

# Effect of Creative Drama on Academic Achievement: A Meta-analytic and Thematic Analysis\*

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## Abstract

The aim of this study was to determine the effect of creative drama on achievement through the use of quantitative and qualitative research methods. In the quantitative section of the research, the meta-analytic method was used and an attempt was made to include all studies of creative drama carried out between 2000 and 2014 at the national and international levels. As a result, 40 studies (8 articles, 28 Mas, and 4 PhD theses) complied with the inclusion criteria, which consisted of examining the effect of creative drama on academic achievement and including statistical values to calculate the effect size. Studies were further separated according to the characteristics of grade level, subject field, and implementation period. The Comprehensive Meta-Analysis statistical program and the MetaWin program were used to calculate effect size. In the qualitative context of the study, data collected through documentary review based on the content analysis of the thematic examination of the articles and theses were analyzed through the Maxqda 11 program. Meta-analytic findings indicated that creative drama had a significant and positive effect on academic achievement and the qualitative findings indicated that it had influential outcomes on a variety of domains in general.

**Keywords:** Creative drama • Academic achievement • Meta-analysis • Thematic analysis • Effect size

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Creative drama implies that there is a teacher who facilitates the lesson by adding structured plays that often consist of beginning, middle, and conclusion. The method operates as a group process and it is effective because of its ability to strengthen a group and create a cohesive unit (Booth & Lundy, 1985; cited in Arieli, 2007). Creative drama includes improvisation, movement, and rhythms and is created on the spot, not memorized or scripted. Thus, a spontaneous self-expression of the participants comes into the scene (McCaslin, 1996). The students in the class act out a story they had learned before and this improvisational and spontaneous process enables them to further analyze and synthesize information creating personal meaning (Arieli, 2007; Guli, 2004). Creative drama includes students in concrete and applied practices of behavior as skills are physically and verbally acted out which results in an authentic experience for the participants (Bailey, 1997). In addition, Laurin (2010) suggested that the students and the teacher can go back and forth in creative drama and make changes as they wish. That is, the focus of creative drama is to be on participants' experience which indicates that creative drama is nonexhibitional and process centered.

The outcomes of utilizing creative drama in learning environments can be beneficial as students who behave in a shy, quiet, or self-conscious manner often regain confidence after they learn to use their unlimited imagination. Knowledge and vocabulary that have been internalized through traditional teaching methods has an opportunity to be externalized in creative drama environments (O'Hara, 1984). Developmental psychologists explain that children explore the world and how to behave in it through imitation, symbolic plays, and dramatic plays. However, our educational system has yet to embrace this strong and natural learning method. Many teachers hesitate from applying creative drama as a teaching tool in the lesson because they think it will take too much time, energy, or effort. They may rationalize that it is a method that they are not familiar with and therefore cannot begin to master without a lengthy training process. In fact, the opposite is true; once you have learned how to do it, you never forget (Bailey, 1997).

In the process of creative drama, participants may not necessarily become experts in a field, but instead, learn or develop certain skills as they engage in meaningful dramatized stories together (Guli, 2004). Especially in students' speaking skills,

creative drama offers a valuable facility to practice and also increases motivation for students to express themselves (Shand, 2008). Creative drama provides active use of the senses, and thus addresses the issues related to Garden's multiple intelligences. That is, students learn through dialogue, movement, sound, and sight. Dialogue, role-playing, and kinesthetic movements appeal verbal-linguistic, spatial, bodily-kinesthetic, interpersonal, and intrapersonal intelligence styles. Creative drama, then, is a means for teachers to engage multiple learning styles in learning environments (Tate, 2002). Therefore, with this meta-analytic review, the effect of such a multi-functional method was investigated.

### The Aim and Significance of the Study

Using creative drama for teaching has led many researchers to examine its effect on various fields or courses, one of which is conducted in seventh graders' science achievements in ecology and matter cycles unit. In this experimental study, the author found a statistically significant difference between the mean scores of groups in favor of the experimental group after treatment (Çokadar & Cihan-Yılmaz, 2010). In a quasi-experimental research study by Gündoğdu (2012) the effect of a creative drama-based assertiveness program on students' assertiveness skills was studied. Following a period of a 10-week application, it was observed that the scores of the experimental group increased at a significant rate compared to those of the control group. Concerning the effect of drama-based geometry instruction, multivariate analyses of covariance revealed that drama-based instruction had a significant effect on students' achievement, retention of achievement, thinking level, and attitudes (Duatepe-Paksu & Ubuz, 2009). In literature reviews from national and international publications, multiple instances in which the positive effect of creative drama on different variables were found (Adigüzei & Timuçin, 2010; Aykaç, 2008; Ayvaci & Yılmaz, 2009; Baird & Salmon, 2012; Joseph, 2013; O'Neill, 2008; Selmanoğlu, 2009). However, meta-analytic review has yet to be conducted. With meta-analytic review it is suggested that one conclude with a general and comprehensive result which will contribute to the literature and the related field. Therefore, a meta-analytic review on creative drama in national and international arenas was recognized as important. In addition, this study was conducted using a combination of methods to enrich the methodology of the research with a holistic approach in order

to achieve reliable research results. Both a meta-analytic method (quantitative) and a thematic method (qualitative) were used. The integration of the methods in the research review is thought to present a more comprehensive and distinct result.

### Method

This study aimed to determine the effect of creative drama on achievement through the use of qualitative and quantitative research methods. In the quantitative section of the research, the meta-analytic method was used. The meta-analytic method was defined by Whitehead (2002 as cited in Küçükönder, 2007) as a holistic re-evaluation of studies conducted in different situations and times by different researchers. Within this context, the researchers attempted to include all studies of creative drama published between 2000 and 2014 in national and international publications.

### Data Collection and Inclusion Criteria

Theses and articles on the subject of creative drama both in national and international arenas were included in this study. The key words “creative drama,” “effect of creative drama,” and “drama and academic achievement” were used in the review, and specific databases were searched both in Turkish and English. Inclusion criteria consisted of studies examining the effect of creative drama on academic achievement published between 2000 and 2014, including required statistical values (sample size, arithmetic mean, and standard deviation) to calculate the effect size and involving a pretest–posttest control procedure. A total of 720 thesis and 440 articles were searched within the ProQuest Dissertations and Theses, the Higher Education Council National Thesis and Dissertation Centre, Google Scholar, Ebscohost Eric, Web of Science and ScienceDirect, Emerald Management, Oxford Journals Online, and Sage Journals Online search engines. As a result of the literature review, 40 studies (8 articles, 28 MAs, and 4 PhD theses) complied with the inclusion and were included in the analysis. Furthermore, a detailed coding form was prepared to indicate both general and specific characteristics of studies included in the research. The form was composed of three sections: *study identity* (which included the study code and title, name of the author, and publication year), *study content* (which presented information about courses in which creative drama was used, education levels, and teaching period), and *study data* (which included statistical values such as

sample size, mean, and standard deviation). Within the qualitative aspect of the study, a document analysis was conducted, and a total of 14 studies (Altıkulaç & Akhan, 2010; Atan, 2007; Bayrakçı, 2007; Bertiz, 2005; Çalışkan Çoban, 2007; Durusoy, 2012; Erdogan, 2013; Kadan, 2013; Saçlı, 2013; Şimşek, 2013; Soytürk, Çamlıyer, Tepeköylü Öztürk, & Daşdan Ada, 2012; Teker, 2009; Ulaş, Sevim, & Tan, 2012) involving students’ views related to creative drama were found. Data for the thematic analysis were coded and referenced according to the document number and page number (e.g., T5-6, meaning the fifth thesis and sixth page).

### Data Analysis

The characteristics of the study were grade levels of education, subject field, and implementation period (IP). Data analysis of the meta-analytic study was conducted by considering the treatment effect method to calculate the difference between the mean values of groups in experimental studies, displayed by the formula  $d = (X_e - X_c) / SD$  (Hunter & Schmidt, 2004). The comprehensive meta-analysis statistical program and the MetaWin program were used in the effect size calculation. A random effects model (REM) and the value of effect size classified by Cohen (1992) were used for the meta-analysis process. The inter-rater reliability was calculated to prove the reliability of the outcome with the calculation formula  $[\text{consensus} / (\text{consensus} + \text{dissensus}) \times 100]$  (Miles & Huberman, 1994) and was found to be 100%. On the other hand, in the qualitative context of the study, data collected through a documentary review based on the content analysis of the thematic examination of articles and theses concerned with creative drama were analyzed using the Maxqda 11 program. The validity of the qualitative section of the study was achieved by ensuring the integrity of consistency and meaningfulness among themes and codes. In terms of the reliability of the data analysis process, Cohen Kappa values with regard to each theme were calculated to determine the agreement among data coders. Interpretations were made in accordance with the calculated values. The intervals of adjustment values were 0.20 or below, indicating poor; 0.21–0.40, indicating sub-medium; 0.41–0.60, indicating medium; 0.61–0.80, indicating good; and 0.81–1.00, indicating an excellent level of compliance (Viera & Garrett, 2005). In this respect, the Cohen Kappa values for the effect of creative drama on the cognitive domain were 0.735; on thinking, creativity, and critical thinking skills were 0.715; on the learning environment/process and negative aspects

Table 1  
Distribution of Homogeneous Values, Average Effect Sizes, and Confidence Intervals for Studies Included in the Meta-Analysis based on the Effect Models of Academic Achievement

Type of Model	n	Z	p	Q	df	ES	SE	95% Confidence Interval	
								Lower Limit	Upper Limit
FEM	40	28.60	0.00	424.06	39	1.39	0.05	1.29	1.48
REM	40	10.39	0.01	60.78	39	1.68	0.16	1.36	2.00

were 0.659; and on social aspects, affective domain, and attitude were 0.857. These values were between 0.659 and 1.00, and therefore, they can be stated as a “good/excellent level of compliance.”

**Findings**

The findings of the study were assessed separately in qualitative and quantitative dimensions. According to the quantitative findings, following the analysis of academic achievement scores from 40 studies with respect to REM, the overall weighted effect size was 1.68. Thus, it can be stated that creative drama had a considerable effect on academic achievement.

The Q value indicated that the distribution of effect sizes in this collection of studies is heterogeneous ( $Q = 60.78, df = 39, p < .05$ ). In other words, the variance of study effect sizes is larger than what can be explained by simple sampling error. Thus, an REM was used (Borenstein, Hedges, Higgins, & Rothstein, 2009), and to explain this variance, studies were categorized into groups in terms of grade level, subject field, and IP and were analyzed accordingly.

With regard to *grade level*, studies were divided into five categories: preschool ( $N = 2$ ), primary ( $N = 10$ ), secondary ( $N = 24$ ), high school ( $N = 2$ ), and university ( $N = 2$ ). A significant between-group effect ( $Q_b = 3.75, df = 4, p > .05$ ) was not found. This result indicates that academic achievement scores do not change depending on grade levels in terms of lessons based on creative drama. When the effect of the technique was analyzed in terms of students’ academic achievement in relation to grade level, the largest effect size was observed in the university student group ( $ES = 2.54$ ),

whereas the lowest effect was observed in the high school student group ( $ES = 1.39$ ).

In terms of subject fields, studies were divided into five categories: science ( $N = 8$ ), math ( $N = 5$ ), social sciences ( $N = 23$ ), foreign languages ( $N = 2$ ), and others ( $N = 2$ ). The effect size for English lessons ( $ES = 3.37$ ) was higher than that for the other subject areas ( $ES = 1.60$  for social sciences; 1.79 for science; and 1.00 for math), but the difference was not statistically significant ( $p > .05$ ). This result suggests that effect sizes do not change depending on subject field.

With regard to IP, studies were categorized into five groups: 2–4 weeks, 5–6 weeks, 7–8 weeks, 9–18 weeks, and unspecified IP. As far as the IP effect of creative drama on academic achievement was concerned, the lowest effect size of 1.23 was observed in the case of unspecified IP, whereas the highest effect size of 2.55 occurred in the 9–18-week-period group. However, a statistically significant difference in terms of the between-group effect ( $Q_b = 7.63, df = 4, p > .05$ ) was not found. This finding indicates that effect sizes do not change according to IP. As a caveat, because there was only one study conducted during 7–8 weeks, i.e., Sever, 2010, it was not included in the analysis.

**Publication Bias**

Fail-safe Number ( $N_{fs}$ ) refers to the number of studies resulting in null effect size, which is necessary to reduce the mean effect size to insignificant levels (Rosenthal, 1979). As found in the results of  $N_{fs}$  test, a total of 13,796 studies with null results would be

Table 2  
Effect of Studies on Creative Drama Regarding Grade Level

Mixed Effects Analysis	n	ES	SE	95% Confidence Interval		Test of Mean		Test of heterogeneity in effect size		
				Lower	Upper	Z value	p value	Q value	df(Q)	p
Preschool	2	2.36	1.20	0.01	4.71	1.97	0.05			
Primary	10	2.12	0.35	1.44	2.80	6.12	0.00			
Secondary	24	1.43	0.19	1.05	1.80	7.39	0.00			
High school	2	1.39	0.81	-0.19	2.97	1.73	0.08			
University	2	2.54	1.96	-1.29	6.37	1.30	0.19			
Tot. B/w								3.75	4	.44
Overall	40	1.60	0.16	1.28	1.92	9.84	0.00			

Table 3  
Effect of Studies on Creative Drama Regarding Subject Field

Mixed Effects Analysis	n	ES	SE	95% Confidence Interval		Test of Mean		Test of heterogeneity in effect size		
				Lower	Upper	Z value	p value	Q value	df(Q)	p
<b>Science</b>	8	1.79	0.33	1.15	2.43	5.48	0.00			
<b>Math</b>	5	1.00	0.48	0.05	1.95	2.07	0.04			
<b>Soc. Sc</b>	23	1.60	0.20	1.21	2.00	7.98	0.00			
<b>Foreign L.</b>	2	3.37	1.18	1.05	5.69	2.85	0.00			
<b>Others<sup>a</sup></b>	2	2.54	1.96	-1.29	6.37	1.30	0.19			
<b>Tot. B/w</b>								4.31	4	.37
<b>Overall</b>	40	1.62	0.16	1.31	1.94	10.17	0.00			

<sup>a</sup>including the lessons at university.

Table 4  
Effect of Studies on Creative Drama Regarding IP

Mixed Effects Analysis	n	ES	SE	95 Confidence Interval		Test of Mean		Test of heterogeneity in effect size		
				Lower	Upper	Z value	p value	Q value	df(Q)	p
<b>2-4</b>	15	1.45	0.25	0.96	1.93	5.87	0.00			
<b>5-6</b>	7	1.45	0.34	0.77	2.12	4.19	0.00			
<b>9-18</b>	9	2.55	0.42	1.74	3.37	6.14	0.00			
<b>Unspecified</b>	5	1.23	0.25	0.74	1.73	4.92	0.00			
<b>CDH<sup>a</sup></b>	3	1.35	1.04	-0.70	3.39	1.29	0.20			
<b>Tot. B/w</b>								7.63	4	.11
<b>Overall</b>	39	1.508	0.145	1.224	1.793	10.390	0.000			

<sup>a</sup>courses determined as hours

required to bring the overall effect size to a trivial level 0.01. Thus, it can be claimed that this number of studies are greatly in excess and the results of the analysis are therefore reliable.

In addition to the quantitative findings of the study, evaluations of the qualitative findings were also

presented. These findings were presented with the themes “effect of creative drama on the cognitive domain,” “thinking, creativity, and critical thinking skills,” “learning environment and process,” and “social aspects, affective domain, and attitude.” All themes and their respective codes are illustrated in models and are presented in Figures 1-4.

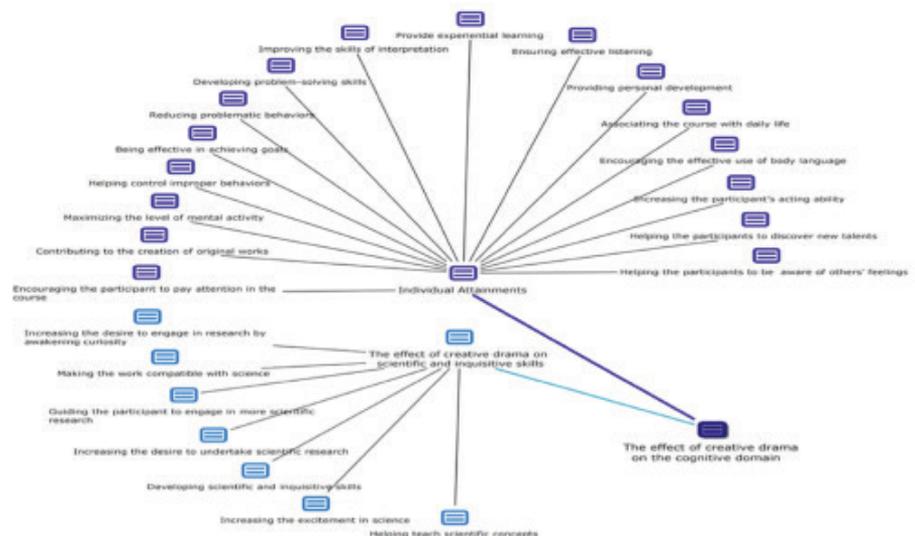


Figure 1: The effect of creative drama on the cognitive domain.

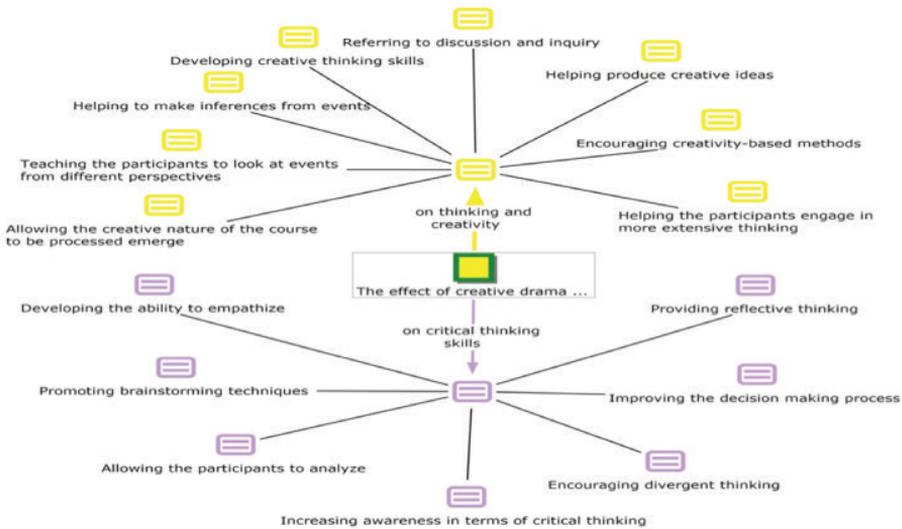


Figure 2: The effect of creative drama on thinking and creativity; critical thinking skills.

Figure 1 presents the codes related to the efficiency of creative drama on cognitive domain involving the sub-themes of *Scientific and Inquisitive Skills* and *Individual Attainments*. “Providing experiential learning,” “contributing to the creation of original works,” “helping the participants to be aware of others’ feelings,” and “making the work compatible with science and increasing the excitement in science” are some of the codes under the considered

theme. These codes and themes were cited from direct quotations of the participants in the studies reviewed of which examples are “Stunning and original products can be created as students share their ideas and see the results with different perspectives via collaborative works” (T137-189) and “I improved myself with creative drama activities on account of certain skills as problem solving, interpretation and investigation” (T131-109).



Figure 3: The effect of creative drama on the learning environment/process and its negative aspects.

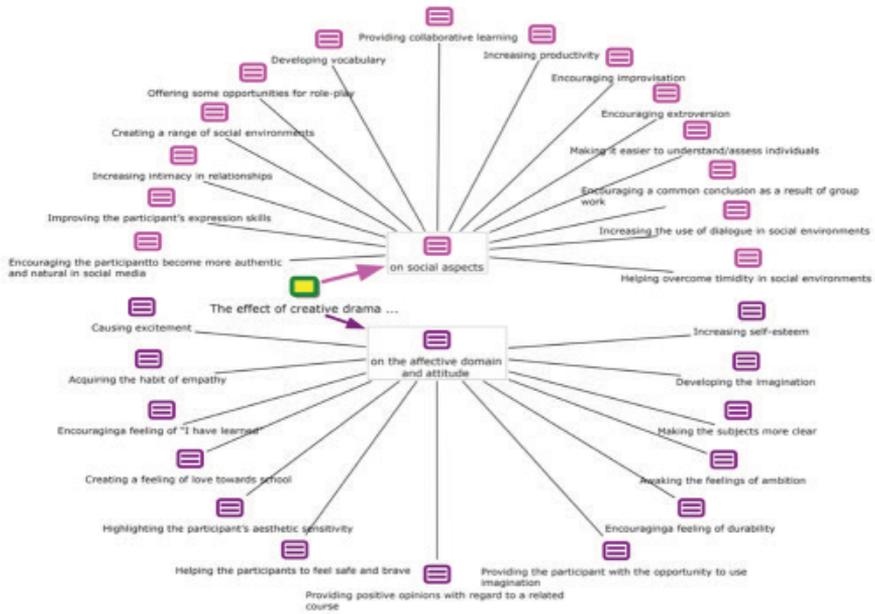


Figure 4: The effect of creative drama on social aspects, the affective domain, and attitude.

As indicated in Figure 2, codes such as “developing creative thinking skills,” “helping the participants engage in more extensive thinking and produce creative ideas,” and “promoting brainstorming techniques and improving the decision making process” are included under the theme of *Thinking, Creativity, and Critical Thinking Skills*. For example, direct quotes regarding the efficiency of creative drama included “...while students were doing the exercises, they set forth original items through using their imagination”<sup>(T23-82)</sup> and “...creative drama makes students think more extensively and accurately”<sup>(T5-61)</sup>.

In Figure 3 the efficiency of creative drama on learning environment and its negative image were illustrated. Codes such as “creating a permanent learning environment,” “increasing the fluency of the learning process,” and “creating interactive media” are included in the theme *Learning Environment and Process*. In addition, negative aspects of creative drama are also presented in Figure 3. Codes such as “creating confusion,” “trouble in understanding due to crowded classes,” and “being considered to be time-consuming” are a few examples of negative effects. Select student views referring to this theme were “The process of the lesson was more fluent,” and “After the applications of creative drama I think it would be great to apply the same method in all the other lessons as it makes students interact with each other and present original works”<sup>(T37-218)</sup>.

As seen in Figure 4, the theme *Effect of Creative Drama on Social Aspects, the Affective Domain, and Attitude* was expressed within the codes “increasing the use of dialogue in social environments,” “creating a range of social environments,” “providing collaborative learning,” “increasing self-esteem,” and “creating a feeling of love towards school.” Students described these effects in quotes such as “...the activities in the lesson based on creative drama promote students to work in groups and ensure them to meet in an agreed result...”<sup>(T37-193)</sup> and “...this was such an efficient method that I felt more creative, imaginative and confident in my opinions”<sup>(T123-79)</sup>.

## Discussion

As predicted there was a stronger positive effect for students who had been exposed to creative drama based learning compared to those who had not for each of the outcomes. That is, the overall weighted effect size was found to be 1.68 under REM assumptions. Thus, it can be stated that creative drama has a considerable effect on achievement. Results are further supported by the meta-analytic review by Lee, Patall, Cawthon, and Steingut (2014), which concluded that creative drama should be considered an effective pedagogical method to increase achievement scores of students alongside other instructional methods.

In addition, an REM was used throughout the review (Borenstein, Hedges, Higgins, & Rothstein, 2009; Dersimonian & Laird, 1986) for testing the heterogeneity of effect sizes and was statistically significant. Moreover, studies included in the analysis consisted of populations, which varied in terms of certain features such as subject fields, grade level, and IP. In an effort to explain this variance, analyses were undertaken by separating the studies into groups in terms of grade level, subject field, and IP. In regards to grade level, which consisted of five groups (preschool, primary, secondary, high school, and university), no significant between-group effect ( $Q_b = 3.75$ ,  $df = 4$ ,  $p > .05$ ) was seen. The abovementioned result means that students' academic achievement scores do not change with regard to grade levels in the use of creative drama. In previous studies (Kardash & Wright, 1986; Podlozny, 2000), similar results were encountered as the considered moderator did not have a consistent effect on creative drama. However, among the grade levels it was recognized that the largest effect size was found to be in the university student group ( $ES = 2.54$ ) while the lowest was in the case of the high school group ( $ES = 1.39$ ).

Based on the findings of this meta-analysis, studies were categorized into four groups (science, math, social sciences, and foreign languages), and it was recognized that while the effect size for English lessons was higher than for the other subject fields, the difference was not statistically significant ( $p > .05$ ). The last moderator examined in the current meta-analysis concerned the IP of creative drama in terms duration (2–4, 5–6, 7–8, 9–18 week, and non-specified groups). As far as the IP effect of creative drama on academic achievement was concerned, the lowest effect size of 1.23 occurred in the case of non-specified IP, while the highest effect size of 2.55 occurred in the 9–18 week period. Nevertheless, no statistically significant difference of the between-group effect ( $Q_b = 7.63$ ,  $df = 4$ ,  $p > .05$ ) was found. That is, the effect sizes do not change according to IP. In the literature review, however, different findings were reported. One such finding asserted that the effect size had no relationship to the span of implementation of creative drama (Kardash & Wright, 1986) while others suggested that implementations that last between a few days to a few weeks did not significantly differ, but those that span 12 weeks to a year or more had greater effects (Conard, 1992; Deasy, 2002).

In this meta-analytic study, qualitative reviews were combined with the quantitative analysis, and the qualitative data was seen to have greatly enhanced the results of the meta-analysis. The mixed

methods contributed to more extensive insights and interpretation of the findings. The effect of creative drama on the cognitive domain; on thinking and creativity, critical thinking skills; on the learning environment and process; on social aspects, the affective domain and attitude were considered separately as different themes. The themes and their codes were cited from the views of students in various studies. Among students' views, it was reported that they have experienced crucial gains due to the use of creative drama activities. These results in general were encountered in previous research (Atan, 2007; Başkan, 2006; Kadan, 2013). Further, when examined in detail, creative drama appeared to have positive results in increasing desire to engage in scientific research and helping the participants become aware of both themselves and others. Özer (2004) published a similar result in which the author observed a change in students' behaviors, specifically, that they became more aware of others emotions following the creative drama treatments.

Furthermore, students stated that they developed their critical thinking skills and had added insight with the help of creative drama. The effect of the related method on learning environments was also considered based on students' views. The most striking codes were stated as "being completely student centered," "creating a permanent learning environment," and "developing active learning strategies," which were supported in previous research results (Bertiz, 2005; Durusoy, 2012). Apart from these pros of creative drama, some cons were also explored. "Creating confusion" and "being considered as time-consuming" were the codes that were most remarkable in the negative aspects of creative drama. It was evident that students improved in social functioning following the introduction of creative drama, that is, they became more outgoing, productive, and stable. In the literature review, certain studies discussed similar results (Bayrakçı, 2007; Şimşek, 2013). In particular, creative drama had a major impact on affective domains such as creating a feeling of love towards learning, and encouraging the sense of "I have learned." Erdoğan (2006) also found that students both learn and enjoy the course concurrently with the help of creative drama activities while exploring the impact of creative drama on mathematics. Accordingly, the qualitative findings indicated that creative drama had influential outcomes on social, cognitive, and affective domains; creativity and critical thinking skills; and attitude, learning environment/process. Based on the research results, as creative drama

seems to have positive impact on achievement in various domains, skills, and attitude, it is recommended that creative drama techniques be utilized in different grades and courses. Future research on this subject is encouraged in order to create meaningful and distinct knowledge in regards to creative drama. In summary, the meta-analytic findings indicated that creative drama had a significant and positive effect on academic achievement and similarly the qualitative findings supported meaningful outcomes.

### Implications for the Research and Practice

As discussed in this paper, creative drama can be considered a powerful instructional technique for effective learning. Education experts are advised to encourage educators to explore the use of creative drama and the benefits it may provide in their classroom. Moreover, given the national and international focus of this study, as well as the effect of creative drama on various fields/courses and grades, it is clear the implications for creative drama are far

reaching and eclectic. This study adds to the growing body of research in which the positive effect of creative drama on different variables can be found (e.g., Aykaç, 2008; Baird & Salmon, 2012; O'Neill, 2008).

The methodological process of this research is also remarkable as it is built on a combination of methods to enrich the methodology of the research with a holistic approach. With this aim, a meta-analytic and thematic method was used to attain a comprehensive result. In this context, meta-analytic results indicated that with the value of the overall effect size, creative drama appeared to have a considerable effect on achievement. Moreover, results showed that the effect sizes did not change when considered in terms of grade level, subject field, and IP. Thematic results, on the other hand, implied that students have acquired significant experiences in areas such as cognitive domains; thinking and creativity, critical thinking skills; the learning environment and process; and social aspects, the affective domain, and attitude. Therefore, it is suggested that future researchers utilize a variety of methodologies to fully explore the field of creative drama and its effect on education.

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