

THE EFFECTS OF COOPERATIVE LEARNING ON CONTINUAL AND STATE ANXIETY AND MUSICAL PERFORMANCE IN TEACHING MUSIC

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ABSTRACT

Students' learning is affected negatively by anxiety. The most important variable that affects performance & academic success of a student in a field like music which requires performance is the level of anxiety. Anxiety is defined as a reaction that occurs against a special danger whose source is unknown. In music education, whatever the methods are, learning is an individual activity that should be done and evaluated by playing and singing personally and this causes anxiety that affects the success negatively. The aim of this research is to determine if there are significant differences between anxiety level of the students who are learning through cooperative learning method and those learning through whole classroom teaching method (Teacher-centered method). The sample of the research consist of second year students at the Department of Class-Teacher Training at Buca Faculty of Education who are taking Music lesson. The research was experimental and conducted with an experimental group and control group. There were 104 students in experimental group and 106 students in control group. Anxiety Scale, which was developed by Spielberger and his colleagues and adapted in Turkish by Necla Öner & Ayhan Le Comte, was used to collect data. Observation form was used which was developed by Kocabaş (1998) for playing instrument skills and its correlation coefficient was to be found as 0.92. In statistical analysis mean, t-test, variance analyses, correlation were used. According to findings, before performance examination the state anxiety level increased in the control group; it decreased just before performance examination in the experimental group.

Keywords: Cooperative learning, continual and state anxiety, music education.

INTRODUCTION

Cooperative learning is a learning method which is based on theory, research and practice in education. In the last decades cooperative learning has become a widely used technique from pre-school to graduate school levels in all subject fields as well as in music. Cooperative learning is a learning strategy in which pairs or groups of students work together and learn from each other. Also students learn and develop their academic and social skills working in a positive atmosphere.

Johnson, Johnson & Smith (1991) synthesized over 375 studies on the effects of cooperative learning. They found that cooperative learning is more influential than competitive and individual learning. Cooperative learning offers student-student and student-teacher interaction besides having a lot of benefits for students. For example; it develops higher level thinking skills (Webb, 1982), increases student retention (Astin, 1997; Treisman, 1985) builds self-esteem in students (Johnson & Johnson, 1989) promotes positive attitudes toward subject matter, develops oral communication skills (Yager, 1985) and social interaction skills, creates an active class environment on problem solving skills, fosters individual responsibility (Johnson, Johnson & Holubec, 1984). It also involves students curriculum, stimulates critical thinking skills, supplies constructive and productive thinking, promotes higher achievement and solves discipline problems, reduce test anxiety significantly (Johnson & Johnson, 1989). In addition to the benefits of cooperative learning on students' learning, teachers can also benefit from it. Teachers who apply cooperative learning techniques, spend their time more effectively and win positive attitudes towards their colleague and jobs. Cooperative learning has many sub-techniques. For example; Academic Controversy (AC), Student-Team-Achievement-Divisions (STAD), Teams-Games-Tournaments (TGT), Group Investigation (GI),

Jigsaw, Learning Together (LT). In music education cooperative learning theory would also be applicable to general music instruction in performance classes as well as in collegiate musicianship and method classes (Kaplan, Stauffer; 1994). Cooperative learning does not replace current music

teaching methods but it supplements them. Students who are studying in cooperative learning groups develop musical thinking and communication skills, solve musical problems and enhance their performance ability. In performance classes, such as reading rhythmic notation to perform different percussion instruments and improvisation, students are involved in active learning activities (Friedman, 1989: 54). Competitive and individual music education causes students to become less talented, less confident and less motivated (Austin, 1990: 25). According to the research done in classes where cooperative learning method is applied, learning music in addition to academic, psychomotor and social areas (Austin, 1990; Bland, 1993; Bullen, 1993; Kocabaş, 2001; Kaplan & Stauffer, 1994) has been proved to have positive effect on learning to play musical instruments, creativity, success, self-concept, positive class-room atmosphere. The power of cooperation can improve the quality of life and education for teachers as well as for their students. In addition these, cooperative learning supports collaborative relationships among teachers, administrators, other professionals and staff. Singing a song and playing an instrument are the most important dimensions in music education. Exam anxiety in the phase of evaluation affects and reduces student's achievement and performance (Asmus, 1986; Austin & Vispoel, 1986; Chandler & Chiarella, 1988; Clark & Agras, 1991). Anxiety is the basic emotion which Spielberger and his colleagues tried to explain as anxiety theory with two factors. Continual anxiety is a kind of unhappiness and dissatisfaction in the objective criteria. Normally, an individual feels unhappy, dissatisfactory and pessimistic all the time. State anxiety is a subjective fear and temporary case that an individual feels due to the stressful condition he/she is in. The purpose of the study was to compare the effects of whole classroom teaching method and cooperative learning method on the continual and state anxiety and playing instrument skills.

METHOD

This study is a comparative and experimental study that is applied with control group and experimental group. Intermediate test and post-test design were applied to these groups. In this study "Learning Together Technique" was applied which was developed by Johnson & Johnson. "Learning Together Technique" was applied in the experimental group and whole classroom teaching method (Teacher-centered teaching method) was used in the control group. The effects of whole classroom teaching and learning together methods on the continual and state anxiety and playing instrument skills were compared.

Table I. Design of the Research

Group	Applied techniques	Inter-mediate -test	Post- test	Instrument of evaluation
Control Group	Whole Class-Room Teaching Method	Scale of Continual Anxiety	Scale of State Anxiety	Observation form for playing skills
Experimental Group	Learning Together Technique (Cooperative Learning Method)	Scale of Continual Anxiety	Scale of State Anxiety	Observation form for playing skills

Universe & Sample

The sample of the research consists of second year students at the Department of Class-Teacher Training at Buca, Faculty of Education in İzmir, taking Music lesson. This study was carried on during 8 weeks. The research was comparative and experimental, and included an experimental group and a control group. There were 104 students in experimental group and 106 students in control group.

Instruments of Collecting Data

In collecting the data of this research, the Continual & State Anxiety Scale, which has been translated into their district languages in European and Asian countries after being developed in the USA and which has been used since 1972-1978, was used. These scales were developed in English by C.D. Spielberger, R.L. Gorsuch and R. Lushene. Turkish adaptation and standardisation of the scales was done by Necla Öner and Ayhan Le Comte at the Hacettepe University. For Continual Anxiety Scale,

KR-Alpha reliability coefficient was found 0.86; for State Anxiety Scale KR-Alpha reliability coefficient was found 0.92. Each of the scales is a likert type scale which consists of 20 items. The most high point is 80 point in each of the scale. Correlation coefficient of Observation Form for Playing Instrument Skills is 0.92. It was developed by the researcher herself.

Applied Methods and Techniques

In the control group, teaching technique based on rhythm of the melody was used in whole classroom teaching method. During the application of this technique after the introduction to the class triggered the teacher attached attention to the song, motivated the students and sampled the song by singing and playing an instrument. The whole class rhythm (with bona method) and instrument exercises were done by giving hints, feedback and correction of the song or melody. At the end of the lesson the whole class played and sang the melody or song without the help of the teacher. The students who wanted were graded individually triggered.

In experimental group 9 application stages were applied in “Learning Together Technique ”.

1. Forming the heterogeneous groups randomly
2. Arrangement of the class-room
3. Forming group identity by finding name of the group, song of the group, slogan of the group, logo of the group
4. Giving the group members the roles of researcher, motivator, speaker and writer
5. Directing group members towards solving rhythm of the song/melody by bona method on a song sheet
6. Directing group members to resolving melody on the rhythm
7. Providing product of the group as a melody by instruments of the group members
8. Presenting melody of each group to whole class
9. Evaluating the group process & individual performance.

In this research guitar, org and generally recorder were used in all the class.

Collection and Analysis of Data

The data of this research have been collected according to the following stages:

1. In the forth week of the research, continual anxiety scale was applied in order to measure their continual anxiety level associated with how the students generally perceive themselves in music lesson.
2. As the eighth week of the research was intermediate exam week, state anxiety scale was applied to students just before their exams.
3. After state anxiety scale was applied, students were individually given instrumental exam.
4. Obtained data were solved in the computer programme of SPSS 8.0
5. During the solution of the data frequency, mean, percentage, standart deviation, -t test and corelation coefficients were calculated.

FINDINGS AND INTERPRETATIONS

In this study, the data and the findings which were based on applied learning techniques are shown below.

Table 2. Comparison of Continual Anxiety Scores Between the Control Group And the Experimental Group with t- Test

Gruop	N	x	Sd	t- value	Significant level
Control Group	106	44.77	5.40	0.56	P<0.05 No difference
Experimental Group	104	44.32	5.92		

In Table 2, it is seen that average score of the control group ($X=44.80$) and the experimental group ($X=44.30$) are very close in terms of continual anxiety. The t- test value shows that there is not a significant difference ($t=0.56$) between two groups.

Table 3. Comparison of State Anxiety Scores Between the Control Group And the Experimental Group with t- Test

Group	N	x	Sd	t- value	Significant level
Control Group	106	48.18	5.65	10.85	$P<0.002$ Difference is significant
Experimental Group	104	40.51	4.63		

In Table 3, State anxiety means of the control group and the experimental group has been shown. Before the performance examination, state anxiety mean of the control group ($X=48.18$) is higher than state anxiety mean of the experimental group ($X=40.50$). Having done t- test analyzing whether there is a significant difference between the control group and the experimental group or not a significant difference was found between two groups average. It can be said that the source of significant difference is due to cooperative learning method. While whole classroom-teaching method increased state anxiety, cooperative learning method decreased state anxiety.

Table 4. Analysis of t- Test Continual Anxiety Scores of the Control Group According to Gender

Variable	N	x	Sd	t- value	Significant level
Female	68	45.17	5.64	1.71	No difference
Male	38	43.74	4.67		

Having done t- test analyzing of continual anxiety, Table 4 has shown the average of the control group according to gender. Between continual anxiety average of female students of the control group ($X=45.17$) and male students of the control group ($X=43.74$); there is not any significant difference ($t=1.71$). It has been understood from the Table 4, that whole classroom teaching method has not constituted significant difference in terms of continual anxiety according to gender.

Table 5. Analysis of t- Test State Anxiety Scores of the Control Group According to Gender

Variable	n	x	Sd	t- value	Significant level
Female	68	48.50	6.09	0.88	No difference
Male	38	47.37	4.35		

State anxiety average of the control group has been seen in Table 5. Average of female students ($X=48.50$) is higher than male students ($X=47.37$). But having done t- test analyzing there is not significant difference ($t=0.88$). Although before the performance examination both female and male students average have increased, significant difference were not found between average of female and male students.

Table 6. Analysis of t- Test Continual Anxiety Scores of the Experimental Group According to Gender

Variable	N	x	Sd	t- value	Significant level
Female	72	44.71	6.07	1.77	No difference
Male	32	43.25	5.44		

Table 6, has shown that continual anxiety average of female and male students of the experimental group to which cooperative learning method was applied. Although female students ($X=44.71$) have high average, male students have low average ($X=43.25$). But according to t- test analyzing there was not significant difference between two average ($t=1.77$). In this situation continual anxiety whose source is unknown has not changed whether they are female or not in cooperative group.

Table 7. Analysis of t- Test State Anxiety Scores of the Experimental Group According to Gender

Variable	N	x	Sd	t- value	Significant level
Female	72	39.70	4.20	3.24	$P<0.002$ Difference is significant
Male	32	42.74	5.07		

Table 7, has shown state anxiety average of female and male students of the experimental group to which cooperative learning method was applied. Average of male students ($X=42.74$) is higher than female students ($X=39.70$). Significant difference was checked with t- test analyzing. Having done –t test analyzing –t value ($t=3.24$) was found significant. Just before the performance examination, it can be said that male students had higher state anxiety than female students in cooperative groups.

Table 8. Analysis of t- Test Between the Control Group and the Experimental Group Scores in Playing an Instrument

Group	N	x	Sd	t- value	Significant level
Control Group	106	80.93	12.05	2.56	$P<0.011$ Difference is significant
Experimental Group	104	86.02	16.0		

Table 8, has shown the score of playing an instrument average of the control group to which traditional whole classroom teaching method was applied and the experimental group to which cooperative learning method was applied. Playing instrument average of the experimental group ($X=86.02$) is very higher than the control group average ($X=80.93$). According to having done t- test analyzing significant difference was found in favor of experimental group ($t=2.56$). In cooperative groups explanations, playing and listening to an instrument, reading notation, questioning and answering discussions, observing an instrument while others playing enhanced students performance in the experimental group.

Table 9. Analysis of t- Test for Scores in Playing an Instrument in the Control Group According to Gender

Variable	N	x	Sd	t - value	Significant level
Female	68	81.88	12.37	1.23	No difference
Male	38	78.51	11.07		

Table 9, has reflected the scores of playing instrument average of the control group according to gender. Playing instruments average of female students who took music lesson via whole classroom method ($X=81.88$) is higher than male students ($X=78.51$). But having done t- test analyzing there was not significant difference ($t=1.23$). It can be said that traditional methods did not affect student performance whether they are female or not.

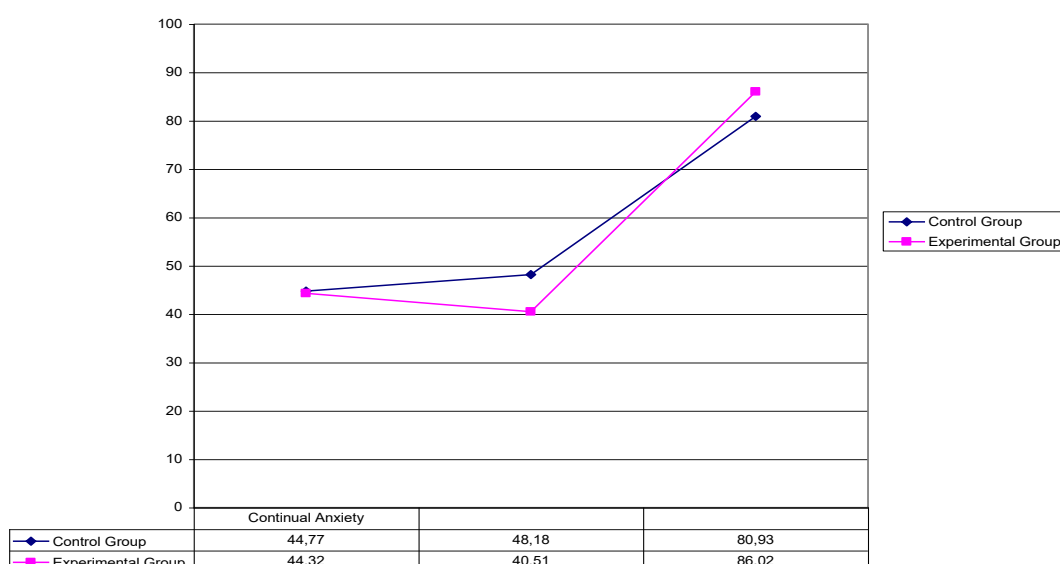
Table.10

Analysis of t- Test for Scores in Playing an Instrument in the Experimental Group According to Gender

Variable	n	x	Sd	t- value	Significant level
Female	72	88.61	14.63	2.97	Difference is significant
Male	32	78.93	17.65		

Table10, has shown the scores of t- test analyzing between playing instrument average of the experimental group in which “Learning Together Technique” applied from one of the cooperative learning techniques according to gender. In the experimental group, playing instrument average of female students ($X=88.61$) is very higher than male students ($X=78.93$). Difference was found significant ($t=2.97$). It can be said that female students who have shared common objectives in cooperative groups have shown more learning effort than male friends. Their performance were affected from these effort.

Correlation Grafics Among Continial, State Anxiety and Performance Sucses of Playing Instrument



Whereas just before the performance examination, the state anxiety level increased in the control group to which whole classroom teaching method was applied, it decreased just before performance examination in the experimental group.

CONCLUSION AND DISCUSSION

The results obtained from this research are presented below.

1. There is not any meaningful difference between control group to which whole classroom teaching method was applied and experimental group to which cooperative learning method was applied from the point of continual anxiety level. Continual anxiety level of both groups are a little higher from the average level for the two groups. In this case students are not generally anxious, unhappy, dissatisfactory and do not have pessimistic feelings in Music lesson.

2. There is a meaningful difference in favor of experimental group, to which cooperative learning method was applied from the point view of the state anxiety level. Whereas just before the performance examination, the state anxiety level increased in the control group to which whole classroom teaching method was applied, it decreased just before performance examination in the experimental group. In other words, students who are in the experimental group do not have any examination anxiety. It is because of cooperative learning groups in which group members share their objectives with each other, playing skills by observation, tapping rhythm, listening melody, explanations, questioning and answering among the students. Adding group rewards to individual evaluation seems to affect their low-state anxiety level.

3. According to gender, there is not a meaningful difference from the point of continual and state anxiety level in the control group to which whole classroom teaching method was applied. Although there is not a meaningful difference from the point of continual anxiety level according to gender; in state anxiety, there is a meaningful difference between female and male students in the experimental group. We can conclude that male students have higher state anxiety level in musical performance than female students do. It can be said that female students strive for their group and individual performance in music.

4. There is a meaningful difference in favor of experimental group in playing instrument skills. Whereas there is not any meaningful difference in playing instruments skills according to gender in the control group. Mean scores of female students is higher than male students in experimental group, so female students are more successful than male students in playing instruments skills. The students, who have studied and practiced all together giving feedback to each other and correcting their errors, giving concerts to the whole class and group members, have decreased their state anxiety in exams and this led to a higher performance. It can be said that Cooperative Learning is an effective method in teaching music and decreasing state anxiety.

Results of this research supported by the results of the research having done by Johnson, Johnson&Smith (1991) and showed towards that cooperative learning enhanced academic success, positive attitudes, productivity and reduce test anxiety (Johnson&Johnson, 1989). The results towards musical performances and playing skills are consistent with the researches and practices having done by Bland (1993), Bullen (1993), Hoffman (1991), Speake (1993), Kocabaş (1998a, 1998b, 2001), Kaplan&Stauffer (1994)

Neither method was superior, but it should be used as a supporting method together with private teaching music method such as Orff, Kodaly and Dalcroze Methods. By considering Cooperative Learning which is one of the active education methods we can establish its contribution to the other areas of music education primarily in the education of class-teachers and then in the education of the students in elementary education. But we need further research for cooperative learning in music and teacher education.

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