

Examining The Effects of Creative Drama on Teacher Efficacy Belief, Critical Thinking Disposition, Emphatic Tendency and Reflective Thinking Tendency

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ABSTRACT

The current study aimed to examine the effects of creative drama on preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency. The present study was designed based on explanatory sequential mixed design research method. The preservice teachers participated in 8-week creative drama training. In the quantitative part of the study, one group pre-test-post-test experimental research design as one of the weak experimental designs, was used in order to examine the effects of creative drama on these variables. 42 preservice teachers were selected by convenience sampling strategy was conducted to Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale. The quantitative data were analyzed by applying paired samples t-test analysis. In the qualitative part of the study, the case study was used in order to investigate the effects of creative drama on the variables in detail. 42 preservice teachers were conducted semi-structured interviews in order to detail the quantitative findings. Their views about the effects of creative drama training on the explained variables were analyzed and reported. The qualitative data were collected through semi-structured interview form prepared by the researchers and analyzed by content analysis technique. To conclude, the preservice teachers' teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency improved through creative drama training. The qualitative data collected through semi-structured interviews confirmed the quantitative findings and provided evidences for their development on these variables with the help of creative drama.

Keywords: creative drama, critical thinking disposition, emphatic tendency, reflective thinking tendency, teacher efficacy belief.

INTRODUCTION

Creative drama can be defined as a playful process in which individuals animate an experience, an event, a phenomenon, an thought or an abstract concept in front of a group of people benefiting from improvisation, role playing, theater activities and other impersonation techniques (Baldwin, 2012; Erciyes, 2008). However, creative drama differentiates from product oriented theatre since there does not exist scripts to be staged in its process oriented nature and necessitate effective acting talents (Gray et al., 2018; Freeman et al., 2003). Moreover, the creative drama is the act of revealing the action in the program by using the body language of the applied group. It is the rehearsal of life and a way of life since it provides opportunities of focusing on ideas, feelings, and happenings with the help of imaginations, roles and events (Adıgüzel, 1999). With the help of creative drama, the individuals can represent their hidden energy so that they can understand themselves, to realize their feelings, skills and emotions in order to learn and acquire the necessitated knowledge and skills (Gönen & Dalkıç, 1999). In this respect, the creative drama can be a useful strategy for preservice teachers to improve their teaching profession since when compared to other branches of art, drama is the most closely related to the teaching process (Lessinger, 1979). Hence, creative drama helps the people whose professions are teaching develop their personal characters and professional

properties such as communicating, making collaboration, creative thinking, actively participation and creating funny learning opportunities (Baldwin, 2012; Horasan-Doğan & Cephe, 2018; Suppiah, 2016). With the help of creative drama, individuals become active in process and express their thought by transforming them into their behaviors in a funny environment. In this process, even shy or introvert people can express their thoughts more socially without fear. By creative drama, individuals perform role playing by putting themselves into other ones' shoes in practicing various life experiences and acting as various characters (Griggs, 2001).

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In this respect, it can be stated that the creative drama helps individuals improve their emotional aspects in addition to their practices. Hence, the present study focused on the effects of the creative drama on emotional aspects including teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency.

Tschannen-Moran and colleagues described teacher efficacy beliefs as “the teacher’s belief in his or her capability to organize and execute the course of action required to successfully accomplish a specific teaching task in a particular context” (1998, p.224). This description made based on Bandura (1986)’s definition of self-efficacy related to the beliefs in individuals’ their own capabilities (Henson, 2001). Teacher efficacy belief is a kind of effective emotion having the power on teacher and student behaviors (Enochs et al., 1995; Hoy & Woolfolk, 1990; Ross, 1992). The teachers having high level of teacher efficacy beliefs tend to perform their teaching profession more effectively, to be more motivated in teaching and to have higher level of positive attitudes towards their classrooms and students (Henson, 2001; Moore & Esselman, 1992). Moreover, teacher efficacy beliefs is related to the teachers’ effort on their teaching, willingness to make decisions about using strategies by taking risks, being flexible in the classrooms and being able to resistant to difficulties (Takahashi, 2011). In this respect, teacher efficacy beliefs is a kind of important emotion for preservice teachers in order to become effective teachers in the future. With this motivation, creative drama can be used in order to help preservice teachers improve their teacher efficacy beliefs as emphasized in the previous research.

Critical thinking as a kind of higher order thinking skill necessitated for solving problems can be explained based on the skills of making purposeful and self-regulatory judgments through analyzing and evaluating many possible alternatives and results and then making inferences, interpretations and explanations (Ennis, 1993; Facione, 2010). This skill can be improved by useful practices and experiences such as creative drama and role playing (Ashton-Hay, 2005). In creative drama activities, the individuals are expected to put into a character’s shoes. In this process, they need to analyze the properties of these characters, how s/he react and thinks using a greater understanding and empathy. Also, it is important for the individuals to manage their thoughts and emotions because they are expected to act like the character. Hence, this role playing process from beginning to end in the creative drama necessitates using critical dispositions effectively.

Dökmen (2005) defined empathy as being able to analyze and think about the events from different views of individuals by putting oneself into their shoes in the process of communication in order to understand and interpret their feelings and thoughts accurately. Moreover, Dökmen (1998) described emphatic tendency as the power and possibility of using and representing empathy in the real life benefiting from social sensitivity. Teachers using their emphatic tendency skills tend to be more sensitive in order to comprehend student understanding and behaviors, and to perform problem solution processes successfully (Genc and Kalafat, 2008). The emphatic tendency skill has critical importance for people whose professions are related to the human-related jobs such as being

teachers (Goleman, 2000). Tuncay and Il (2009) emphasize that empathic tendency has the critical importance for the ability of understanding and interpreting the cognitive, emotional, social codes and signs of other individuals in social interaction. In this respect, creative drama can enhance the development of emphatic tendency. Emphatic tendency having cognitive, emotional and behavioral aspects and affecting individuals’ social interaction can be taught and improved skills by facilitating interpersonal communication (Jeffrey, 2006; Kahrman et al., 2017; Pazar, Demiralp, & Erer, 2017; Trothen, 2017).

According to Dewey (1910), reflective thinking can be explained as thinking coherently and sequentially about a knowledge or thought and another knowledge structure acquiring to reach the results and solutions intended by this knowledge or thought in an effective, purposeful and consistent thinking process. In teaching profession, reflective thinking is a kind of required skill since Taggart and Wilson (2005) stated that reflective thinking enhances making logical decisions based on information related to educational issues and evaluating the results of these decisions. Reflective thinking tendency can be developed with the help of creative drama as emphasized in the previous research (Akin, 2016; Baldwin, 2012). In this respect, in the current study, the preservice teachers’ reflective thinking tendency skills were compared before and after taking creative drama course.

In the light of the explanations above, the current study aimed to examine the effects of creative drama on emotional aspects of teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency. In this respect, the answers of the following research questions were investigated:

1. What are the preservice teachers’ scores of teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency before creative drama training?
2. What are the preservice teachers’ scores of teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency after creative drama training?
3. Is there statistically significant difference between preservice teachers’ teacher efficacy beliefs before and after creative drama training?
4. Is there statistically significant difference between preservice teachers’ critical thinking disposition before and after creative drama training?
5. Is there statistically significant difference between preservice teachers’ emphatic tendency before and after creative drama training?
6. Is there statistically significant difference between preservice teachers’ reflective thinking tendency before and after creative drama training?
7. What are the preservice teachers’ views about the effects of creative drama training on their teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency

METHOD

Research Design

In the present study, in order to examine the effects of creative drama on preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency, as well as their views on their experiences, explanatory sequential mixed design as one of the mixed design research methods analyzing qualitative and quantitative data together, was used. In this mixed design research design, by diversifying the data, quantitative data were initially collected and analyzed, and then qualitative data were collected in order to interpret the initial data more effectively.

In the quantitative part of the study, one group pre-test-post-test experimental research design as one of the weak experimental designs, was used in order to examine the effects of creative drama on preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency. Before the creative drama training, Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale were conducted to the preservice teachers. After the creative drama training, these scales were conducted to them again.

In the qualitative part of the study, the case study design was used in order to investigate the effects of creative drama on preservice teachers' teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency in detail and to represent clearly. With this motivation, the qualitative data collected through semi-structured interview form prepared by the researchers were used in order to detail and support the quantitative data and to determine the preservice teachers' views on creative drama training process and its effects on the explained variables. By using semi-structured interviews, it was researched and stated how the preservice teachers' views on their levels of teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency changed based on creative drama training.

Study Group

In the quantitative part of the present research, 42 preservice teachers were selected by convenience sampling strategy. They were selected since they enrolled in the elective course of Creative Drama in which the training was performed. All of them voluntarily participated in the present study. Of these preservice teachers, 1 female freshman, 10 female and 2 male sophomore, 7 female and 3 male junior, 12 female and 7 male senior. In the quantitative part of the study, 9 preservice teachers selected by random sampling strategy among 42 preservice teachers participating in creative drama training. Of these participants, there existed 3 male and 6 female. Of these preservice teachers, 22 participants enrolled in Turkish teacher education program, 16 in elementary mathematics teacher education and 4 in primary teacher education. In the qualitative part of the study, the semi-structured interviews were performed with all of the participants.

Data Collection Tools

In order to examine the effects of creative drama on preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency in detail, Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale were conducted to the preservice teachers before and after creative drama training in the collection of quantitative data. During the collection of qualitative data, the semi-structured interview form prepared by the researchers in which the preservice teachers expressed their thoughts on their experiences acquired through the creative drama training were used in order to illustrate the effect of the training on the explained variables in detail clearly.

Critical Thinking Disposition Scale

This scale has been developed and reliability and validity studies representing satisfactory values and measures has been performed by Semerci and Ünal (2016). It was designed based on 5-point Likert scale. It consists of 49 items and five sub-factors which are metacognition, flexibility, systematicity, tenacity-patience and open mindedness.

Teacher Efficacy Beliefs Scale

This scale has been developed and reliability and validity studies representing satisfactory values and measures has been performed by Dellinger, Bobbett, Olivier and Ellet (2008). It was designed based on 4-point Likert scale. It consists of 31 items and five sub-factors which are development of planning and teaching, creating positive classroom environment, effective teaching-learning process, individual differences and academic development. The adaptation into Turkish study was performed by Hacıömeroğlu and Taşkın (2010).

Emphatic Tendency Scale

This scale has been developed and reliability and validity studies representing satisfactory values and measures has been performed by Koçak and Önen (2013). It was designed based on 5-point Likert scale. It consists of 29 items and three sub-factors which are emphatic skill, emphatic environment and anti-emphatic attitude.

Reflective Thinking Tendency Scale

This scale has been developed and reliability and validity studies representing satisfactory values and measures has been performed by Semerci (2007). It was designed based on 5-point Likert scale. It consists of 35 items and seven sub-factors which are continuous and intentional thinking, open-mindedness, effective and interrogated teaching, responsibility of teaching and science, foresighted and sincere, researcher and looking professional.

Semi-structured interview form

A semi-structured interview form was prepared by the researchers in order to collect detailed data about how the preservice teachers' views on their levels of teacher efficacy beliefs, critical thinking disposition, emphatic tendency and

reflective thinking tendency changed based on creative drama training. After preparing interview questions, expert opinions were taken from two academician having the degree of Ph.D. in Turkish education and mathematics education. Then, necessary revisions were made on the questions based on the experts' suggestions so that the final version of semi-structured interview form was prepared. The form has six questions. These questions are "What do you think about your experiences in the Creative Drama Course?", "How do these experiences affect you?", "How do your experiences in creative drama course affect your critical thinking disposition?", "How do your experiences in creative drama course affect your teacher efficacy belief?", "How do your experiences in creative drama course affect your emphatic tendency?", "How do your experiences in creative drama course affect your reflective thinking tendency?".

Data Collection and Creative Drama Training Process

The process including conducting to scales and creative drama training lasted 8 weeks. In the first week of the study, Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale were conducted to the preservice teachers enrolled in the Creative Drama Course. After the scales had been conducted to the preservice teachers, the creative drama training including creative drama activities designed by the researchers started.

In the first week of the application, basic information about drama was given and studies in which the animation technique, one of the drama methods, were used.

In the second week of the application, the students were given warm-up exercises, and they were asked to identify a problem in their own field by making groups with their own branches. Then, the corridor of consciousness technique was applied.

In the third week of the practice, information was given about drama techniques; drama techniques, improvisation, pantomime, role playing techniques were studied.

In the fourth week of the application, relaxation exercises were carried out and the silent walls technique was tried. This week, a drama plan was also made, sample plans were examined and they were provided to make a drama plan. In addition, it was ensured that they included and applied the technique in their own lesson-specific plans.

In the fifth week of the application, the implementation of the evaluation phase was explained, then the role-playing technique was arranged in a way that there would be teacher candidates in different branches in each group, and the technique was applied and evaluation studies were carried out.

In the sixth week of the practice, willing friends were selected as drama leaders among the pre-service teachers, and time was given for them to form their own groups, and then a study was conducted to practice a drama technique they chose from the box with their own groups.

After the creative drama training had been completed, Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale were conducted to the preservice teachers again. Then, semi-structured interview forms were conducted to the preservice teachers in order to collect detailed data based

on their experiences. The interviews were completed within 2 weeks and each interview lasted approximately 40 minutes. All interviews were recorded by video recordings. Afterwards, the recordings were transcribed verbatim.

Data Analysis

The quantitative data collected through Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale were analyzed by using SPSS 23 package program. The normality of the data was checked using the Shapiro-Wilk test. Based on Shapiro-Wilk test, it was observed that the data were distributed normally because the calculated p value is greater than 0.05. Moreover, the assumption of homogeneity of variance of the groups was provided based on the p -value of Levene's test. Therefore, paired samples t -test was applied in the analysis of scores acquired through conducting Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale to the preservice teachers before and after creative drama training.

The qualitative data collected through semi-structured interviews were analyzed by using content analysis technique. The content analysis was performed based on six-step qualitative data analysis technique; organization, coding, producing categories and themes, testing the emergent explanations, examining alternative explanations, and preparing the report. The researchers made content analysis was performed independently and then they compared their categories and themes. Afterwards, they produced a list of common codes by comparing their lists of codes, discussing and reaching consensus based on 90% researchers' agreement. Finally, similar codes were collected under themes. In order to represent evidence for validity and reliability of the qualitative interview data, investigator triangulation and member checking strategies were used (Marshall & Rossman, 2006). The researchers performed content analysis by identifying codes and themes on the qualitative data of the current study independently by comparing their codes and themes. Also, the preservice teachers participating in the creative drama and having been interviewed examined the findings based on content analysis procedures and interpretations related to analysis. Another academician having Ph.D. in education analyzed the interpretations based on qualitative findings and evaluated them considering consistency and coherence.

FINDINGS

Descriptive Statistics of **Preservice Teachers' Teacher Efficacy Belief, Critical Thinking Disposition, Emphatic Tendency and Reflective Thinking Tendency**

In the present study, the preservice mathematics teachers enrolled in the elective course of "Creative Drama" were conducted to Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale. These scales were conducted to them at the beginning and at the end of the course in order to examine the effect of creative drama on preservice teachers' teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency.

In order to represent this effect clearly based on the preservice teachers' gender and grade level, the mean values measured based on their teacher efficacy belief, critical thinking

disposition, emphatic tendency and reflective thinking tendency acquired through the application at the beginning of the course were illustrated in Table 1 as follows:

Table 1: Mean Values Measured of the Scores from the Scales at the beginning of the Course

Gender	Grade Level	Mean Values			
		Critical Thinking Disposition	Emphatic Tendency	Teacher Efficacy Belief	Reflective Thinking Tendency
Female	1	4,94	4,87	3,90	4,54
	2	3,82	4,22	3,00	3,96
	3	3,87	4,49	3,35	4,26
	4	4,08	4,44	3,33	4,19
Female Total		3,97	4,39	3,24	4,14
Male	2	4,74	4,81	3,90	4,74
	3	4,63	4,61	3,49	4,57
	4	4,31	4,48	3,45	4,32
Male Total		4,46	4,57	3,53	4,45
Total		4,11	4,44	3,32	4,23

It was observed the freshmen female students' mean values measured as high level on critical thinking disposition (X=4,94), on emphatic tendency (X=4,87), on teacher efficacy (X=3,90) and on reflective thinking tendency (X=4,54) at the beginning of the course. Moreover, the sophomore female students' mean values measured as high level on critical thinking disposition (X=3,82), on emphatic tendency (X=4,22), on teacher efficacy (X=3,00) and on reflective thinking tendency (X=3,96) at the beginning of the course. In addition, the junior female students' mean values measured as high level on critical thinking disposition (X=3,87), on emphatic tendency (X=4,49), on teacher efficacy (X=3,35) and on reflective thinking tendency (X=4,26) at the beginning of the course. Furthermore, the senior female students' mean values measured as high level on critical thinking disposition (X=4,08), on emphatic tendency (X=4,44), on teacher efficacy (X=3,33) and on reflective thinking tendency (X=4,19) at the beginning of the course. Lastly, the female students' mean values measured as high level on critical thinking disposition (X=3,97), on emphatic tendency (X=4,39), on teacher efficacy (X=3,24) and on reflective thinking tendency (X=4,14) at the beginning of the course.

measured as high level on critical thinking disposition (X=4,74), on emphatic tendency (X=4,81), on teacher efficacy (X=3,90) and on reflective thinking tendency (X=4,74) at the beginning of the course. In addition, the junior male students' mean values measured as high level on critical thinking disposition (X=4,63), on emphatic tendency (X=4,61), on teacher efficacy (X=3,49) and on reflective thinking tendency (X=4,57) at the beginning of the course. Furthermore, the senior male students' mean values measured as high level on critical thinking disposition (X=4,31), on emphatic tendency (X=4,48), on teacher efficacy (X=3,45) and on reflective thinking tendency (X=4,32) at the beginning of the course. Lastly, the male students' mean values measured as high level on critical thinking disposition (X=4,46), on emphatic tendency (X=4,57), on teacher efficacy (X=3,53) and on reflective thinking tendency (X=4,45) at the beginning of the course.

In order to represent this effect clearly based on the preservice teachers' gender and grade level, the mean values measured based on their teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency acquired through the application at the end of the course were illustrated in Table 1 as follows:

It was observed the sophomore male students' mean values

Table 2: Mean Values Measured based on the Scores from the Scales at the end of the Course

Gender	Grade Level	Mean Values				
		Critical Thinking Disposition	Thinking Tendency	Emphatic Tendency	Teacher Efficacy Belief	Reflective Thinking Tendency
Female	1	4,58		4,65	3,87	4,42
	2	4,63		4,81	3,76	4,70
	3	4,44		4,68	3,70	4,55
	4	4,59		4,74	3,70	4,60
Female Total		4,57		4,75	3,73	4,62
Male	2	4,45		4,50	3,68	4,58
	3	4,35		4,70	3,66	4,43

	4	4,55	4,67	3,58	4,56
Male Total		4,48	4,65	3,61	4,53
Total		4,54	4,72	3,69	4,59

It was observed the freshmen female students' mean values measured as high level on critical thinking disposition (X=4,58), on emphatic tendency (X=4,65), on teacher efficacy (X=3,87) and on reflective thinking tendency (X=4,42) at the end of the course. Moreover, the sophomore female students' mean values measured as high level on critical thinking disposition (X=4,63), on emphatic tendency (X=4,81), on teacher efficacy (X=3,76) and on reflective thinking tendency (X=4,70) at the end of the course. In addition, the junior female students' mean values measured as high level on critical thinking disposition (X=4,44), on emphatic tendency (X=4,68), on teacher efficacy (X=3,70) and on reflective thinking tendency (X=4,55) at the end of the course. Furthermore, the senior female students' mean values measured as high level on critical thinking disposition (X=4,59), on emphatic tendency (X=4,74), on teacher efficacy (X=3,70) and on reflective thinking tendency (X=4,60) at the end of the course. Lastly, the female students' mean values measured as high level on critical thinking disposition (X=4,57), on emphatic tendency (X=4,75), on teacher efficacy (X=3,73) and on reflective thinking tendency (X=4,62) at the end of the course.

It was observed the sophomore male students' mean values measured as high level on critical thinking disposition (X=4,45), on emphatic tendency (X=4,50), on teacher efficacy (X=3,68) and on reflective thinking tendency (X=4,58) at the end of the course. In addition, the junior male students' mean

values measured as high level on critical thinking disposition (X=4,35), on emphatic tendency (X=4,70), on teacher efficacy (X=3,66) and on reflective thinking tendency (X=4,43) at the end of the course. Furthermore, the senior male students' mean values measured as high level on critical thinking disposition (X=4,55), on emphatic tendency (X=4,67), on teacher efficacy (X=3,58) and on reflective thinking tendency (X=4,56) at the end of the course. Lastly, the male students' mean values measured as high level on critical thinking disposition (X=4,48), on emphatic tendency (X=4,65), on teacher efficacy (X=3,61) and on reflective thinking tendency (X=4,53) at the end of the course.

The Effect of Creative Drama Training on Preservice Teachers' Teacher Efficacy Belief, Critical Thinking Disposition, Emphatic Tendency and Reflective Thinking Tendency

The research problem, "Are there significant differences between the values acquired through the conducting Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency Scale and Reflective Thinking Tendency Scale to the preservice teachers before and after creative drama training?" is examined and represented in this section. The paired samples *t*-test analysis results of the data obtained through these scales and applications were represented to investigate this research problem are given in Table 3.

Table 3: Paired Samples *t*-test Results

Variables	Sub-factors	Application	X	SD	df	t	p																																																																																																																
Teacher efficacy belief		Before	3,32	0,51	41	4,33	0,00																																																																																																																
		After	3,69	0,20				Critical thinking		Before	4,11	0,50	41	4,62	0,00		After	4,54	0,26	Metacognition	Before	4,19	0,56	41	5,02	0,00	After	4,66	0,23	Flexibility	Before	4,19	0,58	41	4,34	0,00	After	4,62	0,26	Systematicity	Before	4,05	0,55	41	3,49	0,01	After	4,46	0,37	Tenacity-patience	Before	4,01	0,63	41	3,42	0,01	After	4,44	0,42	Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51
Critical thinking		Before	4,11	0,50	41	4,62	0,00																																																																																																																
		After	4,54	0,26					Metacognition	Before	4,19	0,56	41	5,02	0,00	After	4,66	0,23	Flexibility	Before	4,19	0,58	41	4,34	0,00	After	4,62	0,26	Systematicity	Before	4,05	0,55	41	3,49	0,01	After	4,46	0,37	Tenacity-patience	Before	4,01	0,63	41	3,42	0,01	After	4,44	0,42	Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51	0,01	After	4,70	0,27							
	Metacognition	Before	4,19	0,56	41	5,02	0,00																																																																																																																
		After	4,66	0,23					Flexibility	Before	4,19	0,58	41	4,34	0,00	After	4,62	0,26	Systematicity	Before	4,05	0,55	41	3,49	0,01	After	4,46	0,37	Tenacity-patience	Before	4,01	0,63	41	3,42	0,01	After	4,44	0,42	Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51	0,01	After	4,70	0,27																	
	Flexibility	Before	4,19	0,58	41	4,34	0,00																																																																																																																
		After	4,62	0,26					Systematicity	Before	4,05	0,55	41	3,49	0,01	After	4,46	0,37	Tenacity-patience	Before	4,01	0,63	41	3,42	0,01	After	4,44	0,42	Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51	0,01	After	4,70	0,27																											
	Systematicity	Before	4,05	0,55	41	3,49	0,01																																																																																																																
		After	4,46	0,37					Tenacity-patience	Before	4,01	0,63	41	3,42	0,01	After	4,44	0,42	Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51	0,01	After	4,70	0,27																																					
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		After	4,44	0,42					Open-mindedness	Before	4,04	0,55	41	2,35	0,02	After	4,31	0,44	Reflective thinking		Before	4,23	0,51	41	3,86	0,00		After	4,59	0,21	Emphatic tendency		Before	4,44	0,44	41	3,39	0,02		After	4,72	0,22	Emphatic skill	Before	4,57	0,39	41	2,15	0,03	After	4,72	0,23	Anti-emphatic attitude	Before	4,30	0,84	41	2,97	0,01	After	4,73	0,29	Emphatic environment	Before	4,49	0,39	41	2,51	0,01	After	4,70	0,27																																															
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According to Table 3, there exist statistically significant differences among the preservice mathematics teachers' values

acquired through the application of Teacher Efficacy Belief Scale, Critical Thinking Disposition Scale, Emphatic Tendency

Scale and Reflective Thinking Tendency Scale before and after creative thinking training. Moreover, the mean values measured based on these applications, it was observed that the preservice teachers' mean values increased from before training to after training. In other words, the preservice teachers' values acquired through the scales increased with the help of the creative drama training.

According to the measures related to Teacher Efficacy Belief Scale, there is statistically significant difference between the score acquired through the application of the scale before creative drama training ($X=3,32$, $SD=0,51$) and after training score ($X =3,69$, $SD =0,20$). It was found that this difference was significant ($t(41)=4,62$, $p < 0,01$) in the favor of after training. In other words, it was concluded that creative drama training in the study supported the increase on the preservice teachers' teacher efficacy belief levels. In addition, the eta-squared measure for the effect size on the effect of creative drama training on teacher efficacy beliefs was found to be 0,56 as medium level. Accordingly, it is seen that this training has medium level effect on the preservice teachers' teacher efficacy beliefs.

According to the measures related to Critical Thinking Disposition Scale, there was statistically significant difference between the score acquired through the application of the scale before creative drama training ($X=4,54$, $SD=0,50$) and after training score ($X =4,11$, $SD =0,20$). It was found that this difference was significant ($t(41)=4,33$, $p < 0,01$) in the favor of after training. Moreover, based on the sub-factors, there were statistically significant increases on metacognition from before training ($X=4,19$, $SD=0,56$) to after training ($X=4,66$, $SD=0,23$) in the favor of after training ($t(41)=5,02$, $p < 0,01$); on flexibility from before training ($X=4,19$, $SD=0,58$) to after training ($X=4,62$, $SD=0,26$) in the favor of after training ($t(41)=4,34$, $p < 0,01$); on systematicity from before training ($X=4,05$, $SD=0,55$) to after training ($X=4,46$, $SD=0,37$) in the favor of after training ($t(41)=3,49$, $p < 0,01$); on tenacity-patience from before training ($X=4,01$, $SD=0,63$) to after training ($X=4,44$, $SD=0,42$) in the favor of after training ($t(41)=3,42$, $p < 0,05$); on open-mindedness from before training ($X=4,04$, $SD=0,55$) to after training ($X=4,31$, $SD=0,44$) in the favor of after training ($t(41)=2,35$, $p < 0,05$). In other words, it was concluded that creative drama training in the study supported the increase on the preservice teachers' critical thinking disposition levels and also the levels of metacognition, flexibility, systematicity, tenacity-patience and open-mindedness. In addition, the et-squared measures for the effect size on the effect of creative drama training on the preservice teachers' critical thinking disposition was found to be 0,38 as medium level on metacognition, 0,32 as medium level on flexibility, 0,23 as low level on systematicity, 0,22 as low level on tenacity-patience, 0,12 as low level on open-mindedness and totally 0,34 as medium level on critical thinking disposition level. Accordingly, it is totally seen that this training has medium level effect on the preservice teachers' critical thinking disposition.

According to the measures related to Reflective Thinking Tendency Scale, there is statistically significant difference between the score acquired through the application of the scale before creative drama training ($X=4,23$, $SD=0,51$) and after training score ($X =4,59$, $SD =0,21$). It was found that this

difference was significant ($t(41)=3,86$, $p < 0,05$) in the favor of after training. In other words, it was concluded that creative drama training in the study supported the increase on the preservice teachers' reflective thinking tendency levels. In addition, the eta-squared measure for the effect size on the effect of creative drama training on the preservice teachers' reflective thinking tendency was found to be 0,27 as low level. Accordingly, it is seen that this training has low level effect on the preservice teachers' reflective thinking tendency.

According to the measures related to Emphatic Tendency Scale, there was statistically significant difference between the score acquired through the application of the scale before creative drama training ($X=4,44$, $SD=0,44$) and after training score ($X =4,72$, $SD =0,22$). It was found that this difference was significant ($t(41)=3,86$, $p < 0,01$) in the favor of after training. Moreover, based on the sub-factors, there were statistically significant increases on emphatic skill from before training ($X=4,57$, $SD=0,39$) to after training ($X=4,72$, $SD=0,23$) in the favor of after training ($t(41)=2,15$, $p < 0,05$); on anti-emphatic attitude from before training ($X=4,30$, $SD=0,84$) to after training ($X=4,73$, $SD=0,29$) in the favor of after training ($t(41)=2,97$, $p < 0,05$); on emphatic environment from before training ($X=4,49$, $SD=0,39$) to after training ($X=4,70$, $SD=0,27$) in the favor of after training ($t(41)=2,51$, $p < 0,05$). In other words, it was concluded that creative drama training in the study supported the increase on the preservice teachers' emphatic tendency levels and also the levels of emphatic skill, anti-emphatic attitude and emphatic environment. In addition, the eta-squared measures for the effect size on the effect of creative drama training on the preservice teachers' emphatic tendency was found to be 0,10 as low level on emphatic skill, 0,18 as low level on anti-emphatic attitude, 0,13 as low level emphatic environment and totally 0,22 as low level on emphatic tendency level. Accordingly, it is seen that this training has low level effect on the preservice teachers' emphatic tendency.

Qualitative Findings

In order to elaborate the evidences related to the effects of creative drama on preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency, the semi-structured interviews were performed by collecting qualitative data about their experiences through creative drama training. The themes and categories are represented based on the variables of the current study separately using direct quotations from the participants' explanations through the interviews.

Based on the effect of creative drama on teacher efficacy beliefs, the preservice teachers emphasized the positive effects of creative drama on their teacher efficacy beliefs. They explained these effects in detail through the interviews. The themes and categories identified by the content analysis are beliefs in adaptation into environment (participating in dialogues, taking roles in tasks and activities, understanding the norms of a group easily), reacting to an action (knowing how to behave in a group, reacting to a dialogue, task or activity in a group and behaving appropriately in a community or a group based on property or norms), planning (preparing for the roles, responsibilities for activities, thinking about ordinary and

unordinary events and how to handle or react them), using gestures and mimic (knowing the power of non-verbal communication, using them appropriately in appropriate environments), realizing the power of making mistakes (not fearing from making mistakes, transferring them into chances and using them as opportunities for directing a dialogue or action), using teaching strategies (learning to use them, acquiring confidence and experience about how to use them), explaining thoughts freely. These themes and categories can be exemplified using direct quotations from some of the preservice teachers' explanations as follows:

"I usually hesitate to even speak in a crowded environment. With the help activities that we performed in the creative drama classes, I believe that I can perform any action or speak successfully in this type of crowded environments..."

Another participant explained as follows:

"I fear of saying to a group of people something wrong so I am always a silent person in a crowded place. Generally, I observe and listen to people and do not talk as long as I do not need it. By participating in the activities and taking roles in creative drama tasks, I thought that my fears are illogical. Moreover, I realized that I could manage a process including interaction or communication with people. Hence, I have begun to believe that I am able to do, I have the power..."

The other preservice teacher told as follows:

"In the classroom, I tended to use teacher-centered techniques and I hesitated to use student-centered teaching strategies before creative drama training because I believed that I could not manage the classroom atmosphere including social interaction and teacher-student and student-student interaction or the students could ask the questions that I was not able to answer. After training, I believe that I am able to manage social interaction and using student-centered approaches in the classrooms funnily. I can decide easily how to behave etc. I do not fear from taking risks of these approaches..."

In the respect of the effect of creative drama on critical thinking disposition, the preservice teachers emphasized the positive effects of creative drama on critical thinking disposition. They explained these effects in detail through the interviews. The themes and categories identified by the content analysis are inquiring the events from different aspect/perspectives (thinking about the events from different perspectives, analyzing the causes and effects, identifying related elements and eliminating unrelated events), making estimations (interpreting events and actions, thinking about possible reasons and explanations), making connections (identifying related disciplines, events, strategies or people), assessment and evaluation (making judgment about the effects and results of events and providing evidences), searching for alternatives (providing possible solution strategies, ways, techniques), interpretation and self-control. These themes and categories can be exemplified using direct quotations from some of the preservice teachers' explanations as follows:

"While I was deciding how to behave as a role in creative drama task, I need to analyze the character, environment, event and time, determine the alternatives about the behaviors. For example, I need to identify the behavior patterns and personalities including gestures and mimic in a situation..."

Another participant made explanation as follows:

"When I face with an unexpected problem or student

action, I believe that I am able to handle with this case. I can solve this problem easily because I realize that it is important to be open-minded and I should think that everything can happen in the classroom but there is no problem. It can be solved. However, if I try to use over-controlling, there will be a problem. Creative drama helped me realize this thought..."

With respect to the effect of creative drama on emphatic tendency, the preservice teachers emphasized the positive effects of creative drama on emphatic tendency. They explained these effects in detail through the interviews. The themes and categories identified by the content analysis are analyzing (identifying the characters' personalities and possible behaviors, thinking about environment and events), identifying behavior patterns (thinking about how to behave and react in different situations in the view of the character), managing emotions (thinking about how to feel and react, ignoring own feelings if necessary), being more considerate. These themes and categories can be exemplified using direct quotations from the preservice teachers' explanations as follows:

"Sometimes I experienced being a tree, sometimes I experienced empathy with a bird. In this lesson, we learned not only to understand each other, but also to understand a cartoon character, an apple. So I feel pretty lucky. The course not only improved my empathy skills, but also gave me ideas on how to improve my teaching topics for the future, because now I can think like every other student..."

Another preservice mathematics teacher also told as follows:

"When I put myself in the place of the character we played in the plays and improvisations, I learned to respect that character by adopting that character's point of view and looking from a different perspective. I think this teaching has broadened my perspective. While animating certain situations, I became aware of the difficulties of the role we were playing. While I can sometimes criticize the people in that role, I realized that it is not easy at all while playing that role and that great responsibilities are required. For example, when I took the role of parents, I realized how I hurt them in a similar incident with my parents and how hard they actually had in their reaction to me..."

Based on the effect of creative drama on reflective thinking tendency, the preservice teachers emphasized the positive effects of creative drama on their reflective thinking tendency. They explained these effects in detail through the interviews. The themes and categories identified by the content analysis are self-evaluation, monitoring one self's own behavior, identifying shortcomings and strong aspects, managing product and process of an event. These themes and categories can be exemplified using direct quotations from the preservice teachers' explanations as follows:

"...the question of-why does thinking about what and how we do make you a better person?-helped me bring your question to life. I think that by having a more sociable spirit, I have improved my ability to communicate with people by meeting them. It helped me answer the question of how can I make the lesson more effective. While I was more excited and anxious in the first animations and activities, I was able to take part in the activities more comfortably and easily in my later experiences..."

Another participant talked as follows:

“While I was more excited and anxious at the beginning of the course, I could play roles in the activities more comfortably and easily in my later experiences. I gained a lot of experience on creative drama, both in group work and in imitation and communication. The experiences I gained made me more active. It made me realize that very colorful works can emerge with group work...”

The explanations and content analysis findings provided more evidence and made clearer the quantitative findings of the current study. Both kinds of data emphasized the positive effects of creative drama teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency. The preservice teachers provided detailed information for the statistically significant positive effects of creative drama on the explained variables.

DISCUSSION AND CONCLUSION

In the current mixed method design study, it was observed that the creative drama training affected the preservice teachers' beliefs and values about teaching and needed for teaching effectively. There exist many research in the literature confirming this findings (Bağcı Ayrancı, 2019; Horasan-Doğan, 2022). More specifically, the preservice teachers' teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency improved through creative drama training in the present study. The quantitative data presented that the participants' scores acquired through the scales of teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency increased statistically significant after the creative drama training. Afterwards, the qualitative data collected through semi-structured interviews confirmed the quantitative findings and provided evidences for the preservice teachers' development on teacher efficacy beliefs, critical thinking disposition, emphatic tendency and reflective thinking tendency through creative drama training.

Through the study, it was observed that the preservice teachers improved their teacher efficacy beliefs through creative drama training. This finding provided the results of the previous research examining the effect of creative drama on efficacy beliefs and self-image (Aykaç et al., 2019; Baldwin, 2012; Oreck, 2004). Moreover, their explanations encouraged this positive effect by detailing the effect clearly. They emphasized that the creative drama activities encouraged their beliefs about having the power of performing profession successfully or performing teaching and representing required teaching skills effectively. The development on the preservice teachers' teacher efficacy beliefs can facilitate them to decide easily and accurately, and take risks. The importance of this situation can be supported with Dunn and Stinson's (2011) explanations that “perhaps more importantly, [teachers] develop their ‘in the moment’ decision-making skills, with risk-taking being a key aspect” (p. 630) because risk-taking and decision-making skills are important skills for teaching profession and these skills can be used effectively for the development of teacher efficacy beliefs as stated by the participants of the current study. Moreover, the development of preservice teachers' efficacy beliefs make them believe to be

able to apply communicative practices. The preservice teachers hesitate to use these kinds of approaches because of not having needed experience knowing how to use them. This finding is parallel to the results of previous research emphasizing the effect of practices and creative drama activities on using communicative approaches (Horasan-Doğan, 2022; Ng, Nicholas & Williams, 2010).

Both of qualitative and quantitative findings represented that creative drama training affected preservice teachers' critical thinking skills. In other words, their critical thinking skills were improved through creative drama. Moreover, the preservice teachers' metacognition, flexibility, systematicity, tenacity-patience and open-mindedness as the sub-dimensions of critical thinking skills were improved. This finding is parallel to the result of Uzunöz and Demirhan (2017)'s study emphasizing the effect of creative drama on the individuals enrolled in 4-year undergraduate teacher program. There exist other previous research emphasizing the positive effects of creative drama on critical thinking (Bailin, 1998; De La Roche, 1993; Miri, David & Uri, 2007; Pearson & Jackson, 2006). Moreover, Giancarlo and Facione (2001) added that creative drama improved the critical thinking tendencies of the students in undergraduate programs. Based on the sub-dimensions of critical thinking, creative drama enhanced their development of flexibility. This findings is parallel to the results of the previous study of Horasan-Doğan (2022). With the help of the role playing activities, they learn to think and view from different perspectives enhancing flexibility. Also, preservice teachers' open-mindedness improved through creative drama as emphasized in the study of Hadjipanteli (2021) and their skills related to metacognition such as solving problems, evaluating and analyzing solutions and solution strategies and making decisions based on these thoughts developed through creative drama as stated in the previous research (Buley et al., 2019; Özmen, 2010). Moreover, the preservice teachers made explanations supporting these quantitative findings through the interviews.

When the qualitative data analysis were examined, it was observed that creative drama enhanced the preservice teachers' development of emphatic tendency. There exist previous research confirming this finding in the literature (Dereboy et al., 2005; Griggs, 2001; Hadjipanteli, 2021; Heathcote, 1984; Horasan-Doğan, 2022; Maley & Duff, 2005; Salmon, 2003; Tarrant et al., 2009). For example, role playing activities in the creative drama helped the preservice teachers put themselves into other people's shoes as emphasized by the words of “an important capacity for a teacher to have with respect to her/his students” (Griggs, 2001, p. 29). In these activities, the preservice teachers could think and behave from different people's perspectives so that they could acquire various experiences about a particular event or phenomenon. The preservice teachers participating in the creative drama fictionally entered the role of someone else, pretended to be that person in the role, and understood their world. In this way, they could better understand the emotional and psychological lives of others. The qualitative data analysis process was also confirmed this finding, the preservice teachers made explanations about the positive effects of creative drama on their emphatic tendency. They emphasized the emphatic tendency based on the required skill of thinking like their

children in order to understand them and communicate with them through teaching.

The quantitative data analysis results illustrated the preservice teachers' reflective thinking tendency improved with the help of creative drama. The previous research examining the effects of creative drama on reflective thinking tendency confirm this finding (Akin, 2016; Baldwin, 2012). The preservice teachers' explanations also encourage this finding based on the quantitative data analysis. By role playing activities in creative drama, the preservice teachers could analyze the events and phenomena and made interpretations considering these thoughts. Hence, they could make inferences for their profession. The interpretation skill necessitated for reflective thinking tendency and used for understanding a problem, a character or an event, comprehending an individual's intention from his/her gestures, mimic, estimating someone's thoughts with his/her own thoughts could be improved by creative drama. In creative drama activities, the preservice teachers were forced to clarify the thought wanted to be conveyed in the role playing and to explain the thoughts reflected there with their own expressions. In this way, the preservice teachers' reflective thinking improved with the help of creative drama.

In the present study, the effects of creative drama on some emotional variables which were teacher efficacy belief, critical thinking disposition, emphatic tendency and reflective thinking tendency were examined by conducting creative drama training to the preservice teachers. These findings can provide contribution to the related literature, teacher educators and teachers. Further research can be performed in order to represent different emotional variables such as self-confidence, creative thinking etc. Moreover, practice based study related to creative drama can be conducted to preservice teachers in order to help them improve teaching skills. Furthermore, the effects of creative drama explained in the current study can be examined by elaborating the sample with teachers or students.

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