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# The Effect of Drama Method on Academic Achievement and Attitude: A Comparative Meta-Analysis and Meta-Synthesis

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## Abstract

The aim of this study is to analyze the effect of drama method on academic achievement and attitude in preschool and primary school in terms of meta-analysis and meta-synthesis in Turkish sample. In this study, a methodological approach was used that combines meta-analysis of quantitative data with qualitative data to present the broadest view of the research on drama method. In order to find the overall effect size at the meta-analysis stage, 67 effect sizes were obtained from 57 empirical studies about the effect of drama method on academic achievement. 25 effect sizes were obtained from 23 empirical studies about the effect of drama method on attitude. Results show that the drama method has a strong effect on academic achievement ( $d=1,157$ ) and a moderate effect on attitude ( $d=0,680$ ). The meta-synthesis results reveal that drama affects emotionally, cognitively, socially, linguistically and kinesthetically in the theme of its role on students. In the theme of learning outcomes of drama, it was seen that the drama method provides students active learning, permanent learning, learning with games, learning with fun, cooperative learning and learning from the teacher. It can be said that both the quantitative results obtained through meta-analysis and the qualitative results obtained through meta-synthesis are compatible, consistent and support each other.

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## Introduction

After understanding that teacher-centered education did not allow for an effective learning process, a transformation from the traditional approach to the constructivist approach began. Constructivist approach, which is student-centered in order to increase the quality of education, took its place in education programs in our country after 2005. This approach led to the transition from a teacher-centered education process to a student-centered approach. In the constructivist approach, the role of students, who are at the center of learning, changed as well as the role of the teacher. The teaching methods and techniques applied to the students gained a special importance. In order for the teaching-learning processes to be effective and functional, appropriate methods and techniques should be selected. Some methods and techniques that actively involve the student in the learning process allow them to learn new things on their previous knowledge and are suitable for the constructivist approach can be listed as drama, role playing, dramatization, brainstorming, problem solving, and project work. Among these methods, drama in which many senses can participate in the learning process at the

same time in the learning environment under appropriate conditions and which will positively affect the learning process is a suitable method for constructivist approach. According to Adıgüzel (2019), creative drama is the revival of a purpose and thought, based on the experiences of the members of a group, using techniques such as improvisation and role playing etc. The main purpose of drama in education is to create new learnings by giving participants real experiences in a fictional environment by doing-living and role-playing (Akar-Vural & Somers, 2016). It is expressed that the drama method is a tool that can make the universal, social, ethical, moral and abstract concepts meaningful in the world (San, 1990). Drama, especially at various educational levels in schools, can enable students to know themselves, to discover their abilities and talents, to empathize, to analyze a phenomenon or event in various aspects, to learn by playing and experiencing (Adıgüzel, 2019). In the learning environment where the drama method is applied, it is possible to educate young people who are creative, productive not only with certain concrete products, but also with ideas, who can make creative decisions, who do not hesitate to be different and make changes, who use their language well, who can be critical and judgmental, who are not strictly stick to dogmas, who can discuss about dogmas or taboos (San, 2006). Drama which is an interesting and exciting way of learning (Prendiville & Toye, 2007), gained an important momentum in our education system in recent years and is used as an effective method in the education system as it contributes to the active learning of students. Among the most important factors in the rising of this method in recent years, it can be said that drama offers a rich learning environment to the student and the student can structure the knowledge and has the opportunity to apply it interactively with other methods, as well as its enabling an effective communication (Aykaç & Ulubey, 2008). This interaction process allows individuals to share experiences and experiences with each other, to produce together, and to develop students' different and critical thinking, creativity, conceptual thinking and written-oral communication skills. Drama enables the individual to be active, to express himself, and to see life from different perspectives.

Several searches revealed that the drama method has positive contributions to both personal development and the cognitive, affective and psychomotor skills of the individual. It is an important issue that how often the drama method, which is an educational and instructive approach, is applied in researches. In the literature, it is seen that there are many studies about the effect of drama method on academic achievement (Aykaç, 2008; Başbuğ & Adıgüzel, 2019; Ütkür, 2012, Şentürk, 2020), attitude towards the lesson (Kaf & Uygungul Yılmaz, 2017; Kayhan, 2004; Soylu Makas, 2017), education of values (Çelik, 2016) emotional intelligence skills (Şek Balandı, 2017).

The high number of these studies, in which the drama method was applied from different ways, necessitated the need to interpret and evaluate these studies from various perspectives. There is a need for comprehensive and reliable studies to interpret the knowledge in social sciences and to lead to new studies (Akgöz, Ercan, & Kan, 2004). In the literature, there are many studies on drama method carried out at pre-school and primary school levels. However, when the literature is analyzed, it is seen that the meta-analysis studies are not comprehensive enough to determine the efficiency of drama method at preschool and primary school levels. In this case, meta-analysis studies are needed to search the efficiency of drama method and the effect sizes on academic achievement and attitude variables. In the literature, no study was found that analyzes the subject of drama at the basic education level with a holistic perspective in meta-analysis and meta-synthesis dimensions. A qualitative

dimension (meta-synthesis) was added to the study in order to increase the verifiability. Therefore, this study is the first and original.

### **The Aim and Significance of the Study**

It is seen in the literature that there is a limitation about analyzing the subject of drama at the basic education level (preschool and primary school) with a holistic perspective. In this context, when the literature is analyzed, there is no study dealing with the subject of drama at the basic education level in terms of meta-analysis and meta-synthesis in Turkish sample. The general purpose of this study is to analyze the effect of independent studies on drama in Turkey at the basic education level with meta-analysis and meta-synthesis method and to reinterpret the subject of drama at the basic education level. For this purpose, this study includes a methodological process in which quantitative and qualitative methods are used together. The purpose of the quantitative dimension of the study is to determine the efficiency of drama method on the academic achievement and attitude variables of the students in their courses compared to the traditional teaching method, with the meta-analysis method. A meta-analysis of the studies identified in the literature was made. Adding a qualitative dimension to the research has two main purposes. The first of these is to provide more comprehensive information and create a rich data set by making a more detailed search on the current subject in order to see the whole picture about the drama method at the basic education level. The second aim is to reveal the students' views on drama method with the meta-synthesis method. Thus, the results obtained in the qualitative dimension of the study and the quantitative results obtained by the meta-analysis method will reveal a more reliable, comprehensive and distinctive result. It is thought that the results obtained in the qualitative dimension will complete the results obtained with the meta-analysis method with a holistic approach, and it will also contribute to the validity and reliability. Considering the main purposes of the research, answers to the following basic research questions were sought:

- What effect does the drama method have on the academic achievement of the students in the course?
- Does the effect size of the drama method on the academic achievement of the students differ according to the moderator variables such as publication year, publication type, education level, geographical region, application week, application hour, subject area, sample size?
- How does the drama method effect student attitude?
- Does the effect size of drama method on attitude differ according to moderator variables such as publication year, publication type, geographical region, application week, application hour, subject area, sample size?
- What are the opinions of the students in the sample group about the drama method?

### **Method**

This study was designed as a mixed method, which included a methodological process in which the meta-analysis method in the quantitative approach and the meta-synthesis method in the qualitative approach used together. Mixed method can be defined as a process in which the researcher collects both quantitative and qualitative data, integrates the two data sets, and draws conclusions by using the advantages of this in order to

understand the research problem in a multi-dimensional way (Creswell, 2017). Quantitative data in the research aim to determine the effect of drama method on academic achievement and attitude variables. Qualitative data in the research aim to reveal the opinions of the students about the drama method applied. On the other hand, since this study is a meta-level research, the researcher thinks that it would be more accurate to call the research model as the meta-mixed model in order to emphasize the meta-analysis method and meta-synthesis method. The purpose of this naming is to highlight the meta-methods that are used both quantitatively and qualitatively, based on the theoretical background of the mixed method. In this context, the model of the research is stated as the meta-mixed model. The meta-mixed model can be described as comparing the two data sets by bringing together the research results obtained from the meta-analysis method in the quantitative approach and the meta-synthesis method in the qualitative approach (Yıldırım, 2021).

### **Research Type and Design**

In the quantitative dimension of the research, meta-analysis method was used in order to determine whether the drama method was effective on academic achievement and attitude. Meta-analysis is explained as statistical analysis used to combine the results of a series of studies in order to combine the results of studies conducted on a particular subject (Crombie & Davies, 2009; Glass, 1976). The analysis of moderator variables, which are thought to have an effect on drama method, was also made. Moderators determined in this study are publication year, publication type, education level, geographical region, application week, application hour, subject area, sample size. It was aimed to provide more comprehensive information and to create a rich data set by making a more detailed scan on the current subject in order to see the whole picture about the drama method at the basic education level by including the qualitative dimension (meta-synthesis). Meta-synthesis is a research method that uses the essence of results and comments in qualitative research (Jensen & Allen, 1996) as data, analyzes these results meticulously and tries to interpret them (Finfgeld, 2003).

### **Data Collection**

After determining the dependent variables (academic achievement and attitude), independent variables (drama method) and moderator variables, literature review was started. During the data collection process, first of all, keywords were determined in Turkish and English. Keywords determined in this research are “Drama”, “Drama method”, “Creative drama”, “Drama with education”, “Effect of creative drama”, “Drama and academic achievement”, “Drama and attitude”. After the keywords were determined, searches were carried out from the databases of “Higher Education Council National Thesis Center”, “Google Scholar”, “Scopus”, and “DergiPark”.

### *Introducing a Set of Inclusion Criteria*

Since the smallest mistake in determining the inclusion criteria can lead to biased results, the inclusion and exclusion criteria are stated in this study as carefully, clearly and impartially as possible:

The criteria used in the selection of the studies included in the research are as follows (for meta-analysis

and meta-synthesis);

Criterion 1: The time period of the studies: It should be done between 01.01.1985 and 15.12.2020. The reason for including the studies published since 1985 in the research is that the first study on drama in Turkey (Çebi, 1985) was published on this date.

Criterion 2: Publication language: It should be published in Turkish or English.

Criterion 3: Publication type: Postgraduate and doctoral theses should be published as articles in peer-reviewed journals.

Criterion 4: Appropriateness of the research method included in the studies: In order to achieve a standardized effect size in meta-analysis studies, the included studies should be in an experimental design (pretest-posttest control group, posttest-control group, Solomon four-group model). For meta-synthesis studies, it should be in the mixed method with a qualitative pattern or in a qualitative method.

Criterion 5: Source of the studies: Since the effect of the drama method in Turkey will be analyzed in this research, the studies should be done in republic of Turkey and Turkish Republic of Northern Cyprus.

Criterion 6: Use of appropriate teaching method in the studies: In the experimental group, the drama method or the drama-based, drama-supported method designed with drama should be used.

Criterion 7: Study group of the study: Students at the basic education level; preschool and primary school students.

Criterion 8: Exclusion of 5th grades in 2013 and later: Due to the transition to a new education system (4+4+4 system) in 2012 in Turkey, the 5th grade was excluded from the scope of primary school. For this reason, while the studies conducted with 5th grade students between 1985 and 2012 were included in the study; as of 2013, studies conducted with 5th graders were not included. A specific attention was paid to this distinction while selecting or screening the studies.

Criterion 9: The included articles' not being derived from the thesis: All data in the meta-analysis should be independent studies. However, some researchers can publish the studies they produced from their thesis data as an article. In order to prevent this situation the thesis publication was preferred first. It is the same for the studies included in the meta-synthesis.

Criterion 10: Containing sufficient data to calculate the effect size: In order to determine the effect sizes in meta-analysis studies, quantitative data of the sample number (N), arithmetic mean (X) and standard deviation value (s.s) of the experimental and control groups were included in the study. In addition, these data were also taken from studies where p value and t value were given in the studies.

Criterion 11: Suitability of data for meta-synthesis: The key point of the meta-synthesis study is the views of the participants in the included studies. In the studies, the views of the participants on the subject should be included.

Criterion 12: Dependent variable of the study: Academic achievement and attitude are the dependent variables of the study. However, some studies contained appropriate data for both achievement and attitude variables an effect size calculation was made for both variables. Some studies, on the other hand, were used only once, as they contained appropriate data for only one variable.

As a result of the database search carried out to determine the effect of drama method on academic achievement and attitude, 47,814 studies were reached. 47,126 of these studies were eliminated due to subject and language

differences. A total of 688 studies included in the study were reached. Among these studies, a total of 623 studies were eliminated, including 15 studies in the non-experimental screening model, 522 studies with different educational levels, 16 studies without a control group, 27 studies that did not contain sufficient data, and 58 studies that measured different variables (permanence, skill). As a result, a total of 65 studies were included in the meta-analysis in this study; 42 studies for the academic achievement variable, 8 studies for the attitude variable, 15 studies for both academic achievement and attitude variables. In the qualitative dimension of the study, 47,814 studies were reached as a result of the database scanning to determine the qualitative studies. 47,126 of these studies were eliminated due to subject and language differences. A total of 688 studies included in the study as full text were reached. A total of 667 studies, including 292 studies with quantitative data, 360 studies with different educational levels, and 15 studies in the screening model, were eliminated from these studies. 21 studies that ultimately met the inclusion criteria were included in the meta-synthesis in this study.

### *Coding Process*

In order for the coding process to be carried out carefully and efficiently and no data to be ignored, the researcher first scanned the sources related to coding in the meta-analysis (DeCoster, 2004; Dinçer, 2021, Jain et al., 2012) and analyzed meta-analysis publications at the national level (Akgöz et al., 2004; Bakioğlu & Özcan, 2016; Bakioğlu & Gökteş, 2018; Kış, 2013; Üstün & Eryılmaz, 2014, Şen & Yıldırım, 2020). There is no certain and single coding form regarding the coding method in the literature. This should happen because the purpose and design of each study is different from each other, in such a case it would be correct to approach the event subjectively. Therefore, in this meta-analysis study, the coding form was developed by the researcher. Microsoft Excel 2010 package program was used to record the data in the coding form. The researcher discussed the form he developed under two titles. In the first part of the coding form, descriptive data were coded. These descriptive data include study number, study name, author information, study year, study type, geographical region, applied education level, applied course, application week, application hour, sample size. In the second part of the coding form, the sample number (n), arithmetic mean (x) and standard deviation (s.s.) data required to calculate the effect sizes were coded. In addition, the “p” and “t” values given in the studies were coded. Coding reliability; coder reliability (single coder) and intercoder reliability (multiple coders). The main difference between these two coding reliability is the number of coders who code (Ellis, 2010; Lipsey & Wilson, 2001; Rosenthal, 1991). Coder reliability and inter-coder reliability can be calculated using the formula called “Agreement Rate (AR)” (Orwin & Vevea, 2009). This formula is calculated as “Agreement Rate = Number of views agreed on/Total number of views”. The reliability between these coders was calculated as the agreement coefficient. While there are studies accepting an agreement coefficient of 0.80 and above as reliable (Carletta, 1996), there are studies stating that this coefficient is reliable if it is 0.85 and above (Bayraktar, 2001).

In order to ensure coding reliability, all studies included in the meta-analysis were coded for the first time by the researcher and then recoded for the second time. The purpose of the researcher coding all the studies for the second time is to eliminate the mistakes (carelessness, inattention) that may occur in the first coding. Then, the researcher randomly selected and coded a total of 5 studies among the included studies. A week later, the same

studies were coded again. As a result, the average coding reliability value of 0.900 was obtained for the codings obtained in the studies chosen randomly by the researcher, and it can be said that the coding is reliable (Bayraktar, 2001; Carletta, 1996). In order to determine the reliability among the coders, an expert or experts in a certain field other than the researcher should be determined and some of the primary research should be coded. The resulting codings should be compared with the coding of the researcher and the reliability between coders should be calculated (Lipsey & Wilson, 2001). In this study, two field experts, other than the researcher, coded three randomly selected studies to calculate the inter-coder reliability. The mean inter-coder reliability for all comparisons obtained was calculated. The inter-coder reliability obtained as a result of the research was as follows: the first researcher (0.869, 0.913 and 0.956); second researcher (0.913, 0.869 and 0.913). The mean coding reliability for each coder was found as: 0.927 and 0.898, respectively, and the mean reliability between coders (mean agreement rate) was found to be 0.912. The researcher's mean coding reliability was found to be "0.90" and the mean inter-coder reliability was 0.912. This result shows that the coding among the coders is reliable.

### **Data Analysis**

While analyzing the data, the CMA (Comprehensive Meta-Analysis) program, one of the software specific to meta-analysis, was used. In addition, IBM SPSS 25 package program was used for normality tests and Meta Win program was used for normal distribution graphs. The overall effect sizes were calculated according to the random effects model. In meta-analysis studies conducted in the field of social sciences, there are studies suggesting the use of random effects model for effect size analysis (Field & Gillet, 2010; Pigott & Polanin, 2020). Although the heterogeneity test was performed in this study, the "Random Effects Model" was preferred as the model because the included studies were functionally different from each other. In addition, heterogeneity analyzes and publication bias analyzes were performed in this study, and "0.05" was selected as the level of significance for all statistical calculations. The classification of Cohen et al. (2007) was used in the evaluation of the effect sizes of statistical data. The classification proposed by these researchers is as follows:  $d < 0$  Adverse effect,  $0 \leq d \leq 0.20$  negligible level,  $0.21 \leq d \leq 0.50$  Small,  $0.51 \leq d \leq 1.00$  Medium, and  $1.01 \leq d$  Large. In order to test whether there is heterogeneity between Cohen's  $d$  and studies in the estimation of the effect size, the degree of freedom  $(n-1)$  heterogeneity test in the Q-statistics chi-square ( $\chi^2$ ) table was used.

In the qualitative dimension of the study, which provides more detailed and comprehensive information and creates a rich data set, the studies related to the drama method were analyzed using the MAXQDA-11 Program. In the qualitative data analysis, content analysis was used in an inductive framework. Patton (2002) classified content analysis as deductive analysis and inductive analysis. Inductive analysis involves exploring themes and categories within data. Results emerge through the interaction of the researcher with the data (Patton, 2002). In the study, codes were obtained from qualitative data and categories and themes were obtained from codes by using inductive analysis. The researcher preferred inductive content analysis to draw a new conclusion about the subject. Codes (R1, R2, R3, ..R21) were given to the studies that were evaluated before the data analysis. For example, the code R13-P10 represents the 13th research and the 10th participant in that study.

Since meta-synthesis has a qualitative dimension, conformity between the coders that form the codes should be checked. In this way, conformity and reliability between the coders were calculated according to the Miles and Huberman and Cohen's Kappa statistics, and the reliability of the meta synthesis was ensured. In this study, Miles and Huberman (1994) reliability formula was used to ensure reliability. Reliability was calculated as 90% and above. In this case, it can be said that the study is reliable as a result of the coding made among the coders. In addition, the codes, sub-themes and themes in the studies were coded by two coders and the inter-coder compatibility and Cohen's Kappa test results are presented in Appendix 1. The intercoder reliability coefficient calculated for each theme was found to be 0.804 in the theme of the role of drama on students, 0.850 in the theme of learning outcomes of drama and 0.881 in the theme of the disadvantages of drama. These values are in the range of "0.804-0.881" and when evaluated according to the classification of Viera and Garrett (2005), it is seen that they are at the level of almost perfect agreement. When both results are analyzed, it can be said that this study is reliable.

## Results

In this part, the results of the effect of drama method on academic achievement and attitude are given. In the first part, a meta-analysis of studies on the effect of drama method on academic achievement and attitude is presented. In addition, the forest plot graph of academic achievement and attitude variable is included in Appendix 2 and Appendix 3. In the second part, the results of the meta-synthesis, which include the opinions of the participants of the studies on the drama method, are given.

### Results on the Effect Size of the Studies on Academic Achievement

When Table 1 is analyzed, the general effect size value was found to be 0.082 according to the random effects model and it was calculated as 1.157 with a standard error. In the 95% confidence interval, the lower limit of the effect size was found to be 0.996 and the upper limit was 1.318. The statistical significance was found to be  $Z=14.092$  and  $p=.000$ . It can be said that the obtained result is statistically significant. The positive mean effect size value ( $d=1.157$ ) indicates that the treatment effect is in favor of the experimental group. For this reason, it can be said that the effect of the drama method on the academic achievement of the students is more positive than the traditional teaching methods. This effect is at a "strong" level according to the classification of Cohen et al., (2007).

Table 1. Statistical Values According to the Effect Models Related to the Academic Achievement Scores

Model	n	Cohen's d	Std error	Variance	95% confidence interval		Z value	p	Q value
					Lower limit	Upper limit			
Fixed Effects Model	69	1.049	0.033	0.001	0.948	1.076	32.050	0.000	402.241
Random Effects Model	69	1.157	0.082	0.007	0.996	1.318	14.092	0.000	

In this study, more than one publication bias test was performed. In order to determine publication bias, Funnel Plot was used first. The results of the funnel scatter plot for the probability of publication bias are presented in Figure 1.

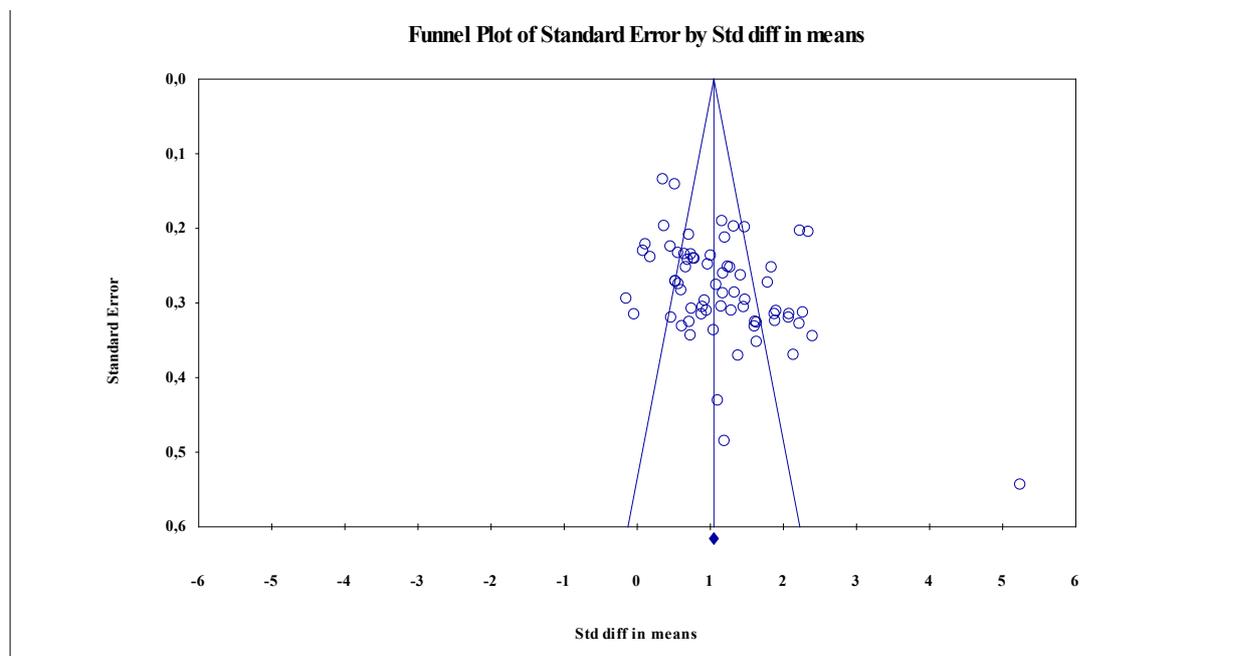


Figure 1. Effect Size Funnel Plot

While evaluating a funnel plot without publication bias, it is expected that the effect sizes of the studies will be distributed symmetrically around the mean effect size (Borenstein et al., 2009; Vevea et al., 2019). In the funnel scatterplot image given in Figure 1, it is remarkable that the effect sizes represented by the circles are symmetrically distributed around the average effect size towards the middle and upper part of the funnel shape. This indicates that there is no publication bias. However, visual evaluation of the funnel plot alone is not sufficient to evaluate publication bias. In this context, Rosenthal's Safe N (classical error protection number), Orwin Safe N test and normal Q-Q graph were used together with the funnel plot of the study. In this meta-analysis study, Rosenthal's "Safe N" method, which measures the original publication bias and also refers to reliability, was used. Rosenthal's fail safe-N is the number of additional studies with opposite results that would be required to distort the result obtained in the study and for which the significance would drop to zero. In this study, Rosenthal's fail safe-N was found to be 7600. It is seen that this fail-safe number is quite high. In this case, it is possible to say that publication bias does not affect the effect size, since the number of studies to be reached is very large and not all of them can be reached. In addition, Orwin fail safe number test was also used. In this meta-analysis, a value of 0.05 was set as the criterion for Cohen's  $d$  to be "insignificant". In this case, the number of studies that should be included for the meta-analysis to be "insignificant" was found to be 1251. This value is much higher than the number of studies included in the meta-analysis (69). As a result, it can be said that there is no publication bias.

In addition, the normal distribution graph, which is another way of determining the suitability of effect sizes to be combined with meta-analysis and ensuring reliability, is presented in Figure 2.

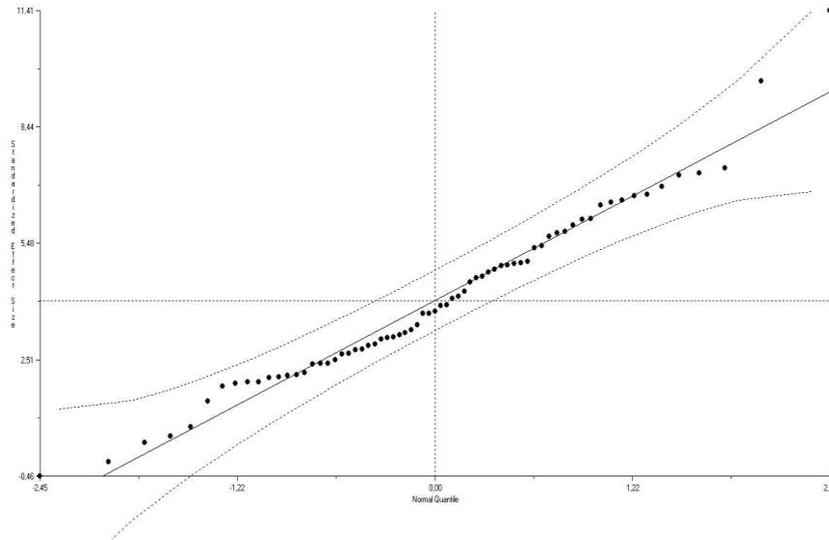


Figure 2. Normal Q-Q Plot

The fact that the normal distribution is between two parallel lines, which are defined as confidence intervals, and that it does not exceed the determined limits is an indication that the effect sizes are suitable for the normal distribution (Rosenberg et al., 2000). For this reason, it was seen that the effect sizes showed a normal distribution and were in a reliable range. Considering all these results, it is understood that this research analyzes are reliable.

**The Efficiency of Drama Applications According to the Moderator Variables**

In Table 2, it was tested whether the effect of drama method on academic achievement changed according to the moderator variables.

Table 2. The Effect of Drama on Academic Achievement According to Moderator Variables

% 95 Confidence Interval										
Moderator variable	Moderator variable levels	N	ES	Std error	Z	Lower limit	Upper limit	Q <sub>B</sub>	sd	p
Publication year	1988-2004	20	1.070	0.151	7.052	0.773	1.367			
	2005-2010	29	1.188	0.121	9.777	0.950	1.426	0.371	2	0.831
	2011-2020	20	1.130	0.167	6.761	0.803	1.458			
Publication type	Article	13	1.288	0.203	6.345	0.890	1.686			
	Postgraduate thesis	52	1.119	0.095	11.769	0.933	1.305	0.914	2	0.633
	Doctorate thesis	4	0.915	0.389	2.351	0.152	1.678			
Education level	Preschool	9	1.282	0.260	4.925	0.772	1.792			
	Primary school	60	1.109	0.087	12.767	0.939	1.280	0.396	1	0.529
	Mediterranean	5	1.443	0.366	3.941	0.725	2.160			
	Aegean	10	1.337	0.229	5.835	0.888	1.786			
Geographical region	Black Sea	5	1.179	0.331	3.560	0.530	1.829			
	Central Anatolia	26	1.166	0.140	8.348	0.892	1.440	3.729	5	0.589
	Eastern Anatolia	6	1.096	0.245	4.468	0.615	1.577			
	Marmara	17	0.899	0.160	5.606	0.584	1.213			

Moderator variable	Moderator variable levels	N	ES	Std error	Z	% 95 Confidence Interval		Q <sub>B</sub>	sd	p
						Lower limit	Upper limit			
Application week*	1-4 weeks	27	0.870	0.130	7.484	0.716	1.224	12.583	2	0.002
	5-8 weeks	26	1.002	0.113	9.294	0.830	1.273			
	9-16weeks	14	1.135	0.167	6.812	0.808	1.461			
Application hour**	1-16 hours	38	0.987	0.106	9.307	0.779	1.195	27.780	1	0.001
	17 hours or more	27	1.172	0.115	10.228	0.947	1.397			
Subject area	Numerical	21	1.184	0.152	7.767	0.885	1.483	0.263	2	0.877
	Verbal	42	1.123	0.113	9.941	0.901	1.344			
Number of samples	Language	6	1.068	0.169	6.312	0.736	1.399	12.738	2	0.002
	1<n≤40	9	1.226	0.105	11.656	1.020	1.432			
	40<n≤60	28	0.988	0.118	8.352	0.756	1.220			
	60<n	32	0.654	0.121	5.395	0.416	0.891			

\*2 studies that did not specify the application period as weeks were excluded from the analysis. \*\*3 studies (4 comparisons) with no application hour were excluded from the analysis.

In Table 2, it was seen that application week ( $Q_B=12.583>X^2=5.991$ ;  $df=2$ ;  $p=0.002<0.05$ ), application time ( $Q_B=27.780>X^2=3.841$ ;  $df=1$ ;  $p=0.001<0.05$ ) and the number of samples ( $Q_B=12.738>X^2=5.991$ ;  $df=2$ ;  $p=0.002<0.05$ ) variables showed a significant difference; while the variables of publication year, publication type, education level, geographical region and subject area did not make a significant difference.

### Results on the Effect Size of the Studies on Attitude

When Table 3 is analyzed, according to the random effects model the general effect size value was calculated as 0.086 and was found as 0.680 with standard error. In the 95% confidence interval, the lower limit of the effect size was found to be 0.512 and the upper limit was found as 0.847. The statistical significance was found to be  $Z=7.939$  and  $p=.000$ . So, it can be said that the obtained result is statistically significant. The positive mean effect size value ( $d=0.680$ ) shows that the treatment effect is in favor of the experimental group. For this reason, it can be said that the effect of drama method on students' attitudes is more significant than traditional teaching methods. This effect is a "moderate" effect according to the classification of Cohen et al (2007).

Table 2. Statistical Values According to the Effect Models Related to the Attitude Scores

Model	n	Cohen's d	Std error	Variance	95% Confidence Interval		Z value	p	Q value
					Lower limit	Upper limit			
Fixed									
Effects	25	0.631	0.052	0.003	0.529	0.732	12.195	0.000	
Model									
Random									63.233
Effects	25	0.680	0.086	0.007	0.512	0.847	7.939	0.000	
Model									

In this study, more than one publication bias test was conducted for the reliability of the data related to student attitudes. In order to determine publication bias, Funnel Plot was used first. The results of the funnel scatterplot for the probability of publication bias are given in Figure 3.

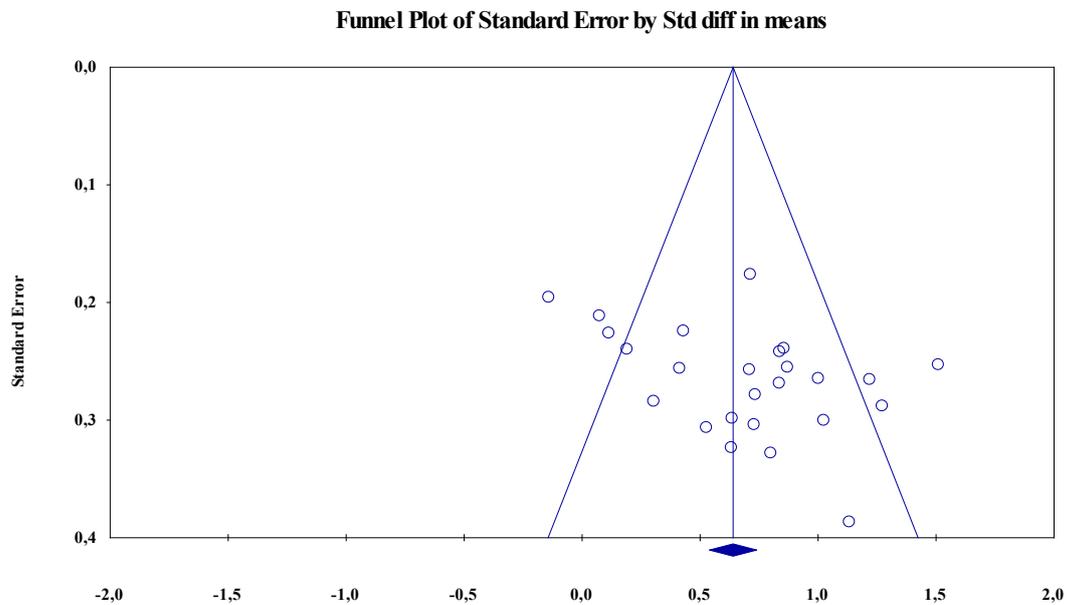


Figure 3. Effect Size Funnel Plot

In the funnel plot above, it is seen that the effect sizes of the studies included in the meta-analysis are distributed almost symmetrically. Therefore, it can be said that there is no significant publication bias. With the funnel plot of the study, Rosenthal's Safe N, Orwin Safe N test and normal Q-Q plot were used. In this meta-analysis study, Rosenthal's "Safe N" method, which measures the original publication bias and also refers to reliability, was used. In this study, Rosenthal's fail safe-N was found to be 1059. It is seen that the obtained fail-safe number is quite high. Therefore, it can be stated that publication bias, in which the number of studies to be reached is too high, does not affect the effect size.

In addition, the Orwin safe N test was also used. In this meta-analysis, a value of 0.05 was determined as a criterion for the Cohen's d value to be "insignificant". In this case, the number of studies that should be included in order for the meta-analysis to be "insignificant" was found to be 295. This is considerably higher than the number of studies included in the meta-analysis (25). So, in the light of these data, it can be said that there is no publication bias in the study.

In addition, the normal distribution graph, which is another way of determining the suitability of effect sizes to be combined with meta-analysis and ensuring reliability, is presented in Figure 4. The fact that the normal distribution is between two parallel lines, which are defined as confidence intervals, and that it does not exceed the determined limits, is an indication that the effect sizes are suitable for the normal distribution (Rosenberg et al., 2000). For this reason, it was seen that the effect sizes showed a normal distribution and were in a reliable range. Considering all these results, it is understood that this research analyzes are reliable.

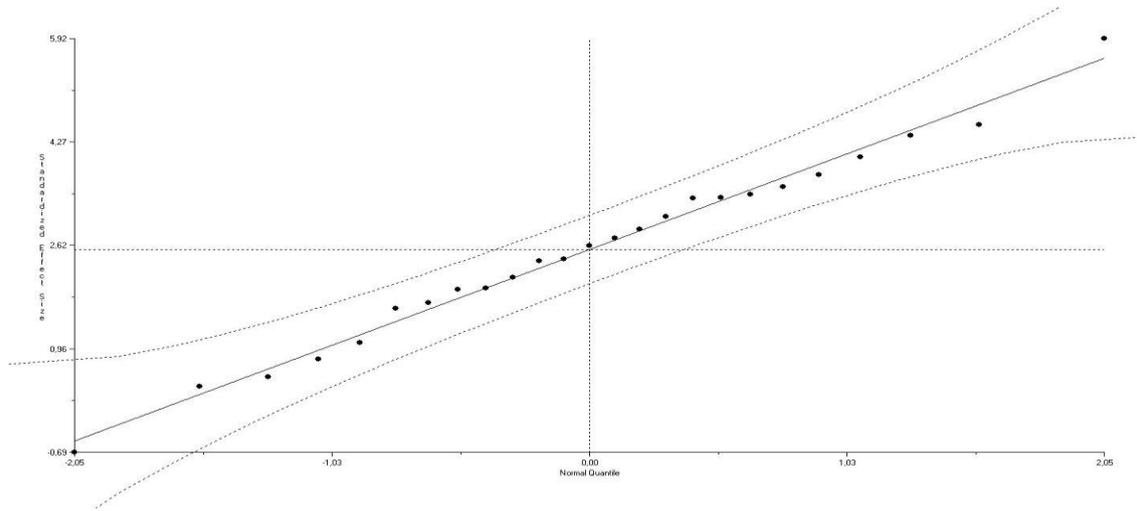


Figure 4. Normal Q-Q Plot

**The Efficiency of Drama Practices on Attitude According to Moderator Variables**

In Table 4, it was tested whether the effect of the drama method on the attitude changes according to the determined moderator variables.

Table 4. The Effect of Drama on Academic Achievement According to Moderator Variables

% 95 Confidence Interval										
Moderator variable	Moderator variable levels	N	ES	Std error	Z	Lower limit	Upper limit	Q <sub>B</sub>	sd	p
Publication year	2000-2011	13	0.724	0.120	6.056	0.490	0.959	0.280	1	0.597
	2012-2019	12	0.632	0.126	5.008	0.385	0.880			
Publication type	Postgraduate thesis	14	0.778	0.129	6.044	0.525	1.030	3.858	2	0.145
	Doctorate thesis	5	0.725	0.213	3.402	0.307	1.143			
	Article	6	0.460	0.109	4.209	0.246	0.675			
Geographical region	Central Anatolia	8	0.827	0.166	4.983	0.502	1.152	3.752	5	0.586
	Marmara	3	0.799	0.148	5.393	0.509	1.089			
	Black Sea	2	0.721	0.318	2.267	0.098	1.343			
	Mediterranean	4	0.611	0.191	3.200	0.237	0.986			
Application week*	Eastern Anatolia	4	0.590	0.300	1.965	0.001	1.179	3.911	1	0.047
	Aegean	4	0.436	0.169	2.576	0.104	0.767			
Application hour	2-5 weeks	10	0.457	0.135	4.118	0.292	0.822	3.939	1	0.045
	6 weeks and over	14	0.749	0.113	6.599	0.526	0.971			
Subject area	1-16 hours	12	0.671	0.102	6.599	0.472	0.870	0.006	1	0.941
	17 hours and over	12	0.906	0.157	4.501	0.399	1.014			
Number of samples	Numerical	6	0.692	0.164	4.216	0.370	1.013	1.467	2	0.480
	Verbal	19	0.677	0.103	6.595	0.476	0.878			
	1<n≤40	4	0.834	0.154	5.435	0.533	1.135			
	40<n≤60	8	0.763	0.105	7.251	0.557	0.970			
	60<n	13	0.492	0.134	3.482	0.339	0.866			

\* One study that did not specify the application week was excluded from the analysis.

In Table 4, it is understood that the variables of application week ( $Q_B=3.911>X^2=3.841$ ;  $Sd=1$ ;  $p=0.047<0.05$ ) and application time ( $Q_B=3.939>X^2=3.841$ ;  $Sd=1$ ;  $p=0.045<0.05$ ) made a significant difference; the variables of the publication year, publication type, geographical region, subject area and number of samples did not make a significant difference.

**Results Related to Qualitative Data**

As a result of the analysis of qualitative data, three themes were determined. These themes are the role of the use of drama in the lesson on students, the learning outcomes of drama and the disadvantages of drama. The theme of the role of drama use in the lesson on students and the codes for these sub-themes is as shown in the model presented in Figure 5.

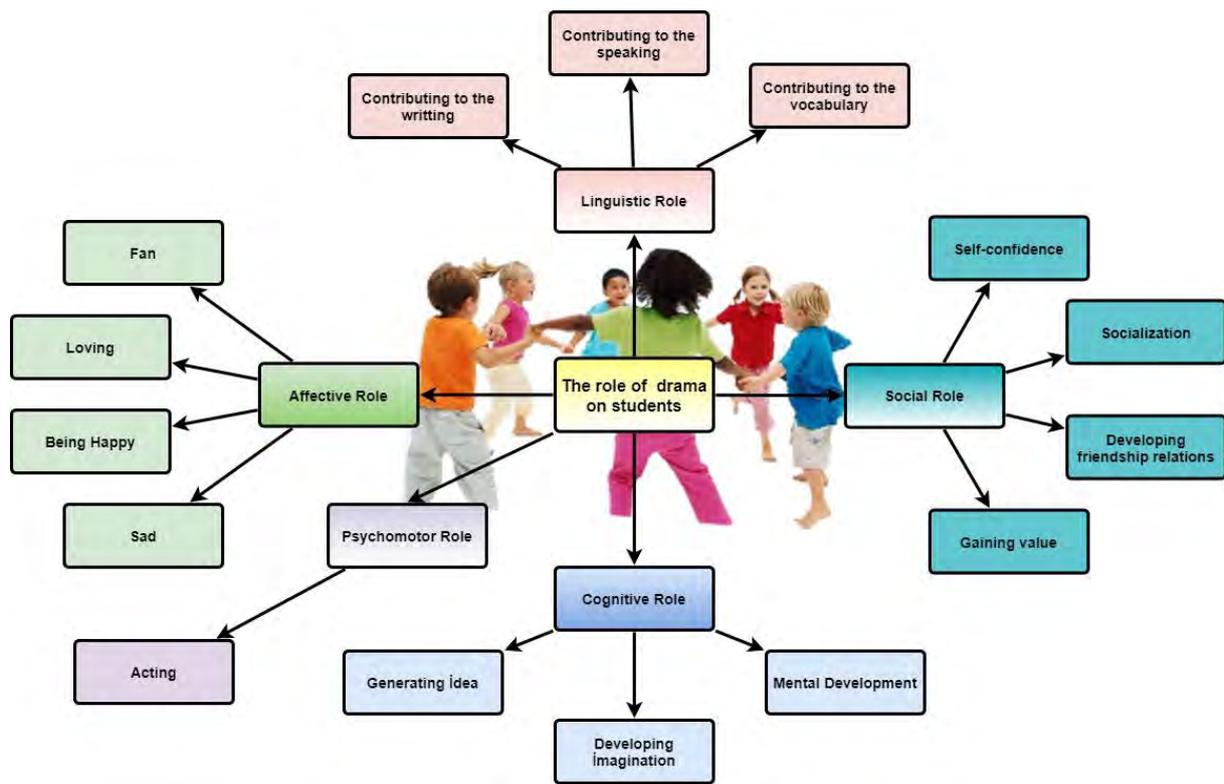


Figure 5. Sub-Themes and Codes of the Theme “The Role of Drama on Students”

The theme of the role of drama on students is the theme which is effective on the roles associated with students’ development areas. There are five sub-themes under this theme: affective role, cognitive role, social role, linguistic role and psychomotor role.

Codes such as having fun, loving, being happy, excited and sad were reached under the affective role sub-theme. Direct quotations from the participant’s views on these codes are as follows: “I can describe it in one sentence: It’s fun to the end.” R9-P16. "Drama in lessons is really fun." R11-P12, “I like it because we don't have to sit in the lessons, I’m happy.”R11-P18, “(...) let's have the lessons like this from now on. Because of this, my friends who do not like maths always like mathematics.”R15-P5, “I understand the lessons better, that's why I like them

very much.” R11-P26, “(...) I was excited because I was wondering about the animations in those texts and how it would turn out at the end. (...)” R9-P13, “(...) I am sad. Because I want the drama to continue.” R12-P14.

Codes such as generating ideas, developing imagination, and mental development were reached under the cognitive role sub-theme. Direct quotations from the participant's views on these codes are as follows: “While we are doing drama (...), our imagination develops, our ideas about what we will write from the texts develop.” R9-P10, “Drama had me think easily” R20-P14, “Our minds are always full of dreams, we imagine something as we act, new things come to our minds.” R9 -P23, “I would like my teacher to teach the lesson with drama. (...) Our minds work better. (...)” R12-P11.

Codes such as self-confidence, developing friendship relations, socialization and gaining value were reached under the social role sub-theme. Direct quotations from the participant's views on these are as follows: “Before these lessons, I could not talk about my opinions. Now my self-confidence has improved even more. I'm talking more everywhere now.” R12-P2, “After the drama lessons, I started to speak more. My self-confidence has increased.” R12-P18, “Especially my friendship relations increased. Then I learned new things. I talked to friends I had never talked to. (...)” R17-P5, “There is a lot of change with me. Because I could not read in front of the public, now I can” R6-P3, “(...) We should not curse our friends, we should respect them. We should show respect even to a plant and a tree.” R16-P7.

Codes such as writing, speaking, contributing to the vocabulary were reached under the linguistic role sub-theme. Direct quotations from the participant's views on these codes are as follows: “Drama had a positive effect on my writing. As our imagination develops in drama (...), we write more happily, our love of writing increases.” R9-P2, “I could not say the R's. We do a lot of improvisation and animations in drama courses. Now I can say R's easily.” R12-P3, “I had problems while speaking because of my stuttering. The improvisations we did in the drama affected my speech positively. I am more comfortable while talking now. (...)” R12-P15, “My vocabulary has improved. (...)” R12-P16.

The code of acting under the psychomotor role sub-theme was reached. Direct quotations from participant views on this code are as follows: “The lessons we have with drama are both fun and we can move our bodies. Because we sit on the desks in other lessons and we listen for two hours and we listen, but we do activities with drama (...)” R9-P1, “We didn't have to sit in the lesson for the first time, I was very surprised (...) That's why lessons with creative drama are better.” R11-P4.

The theme of learning outcomes of drama is defined as learning types that provide various learning opportunities to students in the course environment of drama method. Under the theme of learning outcomes of drama, six sub-themes were reached: active learning, permanent learning, learning with games, learning with fun, cooperative learning and learning from the teacher/leader. The sub-theme of this theme is shown in Figure 6.

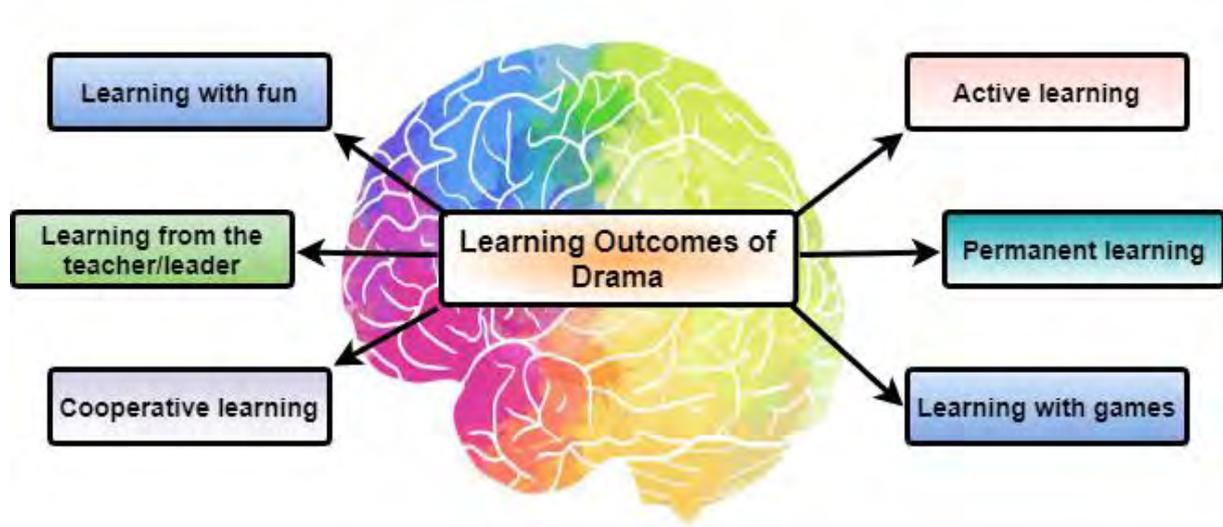


Figure 6. Sub-themes Belonging to the Theme “Learning Outcomes of Drama”

Direct quotations from the participant’s views on these sub-themes and codes are as follows: “Since we learn by doing and watching, it is very nice to learn with creative drama, we understand better and we get good grades in exams. (...) That’s why I think creative drama is very good” R11-P2, “We play games, we do role-plays and improvisation, we participate more in the lesson. That’s why I learn better with drama.” R12-P8, “Let’s always have lesson like this. It stays in my mind much more, I don’t forget”R5-P3, “I learned better in the lessons we did with drama. Because we did it with activities, it stayed in my mind better.”R12-P15, “Yes, learning while playing is better and more instructive.”R7-P30, “I liked the creative drama, because we learned it by playing.” R11-P11, “I think the drama was good, we learned there by having fun. We learned the subjects we did not know better while having fun.” R13-P6, “Learning is easy when you have fun, it becomes easier (...)” R9-P12, “I like the lessons taught with creative drama more. Because I learn by having fun.” R11-P37, “(...) We helped each other in some subjects.”R14-P1, “(...) You helped me, but I didn't need to ask you most of the time, because my other friends told me what I couldn’t do in the group. I somehow immediately understood and saw that I could do the maths.” R15-P2, "We played a game. It was not like a lesson, but we learned a lot from my teacher. (...) I was positively affected. I got 5 in the social and Turkish exams, I understood the lesson very well. I learned a lot thanks to my teacher and thank you very much for everything.”R17-P26.

While, in line with the qualitative results in the study, more results regarding the contributions of drama were reached, there were hardly any studies on the disadvantages of the lesson taught with drama. Under the theme of the disadvantages of drama, there are two sub-themes: external factors and internal factors. Codes such as crowded class, noise, lack of time were reached under the sub-theme of external factors. Direct quotations from the participant's views on these codes are as follows: “Because the class is small, we clash with each other, there is no room for everyone.” R11-P19, “(...) A bigger, more comfortable environment would be better.”R13-P7, “Sometimes I had difficulties in understanding the activities because of the noise. My friends were making a lot of noise, I was disturbed” R11-P28, “When we are preparing for role -plays, sometimes there is not enough time, then we cannot perform well.” R11-P32.

Codes such as fatigue, excitement and inability to express oneself were reached under the sub-theme of external factors. Direct quotations from the participant's views on these codes are as follows: "I got tired of standing too much."R11-P15, "I had difficulties when I went to the board in the lesson because I didn't know what to talk about" R3-P24.

## **Discussion**

The aim of this study, which is generally carried out in two stages, is to analyze the effect of drama method on academic achievement and attitude at the basic education level (preschool and primary school I) by using meta-analysis and meta-synthesis method at a national level. In the quantitative stage, which is the first stage of the study, 57 experimental studies that investigated the effect of the drama method on academic achievement and met the inclusion criteria were reached and 69 effect sizes were obtained. In addition, 23 experimental studies that investigated the effect of drama method on attitude and met the inclusion criteria were reached and 25 effect sizes were obtained.

In the first meta-analytic evaluation of the study, when the data on the effect of the drama method on academic achievement were analyzed, it was found "1.157" according to the random effects model and it is seen that it has a strong, significant and positive effect according to the classification of Cohen et al., (2007). This result shows that the drama method applied in the lesson is efficient in increasing the success of the students. When the studies related to the effect of drama method on academic achievement through meta-analysis are analyzed, similar to the current study result, it is seen that the drama method has important (Akdemir & Karakuş, 2016), strong and positive effects (Bahadırhan, 2019; Batdı & Batdı, 2015; Özbey, 2017; Ulubey & Toraman, 2015) on the academic achievement of the students. In addition, when the studies analyzing the effect of drama method on academic achievement through meta-analysis on a disciplinary basis are analyzed, it is seen that it has a strong and positive effect on the academic achievement of the students in Mathematics (Cantürk Günhan, 2016); in science education (Özdemir Şimşek & Karataş, 2020) in Social Studies course (Er-Türküresin, 2020), in Turkish teaching (Biçer, 2017). Moreover, Alacapınar and Uysal (2020) stated in their meta-analysis study that the drama method had a close to strong effect ( $d=0.926$ ) in Mathematics education. Other researchers working on this subject abroad, as in meta-analysis studies conducted in Turkey, found that the drama method, according to Cohen et al (2007) classification, had a small (Conrad, 1992) and medium (Lee et al., 2015; Lee et al. , 2020) effect on students achievement. As a result, similar to the results of the current study, the effect sizes of all the studies mentioned were found to be positive, significant and effective in favor of the experimental group. In this study, the result that the drama method increases the academic success of the students positively and at a high rate is also consistent with the individual studies which were conducted in different years and different education levels in the country and abroad and were not included in the analysis (Akgül, 2018; Aykaç and Adıgüzel, 2011; Gümüş, 2019; Kamen, 1992; Kariuki and Humphrey, 2006; Özoğul, 2019; Saraç, 2015; Subaşı, 2012; Şentürk-Tosun, 2020; Taş 2020; Timothy and Apatha, 2014; Zayimoğlu, 2006). In the study conducted by Sarı (2017) with primary school 4th grade students, the result that drama practices are effective in increasing the success of the students in favor of the experimental group in the social studies course is in line with the current study result. In the study conducted by Tveita (1998), many students stated that they found the drama method

more effective than the traditional method. On the other hand, there are studies in the literature showing that the drama method does not have a significant effect on the achievement students (Özer, 2004; Selmanoğlu, 2009). Researchers attributed this result to the short time of the application, the inconvenience of the classroom, the crowded classroom, and the inability of the students to express themselves. Considering all these results, it can be said that the drama method applied in preschool and primary school levels is quite effective in increasing student achievement.

In the second meta-analytical evaluation of the research, moderator analyzes were used to see whether the efficiency of drama method changed according to these moderator variables; publication year, publication type, education level, geographical region, application week, application hour, subject area and number of samples. The results revealed that the drama method changed depending on the variables of application week, application hour and number of samples. Accordingly, it is possible to say that the effect level of the drama method varies according to the application week, application hour and number of sample. As a result of calculating the publication bias (fail-safe number), which ensures the reliability of the meta-analytical study, and checking whether the effect sizes of the studies have a normal distribution, it was seen that there was no negative situation. This result shows that the analyses in both calculations are reliable.

In the third evaluation of the study, when the data on the effect of the drama method on the attitude were analyzed, “0.680” was found according to the random effects model and it was seen that it had a moderately significant and positive effect according to the classification of Cohen et al (2007). This result shows that the drama method applied in the lesson is effective on the attitudes of the students. In the literature, there are meta-analysis studies stating that the drama method has a positive and moderate effect on students’ attitudes, similar to the study results ((Alacapınar & Uysal, 2020; Bahadırhan, 2019; Özbey, 2017; Toraman & Ulubey, 2016). In addition, there are studies stating that the drama method has a positive and small effect on students' attitudes towards the lesson (Toraman & Ulubey, 2016). In the meta-analysis studies conducted by Lee et al. (2015; 2020), it was revealed that the drama method had a positive but small effect on students' attitudes. Accordingly, it can be said that the drama method improves students' attitudes in a positive way. The result of the current study is also consistent with individual studies conducted in different years in the literature, which were not included in the analysis, and which got the result that the drama method was more effective on attitude compared to the traditional method (Akgül, 2018; Duatepe, 2004; Günaydın, 2008; Şengül & Ekinözü, 2006; Yıldırım & Erdoğan, 2016; Zayimoğlu, 2006). In a study conducted by Sarı (2017) with primary school 4th grade students, it was seen that the drama method was effective on students' attitudes towards the social studies course.

Similarly, in the study conducted by Yıldırım and Erdoğan (2016) with primary school 2nd grade students, it was concluded that the creative drama method was more effective in improving students' attitudes towards the Turkish lesson compared to the teaching conducted according to the Turkish Curriculum. Timothy and Apatha (2014) stated in their study that the positive attitude changes of the students in the experimental group in which creative drama was applied were more apparent than in the control group. On the other hand, there are also individual studies, in both domestic and international literature, stating that the drama method and the traditional

method have the same effect on students' attitudes and that there is no significant difference between the groups (Ekinözü, 2003; Kariuki & Humphrey, 2006; Özer, 2004; Saraç, 2015; Saab, 1987). It is thought that many reasons affect the difference in attitude scores in individual studies. The application of the drama method on only one subject, unit and concept may not have had a full effect on the attitude towards the lesson.

In addition, it is thought that the application duration is not sufficient to develop and change positive attitudes of the students. There are many studies that support that attitude changes take time (Siegel & Ranney, 2003) and that the application duration is not enough to change students' attitudes towards the lesson (Geçim, 2012; Kırmızı, 2008). Although the drama method applied in education is positive and effective on students' attitudes, it can be said that the application period of the studies should be kept long enough in order to get more effective results. As a result, in the study, it is seen that the drama method affects students' attitudes positively. Another result obtained from the study is that the drama method affects the academic achievement of the students positively. When these two results are analyzed together, it is thought that the positive attitudes of the students towards the course of the drama method may have increased their academic achievement in the courses. In addition, the fact that the drama method applied in the lesson increased the academic achievement of the students may also have affected the attitudes of the students towards the lesson.

In the fourth meta-analytical evaluation of the research, moderator analyzes were used to see whether the drama method activity changed according to these moderator variables; publication year, publication type, geographical region, application week, application hour, subject area and number of sample. The results revealed that the drama method changed depending on the application week and application hour. Thus, it is possible to say that the effect level of the drama method varies according to the application week and application hour. As a result of calculating the publication bias (fail-safe number), which ensures the reliability of the meta-analytical study, and checking whether the effect sizes of the studies have a normal distribution, it was seen that there was no negative situation. This result shows that the analyses in both calculations are reliable. In the study, besides meta-analysis, meta-synthesis was also made and themes and codes related to the effects of drama method applications on preschool and primary school levels and different courses were created. At this point, the drama method was divided into affective, cognitive, social, linguistic and psychomotor role sub-themes under the theme of the role of drama method on students. When the codes related to the affective role sub-theme are analyzed, it can be said that the students experienced emotions such as "having fun, being happy, loving, excited" intensely in the lessons in which the drama method was applied. It is thought that these results may be due to the fact that the students played games that attracted their attention during the warm-up phase. Önder (2010) also states that children's perception of drama as a game is beneficial in terms of attracting and motivating the child. The study results overlap with the results of many individual studies in the domestic and international literature that are not included in the meta-synthesis (Bayraktar & Okvuran, 2012; Dadük & Dede, 2020; Kalidas, 2014; Karaosmanoğlu, 2015; Lin, 2010; Nalçacı, 2012; Saraç, 2015; İncebacak et al., 2017; Yıldırım & Erdoğan, 2016). As a result, it can be said that the students come to the lesson where the drama method is applied with pleasure, they have fun in the lessons and they feel happiness and excitement in the process.

Under the cognitive role sub-theme, the students stated that the lessons in which the drama method was applied encouraged them to think about many subjects, they were able to generate ideas, developed their imaginations, and provided different perspectives on events. It is thought that such a situation may be caused by the learning environment. Games, role-plays and improvisations may have provided students a comfortable, fun and free learning environment. Only in such an environment can the participants freely express themselves and generate new ideas. This result is in line with the result of Pinciotti's (1993) study in which students express themselves more easily at every stage of the drama and become conscious about events and situations. In many individual studies in the literature that were not included in the analysis, it is possible to see similar results such as drama improves the imagination of students (Akdeniz, 2019; Dadük & Dede, 2020; Gündoğan, 2011), drama enables children to discover their own talents (Elaldı & Yerliyurt, 2017), students can look from different views and gain various perspectives while learning (Peker & Adıgüzel, 2020; Özoğul et al., 2020). Groups and experiences, which are at the core of drama, provide children with a natural social interaction environment (Adıgüzel, 2019) and offer them the opportunity to use cognitive skills. Lindon and Brodie (2016) also stated that children's previous cognitive abilities develop through experience and social interaction. In this respect, drama provides a natural, fun, free and interactive environment to students and affects them cognitively in a positive way.

Under the social role sub-theme, it was seen that the students wanted to speak more often and their self-confidence increased during the lesson in which the drama method was applied. Philips (2003) states that even shy students gain more confidence thanks to the social qualities of drama. In addition, it can be said that the study result is similar to the results of various studies conducted in Turkey and abroad (Jindal-Snape et al., 2011; Freeman et al., 2003; Karaosmanoğlu, 2015; Larsen-Freeman, 1986; Yassa, 1999). With the social role sub-theme, it is seen that during the lesson in which drama method is applied, the students get on well with their friends, so drama contributes to the friendship relations of the students. Baldwin (2020) states that children can cooperate and establish friendships with their peers through drama. This result is similar to the results of many studies in the literature (Aslan, 2008; Ezer & Aksüt, 2020; Ökten & Gökbulut, 2015). From this point of view, it can be expressed that drama method provides a more effective group communication and interaction among students and contributes positively to friendship relations.

Under the linguistic role sub-theme, the students stated that their writing and speaking skills improved during the course in which drama method was used. This result is similar to many study results in the literature, besides, it reveals that drama positively supports children's language development (Eti & Aktaş Arnas, 2016; Yalçınkaya & Adıgüzel, 2019). Marschke (2005) underlines in his research that drama techniques have positive effects on students' communication and language skills. In addition, Ting (2005) states that children enjoy learning languages thanks to drama activities that offer a kind of entertainment for students. As a result, although language development is a process that naturally continues as long as there is communication and interaction, drama activities accelerate the process and they have positive effects to this process.

Under the psychomotor role sub-theme, the students stated that they did not have to sit in the lesson all the time, they were moving during the lesson in which the drama method was applied. This situation can be associated

with the games played during the warm-up-preparation phase of the drama. In the literature, Lin (2010) and Rosler (2008) also stated that the students enjoyed acting during the lesson in which the drama method was used and they were very happy. From this point of view, it can be said that the fact that the students are physically active during the lesson enables them to love the lesson and to be happy in the lesson. Under the active learning sub-theme, it is emphasized in many studies that drama applications provide students with the opportunity to learn by experiencing, which is similar to the study result (Adıgüzel, 2006b; Aykaç & Ulubey, 2008; Can Yaşar & Aral, 2011; Maden, 2010; Önder, 2016; San, 2018). In addition, similar to the study result, it is stated in many studies that the drama method contributes to permanent learning (Ezer & Aksüt, 2020), learning with fun (Saraç, 2015; Terzi & Beştepe, 2018; Hamurcu, 2018), cooperative learning (Kaf, 1999; Mantaş, 2014).

However, despite the mentioned contributions of drama, some difficulties encountered during the application were also seen. Under the theme of the disadvantages of drama, in the sub-theme of external factors, the students stated the negative aspects of the drama method in the course process in which the drama was applied as follows; crowded classroom and noisy environment, lack of time. This result is similar to the results of many individual studies in the domestic and international literature. In the related literature, in the lessons in which the drama method is applied, some difficulties are mentioned such as crowded classroom environment (Aykaç & Metinnam, 2019; Ezer & Aksüt, 2020; İşyar, 2017; Kadan, 2013; Pektezel, 2017), noisy classroom (Akkaya, 2012; Aykaç & Metinnam, 2019; Kadan, 2013; Philips, 2003). In the sub-theme of internal factors, feelings such as excitement and fatigue were seen in a few students and they attributed this to the drama method. The study carried out by Ezer and Aksüt (2020) supports this result. Ezer and Aksüt (2020) concluded that students get extremely excited during drama practices.

## **Conclusion**

Based on the research results obtained from the two phases, the drama method seems to have a positive impact on not only achievement and attitude but also social, psychomotor, cognitive, and affective domains, learning environments, and delivery of the course. In the meta-analysis phase, the results revealed a positive and significant level of drama on academic achievement and attitude with a large effect size according to Cohen et al (2007) classification. Considering all the results obtained in general, the fact that drama is a versatile discipline (San, 2018) and that it provides a holistic development of students (Baldwin, 2020) plays an important role in obtaining these results. In addition, it can be said that its power to affect many areas such as affective, cognitive, social, psychomotor and language is also a factor in reaching these results. The quantitative results of the study were supported by the qualitative results. It can be suggested that both the quantitative results obtained through meta-analysis and the qualitative results obtained through meta-synthesis are compatible, consistent and support each other.

This study is important in terms of analyzing the effect of drama method on academic achievement and attitude in meta-analytical and meta-synthesis dimensions. However, the study has certain limitations. At the quantitative phase, this research is limited to studies conducted in Turkey and the Turkish Republic of Northern Cyprus. Therefore, the results may be generalizable only to these countries. These results may have important

implications and insights about the impact of drama on academic achievement and attitude in other countries as well. The results obtained at the qualitative stage are limited to the views of preschool and primary school students.

## **Recommendations**

At the quantitative and qualitative phase, this research is limited to studies conducted in Turkey and the Turkish Republic of Northern Cyprus. Therefore, the results may be generalizable only to these countries. These results may have important implications and insights about the impact of drama on academic achievement and attitude in other countries as well. Within the framework of the methodology and results of this study, other studies in which meta-analysis and meta-synthesis methods are used together are suggested, based on the choice of drama method, in accordance with the nature of the problem being investigated. Since the results revealed a positive effect of drama on developing academic achievement and attitude, it is recommended that the drama method, which is an effective method, be applied frequently in preschool and primary school levels.

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**Appendix 1. Cohen's Kappa Test Results for Themes for Coherence between Coders**

The Role of Drama on Students

		K2		
		+	-	$\Sigma$
K1	+	29	2	31
	-	3	19	22
	$\Sigma$	32	21	53
Kappa: .804		p:.000		

Learning Outcomes of Drama

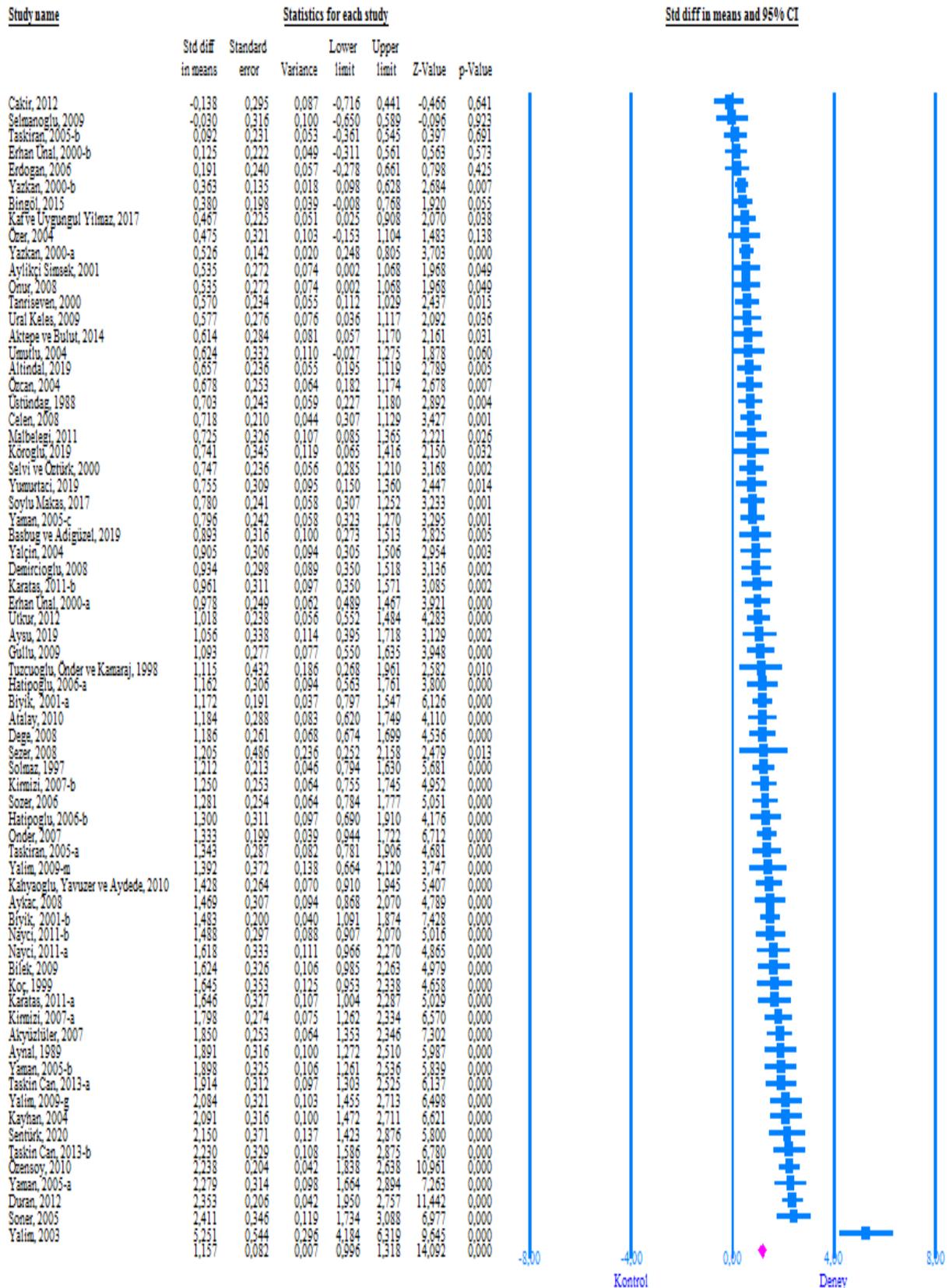
		K2		
		+	-	$\Sigma$
K1	+	24	1	25
	-	2	15	17
	$\Sigma$	26	16	42
Kappa: .850		p:.000		

Disadvantages of Drama

		K2		
		+	-	$\Sigma$
K1	+	9	0	9
	-	1	7	8
	$\Sigma$	10	7	17
Kappa: .881		p:.000		

## Appendix 2. Forest Plot Graph of Academic Achievement

Akademi Başarıya Ait Orman Grafiği



**Appendix 3. Forest Plot Graph of Attitude**

Tutuma Ait Orman Grafıgi

