses on the essence of experiences gained through life, and thus gives the opportunity to analyze the core meanings lying under the complexity of these experiences in a clear way (Merriam, 2002). In the research, structured open-ended interviewing nine questions were used, which were prepared after the literature review and piloted upon expert opinions. The purpose of collecting data by using open-ended interviewing questions is to understand the essence of participants' views in a broader perspective without relying on the restrictive effect of pre-prepared survey type questions, and to transform these into data (Patton, 2002). In collecting quantitative data, "Organizational Cynicism Scale for Teachers" was used, which was developed by Sağır and Oğuz (2012). This scale consists of four sub-dimensions:

1. Alienation from the institution being worked (items 1 to 7)
2. Factors lowering performance (items 8 to 16)
3. A negative attitude towards the school (items 17 to 21), and
4. Participation of the employees in implementing decisions (items 22 to 25).

Cronbach Alpha internal consistency reliability coefficient was calculated as 0.86 for the first factor; 0.88 for the second factor, 0.85 for the third factor and 0.68 for the last factor. In the research, participants were asked to give their opinions on the questions given for the Likert-type scale. According to this, a five-point Likert

scale was used; (5) strongly agree, (4) agree, (3) neutral, (2) disagree and (1) strongly disagree. Scale results spread over 5.00 to 1.00=4.00 point range. This range was divided into five, and dimensions setting the cut-points of the scale were determined. The scale, together with the four factors it includes, accounts for 0.59 of the total variance. The Cronbach Alpha coefficient for the total scale was found to be 0.89.

Data analysis

In the analysis of qualitative data, a content analysis was carried out on an inductive basis. The inductive basis enables thematizing and categorizing the codes, which emerge from the relations of data to one another (Patton, 2002). For this purpose, codes were formed by doing a content analysis on interviews, which were handled individually, and these codes were thematized. After that, the findings were put in the tables by presenting data relations in an organizational way. In the analysis of quantitative data, "IBM SPSS 21 for Mac" program was used and descriptive statistical methods were employed.

FINDINGS

Quantitative analysis findings

Quantitative analysis findings were gathered by the analysis of data collected by means of scales from teachers who work in public schools and participated in the research for the solution of the problem. The result of descriptive statistical analysis, done to determine the average point for participant teachers' organizational cynicism level, is given in Table 3.

When the average point for the cynicism level of participant teachers was analyzed, it was determined that it is at a low level in the sub-dimension of alienation from the institution being worked (2.50 ± 0.42); at a medium level in the sub-dimension of factors lowering performance (2.90 ± 0.50); at a low level in the sub-dimension of a negative attitude towards the school (1.94 ± 0.48); and at a low level in the sub-dimension of participation of the teachers in the implementation of decisions (2.29 ± 0.53). In addition, a low-level agreement can be seen in the sub-dimension of overall point for participants' organizational cynicism (2.41 ± 0.34).

Qualitative analysis findings

Views received from teachers were gathered and analyzed as part of educational organizations on the basis of:

1. Interactions that came out
2. Duties assumed
3. Organizational structure and processes.

Teachers' views on intra-organizational interaction

Under this title, teachers' views were asked regarding the

Table 2. Demographic information of qualitative study group.

Participant	Age	Gender	Major	Seniority	Participant	Age	Gender	Major	Seniority
P1	28	Female	P.E.	6	P16	36	Female	Eng.	11
P2	27	Male	Eng.	4	P17	51	Male	Social S.	28
P3	22	Female	Science	1	P18	35	Male	Turkish L.	11
P4	33	Female	Social S.	8	P19	29	Female	Science	8
P5	30	Male	Turkish L.	6	P20	32	Female	Kindergarten T.	6
P6	33	Female	Social S.	7	P21	35	Male	Social S.	10
P7	35	Female	Science	12	P22	35	Female	Kindergarten T.	10
P8	34	Female	Turkish L.	9	P23	36	Female	Classroom T.	12
P9	31	Female	Science	7	P24	30	Male	I.T.	8
P10	34	Female	Maths	2	P25	25	Female	I.T.	6
P11	29	Female	Maths	7	P26	40	Male	Visual Arts	16
P12	31	Female	Classroom T.	9	P27	24	Female	Science	2
P13	26	Female	Turkish L.	3	P28	32	Female	Kindergarten T.	8
P14	37	Male	Science	12	P29	36	Male	Visual Arts	11
P15	43	Female	Visual Arts	6	P30	27	Female	Maths	2

Table 3. Organizational cynicism level of teachers working at schools.

Variable	n	\bar{X}	S	Min.	Max.
(Affective and behavioral) Alienation from the institution	348	2.50	0.42	1	5
Factors lowering performance	348	2.90	0.50	1	5
Negative attitude towards school	348	1.94	0.48	1	5
Participation of teachers in the implementation of decisions	348	2.29	0.53	1	5
Overall point for organizational cynicism	348	2.41	0.34	1	4.64

relations, and communication and interactions they formed with others. In the light of the data gathered from the interviews, findings obtained from the content analysis are given in Table 4. When teachers' views were analyzed based on the findings obtained from the interactions brought forth by their communication with others (administrator, colleague); it can be said that teachers, who have horizontal relations with their colleagues, perceive colleague attitude more positively:

"I think the communication between me and my colleagues is quite positive at the school where I am currently working. I can say that my colleagues' attitudes are sincere, respectful and understanding (P13)".

On the other hand, the views of the participants show that the perception of administrative attitude compared to colleagues is more negative:

"I know that administrators don't want me here." (P12)

Teachers' views on duties and roles assumed

Under this title, teachers were asked to give their

opinions regarding personal responsibilities they assume for the present status of the school as well as the level of fulfillment of duties and responsibilities by administrators. Findings obtained as a result of the content analyses is given in Table 5.

When the data regarding roles and responsibilities assumed by participants as individuals and the role of administrators with whom teachers are in a vertical relationship was analyzed; it was seen that participants have a negative point of view especially for the fulfillment of duties and responsibilities by administrators. Majority of teachers (25/30) describe administrators with negative adjectives like strict in documents, oppressive, discriminating etc.

"Administrators, whether employed by an exam or appointed, are quite happy with their chairs granted to them. They do not care about anything but their position. They want teachers to solve every kind of problem themselves and reflect no trouble to them (P11)".

While some of the teachers (13/30) who were asked to give their opinions about the fulfillment of responsibilities

Table 4. The analysis of teachers' views regarding intra-organizational interaction.

Theme	Code	Participant	F
Colleague attitude	Positive	Moderate, good, humanistic, sincere, respectful, sharing P1, P2, P4, P5, P7, P8, P9, P13, P14, P15, P16, P18, P21, P22, P24, P26, P28, P29, P30	19
	Negative	Indifferent, instable, sexist, ideological, selfish, subjective, rude P3, P6, P10, P11, P12, P17, P19, P20, P23, P25, P27	11
Perception of administrative attitude	Positive	Fair, witty, professional, cheerful, constructive, open-minded, successful, patient, idealist P1, P3, P4, P5, P6, P7, P9, P14, P16, P19, P20, P23, P25, P26, P28, P29, P30	18
	Negative	Has no idea, aggressive, opponent, incompatible, angry, meek, marginal, unwanted, strict, distant, exhausted, hopeless, ordinary, self-seeking P2, P8, P10, P11, P12, P13, P15, P17, P18, P21, P22, P24, P27	12

Table 5. The analysis of teachers' views regarding the duties and roles assumed.

Theme	Code	Participant	F
Perception of administrator role	Positive	Adequate, responsible P1, P4, P9, P23, P25	5
	Negative	Strict in documents, unfair, careless, inadequate, close to criticism, oppressive, threatening, impatient, exclusionary, chair-lover, irresponsible, prejudiced, authoritative, discriminatory P2, P3, P5, P6, P7, P8, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P24, P26, P27, P28, P29, P30	25
Perception of personal role regarding the present situation	Positive	Active, compromising, entrepreneurial, problem solver, advisor, responsible P3, P5, P7, P9, P10, P11, P13, P14, P15, P18, P21, P23, P24, P25, P27, P29, P30	17
	Negative	Isolated, neutral, insistent, indecisive, abrasive, reckless, unproductive P1, P2, P4, P6, P8, P12, P16, P17, P19, P20, P22, P26, P28	13

they assume within the school described themselves with negative adjectives like neutral, reckless etc., some (17/30) described themselves with positive adjectives like active, compromising etc.

“...I did my M.A. in educational administration and supervision. I also fulfilled my teaching responsibilities. I am a trade union member, so I try to take place in such processes on an opinion basis. I express my views in committee meetings. I also ask the union for help when a colleague of mine needs legal support (P7)”.

Teachers' views on processes and organizational structure

Under this title, teachers were asked to give their

opinions about the present structural status of the school organization of which they are a member; about their own future, the future of the schools they are working in and the future of the education system of which they have become a part. The findings obtained as a result of the content analyses are given in Table 6. When participant views regarding the perception of the organization they work in were analyzed, it was seen that only one participant expressed positive opinions, while others stated negative views regarding the present situation of the school they work in:

“I am satisfied with the present condition of my school. We are trying to increase students' academic achievement. Administrators ask our opinions on every subject. I feel lucky to be working in such a peaceful school environment... (P30)”.

Table 6. The analysis of teacher views in terms of organizational structure and process.

Theme	Code		Participant	F
Perception of the present situation of the organization (school)	Positive	Adequate	P30	1
	Negative	Administrational inadequacy, inadequacy of colleagues, equipment inadequacy, parents' insensitivity, lack of infrastructure, inadequate curriculum, political uncertainties, economical problems, lack of empathy	P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30	29
Perception of the condition of the organization (school) in the future	Positive	Optimistic, can develop, can improve	P4, P5, P9, P11, P13, P15, P18, P21, P22, P23, P24, P25, P27	13
	Negative	Neutral, cynic, pessimistic, expectation of politicization, stable, uncertainty	P1, P2, P3, P6, P7, P8, P10, P12, P14, P16, P17, P19, P20, P26, P28, P29, P30	17
Perception of Personal Future	Positive	Optimistic, advance in the career, career development	P2, P3, P4, P5, P9, P10, P11, P13, P15, P21, P23, P24, P25, P26, P27, P30	15
	Negative	Neutral, pessimistic, stable, uncertainty	P1, P6, P7, P8, P12, P14, P16, P17, P18, P19, P20, P22, P28, P29	15
Perception of the future of education system	Positive	Can improve, development, progress	P3, P5, P9	3
	Negative	Neutral, cynic, pessimistic, expectation of politicization, stable, uncertainty, chaotic	P1, P2, P4, P6, P7, P8, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30	27

"To start with, our classes are too crowded and the number of teachers is not sufficient. Counselling service falls short of guiding students. We also encounter security problems and we don't feel safe. Our school lacks basic needs: A library, a laboratory, a studio, and computers are not enough. These are essential needs as air, water and food for our school where a full-day education is given, and should be met in a short time." (P16)

When views of the participants, who expressed their opinions about the present condition of their schools, were analyzed; it was seen that there are teachers who have optimistic points of view (13/30) although the majority (17/30) used pessimistic expressions regarding the future of their schools:

"The present condition as well as the future of the school seems dark to me. With this understanding of education, I think all schools are in a similar darkness. I'd like to go on teaching my students 1-4th grade and go to another school because nothing changes; at least I will be in a different place." (P10)

"A better education could be provided by creating a safe

education environment and supplying the missing equipment." (P25)

Half of the teachers, who were asked to give their opinions about their personal future expectations, expressed pessimistic views, while the other half mentioned that they are optimistic on their expectations.

"By every passing year, I want to improve myself, learn new things and share my experiences with people. I think I have the energy to do all these." (P25)

"Unfortunately, I don't think I will be in a better position in the future in an education environment where merit is not considered. I also don't believe that I can change things in a better way (P29)".

It was determined that majority of the teachers (27/30), who were asked for their opinions regarding the future of education system, have pessimistic expectations of future:

"The education system of our country is terrible. It is an aimless system which operates by trial and error. Therefore, the quality of our education system is low (P19)".

"...The education system is tried to be formed by trial and error. Unfortunately, this trial and error work is a constantly ongoing process. It never ends. System changes, which are not suitable for the structure, values, socio-cultural characteristics of the society and country, and physical condition and feasibility of the school are presented with 'a fait accompli' without preparing a sufficient substructure. Before we get used to something new or when we are used to it, new changes are being made. Teachers are in a situation that we call 'learned helplessness'... (P21)".

DISCUSSION

In this study, which is done to analyze organizational cynicism level of teachers working at schools in the organizational sense, views of the participants were analyzed in two dimensions:

1. In the quantitative dimension, the views were analyzed under four factors;

- (a) Alienation from the institution being worked
- (b) Factors lowering performance
- (c) A negative attitude towards the school
- (d) Participation of the employees in implementing decisions.

2. In the qualitative dimension, the views were analyzed in terms of the

- (a) Interactions that came out of the relations formed with others
- (b) Duties assumed and
- (c) Organizational structure and processes.

As a result of the analysis of findings, which were obtained from the descriptive analyses done in the quantitative dimension, on the basis of factors, it was determined that the organizational cynicism levels of teachers are low. When the results that are obtained from the sub-dimensions; alienation from the institution being worked (2.50 ± 0.42); factors lowering performance (2.90 ± 0.50); a negative attitude towards the school (1.94 ± 0.48); participation of the employees in implementing decisions (2.29 ± 0.53) were analyzed with participant views on interactions that came out of the relations formed with others in the organizational sense in the qualitative dimension, it can be said that the results are consistent.

It was seen that majority of the participants (19/30) stated words like "moderate, good, humanistic, compatible, sincere, respectful and sharing", which denotes that they find their colleagues' attitude positive towards themselves. However, when the participants were asked

about the perception of administrators for them, it was seen that there were positive expressions, but the negative ones like "aggressive, opponent, incompatible, angry, meek, marginal, unwanted, strict, distant, exhausted, hopeless, ordinary and self-seeking" were uttered much more. For this situation, it can be said that there is a difference in terms of perception between colleagues with whom a horizontal relation is established and the administrators with whom they have a superior-subordinate relationship. Participants pointed out that situations created by superiors like "no appreciation for success" can cause cynic behaviors, which were also put forth in Oki (2013) research. When considered with Andersson's findings (1996) that relations with administrators are triggering, factors which provide a basis for cynicism on an interactional level can lead to cynicism within the organization.

It was seen that participants, who were asked for their views regarding the fulfillment level of works and responsibilities by administrators and the level of their effect on the present condition of the school, have a negative perception of the administrator role. It is also striking that they used words like "strict in documents, unfair, careless, inadequate, close to criticism, oppressive, threatening, impatient, exclusionary, chair-lover, irresponsible, prejudiced, authoritative and discriminatory". When this finding is handled with Cartwright and Holmes (2006) comment; "when administrators do not establish relations with employees that rests on empathy, an organizational environment which can cause cynicism is formed", it can be said that a negative perception of administrators has a high chance to create cynicism. Moreover, when frequently used words which indicate the perception of administrators such as "unfair, authoritative, discriminatory and exclusionary", are considered with Huseman et al. (1987) justice sensitivity and its relation to cynicism, it can be said that relations with administrators who exhibit unfair behaviors has a potential to create cynicism (Reichers et al., 1997).

Participants, who were asked for their opinions regarding personal duties and responsibilities, used positive words like "active, compromising, entrepreneurial, problem solver, advisor and responsible" as well as negative ones like "isolated, neutral, insistent, indecisive, abrasive, reckless and unproductive". It is put forth in Watson, Clark and Tellegen (1988) research that cynicism shows itself in situations of dissatisfaction, trouble and fear. Also, as stated in Andersson research findings (1996), these situations strengthen the probability for cynicism to become more apparent in the organization.

The conclusions drawn from participants' views regarding organizational structure as well as their opinions for the present and future condition are as follows:

1. They stated negative views for the present condition of

their schools. In the analysis of these views, factors like “administrational inadequacy, inadequacy of colleagues, equipment inadequacy, parents’ insensitivity, lack of infrastructure, inadequate curriculum, political uncertainties, economical problems and lack of empathy come to the forefront.

2. Participants whose perception for the future condition of the organization was analyzed mostly used negative expressions. In the analysis of these views, words like “pessimistic, cynic, expectation of politicization, stable and uncertainty” stand out.

3. When asked about their personal expectations for the future, they exhibited a more positive approach and highlighted elements like “optimism, advance in the career and career development”.

4. The positive approach towards the personal future left its place to negative expectations when it came to views for the future of the education system.

Here, factors like “neutral, cynic, pessimistic, expectation of politicization, stable, uncertainty and chaotic” come to the forefront. The results of the qualitative research are consistent with the results obtained in the sub-dimension of quantitative analysis, participation of teachers in the implementation of decisions, which could be treated in relation to the organizational structure. These findings are parallel to the results of the research done by Yetim and Ceylan (2011).

Although more positive points of view were in the forefront regarding personal future, participants also had pessimistic expectations about the organizational change and future of the education system; this situation could be evaluated in the cynicism type where situational factors are the cause when the cynicism classification put forth by Dean, Brandes and Dharwadkar (1998) taken into consideration. This type of cynicism is possibly occupational-oriented, and this situation can be overcome by managing administrative processes in an efficient way.

The fact that participants had a positive attitude in their views for personal expectations shows that they have no problem regarding self-respect, and that they do not let negative situations to affect their future expectations. Self-respect is a concept that is about the answers given to the questions of what other people’s opinions are for the self, what weaknesses or strengths the person has as an individual, and how his/her relation is to other people (Gilroy, 2004). Individuals who don’t have positive opinions about themselves have low self-respect levels. Generally, these individuals show strong reactions to possible violations and adopt a defensive approach (Andersson, 1996). It could be said that these individuals have a tendency to develop a cynic attitude.

The literature review shows that cynicism can be manageable within the organization considering the administration style which is an important factor in the

rise of cynicism (Kanter and Mirvis, 1989; Reichers et al., 1997; Dean et al., 1998; Nafei and Kaifi, 2013). However, when the findings of this study was analyzed, it can be said that the school environment holds the conditions to lead to cynicism, and this situation is not well-managed by the school administrators. Many factors can be specified to take place among factors that cause cynicism; to illustrate, teachers do not have an appropriate setting to involve in decision-making processes actively, teacher contribution is ignored in education policy-making processes, there is a gap between organizational aims and individual expectations, administrators are not chosen by a merit-based and transparent approach etc. Of all these factors, lack of organizational support establishes a ground for cynicism, which was also supported by teacher views in the qualitative dimension. This finding is in parallel to the results of Kasalak and Aksu (2014) research in which the relation of perception of organizational support to organizational cynicism was analyzed.

Each phase of education needs to be considered as an ethical effort, so each individual shaping the education process must have ethical values (Nair and Kamalanabhan, 2010b). Professional ethics can generally be defined as seeing the job as an internalized value or a cultural norm which forms the basis for considering the effort for doing a good job valuable (Linz and Chu, 2013). It can be said that individuals who have a low level of professional ethics compared to those who have a high level, have a bigger chance to develop cynic tendencies when it comes to organizational violations.

For instance, it was brought forward in Kanter and Mirvis (1989) study that employees who have a low faith in professional ethics believe that share of rewards are not fair. Individuals who have professional ethics can show their intention of working for the common good to their colleagues by the relations they form with them (Horton, 2004). Yet, if the communication in the organization is not based on an ethical basis, it can give rise to cynic tendencies (Dean et al., 1998; Nair and Kamalanabhan, 2010).

CONCLUSION

In other words, it can be said that organizational cynicism feeds on unethical conduct and communication problems. An ethical communication can be explained as the exhibition of sincerity regarding communication which is based on mutual ethical values (Bakker, 2007). Ethical communication is affected by many factors like the decision-making process which defines the relations within the organization, administration style, colleague relations, superior-subordinate relations and informal group dynamics.

Cynicism is closely related to the type and size of the

effect of the factors on relations. Unethical attitudes of administrators towards teachers can cause negative feelings such as frustration and anger. Such negative feelings are likely to create cynicism by causing lack of confidence in others in the organization, poor performance, job dissatisfaction, reduction in the level of organizational commitment, and an increase in intention to quit (Dean et al., 1998; Abraham, 2000; Bernerth et al., 2007; Watt and Piotrowski, 2008; Byrne and Hochwarter, 2008; Chiaburu et al., 2013). Based on these findings in the research, the following suggestions can be developed:

1. Forming an organizational culture that is based on ethical values and that promotes justice in the school can prevent cynic tendencies. Teachers whose expectations are met, views are received and who involves in decision-making processes will have a low level of organizational cynicism.
2. Studies that can develop collaboration, support and faith among teachers can be done in the school organization.
3. Periodical in-service trainings can be given to teachers so that they can become aware of the negative conditions (that is having internal locus of control) which could also stem from them rather than ignoring their own share in the problems and highlighting external reasons.
4. It should be aimed to raise teacher candidates as individuals who are self-aware, accept themselves as they are, know what their weaknesses and strengths are and have a high level of self-respect.
5. Workshops on ethics can be organized to make teachers become individuals who are more focused on gains of professional development instead of financial ones.
6. The population of this study was restricted with teachers. Certain generalizations can be made by involving school administrators in the population of the study. In addition to these, a research which enables a comparison between public and private school teachers can be designed.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

A study on creating writing strategy and evaluation tool for book summary

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Summarizing is restating the most important ideas from an original text briefly. Students often need summary writing skill along the education life since it provides understanding and remembering the reading material. This study aims to apply book summary writing strategy which is based on in-class implementations, and to develop the students book summary writing skill with education. With this aim, to determine students' book summary writing skill and analyze the development of their book summary writing skill, researchers have developed a book summary writing strategy and also a rubric to evaluate the written summaries. While developing the book summary writing strategy, researchers have conducted the study with 44 university students studying at Turkish language teaching department in the third grade. The study lasted for 11 weeks, and the education period is implemented as one week education and one week summary writing implementation. The strategy and rubric have been updated with the students' views, feedbacks and researchers' notes during the education process. In the study, of the qualitative research methods, grounded theory was used. At the end of the study, it is stated that students have been successful in writing a book summary, tagging and taking notes, isolating from trivial details and also, they could write the summaries in a shorter time. The study findings revealed the usable book summary writing strategy and the rubric for book summary evaluation.

Key words: Book summary, summary writing skill, rubric, writing.

INTRODUCTION

Summarizing is retaining required information from an original text and restating these information in a shorter version. During the education life, teachers want students to read a number of texts and summarize them. When we analysed the definitions of the term 'summary', we are faced with various definitions on it like activity, skill and strategy. Many definitions have led us to call summary as 'a strategy'. This strategy is a high skill which includes using basic language skills: reading, writing and listening.

A student who learns the summary writing strategy means that he or she can use the basic language skills effectively.

"The ability to summarize information is important for understanding and remembering texts, and therefore, the development of this ability in children should be of considerable pedagogical interest" (Brown et al., 1983).

Taylor (1986) states that summaries, in the first years of education life, are generally in a simple book

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evaluation form including main characters, basic events and the moral of the book. In the upper grades, students are expected to read different kinds and sizes of books and write more complex and long summaries. Summarizing which is a useful skill for students in many ways helps them in many cognitive processes: to categorise, analyse, explain, evaluate and conclude (Erdem, 2012). Also, since summarizing makes remembering easier, it provides retaining information.

According to Wichadee (2014) summarizing helps students to determine the main idea of the text, make generalizations, disuse unnecessary words, integrate ideas and improve memory. Moreover, summary writing education is important since it improves the reading and summarizing skills; but Baleghizadeh and Babapour (2011) emphasize that summarizing is completely different from memorizing. In memorizing, all the information and the words are tried to be memorized; on the other hand, in the summarizing, only important points are determined and written. This skill provides students to focus on the most important ideas in a text and relating these ideas with the others (Leopold et al., 2013).

Yang and Shi (2003) state that students summarize many texts with the aims of integrating concepts discussed in the courses, to get a better grade or to meet the expectations of the instructors. In this context, it can be remarked that summarizing is also an important skill for students to be successful in the education life. However, Messer (1997) pointed that summary writing is a difficult skill to teach, learn and evaluate (Lin and Maarof, 2013). Zipitria et al. (2004) remarked that this skill is one of the best learning strategies to understand whether a student comprehended a taught subject as well (Idris et al., 2007). From a different point of view, Bean (1986) indicated that an effective summary writing instruction prevents egocentrism; because while summarizing individuals concentrate on another person's ideas. Susar-Kırmızı and Akkaya (2011) emphasize that summarizing strategy also activates thinking process.

The aim of the summary is conveying information to the reader with a shorter text without a literary concern. Therefore, anybody can learn the main points of an original text by reading the summary without seeing the original text. In the summarizing process, the summary writer concentrates on the most important ideas in the text and eliminate trivial details. Yasuda (2014) stated that summarizing is not a way of reconstructing meaning, it is rather a process that existing information is restated in a shorter version. While writing a summary we do not reconstruct the meaning or information of the original text, instead, we continue to give the main points of the original text. Endres-Niggemeyer (1998) also emphasized that summarizing requires using an intense cognitive process. Moreover, Kirkland and Saunders (1991) remarked that summarizing is an interactive and repeated process like all the reading-writing activities; because

while writing a summary, individuals interacts with the text directly and experiences rereading and rewriting processes.

Wichadee (2014) has evaluated summaries of the students in his study. According to him, these summaries are poor in some way. Summaries can be a copy of the original text. Wichadee (2013) also stated that since students have difficulty in determining which information is relevant and required for inclusion in the summary, they can not write good summaries. On the other hand, Garner (1984) remarked that when students can not determine relevant information from the trivial details, they can not make an effective study. Mani and Maybury (2001) also emphasized that summarizing is a difficult work; because this process requires to handle original text completely, to focus on important points and eliminate trivial details.

Students experiences two types of summary during their education life. First, summarizing short texts in textbooks, and the second is summarizing a book. Although these summaries seem to be similar, they differ in some ways. Similarly, Frey et al. (2003) determined that there are two types of summaries used by students. The first is *précis*, a brief summary and the second type is the evaluation summary. *Precis* summary contains a few sentences; on the other hand, evaluation summary contains writer's opinions and insights. In the literature review, there isn't a discrimination of the summarizing strategy as text summary and book summary. In some of the foreign studies, it is stated that there are two types of summaries: book summary and text summary. Also, these summary types are studied separately. Mihalcea and Ceylan (2007) remarked that there is a significant body of research carried out but most of this work has been concerned with the summarization of short texts. However, books are different in both length and genre, and different summarization techniques are required.

This study is appropriate to 'process-based learning model' since researchers have developed a book summarizing strategy with students in the process. This learning model, according to Ashman and Conway (1993), is used for getting information about some subjects, developing and reconstructing the information, monitoring and enhancing behaviors by practicing plans widely and continually (Karatay, 2013). In this learning model, it is important for students to think independently, decide, solve problems, learn learning as well as gaining cognitive awareness on the steps of writing process (Karatay, 2013).

In the present study, student ideas on book summary writing are evaluated, the problems they faced in the writing process and their ideas to solve these problems are also handled. The strategy in this study has been developed with student feedbacks in the process.

In the scope of the study, it is aimed at developing a theory to enable students to write a book summary. In

accordance with this, to make book summary writing easier;

1. Establishing a theory showing the steps of writing a book summary based on student views.
2. Applying book summary writing strategy to class teaching and developing students' summary writing skill along the education.
3. To be able to summarize any book in a lesson time (approximately 40 to 50 min).
4. Developing a rubric to evaluate written summaries are aimed.

METHODOLOGY

In this study, grounded theory is used. Creswell (2015) defines grounded theory as establishing or discovering a theory with reference to the research data. Here, the basic point is that the theory is not provided from a ready material, rather the theory is grounded on the participants experiences in the process. In this method, researchers establish a general theory in the framework of many participants' opinions related to the process, performance or interaction. Bogdan and Biklen (2006) states that grounded theory is a specific process developed by Anselm Strauss and Barney Glaser. In this process, researchers collect and analyze data simultaneously. This method also points to develop a theory with induction by using qualitative data.

Grounded theory is a general methodology for developing theory that is grounded in data systematically gathered and analyzed (www.depts.ttu.edu). In the present study, researchers have been active during all the process. Grounded theory is preferred to be able to develop an applicable summarizing strategy with participants and reflect the process of the study clearly. With this aim, the study is applied to one group for 11 weeks. Participants of the study have been active during the process. In the process, creativeness has been encouraged, a productive classroom atmosphere has been generated and the opinions of the students have been taken continually. During the process, with the help of acquired data, analysis have been made, and a book summarizing strategy and a rubric have been developed to evaluate the written summaries. The rubric has been used in the process simultaneously with the theory, and the effectiveness and practicality of them have also been tested.

Study group

The study group of the research is 60 university students studying at Turkish language teaching department in the third grade in İstanbul. But 44 student data is handled since they participated all the process regularly. Creswell (2015) states that in the grounded theory, while collecting data, interviews can be made with 20 to 60 students. The reason for applying the study to 3rd grade Turkish language teaching department students is that the subject is related to their lecture 'Comprehension Techniques'.

Data collection tools

In the study, semi-structured interview forms, in-class observation notes, students' taggings, written summaries and some photos were used to collect the data. Büyüköztürk et al. (2012) remarks that semi-structured interviews provides both getting answers to

questions and investigating a subject thoroughly. In the semi-structured interview, what and how the questions will be asked is determined beforehand. However, there is a free space for the interviewer. In the implementation process, four semi-structured interview forms have been used with summarizing simultaneously. There is a list of questions in order. In the first and second interview form there are 7 questions and in the third and fourth interview form, there are 5 questions. With the acquired data from semi-structured interview form, we aimed at updating book summary writing strategy and determining missing points. In the interview forms of all the students, some did not participate in all the implementations, and they were also evaluated to make a significant contribution to the study.

During the process, 264 semi-structured interview forms are collected from the students. The questions in the forms have been generated during the process appropriate to the grounded theory based on the requirements. At the end of the study, 20 different open-ended questions have been directed to the students through these forms. In order to understand whether the book summarization strategy works or not, researchers have made in-class observations during the process and noted these observations. Balcı (2013) states that with these notes, the researcher can collect the data in the natural setting first hand. In the present study, 264 summaries written by students are collected with students' taggings. All these summaries have been analyzed but 176 summaries which belongs to regularly participated students, are handled in this study.

Collecting the data

In the research process, *The Miserables* (Victor Hugo, 2015), *Of Mice and Man* (John Steinbeck, 2012), *The White Steamship* (Cengiz Aytmatov, 2003) and *The Alien* (Yakup Kadri Karaosmanoğlu, 2008) are the novels read by students based on the views of 2 Turkish language teachers and 4 scholars. While choosing these books, we remarked that they are nearly same in length, all of them are in the same type (novel) and all are narrative. Since having and reading book takes time, the book list has been given to students three weeks before the implementation. After this three weeks, the study has continued for sequential 8 weeks.

1st week

In the first week of the study, students are asked to summarize the first book 'The Miserables' without any instruction. Students have been free of looking at the book while summarizing. While summarizing, they are observed by 4 researchers. After students have finished their summaries, they have answered the semi-structured interview form including 7 questions.

2nd week

Book summary writing strategy (BSWS) education which is developed through literature review and answers from the last week's interview forms has been instructed to the students by researchers. Four researchers participated in the education program. The strategy includes three basic steps: Pre-summarizing, while-summarizing and post-summarizing. All the processes of the strategy has been shared with students. After then, the education has been discussed in the class and students are asked to criticize the education. Following this criticism, students are given previous weeks' summaries and they are informed about their mistakes (giving so many trivial details, missing important ideas) and missing

points in their summaries. After the education, students are asked to read 'Of Mice and Man' until next week and make preparation for summary writing while reading (tagging).

3rd week

Since students were told to read the novel in a week, researchers asked whether they developed any strategy useful for summarizing and what they did while reading the novel. After then, in-class discussions have been made and observation notes have also been taken. Moreover, students are also asked whether they could apply the book summarizing strategy while summarizing and in which item they had a problem. Each item in the strategy are categorized in the form of 'unusable', 'usable' and 'need development' with students. In some of the items, researchers have persuaded the students and in some other items students have persuaded the researchers. After the discussions with students, book summary writing strategy has been updated.

4th week

While students are writing the summary of 'Of Mice and Man', researchers have observed the students whether they use the strategy or not and took some notes. In order to have students gain awareness in some points, after the second summarizing implementation, researchers have given students summary writing form (Ap.B). After summarizing the book, students are given semi-structured interview form including 7 open-ended questions.

5th week

In accordance with the answers in the interview forms, book summary writing strategy has been updated. Students' summaries written last week are discussed according to the strategy, and the evaluation on their summaries have been shared with them. The evaluation process and weak points in the summaries have also been discussed and brainstorming has been made to overcome these. Students' opinions have also been taken. Strategy education has been proceeded by discussing missing and weak points of the summaries. Afterwards, students are told to read 'The White Steamship' novel for the next week and make some preparation while reading.

6th week

Students are asked to summarize 'The White Steamship' novel. While summarizing they have been decontrolled in using the book summary writing strategy. Here, the aim is to observe whether students use their old ways or not. During this process, researchers have observed the students and taken some photos. After the students finished summarizing they are asked to fulfill the interview form including 5 questions. The questions in the interview form have been varied weekly, with the implementation requirements.

7th week

BSWS has been updated by the researchers with reference to the semi-structured forms' answers. Then feedback has been given to the students about previous summaries. The summary writing education is practiced to the students, not only their weak points but also the strong points are emphasized. Afterwards researchers

brainstormed with students on the usefulness of each BSWS items. Followingly, students are remarked that they will summarize the novel "The Alien" for the next week, and thus they need to make preparation.

8th week

Students' objections and suggestions in the brainstorming of the previous week have been recorded by researchers, and BSWS education has been updated. Summary writing implementation process has been observed for the last time by four researchers in the last week of the education. After the summary writing education has finished, the semi-structured interview forms were applied to the students.

Analyzing the data

In the process of analyzing the data, researchers studied by questioning all the concepts with new data without prejudicing. The coding process are as follows:

1. Data is collected
2. A copy of the data is written to the computer
3. Data is reviewed and read to get a general idea
4. Codes are determined from the data
5. Themes are determined and defined (Creswell, 2008).

In accordance with the steps earlier mentioned, student views are analyzed with open coding. While generating the strategy, 50 open codes are determined. These codes are analyzed and according to the relation among them, axial coding process is practiced. According to the similarities and differences of codes, 18 axial codes are generated. After determining the axial codes selective coding process is handled. In the selective coding, general rules for summarizing, pre, while and post-summarizing processes to do lists are determined. Afterwards, these lists are developed with the literature review and book summary writing strategy coding is finalized as shown in Table 1.

According to the authors in this analysis, researchers may request concepts with all the new data and may be free of any prejudice. In constant comparison method, the concepts are labeled, and each labelled concept is compared with previous concepts and grouped. In the present study, as a result of this weekly repeated analysis, the BSWS and an assessment tool is developed.

The tool which is developed in order to evaluate the book summaries is a rubric. While preparing the rubric, literature review is made on writing a book summary and item pool is created. Afterwards, these items are developed and have been made clear with the suggestions from students on a weekly basis. Reference to the suggestions from students again, dysfunctional substances were removed in rubric less functioning substances which were treated in the education process. Moreover, new useful items are added. While ensuring the validity of the rubric, opinions of 3 Turkish language teachers, 4 domain experts and 2 scholars of educational sciences have been received. For the reliability of the rubric, randomly selected 5 summary texts are copied and sent to 4 independent researchers. Their results are evaluated. Consistency between researchers rating results are calculated formula of concordance percentage ("P= Na: (Na + Nd) x 100" "concordance percentage = quantitative of concordance: (quantitative of concordance + quantitative of discord) x 100") (Türnüklü, 2000).

In this study, concordance percentage is 85%. Rubric has four sub-dimensions: tagging, style, content and format. And it has 20

Table 1. Summary writing strategy coding.

Open coding	Axial coding	Selective coding
Undetailed expression; Short expression; Expressing basic events; Giving the main points; Expressing outline; Expressing general framework of the book	Expressing main points shortly (trivial details are not included)	
Expressing with a new style; Expressing the info that is remembered; Expressing the read text originally	Summary writer uses his/her sentences	
Avoiding subjectiveness; Giving the message of the writer directly; Expressing objectively and without commenting	Giving the original writer's idea	General rules for summarizing
Expressing in the summary that the work belongs to another writer; It should be understood that the original text was written by another writer ; Not to summarize as if a character of the book	Summarizing with third person-singular	
Subject integrity; Coherence; Cohesion	Cohesion	
The difference between summarizing a novel and a scientific book	Book type	
Information on book cover; Writer of the book; Preface of the book ; Final word of the book	Book tag	
A common program in group implementation where everyone is responsible; The duration given for reading a book	Reading plan	Pre-summarizing to do list
Taking short notes while reading; Important points should be noted for summary while reading	Tagging	
Reflecting the notes on the summary; Utilizing the notes on events, characters, place and time	Tagging should be reflected on the summary	
General subject should be mentioned in the beginning; The time of the events; The place of the events	Beginning with a general introduction of the book	
Character features of the main character; Physical appearance; The situation of the character in the beginning and at the end of the book	Mentioning the main characters in the beginning	
Features of the supporting character; Relation with main character; Conflict with main character	The relationship of the supporting characters with the main character	While-summarizing to do list
Events that have changed in the process; Main conflicts	Plot	
A paragraph based on one idea; Giving one point in one paragraph	Cohesion in the paragraphs	
Paragraphs giving the chronologic order of the events; Coherence of the paragraphs	Cohesion among the paragraphs	
Conclusion of the book; Final point, the main character has reached	Inference of the reader	
Rereading for cohesion		
Controlling trivial details and eliminating them		
Spelling and punctuation control	Rereading for control	Post-summarizing to do list
Peer assessment		

items that measure these dimensions. Each item contains scoring and classification [weak (1 point), insufficient (2 points), medium (3 points), good (4 points), excellent (5 points)]. The highest score is 100 points in the rubric. From this perspective, rubric scoring system is convenient for scoring system used in the schools (100 points).

Researchers evaluated summary texts with this measurement tool. All the summary texts are collected in the process (264), and has been evaluated to see results accurately and to improve reliability. However, based on the regular attendance of the students, of these, only 176 summary texts are handled in the study for evaluation / comparison. Summarizing skills of the students are quantified by rubric scores. Afterwards, development of the skills in the items are monitored and compared week by week. Thus, developing skills and fixed skills have been determined.

Results of the semi-structured interviews are divided into themes based on the questions and content analysis. Since interview forms are semi-structured, participants have been given the answer of a question to another question occasionally. Furthermore, some participants have also given more than one answer to one question.

Therefore, there can be seen an increase in the frequency rate of the interview forms. Thus, inductive data analysis is used in the quantitative data analysis (Büyüköztürk, 2012). According to the author, the researchers do not determine the hypothesis precisely and clearly in this analysis. Data is collected in a long period of time, after then to make generalizations, these data is synthesized inductively. The direct way is from part to the whole. In addition, this research is very significant to find new ways for understanding and comprehending.

In the present study, the data is subjected to classification

according to their similarities and differences. Then the data is coded and categorized and these codes, according to the frequency levels are combined under the themes describing them best. The data are then, interpreted. The data collected from in-class observations are analyzed descriptively.

FINDINGS

In this section, book summary writing strategy which has been based on in-class implementations and literature review has been given.

Theory: Book summary writing strategy (Bsws)

1. General rules:

- a. The summary should consist of our own words.
- b. The message of the original text should be given in the summary text.
- c. The summaries should be written in third-person singular.
- d. The summary length depends on the length of the book but the trivial details or unnecessary information should not be given in the summary text.
- e. The tense suffixes should be used to ensure the cohesion between sentences and paragraphs.

Pre-summarizing stage

- a. The type of the book should be determined before the book is read. For example, the conflict between the characters and events are important in narrative books whereas in the informative books, ideas and their influences are important.
- b. The clues for providing information about the content of the book, cover of the book, the author, translation, publication date, edition number, should be collected.
- c. Book reading schedule should be determined. The duration for reading the book must be equal for all the students. When reading is finished, before students have not forgotten the topic, summary should be written immediately.
- d. While reading the book, the important points should be tagged.

While-summarizing stage

- a. While writing the summary students should benefit from tagging that they wrote while reading the book.
- b. The first sentence of the summary should be giving a general information of the book, location and time should also be given in the introduction.
- c. In the beginning part of the book summary main characters should be mentioned. Moreover, characteristic

features, physical appearance, first situation and last situation should be mentioned.

d. From the second paragraph, supporting characters should be mentioned. Features of the supporting characters first and last situations, relationship with the main character, conflicts with the main character should be explained.

e. In the body paragraphs the events which are caused by the main characters should be explained. Moreover, changing events and elements of conflicts should be mentioned. In this part, for coherence "suddenly, contrary, oppositely, whenever" conjunctions can be used.

f. Every paragraph should include an opinion. It should be formed around this idea without giving trivial details. In the summary text for providing cohesion, statements like "This part is written on that subject" should not be used.

g. While summarizing a book including many chapters, for every part one summary paragraph should be written. For example, while summarizing a book including 9 chapters, 9 paragraphs should be written.

h. The paragraphs created for the summary should be reread sequentially and evaluated at the end. After the evaluation, the paragraphs including the same ideas can be connected to each other by adding a transition sentence.

i. In the conclusion paragraph, how the book has finished should be stated and an inference should be made.

4. Post-summarizing Stage

- a. The summary should be read to check the cohesion and integrity of the paragraphs.
- b. In the summary text, if sentences include trivial details and unnecessary information they should be removed; if there are missing sentences, they should be added.
- c. In the summary text, style, grammar, punctuation marks should be checked, if necessary, they should be corrected.
- d. If possible, summaries should be read by a peer and peer-assessment can be made.

1. Findings from the rubric and semi-structured interview forms are handled in this section.

Findings on book summary writing skill

The findings obtained from the rubrics have been evaluated in four sub-headings, including tagging, content, style and format. Each book summary collected from students are given in the tables comparatively.

The items on tagging

According to the Table 2, each sub-items of tagging skill have been improved regularly from the first to the fourth

Table 2. Items on tagging.

Items	1. Summaries	2. Summaries	3. Summaries	4. Summaries
	\bar{x}	\bar{x}	\bar{x}	\bar{x}
The length of the tags is convenient	1.04	2.21	3.80	4.77
Main conflicts are given in the tags	0.88	2.23	4.02	4.68
Tags are in the form of word or phrase	0.93	1.62	3.77	4.63

book summary implementation. While the average rate on the first item of the book summary is $\bar{x}1.04$, the rate of the fourth one is $\bar{x}4.77$. Second item's rate is also increased from $\bar{x}0.88$ to $\bar{x}4.68$ and third item's rate is increased from $\bar{x}0.93$ to $\bar{x}4.63$. According to that, it can be said that they have learned regarding the length of the tags, use keywords, restrict content in tags. When the book summaries are compared weekly, the weakest items are the second item ($\bar{x}0.88$) in the first summary, the third item in second ($\bar{x}1.62$), third ($\bar{x}3.77$) and fourth ($\bar{x}4.63$) summary.

Items on content

According to the Table 3, while an increase in all of the items regarding with the content seen, this increase is very clear, especially in the second item. While the success of the fifth item is $\bar{x}2.38$ in the first book summary, it is $\bar{x}5$ in the fourth book summary. The success of the third item is increased from $\bar{x}2.13$ in the first book summary to $\bar{x}4.65$ in the fourth book summary. When the success of the items is compared weekly, the weakest items are fourth item ($\bar{x}2.06$); in the first summary, third item ($\bar{x}3.37$) and fourth item ($\bar{x}3.31$) in the second summary, third item ($\bar{x}4.06$) in the third summary, fourth item in the fourth summary.

Items on style

According to the Table 4, there is a regular increase in all of the items but the maximum increase ($\bar{x}1.68$) is in the sixth item. When the success in the items is compared weekly, the weakest one is the sixth item ($\bar{x}2.70$) in the first summary, the first item ($\bar{x}3.89$) in the second summary, the sixth item ($\bar{x}4.11$) in the third summary and the sixth item ($\bar{x}4.38$) in the fourth summary.

Items on form

According to the Table 5, the biggest increase is in the first item. While this rate is $\bar{x}3.20$ in the first summary, it is

$\bar{x}4.77$ in the fourth summary. When the success in the items is compared weekly, the weakest one is the third item ($\bar{x}3.11$) in the first, ($\bar{x}3.56$) second, ($\bar{x}3.95$) third, and ($\bar{x}4.04$) fourth summary.

Findings of student opinions

During the education of the BSWs, four individual semi-structured interview forms have been applied to the students after each summary writing implementation to increase the intelligibility of the theory, test the feasibility and identify problematic items. The summarizing duration of the students, number of paragraphs and words they used in the summaries and rubric score is compared weekly and presented in Table 6. According to the Table 6, a significant relationship can not be seen between the duration and the number of words and paragraphs. The question "Do you like your book?" has been asked to the students in the 1, 2, 3 and 4 semi-structured interview forms. The following table shows the findings on this question.

According to the Table 7, the least appreciated book is the third book "The White Steamship" and the most admired book is the first book "The Miserables". Some questions about tagging have been asked to the students in the semi-structured interviews forms. These are: "Did you tag before you start writing your summary?" in the first form, "What challenges have you experienced while tagging?", "Do you observe development on your tagging? If yes, what are they?" in the second and third form. The following table shows the findings on these questions.

According to the Table 8, before the BSWs education is given, most of the students did not tag while summarizing. Beside this, when the points that students have some difficulties while tagging are similar both in the second and third book summaries, but in the third book summary students have difficulties in tagging by omitting the key words. This is remarkable about tagging since it increases the awareness of the students.

According to the Table 9, in three of the book summary implementations, it can be seen that students have given the same answers about the points they have difficulty while summarizing. In the table, the most remarkable

Table 3. Items on content.

Items	1. Summaries	2. Summaries	3. Summaries	4. Summaries
	\bar{x}	\bar{x}	\bar{x}	\bar{x}
Short information is given about the book in the introduction of summary	2.65	3.38	4.58	4.81
The information about the main characters is given in the summary text	2.93	4.23	4.72	4.84
The information about the supporting character is given in the summary text	2.13	3.37	4.06	4.65
The information about duration is given in the summary text	2.06	3.31	4.88	4.38
The information about the place is given in the summary text	2.38	4.84	4.93	5
The plot is compatible with the book	3.04	3.89	4.22	4.90
The main conflicts affecting novel fiction is given in the summary text	2.90	3.57	4.11	4.88
The solution of the book's problem is stated in a conclusion sentence.	2.97	4.17	4.31	4.81

Table 4. Items on style.

Items	1. Summaries	2. Summaries	3. Summaries	4. Summaries
	\bar{x}	\bar{x}	\bar{x}	\bar{x}
The summary text is clear and fluent	3.56	3.89	4.22	4.95
The tense suffixes are used compatibly	3.93	4.28	4.52	4.81
The summary text has been written by the reader's own sentences	4.25	4.86	4.88	5
The students used third-person singular in their summaries	4.29	4.78	4.90	5
The message of the original text is given in the summary text.	4.09	4,68	4,79	4,95
The details or unnecessary information isn't given in the summary text	2.70	4.07	4.11	4.38

Table 5. Items on form.

Item	1. Summaries	2. Summaries	3. Summaries	4. Summaries
	\bar{x}	\bar{x}	\bar{x}	\bar{x}
Spelling and punctuation are used correctly	3.20	4.10	4.22	4.77
There is no incoherency	3.18	3.97	4.13	4.56
The order of paper is regarded	3.11	3.56	3.95	4.04

Table 6. The summary writing skill average rates.

Item	1. Summaries	2. Summaries	3. Summaries	4. Summaries
	\bar{x}	\bar{x}	\bar{x}	\bar{x}
The duration	61.65	44.95	61.88	63.53
The number of paragraphs	7.5	5.7	9.20	7.8
The number of words	539.38	411.04	616.71	537.52
Rubric score	55,13	75.04	86.88	94.71

Table 7. Findings about the approval rates of the students.

Do you like your book?	1. Book (%)	2. Book (%)	3. Book (%)	4. Book (%)
Approval rates of the students who liked	93.44	89.04	71.92	87.67

Table 8. The findings on tagging.

Tagging	1. Summaries	2. Summaries	3. Summaries
	\bar{x}	\bar{x}	\bar{x}
Did you tag before you write your summary?	No tagging (68.18%)	-	-
What challenges have you experienced while tagging?	-	Analyzing important and unimportant information (31.81%); Tagging in the same order of the events as in the original book (11.36%)	Analyzing important and unimportant information (34.09%); Tagging in the same order of the events as in the original book (20.45%); Tagging by using key words (11.36%)
Do you observe development on your tagging? If yes, what are they?	-	Number of people who didn't make tagging in the second week (12.32%); Tagging easier (13,69%); Tagging shorter and clearer (8.21%); People who think that tagging is not required in the novel (6.84%)	Coding important information (7.01%); Tagging shorter and clearer (15.78%); Tagging by using key words (10.52%); People who don't make any explanation after the answer of "yes" (57.89%)

point is the variability of the student opinions on tense suffixes. BSWS is updated with the help of these and a

change is observed on students after updating. However, the problem of writing introduction sentence could be

Table 9. Findings on the difficulty of summary writing.

Variable	1. Summaries	2. Summaries	3. Summaries
Do you have difficulty in writing summary, if you have what are those?	Regarding the plot (40,90%)	Regarding the plot (22,72%)	Regarding the plot (15,90%)
	Using tense suffixes (11,36%)	Using tense suffixes (25%)	Using tense suffixes (4,54%)
	Eliminating trivial details (25%)	Eliminating trivial details (18,18%)	Eliminating trivial details (20,45%)
	Writing an introduction sentence (6,81%)	Writing an introduction sentence (4,54%)	-
	Remembering the names of the characters and place (22,72%)	Tagging (6,81%)	Tagging (4,54%)
	93,44% while writing summary	95,89% while writing summary	68,42% while writing summary

overcome in the following weeks. In the 2nd, 3rd and 4th interview forms, students are asked "Do you think that there is a mistake or something missing in the BSW education?" and "When you become a teacher will you practice the things you have learnt?"

According to the Table 10, in the second implementation of the BSW education, 36.98% of students states that there is no missing points; this rate is 82.2% in the fourth implementation. Before the second book summary implementation, students are given information on how to tag. Consequently, as can be seen on Table 10, in the third implementation 12.18% of the students remarks that they have difficulty in tagging but in the fourth week, it is significant that they have reported tagging as one of the exercises they like most. When students are asked that "When they become a teacher, will you practice the things you have learnt?" 92,27% said "yes", this shows that this education can be thought to be useful.

According to the Table 11, while 81.81% of the students remark that they write better summaries when compared with the first implementation, in the fourth application, this rate becomes 91.64%. On the other hand, most of the students state that writing summary is beneficial and this rate is 96.72% in the first interview form, it is 100% in the second interview form. The question which is asked to the students to learn in which parts BSW education was beneficial for themselves is answered as writing in a planned way (38.35%) in the second interview form, and writing a better summary (92.64%) in the fourth interview form.

DISCUSSION

In the scope of the research, a book summary writing strategy and a rubric for evaluating summaries have been developed by the researchers. According to Goulding (1999), grounded theory method that has been used in this study, is used when there is so much information on a case and in a need to add new information to the

present information (Kaya, 2014).

In the process of using grounded theory in this study, the instructor guided students properly. In this process, students' confidence to the lecture decreased occasionally. Because while developing this theory students construct the knowledge. In this constructing process, knowledge is reviewed, tested and evaluated according to students' feedbacks and either modified or removed. Students are active and decision-maker during all the process. Moriarty (2011) states that grounded theory is advantageous since it aims to produce information from the data itself instead of using the available hypotheses, providing new information on the subject that has been researched and also it is useful in terms of flexibility of data collection tools (Kaya, 2014).

After implementing the strategy, it is determined that the average achievement of the students' book summary writing skill has increased gradually. According to this, (from assessment tool) they increased their success with the rates of $\bar{x}55.13$ for the first week, $\bar{x}75.04$ for the second week, $\bar{x}86.88$ for the third week, $\bar{x}94.71$ for the fourth week.

When the duration of writing their summaries is observed, the average is for *Les Miserables* (180 pages), *Of Mice and Men* (128 pages), *The White Steamship* (186 pages), and *The Alien* (214 pages) which has the largest number of pages are respectively $\bar{x}61.65$, $\bar{x}44.95$, $\bar{x}61.88$ and $\bar{x}63.53$ min. Accordingly, there is no meaningful relation between the period for students to write summary and the number of pages.

In the first book, the rate of the students who eliminate trivial details is the least successful item ($\bar{x}2.70$). Even though this rate shows increase upwards in the following weeks, it came forward (in the meeting form) as the most challenging material for students as the last one of the questions were asked to the students again in 3 different weeks (20.45%).

This result is compatible with the findings of Wichadee (2013) and Garner (1984). According to these writers, since students can not distinguish whether the information

Table 10. Findings on the BSWs education.

Variable	2. Interview form	3. Interview form	4. Interview form
Do you think that there is a mistake or something missing in the BSWs education?	There is no mistake (36,98%) 1. Uncertainty in using tense suffixes (13.69%) 2. Not personal feedback (12.32%) 3. Not dwelling on the main idea (5.47%)	There is no mistake (70.17%) 1. Practicing in a lesson time (8.77%) 2. Tagging obligation (12.28%) 3. Not giving feedback simultaneously (14.03%)	There is no mistake (82.2%) 1. Practicing in a lesson time (5.47%) 2. Tagging obligation (4.10%)
What do you like the most in BSWs education?	-	-	1. Giving feedback (34.09%) 2. Making application (6.81%) 3. Learning how to tag (29.54%) 4. Reading four different books (11.36%)
When you become a teacher, will you practice the things you have learnt?	-	-	1. Yes, I will. (97.27%).

Table 11. Findings on the BSWs education implementation process.

Variable	1. Book Summary	2. Book Summary	4. Book Summary
What are the differences between the summary you write first time and second time?	-	1. Writing summary convenient to the plot (6.81%) 2. Eliminating trivial details (4.54%) 3. Writing summary in a less time (9,09%) 4. Writing a planned summary (6.81%) 5. Writing a better summary than before (81.81%) 6. Tagging (18.18%)	-
Do you think that writing summary is useful, if yes, in what ways it is useful?	1. 96.72% of the students think that it is useful 2. Retaining information (22.95%) 3. Help to comprehend the book (11.47%) 4. Improving memory (16.39%)	1. 100% of the students think that it is useful 2. Writing introductory, body and conclusion parts (6.84%) 3. Regarding the plot (16.43%) 4. Writing a planned summary (12.32%)	-
What are the changes in your summary writing skill before and after BSWs education?	-	-	1. Writing a better summary than before (91.64%) 2. Eliminating trivial details (12.84%) 3. Tagging (15.06%) 4. Writing a shorter and clear summary (4.10%) 5. Writing a planned summary (4.10%)
Did the BSWs education help you to write summary? If yes, how?	-	1. Writing a planned summary (38.35%) 2. Eliminating trivial details (15.06%) 3. Tagging (12.32%)	-

is necessary or not and whether it needs to be in the summary or not, they explain that they can not write a good summary. 40.90% of the students remark that they had some difficulties in the first book summary and in “regarding the plot” while this rate shows a noticeable decrease to the second book summary, they mention that this topic no longer in the third and fourth book summaries. Findings of the rubric supports that the averages of summaries which is related to this item are $\bar{x}3.04$ for the first book summary, $\bar{x}3.89$ for the second, $\bar{x}22$ for the third, and $\bar{x}4.90$ for the fourth one. This result shows that BSWs make students acquired “the skill of writing summary convenient to the plot”

When the findings obtained related to the points that students have some difficulties while writing summary are evaluated, 11,36% of students remark that they had some difficulties in using consistent tense suffixes in the summaries which are written before the BSWs education is given. This rate increases to 25% after the education and with the last change store in the strategy and the third book summaries, this rate decreases to 4.54%. In the implementation of the last book summary, they do not mentioned this topic. In the rubric, when the findings which are related to the relevant item is observed, the first one is $\bar{x}3.93$, the second one is $\bar{x}4.28$, the third one is $\bar{x}4.52$ and the fourth one is $\bar{x}4.81$.

That condition results from the instruction given to the students in the BSWs education. Through literature, students are given instruction to use present tense in the first week. However, they could not manage to use those instructions in their book summaries. In the second book summary, this item is changed as using consistent tense suffixes. As a result, difficulty for tense suffixes is decreased, and achievement is increased for students.

When answers which students have given related to the condition of appreciation of books they gain to summarize in practice are evaluated, it is determined that the rubric did not overlap the findings. While a steady decrease is being observed by weeks in findings obtained from rubric, the condition of appreciation of the students for the book is said to be directly related to the achievement of the students for summarizing.

One of the remarkable points of the study is that students acquire the skill of summarizing completely. Accordingly, when the findings obtained from the rubric is observed, students are viewed to gain full grades in the point of “giving information about the location in summary, using third-person singular in the summaries, writing the summary with their own sentences”. In this context, after the BSWs education, students have gained those abilities. On the other side, of the 14 items from 17 rubric items, they are determined to get grade upon $\bar{x}4.50$. According to that, after the BSWs education, students have gained three of the book summary writing skills and in many skills they have become in the practising level.

Throughout the strategy education, some items are removed from the rubric and some items are added to the strategy with the opinions of the students. For example, students have hesitated about how to finish the summary in the last paragraph. After this situation, instruction is given to students that they can finish the summary with a question to invite audience to read the book and to state how the problem in the book has been solved should be mentioned in the conclusion sentence (Lake, 2005). Since students could not have a consensus on finishing the summary with a question sentence, with their opinions this instruction is removed from the strategy. When the fourth book summary is observed, the rubric item ‘how the problem is solved is expressed in the result sentence’ have a rate of ($\bar{x}4.81$). This rate shows that students have been successful in applying this instruction.

CONCLUSION

In accordance with the student opinions and the development in the book summary writing skill, when BSWs education is applied in the classroom, it can provide students to gain the ability of writing a book summary. For evaluating summary texts, the rubric which is developed is also determined to be applied by research in the way of function. In BSWs, education is original in showing that students can summarize a book in a lesson time. In this context, with the help of BSWs education, students are determined to write better book summaries. The rates of the rubric of the last practice ($\bar{x}94.7$) also supports this idea.

Suggestions

In the implementation process, it is determined that some students have come to the classroom by writing the summary that they obtained from the internet. To overcome that situation teachers should give a ready form to write the summary in the classroom.

When teachers make a summary writing study in the classroom, he or she should give a publishing firm to make students read the same book. If students are not informed, they may buy different presses of the same book they may have read the same book in different lengths. In the present study, ‘The Miserables’ book have different presses from different publishing firms changing from 60 to 1715 pages. The researchers have selected and recommended one among them according to the study group. When teachers make a summarizing study in the classroom, they should determine a reading period of time. Moreover, they should prepare a reading calendar according to the level of the students and the density of the lesson.

The reading calendar can be prepared both by the

teacher and the student. With the help of this calendar, all the students can read and finish the same book simultaneously. Therefore, all of them can write their summaries in the classroom during the lesson time. Teachers, by making the students write the summaries in the classroom can prevent them to acquire a ready summary from the internet.

Conflict of Interests

The authors have not declared any conflict of interests.

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