IMPACT OF DRAMA EDUCATION ON THE SELF-CONFIDENCE AND PROBLEM-SOLVING SKILLS OF STUDENTS OF PRIMARY SCHOOL EDUCATION

Volkan Cicek, Ozcan Palavan
Zirve University
Kızılhisar Campus, Sahinbey, Gaziantep, 27260, TURKEY
volkancicek@gmail.com

ABSTRACT

It is an established fact that students' academic success is proportional to their problem-solving skills. Another established fact is the positive effect of self-confidence on problem-solving skills of students. Thus, finding the right courses that would improve the self-confidence and problem-solving skills of college students is a concern. Therefore, in this study, influence of drama and drama education on the self-confidence and problem-solving skills of college students of primary school education is researched. The study was conducted with 34 college students via experimental pretest posttest single group design model. Problem-solving and self-confidence scales were used to collect the necessary data. Analysis of the collected data revealed that the self-confidence levels of college students of primary education have improved after being introduced to the drama education. In other words, a significant difference was observed in favor of the drama education when the self-confidence levels of students were compared before and after they were introduced to the drama education. Additionally, a significant difference was also observed in favor of the drama education when problem-solving skills of students were compared before and after they were introduced to the drama education. Consequently, it was concluded that drama contributes to self-confidence levels of individuals and that their problem-solving skills develops parallel to their improved self-confidence. Therefore, it is recommended to incorporate drama into various levels of educational system both as a course and as a technique.

KEYWORDS

Classroom Teacher, Drama, Problem-solving, Self-confidence

1 INTRODUCTION

Problem solving is a crucial skill for the individuals to cope with the problems of life and adapt. It a composite skill necessitating other skills such as reasoning and discretion, knowing and comprehending the self and the surroundings, making sense of the cause and effect relations of different circumstances and events and analyzing them, and developing unique solutions to different problems (Erbay, 2009:1). Problems get complicated as the individual gets olders and as his/her circumstances and the environmental factors change by time (Üstün, Bozkurt, 2003:14). Therefore, individuals, who did not develop problem-solving skills at earlier ages, have even harder time to manage such problems when they are older, and thus, they are more likely to lose their self-confidence and lead an unhappy life. A society composed of such individuals may also crumble. Only individuals that have the necessary problem-solving skills may lead the society to a better future (Güçlü, 2003:274), because problem-solving comprises development of tools, instruments, paths, methods, and techniques and a series of efforts to remove the difficulties, hardships, obstacles to achieve a certain objective and an inner equilibrium (Koray, Azar, 2008: 126; Nacar, 2010: 26). Individuals and then the society would have hard time unless such equilibrium is established. One of the questions that arise here is whether problem-solving skill is an innate skill or not. People usually assume that they have this skill from birth. However, in fact

there are not many people, who really had sufficient training to have had mastered this skill (Kneeland, 2001: 3). De Bono states: "Problem-solving is a basic need for a child like nutrition or playing games. Children enjoy working their brain to solve a problem as they enjoy sliding or jumping on a trampoline" emphasizing the importance of problem-solving (De Bono, 1995:22). Education helps improving this skill and as this skill is developed in individuals, society may be expected to develop as well. Especially after 1990s, teaching of values that help to connect the brain, body, mind and the social world became more important (Duman, 2007: 50). Veermann and Veldhuis-Diermanse (2001) state that a group study environment is a suitable medium for students to improve their problem-solving skills, especially so if the group study involves incorporation of both the mind and the body into the study. If self-confident students, who have the necessary critical thinking and problem-solving skills, are the desired outcome of the education, then students have to be actively and consciously involved in the decision-making process of the choice of activities to be employed (Demirel and Yağcı, 2011). These activities must address both body and the mind and they have to be implemented in a social environment. Here, drama comes out as a promising technique.

Drama is the reenactment of a past event, an idea, or sometimes an abstract concept or a behavior as a group using improvisation, role-playing or drama techniques taking into consideration many dimensions such as observations, emotions, feelings, experiences, etc. (San, 2002). Drama helps students that have communication problems rid their worries earning them to the society (Ergin, 1995: 101).

Regardless of the field it is utilized, drama allows students to have self-experiences leading them to have the self-confidence in order to trust others, to cooperate and to have empathy with them. Meanwhile, primarily problem-solving, creative thinking, self-confidence and many other similar skills are also improved (Yassa, 1999; Okvuran, 2000; Akoğuz, 2002; Hui and Lau 2006; Kara & Çam, 2007; Karakaya, 2007:109).

It is important to keep in mind that education have been almost always rendered in a traditional teacher-centered setting, where students had to sit down, listen, and write for years. Drama, on the contrary, exposes the students' imagination allowing a student-centered setting, and thus is a revolutionary technique (Karppinen, 2005: 11). However, it is rendered useless without teachers' knowledge of it as it is the case for similar other techniques those teach students how to learn (Şenol et al., 2007: 212). There are many studies in the literature that researched the teachers' awareness of such techniques and implementations (Özcan, 2004; Karakaya, 2007; Sakkallı, Hüsren and Özçınar, 2007; Tekerek, 2007; Ormancı and Ören, 2010; Udeani ve Adeyoma, 2011). For instance, in the study of Sakallı, Hürsen and Özçınar (2007), teachers were found to have utilized mostly the narrational and question-answer methods but rarely hands-on methods such as drama, role-playing, experiments, and field trips that address many senses. In Akçadağ's study dated 2010, it was found that more than half of the elementary school teachers needed training about drama techniques.

As a result, it is obvious that teachers, and especially teachers of primary school level, must be informed of various teaching techniques and shall be encouraged to implement them. However, the very first step seems to be the teachers' belief in such techniques. According to Ormancı and Ören (2010:184), drama courses improve classroom teacher candidates' creativity, self-confidence, cooperativeness, social relations and empathetic thinking skills. Karakaya (2007: 109) also points out to the same fact that drama courses help educating students to become creative, constructive, cooperative, problem-solver individuals, who are able to realize themselves. Tekerek (2007) has stated that the activities that take place in the college course of "Drama in

Elementary Education" are intended to rid the concerns that stress out the students, exposing students' imagination enriching their personalities. All of the aforementioned personal skills and qualities that the drama courses are said to bring out of the students are also vital and essential skills. Especially self-confidence and problem solving are crucial skills to perpetuate a quality life.

Udeani and Adeyoma (2011) found a positive relationship between the problem-solving skills of the teachers and the academic success levels of the students they taught. In other words, students' success levels increase with increasing problem-solving skills of their teachers. Therefore, determination of the impact of drama education both on the self-confidence and problem-solving skills of college students poses a research question. Other than separately affecting the self-confidence and problem-solving skills, drama education indirectly improves the problem-solving skills of college students solely by increasing their self-confidence as well; since it is established in the literature that an increase in self-confidence levels also result in an increase in the problem-solving skills. Thus, in this study, direct and indirect effects of drama education on the self-confidence and problem-solving skills of college students are researched. In this regard, posed research questions are as follows:

1. Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the problem-solving inventory before and after they were introduced to drama education?
   a) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the impetuous approach subscale of the problem-solving inventory before and after they were introduced to drama education?
   b) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the thinking approach subscale of the problem-solving inventory before and after they were introduced to drama education?
   c) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the evasive approach subscale of the problem-solving inventory before and after they were introduced to drama education?
   d) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the evaluative approach subscale of the problem-solving inventory before and after they were introduced to drama education?
   e) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the self-confidant subscale of the problem-solving inventory before and after they were introduced to drama education?
   f) Is there a statistically significant difference between the primary school education teacher candidates' problem-solving skills measured by the planned approach subscale of the problem-solving inventory before and after they were introduced to drama education?
2. Is there a statistically significant difference between the primary school education teacher candidates' self-confidence levels measured by the self-confidence scale before and after they were introduced to drama education?
3. Is there a statistically meaningful relation between the primary school education teacher candidates' problem-solving skills and the self-confidence levels?

2 METHODOLOGY

This study has been conducted using the single group pretest-posttest experimental model. In this model, selected group is administered an independent variable and measurements are taken before and after the experiment (Karasar, 2002: 101). Independent variable of the study is the drama education introduced to the experiment group, of which effects are studied. On the other hand, dependent variables are the problem-solving skills and self-confidence levels of the college students to whom drama education is introduced.

2.1 Study Group

A study group is determined for the study instead of a population-sample selection since an experimental design used. As a reason, the purpose in experimental studies is to examine the case rather than generalizing (Sönmez 2005). Study group consists of the 34 students of primary school education department that are in the same grade level those had drama education in the 2013-2014 academic year at Zirve University College of Education.

2.2 Experimental Procedure

Prior to the research, approvals and consents of the participants, Zirve University Rectorate, and Zirve University Senate Committee of Ethics have been obtained. The fact that drama education is a compulsory course that the 34 students had to enroll does not negatively affect the effectivity of creative drama as a group activity as revealed in Adıgüzel's study in 2010.

Study lasted for 14 weeks. 34 primary school education students were given self-confidence and problem-solving scales in the 1st week. Students were taught theoretical information from the 2nd week until the 5th week for a total of 16 hours, with 4 hours per week for four weeks (4 sessions x 4 hours = 16 hours). Practical applications have been implemented from the 6th week until the 13th week for a total of 32 hours, with 4 hours per week administered in two sessions of two hours each (16 sessions x 2 hours = 32 hours) in consultation with two educational experts. Lesson plans were revised and then finalized based on the expert opinions. Lessons were realized on Tuesdays each week between the hours of 09.00 and 13.00 in the drama hall. A drama application session consisted of three parts that are, preparation-warming up, reenactment, and evaluation-discussion. 34 primary school education students were given self-confidence and problem-solving scales once more in the 14th week after the completion of the research.

2.3 Data Collection Instrument

Self-confidence and problem-solving scales were used to collect the necessary data for the study.

2.3.1 Problem-Solving Inventory

Heppner and Petersen developed problem-solving scale (PSI) to measure the problem-solving skills of college students. PSI was adapted to Turkish in 1993 by Şahin. PSI may be used in the areas of psychological guidance, medicine, and education to determine the problem-solving or coping level of individuals. Inventory comprises 35 questions that are in the form of 6-point Likert scale. "1" denotes total agreement and "6" denotes total non-agreement. Out of the 35 questions, 9th, 22nd, and 29th questions were not graded, whereas 1st, 2nd, 3rd, 4th, 11th, 13th, 14th, 15th, 17th, 21st, 25th, 26th, 30th and 34th questions are inversely graded. The lowest score to be obtained is 32, while the highest is 192. Higher scores imply that the individual perceives him/herself as insufficient in terms of problem-solving skills. Inventory was administered to 150 people abroad to determine its validity and reliability. Entire inventory's reliability

coefficient was found to be .90. Question-total score correlation range of the inventory lied between .25 and .71, while the test-retest reliability coefficients of the sub-inventories varied between r= .83 and r= .89. Inventory was administered to 244 college students to determine its reliability domestically. Cronbach Alfa reliability coefficient was found to be 88. Reliability coefficient of the inventory that was obtained using dividing into half technique was found as .81. Factor analysis revealed 6 factors of "impetuous approach" (13th, 14th, 15th, 17th, 21st, 25th, 26th, 30th and 32nd questions), "thinking approach" (18th, 20th, 31st, 33rd and 35th questions), "evasive approach" (1st, 2nd, 3rd and 4th questions), "evaluative approach" (6th, 7th and 8th questions), "self-confidant" (5th, 23rd, 24th, 27th, 28th and 34th questions), and "planned appproach" (10th, 12th, 16th and 19th questions). Alpha coefficients of the factor subinventories determined based on these 6 factors are found as.78, .76, .74, .69, .64, and .59; respectively. Both the scores obtained from the subinventories and the total score obtained from the inventory may be used. The correlation coefficient between the total score of the inventory and the Beck Depression Inventory was measured as .33; and the correlation coefficient between the total score of the inventory and the STAI-T total score was measured as .45. Additionally, 69 PSI was determined to be able to meaningfully distinguish the groups formed based on the scores obtained from the Beck Depression Inventory and STAI-T. Discriminant analysis revealed that the inventory could categorize the dysphoric groups with 94% accuracy and the non-dysphoric groups with 55% accuracy; whereas it could categorize the groups with anxiety with with 90% accuracy and the groups with no anxiety with 80% accuracy (Şahin, Şahin and Heppner, 1993).

2.3.1 Self-Confidence Scale

Akın (2007) has developed the self-confidence scale explaining 43.6% of the total variance consisting of 33 questions and two factors that are "internal self-confidence" and "external self-confidence". Internal self-confidence consists of 17 questions that have factor charges between .31 and .74 corresponding to the 26.4% of the total variance. External self-confidence consists of 16 questions that have factor charges between .32 and .75 corresponding to the 17.2% of the total variance. Correlation coefficient between the two factors was measured as .81. Thus, the scale may be used in one-dimension as well considering the high correlation in between the factors. Another validity study that was conducted during the development of the self-confidence scale was the concurrent validity. Both the self-confidence scale that was developed for this study and the Coopersmith Self Estcem Inventory have been simultaneously administered to the participants and the correlation between the two scales has been calculated as .87. Based on the findings obtained from the validity measurements, it is safe to say that validity of the scale is established. In the reliability analysis, internal consistency coefficients of the self-confidence scale were found as .83 for the entire scale, .83 for the internal self-confidence factor, and .85 for the external self-confidence factor; respectively. Scale was administered to the same students twice with an interval of 3 weeks to determine the test-retest reliability score. Correlation coefficients obtained from these two test administrations were found as .94 for the entire scale, .97 for the internal self-confidence factor, and .87 for the external self-confidence factor; respectively. The highest possible score and the lowest possible score to be obtained from this 5 point Likert scale are 165 and 33; respectively. High scores indicate self-confidence at high levels especially considering that there is no negative question in the scale. Points lower than 2.5 indicate low-level self-confidence, whereas points between 2.5 and 3.5 indicate medium, and points over

3.5 indicate high level of confidence in the questions (Akın, 2007).

2.4 Analysis of the Data

In the data analysis, at first, Shapiro–Wilk Test was applied to determine the normality distribution. Shapiro–Wilk Test is commonly applied when the sample size is smaller than 50 (Durmuş, Yurtkoru, Çinko, 2013:66). Secondly, between the two non-parametric matched sampling tests, Wilcoxon Signed Rank Test was applied to the data that are not normalized as determined from the Shapiro–Wilk Test. Wilcoxon Signed Rank Test is commonly used to determine whether the difference between two associated average value is significant or not. It corresponds to the Paired Sample t-Test among the parametric tests (İslamoğlu, Alnıaçık, 2013). However, Paired Sample t-Test was still applied in addition to the Wilcoxon Signed Rank Test.

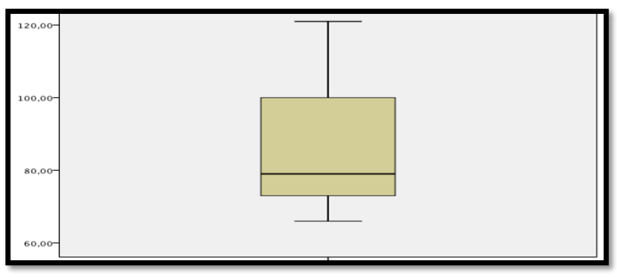
3 FINDINGS

Test of normality was applied to the data associated with the subscales before the analysis of the data. Results of the test were as follows:

Table:1 Normality Distribution Analysis Table of the Problem-Solving Inventory Scores

	N	df		p
Problem-Solving Inventory	34	34	0,863	0,002

Figure 1: Box-Line Distribution Graph of the Problem-Solving Inventory Scores

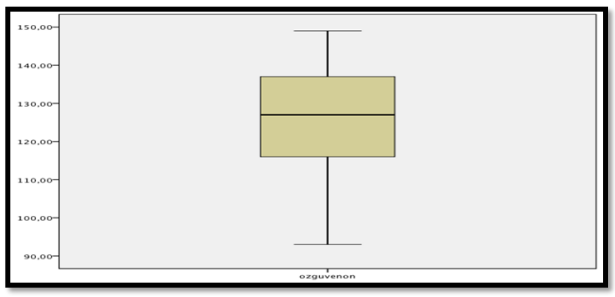


Analysis revealed that scores obtained from the Problem-Solving Inventory did not show normal distribution. Therefore, scores obtained from the Problem-Solving Inventory were analyzed with the non-parametric Wilcoxon Signed Rank Test as well in addition to the Paired Sample t-Test, which is a parametric test. Analysis of the scores obtained from the Self-Confidence Scale is shown in Table 2 and Figure 2.

Table 2: Normality Distribution Analysis Table of the Self-Confidence Scale Scores

	N	df		p
Self-Confidence Scale	34	34	0,960	0,235

Figure 2: Box-Line Distribution Graph of the Self-Confidence Scale Scores



Analysis revealed that scores obtained from the Self-Confidence Scale showed normal distribution. Therefore, scores obtained from the Self-Confidence Scale were analyzed with parametric Paired Sample t-Test.

3.1 Findings Regarding Problem-Solving Inventory

Analysis of the t-Test results, shown in Table-3, and Wilcoxon test results, shown in Table-4, revealed that there is a significant difference ($p<.05$) between the Pre-test ($X=85.32$) ve Post-test ($X=78.23$) average scores obtained from the total scores of the Problem-Solving Inventory. Higher scores obtained from the Problem-Solving Inventory indicate that

individual students perceive themselves as insufficient with respect to the problem-solving skills. However, students' scores decreased after the experimental period indicating that drama education positively influenced the problem-solving skills of the students.

Table 3: t-Test Analysis of of Scores Obtained from the

SCORES	TEST	N	X	SS	Z	P
TOTAL SCORE	Pre-Test	34	85,32	17,05	-2,905	0,004
	Post-Test	34	78,23	20,46		
IMPETUOUS APPROACH	Pre-Test	34	30,41	5,88	-0,805	0,421
	Post-Test	34	29,52	6,50		
THINKING APPROACH	Pre-Test	34	12,11	3,93	-3,845	0,000
	Post-Test	34	10,35	3,81		
EVASIVE APPROACH	Pre-Test	34	10,73	3,12	-1,885	0,059
	Post-Test	34	9,29	3,88		
EVALUATIV E APPROACH	Pre-Test	34	7,26	2,56	-0,724	0,469
	Post-Test	34	6,94	2,63		
SELF-CONFIDANT APPROACH	Pre-Test	34	15,88	5,01	-3,132	0,002
	Post Test	34	13,64	5,04		
PLANNED APPROACH	Pre-Test	34	8,91	2,50	-1,077	0,282
	Post Test	34	8,47	3,20		

Problem-Solving Inventory

Analysis of the t-Test results and Wilcoxon test results revealed that there is a significant difference ($p<.05$) between the Pre-test ($X=12.11$) ve Post-test ($X=10.35$) average scores obtained from the thinking approach subscale scores of the Problem-Solving Inventory. High scores indicate that the individual student perceives him/herself as insufficient with respect to the particular subscale. Decreasing scores after the introduction of drama education indicates the positive impact of drama education.

Table 4: Wilcoxon Test Analysis Result of Problem-Solving Scale

SCORES	TEST	N	X	SS	T	P
TOTAL SCORE	Pre-Test	34	85,32	17,05	3,070	0,004
	Post-Test	34	78,23	20,46		
IMPETUOUS APPROACH	Pre-Test	34	30,41	5,88	0,906	0,371
	Post-Test	34	29,52	6,50		
THINKING APPROACH	Pre-Test	34	12,11	3,93	4,158	0,000
	Post-Test	34	10,35	3,81		
EVASIVE APPROACH	Pre-Test	34	10,73	3,12	1,990	0,505
	Post-Test	34	9,29	3,88		
EVALUATIV E APPROACH	Pre-Test	34	7,26	2,56	0,728	0,472
	Post-Test	34	6,94	2,63		
SELF-CONFIDANT APPROACH	Pre-Test	34	15,88	5,01	3,743	0,001
	Post Test	34	13,64	5,04		
PLANNED APPROACH	Pre-Test	34	8,91	2,50	0,886	0,382
	Post Test	34	8,47	3,20		

Analysis of the t-Test results and Wilcoxon test results revealed that there is not a significant difference ($p>.05$) between the Pre-test ($X=10.73$) ve Post-test ($X=9.29$) average scores obtained from the evasive approach subscale scores of the Problem-Solving Inventory.

Analysis of the t-Test results and Wilcoxon test results revealed that there is not a significant difference ($p>.05$) between the Pre-test ($X=7.26$) ve Post-test ($X=6.94$) average scores obtained from the evaluative approach subscale scores of the Problem-Solving Inventory.

Analysis of the t-Test results and Wilcoxon test results revealed that there is a significant difference ($p<.05$) between the Pre-test ($X=15.88$) ve Post-test ($X=13.64$) average scores obtained from the self-confidant approach subscale scores of the Problem-Solving Inventory. High scores indicate that the individual student perceives him/herself as insufficient with respect to the particular subscale. Decreasing scores after the introduction of drama education indicates the positive impact of drama education.

Analysis of the t-Test results and Wilcoxon test results revealed that there is not a significant difference (p>.05) between the Pre-test (X=8.91) ve Post-test (X=8.47) average scores obtained from the planned approach subscale scores of the Problem-Solving Inventory.

3.2 Findings Regarding Self-Confidence Scale

Analysis of the t-Test results revealed that there is a significant difference (p<.05) between the Pre-test (X=125.85) ve Post-test (X=130.85) average scores obtained from the self-confidence scale scores indicating that the drama studies increased students' self-confidence scale scores implying improved self-confidences.

Table 5: t-Test Analysis of Scores Obtained from the Self-Confidence Scale

Scores	N	X	ss	Z	p
Pre-Test	34	125,85	13,95	-2,401	0,022
Post-Test	34	130,85	19,73		

3.3 Findings Regarding the Relation between the Self-Confidence and Problem-Solving

It is found that there is medium correlation between the self-confidence scale scores and problem-solving inventory scores based on the pre-test (r= -0,407) results, and high correlation between the self-confidence scale scores and problem-solving inventory scores based on the post-test (r= -0,505) results. The sign of the correlation is negative since as the scores obtained from the problem-solving inventory decrease, the self-confidence increases. In brief, the individual perceives him/herself as sufficient with respect to the problem-solving skills as his/her self-confidence level increases.

Table 6: Correlation Table Regarding the Self-Confidence Scale Scores and Problem-Solving Inventory Scores

	Pre-Test				Post-Test			
Scores	N	X	ss	r	N	X	ss	r
Self-Confidence	34	125,85	13,95	-0,407	34	130,85	19,73	-0,505
Problem Solving	34	85,32	17,05		34	78,23	20,46	

4 DISCUSSION AND RESULTS

The main objective of this study is to research the effect of drama education on primary education students' self-confidence and problem-solving skills. Students' self-confidence levels were measured via the self-confidence scale and their perceptions with respect to their problem-solving skills were measured via the problem-solving inventory; both before and after drama education has been provided to them for 3 months. As a result, significant differences have been found between the averages of students' pre-test and post-test scores obtained from both the problem-solving inventory and the self-confidence scale.

Average of the study group's problem-solving inventory pre-test and the post-test scores have been X: 85.32, and X: 78.23; respectively. Higher scores obtained from the problem-solving inventory indicate that individual students perceive themselves as insufficient with respect to the problem-solving skills. However, students' scores decreased after the experimental period indicating that drama education has led the students to think of themselves as sufficient with respect to the problem-solving skills. Many other studies of similar nature in the literature have revealed comparable results. Innes, Moss and Smigel (2001) for instance concluded in their study that the critical thinking and the problem-solving skills of children participated in the creative

drama process have been improved. In another study, Danner (2003) concluded that drama improved children's problem-solving skills as well. Again, Köseoğlu (2006) found that using drama as a problem-solving strategy for students of 9th grade in teaching of geography revealed better results than using other methods as a problem-solving strategy and positively influenced knowledge retention in students. Additionally, Catterall (2007) concluded in his study that drama positively influenced students' problem solving skills with respect to the peers' conflict situations. As a counter study, in which Selçioğlu Demirsöz (2008) studied the effect of drama education on the problem-solving skills of college students of primary education, no significant difference was found between the average pre-test and post-test scores of students obtained from the problem-solving inventory and all of its subscales. As a result, majority of the research findings support the findings of this study. Combined with the findings of Udeani and Adeyoma's study (2011), which revealed that there is a positive correlation between the teachers' problem-solving skills and the academic success of their students; it can be said that providing teacher candidates with drama education will improve their problem-solving skills and enhance the academic success of the students that they will be teaching.

Average of the study group's self-confidence scale pre-test and the post-test scores have been X: 125.85, and X: 130.85; respectively. Average self-confidence scores of the study group has been significantly increased after they were introduced drama education. Yassa (1999) has also found a similar result in his study conducted on high school students. He found that participation in creative drama activities improved the feeling of self-confidence and social interactions inside the classroom. Freeman's (2000) study on third and fourth grade students revealed that using creative drama technique in classes improved students' self-confidence and that the students found these activities interesting, motivating and fun allowing them to focus on the topic easily. Many other studies of similar nature in the literature have revealed comparable results. Morris' study (2001) entitled "Authentic Evaluation of the Drama Method in Social Studies Class" revealed that creative drama method enhanced students' self-confidence, creativity and imagination. In another study, Rowland (2002) pointed out to the same result finding that the children, whom were introduced to drama education, had higher self-confidence scores compared to the control group. Duatepe and Ubuz's study (2007) is another study, in which they studied the thoughts and opinions of mathematics teachers, who were observing drama based mathematics courses. Duatepe and Ubuz found that these mathematics teachers observed that the students, whom were administered drama based mathematics courses, participated in the classes more, had fun, commented on thoughts and opinions of others and criticized, and their self-confidence levels, imagination and creativity had increased. In Ormacı and Ören's study (2010) conducted with 58 college students, who will become teachers, it was found that students' creativity, self-confidence, and empathetic skills and the solidarity among them had increased and students stated that they would want to use drama in many courses. Toy's study (2012) entitled "Opinions of Teacher Candidate Students about Pedagogical Formation Courses Taught using Drama Technique" that is conducted with 230 college students, who will become teachers, revealed that students thought that drama improved their self-confidence, creative thinking, and public speaking skills, it helped them to overcome their concerns and to like the teaching profession.

It is found that there is medium correlation between the self-confidence scale scores and problem-solving inventory scores based on the pre-test (r= -0,407) results, and high correlation between the self-confidence scale scores and problem-solving inventory scores based on the post-test (r= -0,505) results. It was observed

that the problem-solving skills of the students had improved as the self-confidence levels had increased. The medium-level negative correlation between the two factors indicates that self-confidence positively affects the problem-solving skills, because decreasing scores obtained from the problem-solving scale imply increasing perceptions with respect to problem solving.

It is important for the teachers to realize that there are other methods and techniques available aside from the traditional teaching methods (Akçadağ, 2010). This study along with other studies in the literature can be said to have contributed to this fact by revealing the positive effect of drama on the self-confidence and problem-solving skills of students of primary education. It may also be said that drama technique increases the individual's articulation and communication abilities along with problem-solving skills, all due to the increase in self-confidence levels, as revealed by other studies *(Demirel ve Yağcı, 2011).*

5 RECOMMENDATIONS

Following recommendations are deemed appropriate based on the findings of this study:

1. Creative drama course can be taught for at least two semesters in the curriculum of college students of primary education major.
2. Creative drama technique can be increasingly used as a teaching technique in other courses as well.
3. Creative drama course can be incorporated to the curricula of other educational levels aside from the college education to improve the students' self-confidence levels and problem-solving skills.
4. Longitudinal studies may be conducted to establish the effect of creative drama on problem-solving skills.
5. Other studies may research the changes occurred on students, whom are taught by the teachers that have increased problem-solving skills due to being introduced to creative drama.
6. Qualitative studies may be conducted to investigate the effects of drama education in depth as well.

REFERENCES

[1] Adıguzel, Ö. (2010). Creative Drama in Education. Ankara: Naturel Publishing.

[2] Akın, A. (2007), The Development and Psychometric Characteristics of the Self-confidence Scale Journal of Abant İzzet Baysal University Education Faculty, Year 7, Volume 2, p.165- 175.

[3] Akoğuz, M. (2002). The impact of creative drama in improving communication skills.(Master Thesis), Ankara University, Education Science İnstitute

[4] Akçadağ, T. (2010). The Training Needs of Teachers Concerning Methods & Techniques and Assessment & Evaluation in the Primary School Curriculum. Bilig Spring 2010 volume:53 p, 29-50

[5] Catterall, J.S. (2007). Enhancing Peer Conflict Resolution Skills Through Drama: An Experimental Study. Research in Drama Education. 12(2) p.163-178.

[6] Danner, S. (2003). Prevention Through Performance: Creative Drama Enrichment Program for Arts School Students. (Ph.D Thesis). Green State University

[7] Demirel, Ö., Yağcı, E. (2011). Teaching Principles and Methods for Anatolian High Schools (5th Print). MEB State Books, Ankara.

[8] De Bono, E. (1995). Kids Resolve Problems. Istanbul: Inkılap Publishing.

[9] Duatepe, P., A., Ubuz, B. (2007). Teachers' Opinions of Mathematics Courses Based on Creative Drama. Creative Drama Journal (Winter/summer). Volume .3-4. P.193

[10] Duman, B. (2007). Why Brain-Based Learning? Ankara: Pegem A Publishing.

[11] Durmuş, B.,Yurtkoru, E.S., Çinko, M. (2013) Data Analysis in Social Sciences with SPSS. İstanbul : Beta Publishing (5th Print)

[12] Erbay, D. (2009). The Investigation of Effects of Creative Drama Education on Six Year Old Kindergarten Students Auditory Reasoning and Processing Skills (Ph.D Thesis) Selçuk University, Social Science Institute.

[13] Ergin, A. (1995), Educational Technology Communications, Ankara: Pegem Publishing

[14] Freeman, G. D. (2000). Effects of Creative Drama Activities on Third and Fourth Grade Children, (Unpublished PhD Dissertation) USA: University of Missippi.

[15] Güçlü, N., 2003. "Problem-Solving Skills of High School Principals", National Education 80th Year Special Issue, 160(1), pp. 272-300.

[16] Hui, A. & Lau, S. (2006). Drama Education: A Touch of the Creative Mind and Communicative-Expressive Ability of Elementary School Children in Hong Kong. Thinking Skills and Creativity, 1, p.34–40.

[17] Innes, M., Moss, T. , Smigel, H. (2001). What Do the Children Say? The Importance of Students Voice. Research in Drama Education. 6 (2).p.207-221.

[18] İslamoğlu, A. H., Alnıaçık, Ü. (2013). Research Methodologies in Social Sciences. İstanbul :Beta Publishing (3th Print).

[19] Kara, Y & Çam, F. (2007). Effect Of Creative Drama Method On The Reception Of Some Social Skills. Journal of Hacettepe University Education Faculty. volume:32, p.145–155.

[20] Karakaya, N. An Example of Drama Application And Drama in Elementary Education. Journal of Gazi University Gazi College of Education Volume :27 (1) p.103-139

[21] Karasar, N. (2002). Scientific Research Methodology. Ankara: Nobel Publishing.

[22] Karppinen, T. (2005). Artistic Practices and Techniques from Europe and North America Favouring Social Cohesion and Peace. Arts Education and Creativity in Primary and Secondary School. Paris: UNESCO.

[23] Kneeland, S. (2001). Problem Solving (Translated by N. Kalaycı). Ankara: Gazi Publishing.

[24] Koray, Ö. ve Azar, A.(2008). An Analysis of High School Students' Problem Solving And Logical Thinking Abilities In Terms Of Gender And Preferred Field. Journal of Kastamonu Education, volume: 16(1), p.125-136.

[25] Köseoğlu, İ. (2006). Using Dramatization As A Problem Solving Strategy In Geographein (Master Thesis). Marmara University Education Science Institute

[26] Morris, R. V. (2001). "Drama and Authentic Assessment in A Social Studies Classroom", Social Studies, 92, (1). p.41-45.

[27] Nacar, F. S., 2010. Analysis Of The Relationship Between The Communication Of The Class Teachers And Their Skills To Solve Interpersonal Problems (Mater Thesis), Çukurova University, Social Science Institute, Adana

[28] Ormancı, Ü ve Ören F. Ş. (2010). Classroom Teacher Candidates' Opinions Related to Using Drama in Primary School: An Example of Demircı Faculty of Education. Ankara University, Journal of Faculty of Educational Sciences, yıl: 2010, volume: 43(1) p. 165-191

[29] Okvuran, A. (2000). Attitudes toward Creative Drama (Ph. D. Thesis). Ankara University Social Science Institute. Ankara.

[30] Özcan, H. (2004) Using Drama Method In Geography Subjects Studied In Social Sciences For Primary School Fifth Grade Students (Sample Of Kazan District) (Master Thesis). Gazi University. Education Science Institute. Ankara.

[31] Rowland, G. E. (2002). Every Child Needs Self esteem: Creative Drama Builds Self Confidence Through Self Expression, (PhD Thesis) The Union Institute.

[32] Sakallı, H. Hürsen, Ç. & Özçınar, Z. (2007)"The Frequent Use Of Teaching Strategies/Methods Among Teachers According To The Teacher Candidates Observation" Cypriot Journal of Educational Sciences, Vol 2, No 1

[33] San, İ."Creative Drama as a Hands-on Learning Method and a Aesthetic Process". Creative Drama. Ed. Ömer Adıgüzel. Naturel Publishing Ankara, (2002).

[34] Selçioğlu E. D. (2008). "Effect of Creative Drama on the Problem-Solving Skills of Student Candidates of Classroom Teaching", 3th. Internetional Congress of Drama in Education, Ankara University, 21-23 November

[35] Sönmez, V. (2005). Mistakes Made In Scientific Research. Journal of Educational Surveys, Volume: 18, p.150-170.

[36] Şahin, N. Şahin, N.H., Heppner, P.P. (1993). Psychometric Properties of the Problem-solving Inventory in A Group Of Turkish University Students. Cognitive Therapy and Research, Vol. 17 No: 4,

[37] Şenol, E. N. (2011). The Effect of Creative Drama Practices in Mathematics on Primary School Students' Problem Solving Strategies, Achievement, Self-Concept And Interaction Patterns.

[38] Şenol, H., Bal, Ş., Yıldırım, H.İ. (2007). The Effect of Cooperative Learning on Pupils' Success and Attitudes against Science and Teaching Sensory Organs at 6th Grade. Kastamonu Education Journal (March). 15 (1): 211-220.

[39] Tekerek, N. (2007). Freedom of Creative Drama, Stereotype of the Habbits and an Application Example. Journal of Uludağ University Education Faculty 20 (1), 189–219. [Online]: http:// http://kutuphane. Uludag. edu. tr/Univder/uufader. htm [21.07.2013]

[40] Toy, B. Y., (2012). Perceptions Of Teacher Candidates Regarding The Instruction Of Pedagogical Courses By Using Drama Method: The Development And Learning Course Example. International Journal of New Trends in Arts, Sports & Science Education, volume 1 Issue 1 p.125-136

[41] Udeani, U. ve Adeyemo, S. A. (2011). The Relationship Among Teachers Problem-Solving Abilities, Student's Learning Styles and Students Achievement in Biology. International Journal of Educational Research and Technology, 2 (1), 82-87.

[42] Üstün, A. ve Bozkurt, E. (2003) Occupational Factors that Affect the Problem Solving Skills of Primary School Principals as They Perceive Themselves. Kastamonu Education Journal (March) volume 11 no:1 p:13-20

[43] Veerman, A. and Veldhuis-Diermanse, E. (2001). Collaborative Learning through Computer Mediated Communication in Academic Education. http://www.ll.unimaas.nl/eurocscl/ presentations.htm [19 Ağustos, 2013]

[44] Yassa, N. A. (1999). High School Involvement in Creative Drama. Research in Drama Education, 4(1), 37–49.

[45] Yenilmez, K., Uygan, C. (2010). The Effects of Creative Drama Method on 7th Grade Students' Self-Efficacy Beliefs On Geometry. Kastamonu Education Journal. September Vol:18 No:3

[46] Yıdırım, İ.N. (2008). The Determination Of The Levels About The Adequacies And Applications For The Creative Drama Method Of The Elemantry Education First Degree Primary-School Teachers. (Master Thesis). Fırat University Social Science Institute