International Journal of Human Sciences
ISSN:1303-5134

Volume: 9 Issue: 2 Year: 2012

The effects of constructivist learning approach on the students' psychomotor and cognitive field achievements in Canon teaching

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Abstract

The study aims to examine the level the psychomotor and cognitive field achievements of the students learning canon songs in primary school 6th grade music education according to constructivist learning approach and conventional teaching methods(e.g. question& answer, practice, analysis), to compare the differences between the experimental and control groups and finally to determine their permanency levels. For the research, 2x2 split-plot experimental designs were used. In this design, the first factor displays intervention groups (experimental and control), and the second factor shows pretest-posttest measurements according to the dependent variables of the study. In terms of analysis, four statistical analysis methods were used and data were analyzed by means of SPSS for Windows 15.00. Differences between the pre and post psychomotor achievement tests scores in the experimental group were found to be significant in terms of the evaluation criteria. The pre and post tests achievement scores of the students in the control group, while the differences for the five of scores of the evaluation criteria are statistically significant, for one criterion the difference was found insignificant. As for the permanency tests, it is seen that, students' posttest and permanency test performances in the control and experimental groups have permanent effects on their psychomotor achievement levels but in terms of permanency, certain decreases compared to posttest results were found. It is also seen that rank means and mean scores of the experimental group are higher than the scores of the control group. It can be said that in canon teaching cognitive field, the effects of the teaching methods implemented based on constructivist and conventional approach have decreased in the course of time.

Keywords: Music education, constructivist learning, psychomotor field, cognitive fiel

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Demirci, B. (2012). The effects of constructivist learning approach on the students' psychomotor and cognitive field achievements in Canon teaching. *International Journal of Human Sciences* [Online]. (9)2, 1485-1498.

Introduction

Arrangement of the educational programs by the expert will provide sound and feasible programs as well. To do this, the definition of education should be well internalized and adopted. Return states that Ertürk, (1997, p.11) thinkers have put forward a definition that reflects their appropriate way of education considering certain aspects of education instead of merely defining education. Smith, Stanley and Shores (1957) define education as effective social processes in which individuals earn their standards , beliefs and life styles as a society, and Good, (1959) also defines it as a process that provides optimum individual development and social adequacy under the influence of selected and restricted environments especially of schools. Varış, (1997) broadly defines education as the total of the processes in which an individual acquires certain acts in his/her society. As mentioned above, education is a social phenomenon (p.13). The existed educational system should be handled through the consideration of this phenomenon and modern program concepts and models should be created to meet the needs of today. Elliot, (1979), at this point, defines education as the planned series that certain educational purposes are aimed for one or more persons. According to Harrison (1983) program should include model, aims, effective components, activities, content, timing and ordering suggestions and evaluation forms. In a study conducted by Demirel, Özgen and Gönentürk (1988), program development experts reached a consensus about program model in Turkey that the basic components of a program are aims, content, instructional contexts, and evaluation (2011, p. 58).

These fundamental elements take place in the educational programs, instructional programs and curriculums. Küçükkahmet defines educational programs as all activities to realize the aims of the national education and institute that are provided for children, youth, and adults in an educational institute (1999, p. 9). Özçelik (1992, p. 4) defines an instructional program as a guide of what, why and how teaching and learning processes include, in other words as a project area, and Varış (1997, p. 14) defines curriculum as the program including instructional principles, the subcategories of the subjects and evaluation fundamentals and changing education and teaching principles in the program into student behaviors.

Programs including these basic components have been arranged according to certain teaching theories, models and approaches, and have been piloted at primary education level and taken effect. Demirel (2011) indicated that the basic theories about learning are divided into two groups such as behavioristic theories and cognitive field theories given the historical developments in psychology.

According to behaviorist theory, as a result of the interaction between knowledge and person, some desirable changes occur in this person's behaviors. Öztürk (2007) states that in all learned behaviors of an individual there have been cognitive, sensory and psychomotor features. According to

Sönmez (2010, p.34) cognitive field is the area in which dominant ones of the learned behaviors are coded. Bloom (1956) divided cognitive field into knowledge, comprehension, application, analysis, synthesis and evaluation. Demirel (2011) points out that this field encompasses behaviors such as defining, answering, criticizing, stating whether true or false, listing, ordering, choosing and marking. In the other learning area namely cognitive field, according to Ertürk (1997, p. 67), taking, valuing, organizing, and one value and groups of values are acknowledged to be the predictors. Sönmez, defines psychomotor field that can be considered integrated with these fields, as the field where learned abilities are coded (1994). This field includes behaviors patterns that is done by or requires a coordination of an individual's one or more body organs (Beydoğan, 2001, p. 20).

As seen, programs include some basic concepts as well as many theories and learning approaches. These basic concepts and theories play considerable roles in the implementation and evaluation of a program and they exist as long as they are used. However, the programs that have certain constraints should be revised by the program development experts and field experts in terms learning-teaching, goals, evaluation according to modern needs. Thus, Ministry of National Education in Turkey has launched new initiatives, and in these studies, in addition to some learning approaches, theories have become sources to student centered constructivist instructional programs. According to Demirel (2011, p. 249) constructivism is not a teaching related theory to but a theory of knowledge and learning and this theory proposes a base construction. Sönmez (1994) indicates that in order to make learning efficient students should speak, discuss, make claims but the teacher should act solely as a guide. According to Sönmez (2010, p. 148) students should be centered and they should be given opportunity to solve problems in that they are aimed to learn. The course content should be arranged so that this aim is to be realized. Likewise, Orff Schulwerk highlights that teachers should guide students to find out knowledge instead of conveying it (2003).

Primary school music education program launched in 2006 encompasses a learner centered, constructivist approach, cooperative learning, and multiple intelligences theory. Demirci (2010, p. 51) defines cooperative learning as a learning approach to solve problem or carry out a task making small groups. According to Küçüktepe (2010, p.9) programs provide students with better learning making them discuss with other students, and use their reflections. Cooperative work provides students with noticing other students' views and their comments and solutions. Gülay, Mirzeoğlu and Çelebi (2010, p.92), in their study, stated that cooperative games that do not have individual competition include group interaction and positive socialization. Gardner defines the other theory, multiple intelligences theory as follows: intelligence is the ability to give form to a valuable product in one or more cultural structure or solve problems (Demir, 2005, p. 3). Gardner claims eight intelligence fields. One of them is musical-rhythmic intelligence. To Gardner music is the ability to

perceive musical forms, tones, frets and rhythms, to discriminate, to compose, and to express oneself by means of music. It is also known that the studies based on Orffian understanding have several similarities with multiple intelligences theory (Temiz, 2007, p. 26). Carl Orff's understanding of elementary music and movement instruction acknowledges that every child has his/her unique talents (Orff Schulwerk, 2006).

The musical conceptions such as perception, singing, performing are effective conceptions that should be considered a whole in musical education of the cognitive, sensational and psychomotor fields and for behavior. These theories were used as the basis of many programs in the past and have still become effective in today's music education programs. Primary education teaching program of music courses that has been prevailed since 2006 is a program that is to be mostly discussed by specialists in terms of their effects on both affective and cognitive success level and psychomotor skills. Albuz and Akpınar concluded their study with an evaluation that 2006 primary education teaching program of music courses was arranged by providing affirmative contributions through constructive learning approach (2009, p.8). Besides, in a case study that is made through teachers' views, it was determined that teaching methods and techniques based upon constructivist learning provided students to be active in music courses (Demirci, Albuz, 2010, p.264). In this study, students' psychomotor and cognitive field achievements were tested by means of conventional teaching methods, constructive learning approaches.

Method and design

This study used an experimental research design that aims at examining the effects of conventional teaching methods and constructive approach on students' psychomotor and cognitive fields' achievements in primary school 6 th grade music education program, in the subject of Canon instruction. In the study, 2x2 split-plot designs were used. In this design, the first factor displays the experimental process groups (experimental and control groups), and the second factor displays the test-retest measurements of the dependent variable (pretest-posttest).

Table 1. Research Design

Groups	Pretest	Process	Posttest	Permanency test
Experimental group (grade 6,6-k)	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students	*Constructivist learning (two weeks, one class a week, 40+40)	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students
Control group (grade 6,6-a)	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students	*Conventional teaching methods (two weeks, one class a week, 40+40)	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students	1)Psychomotor field test, 6 groups 2) cognitive field test, 30 students

At the beginning of the study, a pretest for psychomotor and cognitive field achievements of the subjects was applied to both groups. Then canon instruction was taught to the subjects one hour a week for each group. At the end of the instruction, the experimental and control group

psychomotor and cognitive field achievement tests were applied as the posttest. Finally, in order to examine the permanency of canon instruction, 20 days later from the posttest, the students from both groups were reapplied psychomotor and cognitive field achievement test (permanency). To determine students' psychomotor field achievement levels, in accordance with experts' ideas six evaluation criteria questions in the form of a 5-likert attitude scale was created.

Analysis

In the analysis, four statistical analysis methods were used by means of SPSS for Windows 15.00 statistical program. Mean and standard deviation, t-test, Mann Whitney U test, The Wilcoxon signed-rank test.

Sample song for the psychomotor field evaluation criteria

Results and discussion

The analyses to determine the effects of constructivist teaching approach and conventional methods in primary school 6th grade music education program and the discussion part have been separately given for psychomotor and cognitive fields achievement tests.

Findings about psychomotor field test

To find out whether there were any differences in the pretest scores between the experimental and control group, Mann Whitney U test was used.

Table 2. Comparison of the Pretest Performance Scores of the Experimental and Control Groups

Performance Evaluation Criteria	Groups	N	Rank Mean	Rank Total	U	P
1. Level of accurate singing of the canon sample	Experimental	6	6,50	39,00	18,000	1,000
	Control	6	6,50	39,00		
2. Level of accurate performance of rhythmic structure of the canon sample	Experimental	6	7,00	42,00	15,000	0,575
	Control	6	6,00	36,00		
3. Level of accurate intervention of the groups to the canon sample	Experimental	6	6,00	36,00	15,000	0,523
	Control	6	7,00	42,00		
4. The level of performing of the groups by listenin to each other (without violating rhythmic structur and melody)	Experimental	6	6,50	39,00	18,000	1,000
	Control	6	6,50	39,00		
5. The level of groups' achievement of strength terms	Experimental	6	6,50	39,00	18,000	1,000
	Control	6	6,50	39,00		
6. the level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence)	Experimental	6	6,50	39,00	18,000	1,000
	Control	6	6,50	39,00		

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All U scores of the experimental and control group students' canon teaching performance were found to be statistically insignificant at the level p>,05. These findings show that there were no differences between the both groups' pretest achievement scores and the experiment could be seen to start. To test psychomotor pretest and posttest scores of the experimental and control group The Wilcoxon signed-rank test was used and the findings are given in Table 3.

Table 3. Comparison of the Pretest and Posttest Scores of the Experimental and Control Groups

Performance Evaluation Criteria	Groups		N	Rank Mean	Rank Total	Z	P
1.Level of accurate singing of the canon sample	Experimental	Pretest (Negative Rank)	0(a)	,00	,00	**-2,271**	**,023**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	**-2,333**	**,020**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
2. Level of accurate performance of rhythmic structure of the canon sample	Experimental	Pretest (Negative Rank))	0(a)	,00	,00	**-2,232**	**,026**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	-1,857	,063
		Posttest (Positive Rank)	4(b)	2,50	10,00		
3. Level of accurate intervention of the groups to the canon sample	Experimental	Pretest (Negative Rank)	0(a)	,00	,00	**-2,220**	**,026**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	**-2,000**	**,046**
		Posttest (Positive Rank)	4(b)	2,50	10,00		
4. Level of performing of the groups by listening to each other (without violating rhythmic structure and melody)	Experimental	Pretest (Negative Rank)	0(a)	,00	,00	**-2,264**	**,024**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	**-2,070**	**,038**
		Posttest (Positive Rank)	5(b)	3,00	15,00		
5. Level of groups' achievement of strength terms	Experimental	Pretest (Negative Rank)	0(a)	,00	,00	**-2,264**	**,024**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	**-2,333**	**,020**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
6. Level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence)	Experimental	Pretest (Negative Rank)	0(a)	,00	,00	**-2,271**	**,023**
		Posttest (Positive Rank)	6(b)	3,50	21,00		
	Control	Pretest (Negative Rank)	0(a)	,00	,00	**-2,070**	**,038**
		Posttest (Positive Rank)	5(b)	3,00	15,00		

a posttest < pretest b posttest > pretest

As seen in Table 4, given the students in the experimental group pretest and posttest psychomotor field test evaluation criteria, the differences between scores were found to be statistically significant (z_1 = -2.271, p<0.05; z_2 = -2.232, p<0.05; z_3 = -2.220, p<0.05; z_4 = -2.264, p<0.05; z_5 = -2.264, p<0.05; z_6 = -2.271, p<0.05;). As for the rank means of the pretest and posttest scores, this

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difference was seen to be in favor of the posttest scores. To these findings, psychomotor field achievement test had an important effect within six evaluation criteria in the experimental group. The differences between the experimental group pretest and posttest psychomotor field test scores for the 1st, 3th,4th, 5th and 6th evaluation criteria were turned to be statistically significant , for the 2nd criterion , the differences between the scores were found to be statistically insignificant (z_1 = -2.333, $p<0.05$; z_2 = -1.857, $p>0.05$; z_3 = -2.000, $p<0.05$; z_4 = -2.070, $p<0.05$; z_5 = -2.333, $p<0.05$; z_6 = -2.070, $p<0.05$;).

In order to find out which teaching method between the constructivist teaching method and the conventional teaching is more effective in enhancing students' psychomotor achievements, their posttests were compared by means of Mann-Whitney U test was used and the findings are given in Table 4.

Table 4. Findings about the Comparison of Canon Teaching Posttest Results of the Control and Experimental Groups

Performance Evaluation Criteria	Groups	N	Rank Means	Rank Total	U	P
1. Level of accurate singing of the canon sample	Experimental	6	7,50	45,00	12,000	,241
	Control	6	5,50	33,00		
2. Level of accurate performance of rhythmic structure of the canon sample	Experimental	6	9,17	55,00	**2,000**	**,007**
	Control	6	3,83	23,00		
3. Level of accurate intervention of the groups to the canon sample	Experimental	6	9,00	54,00	**3,000**	**,011**
	Control	6	4,00	24,00		
4. Level of performing of the groups by listening to each other (without violating rhythmic structure and melody)	Experimental	6	8,75	52,50	**4,500**	**,024**
	Control	6	4,25	25,50		
5. Level of groups' achievement of strength terms	Experimental	6	8,58	51,50	**5,500**	**,026**
	Control	6	4,42	26,50		
6. Level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence)	Experimental	6	9,17	55,00	**2,000**	**,007**
	Control	6	3,83	23,00		

In the Mann-Whitney U test results of the comparison of canon teaching posttest results of the control and experimental groups , all the U values except for the criterion "level of accurately singing of the canon sample" were found to be significant at the level of $p<0.05$

These findings show that the posttest results of experimental and control groups in terms of canon teaching performance displayed differences except for the item "to be able to accurately sing of the canon samples". The reason why no significant difference was found in the levels of accurate singing is that singing the lyrics is within the reference of cognitive field. Table also shows that the rank means of the experimental group is higher than the values of the control group, and it is seen that the means of the experimental group is higher. To compare the psychomotor and permanent posttests scores of both groups Wilcoxon signed-rank test was applied and the results were given in Table 5.

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Table 5. Canon Teaching Posttest and Permanency Test Performance Scores of Experimental and Control Group

Performance Evaluation Criteria	Groups		N	RankMeans	RankTotal	Z	P
1. Level of accurate singing of the canon sample	Experimental	Posttest(Negative Rank)	2(a)	1,50	3,00	-1,342	,180
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	3(a)	2,00	6,00	-1,732(a)	083
		Permanency Test (Positive Rank)	0(b)	,00	,00		
2. Level of accurate performance of rhythmic structure of the canon sample	Experimental	Posttest (Negative Rank)	3(a)	2,00	6,00	-1,633	,102
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	2(a)	2,00	4,00	-,577(a)	,564
		Permanency Test (Positive Rank)	1(b)	2,00	2,00		
3. Level of accurate intervention of the groups to the canon sample	Experimental	Posttest (Negative Rank)	2(a)	1,50	3,00	-1,414	,157
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	2(a)	2,00	4,00	-,577(a)	,564
		Permanency Test (Positive Rank)	1(b)	2,00	2,00		
4. Level of performing of the groups by listening to each other (without violating rhythmic structure and melody)	Experimental	Posttest (Negative Rank)	3(a)	2,00	6,00	-1,732	,083
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	4(a)	2,50	10,00	-1,890(a)	,059
		Permanency Test (Positive Rank)	0(b)	,00	,00		
5. Level of groups' achievement of strength terms	Experimental	Posttest (Negative Rank)	5(a)	3,00	15,00	**-2,236**	**,025**
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	5(a)	3,00	15,00	**-2,236(a)**	**,025**
		Permanency Test (Positive Rank)	0(b)	,00	,00		
6. Level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence)	Experimental	Posttest (Negative Rank)	5(a)	3,00	15,00	**-2,070**	**,038**
		Permanency Test (Positive Rank)	0(b)	,00	,00		
	Control	Posttest (Negative Rank)	3(a)	2,00	6,00	-1,633(a)	,102
		Permanency Test (Positive Rank)	0(b)	,00	,00		

a permanency < posttest b permanency > posttest

As seen in table 6, while experimental group students' posttest and permanency test scores display statistically insignificant results for the 1st, 2nd, 3rd, and 4th evaluation criteria, the scores were found to be statistically significant for the 5th and 6th criteria ($z_1 = 1.342$, $p>0.05$; $z_2 = 1.63$, $p>0.05$; $z_3 = 1.414$, $p>0.05$; $z_4 = 1.732$, $p>0.05$; $z_5 = -2.236$, $p<0.05$; $z_6 = -2.070$, $p<0.05$;). According to the findings, given the posttest and the permanency test scores of the experimental group, it was seen that constructivist teaching had an effect for the criteria 1-2-3-4 except for the

following criteria "The Level of groups' achievement of strength terms" and " The Level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence). Given the scores of the control group's posttest and permanency test, while the differences between the scores were found to be statistically insignificant for the evaluation criteria 1-2-3-4-6, "The Level of groups' achievement of strength terms" was found to be significant for the criterion 5 (z_1 = 1.732, p>0.05; z_2 =0.577, p>0.05; z_3 = 0.577, p>0.05; z_4 = 1.890, p>0.05; z_5 = -2.236, p<0.05; z_6 = 1.633, p>0.05). Through the findings, it can be suggested that the psychomotor test has a significant effect on these six evaluation criteria.

Findings for the cognitive field test

t test was used to find out whether there was a significant difference between the canon teaching cognitive field pretest scores of the experimental and control groups.

Table 6. Compared Values of the Canon Teaching Cognitive Field Pretest Scores of the Experimental and Control Groups

Groups	N	X	S.D.	t	P
Experimental	30	26,67	20,57	,130	,897
Control	30	26,00	19,05		

The t test scores of the Canon teaching cognitive field pretest scores of the experimental and control groups were found to be insignificant (t=.130, p>0.05). This shows that there are no significant differences in terms of the experimental and control groups' canon teaching cognitive field pretest achievement scores.

To compare experimental and control groups' cognitive field pretest and posttest scores, t test was used for the related groups and the findings were shown in table 7.

Table 7. Comparison of the Experimental, Control Groups' Cognitive Field Pretest, and Posttest Scores

Groups		N	X	S.D.	T	P
Experimental	Pretest	30	26,67	20,57	**-11,691**	**,000**
	Posttest	30	88,00	20,07		
Control	Pretest	30	26,00	19,04	**-16,510**	**,000**
	Posttest	30	90,67	13,63		

In the experimental group, the t value of students' canon teaching cognitive field pretest and posttest scores was found to be significant(t=11.691, p<0.05). It is also seen that the means of experimental group canon teaching cognitive field posttest scores were higher than the means of pretest score.

In the control group, the t score of students' canon teaching cognitive field pretest and posttest achievement scores was found to be significant (t=16.510, p<0.05). This finding underlines that there are significant differences between the canon teaching cognitive field pretest and posttest achievement scores of the control group students. The table also shows that the means of the posttest scores of the canon teaching control group students appear to be higher than the means of pretest scores. Therefore, it can be said that teaching methods based on both constructive and conventional approaches are effective in the canon teaching cognitive field. To be able to find out which of the teaching methods would be more effective to enhance students' cognitive field achievement, posttest results of both groups were compared by means of t test, and the findings were shown in table 8.

Table 8. Comparison of the Experimental and Control Group Students' Canon Teaching Cognitive Field Posttest Scores

Groups		N	X	S.D.	T
Experimental	30	88,00	20,07	,602	,549
Control	30	90,67	13,63		

The t score of the experimental and control group students' canon teaching cognitive field posttest results was found to be insignificant (t=.602, p>0.05). This shows that there is no significant differences in both groups' canon teaching cognitive field posttest achievement scores.t test was also used to see compare the experimental group and control group students' cognitive field posttest and permanency tests scores, t-test was used for the related samples and the results were shown in table 9.

Table 9. Comparison of the Experimental Group and Control Group Students' Cognitive Field Posttest and Permanency Tests Scores

Groups		N	X	S.D.	T	P
Experimental	Posttest	30	88,00	20,07	**2,138**	**,041**
	Permanency Test	30	78,67	22,24		
Control	Posttest	30	90,67	13,63	**2,283**	**,030**
	Permanency Test	30	80,00	20,34		

The t score of the experimental group students' canon teaching cognitive field posttest and permanency test results were found to be significant (t=2.138, p<0.05). This finding displays that experimental group students' canon teaching cognitive field posttest and permanency test results differ. Besides, the mean of experimental group students' canon teaching cognitive field posttest scores appear to be higher than the mean permanency test scores. Likewise, the t score of the

control group students' canon teaching cognitive field posttest and permanency test results was found to be statistically significant ($t=2.283$, $p<0.05$).

This shows that control group students' canon teaching cognitive field posttest and permanency test scores differ each other. The means of the control group students' canon teaching cognitive field posttest scores seem to be higher than the means of the permanency test scores.

According to these findings, in canon teaching cognitive field, the effects of teaching methods based on constructivist and conventional teaching approaches decrease in the course of time. These two teaching methods are also seen to have similar effects in students' cognitive field achievement and its permanency.

Conclusion and implications

In the study, since the psychomotor pretest scores between the experimental and control groups displayed no differences the study could be decided to start. In addition, the means of canon teaching psychomotor field posttest scores of both groups appear to be higher than the means of pretest scores. Given the comparison of posttest scores, rank means of the experimental group is higher than the control group's means and the findings displayed that the means of the experimental group's scores were higher.

The permanency test results showed that the constructivist teaching methods appeared to be more effective in enhancing experimental group students' psychomotor field achievements and had more permanent effects compared to the control group. As for the cognitive field pretest scores of both group, there seemed no difference and the study could be started.

The means of canon teaching cognitive field posttest scores appeared to be higher than the pretest scores of both groups. The results showed that cognitive field posttest scores did not differ. In canon teaching cognitive field, the permanency of the teaching methods employed for both groups gradually reduced.

Learner centered learning highlights that individuals have different interest and learning experiences. Music instruction is the field where these differences are extensively felt. Therefore, teaching methods and techniques should be formed taking students' individual differences into account at maximum level and in this way permanent learning should be provided. One of the basic principles of the constructivist theory is that permanent learning can be provided by means of activities. Given the finding the psychomotor and cognitive fields permanency test achievement scores are lower than the posttest scores in "canon" acquisition 6th grade primary education, it is seen that more activities should be taken place. Further, that inclusion of more activities through play, dance and action in song teaching can be more effective in permanent learning. A different

topic that takes place in primary education music teaching can be handled by means of the current study's findings and application. In further studies, through the outcome of "students will change different musical rhythms into action" in "musical creativity" learning field, a sample study model based on constructivist learning approach in music education can be established.

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Psychomotor Field General Evaluation Scale and Criteria Questions

EVALUATION CRITERIA	SCALE				
	5	4	3	2	1
1. Level of accurate singing of the canon sample					
2. Level of accurate performance of rhythmic structure of the canon sample					
3. Level of accurate intervention of the groups to the canon sample					
4. Level of performing of the groups by listening to each other (without violating rhythmic structure and melody)					
5. Level of groups' achievement of strength terms					
6. Level of accurate singing of the melody in the canon sample (M1,M2,M3, 1,2,3…sentence)					

Cognitive field evaluation questions

1. **Which of the following definitions does best express Canon? Choose the correct answer.**

a) It is the type of performing of a song or melody by a single group through strict following technique in certain frequencies.

b) It is the type of performing of a song or melody by different groups through the strict following technique in certain frequencies.

c) It is the type of simultaneous performing of two or more songs or melodies by one performer.

d) It is the type of performing of a one-sound melody by three performers.

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2. Which of the following statements does best express about how canon should begin? Choose the correct answer.

a) Two groups start to sing at the same time.

b) After the first group completes the song, the second group starts.

c) The first group gets started, and then the second group enters during the certain places of the song.

d) The second group starts first.

3. How many groups at least are needed in order to perform the canon?

a) There needs at least four groups.

b) There needs at least three groups.

c) There needs at least two groups.

d) There needs at least five groups.

4. Which of the followings is true?

a) The musical structure of canons is simple polyphonic.

b) The musical structure of canons is monodic.

c) The musical structure of canons is polyphonic.

d) The musical structure of canons is difficult polyphonic.

5. Which of the groups should perform the canon strongly?

a) The first group should perform strongly.

b) Both groups should perform in equal strength.

c) The second group should perform strongly.

d) The second group should strongly perform the canon after the first group strongly did it.