

The Effect of Creative Drama Method on 5th Grade Students' Life Competencies and Environmental Sensitivities: Example of Human and Environment Unit

Yaratıcı Drama Yönteminin 5.Sınıf Öğrencilerinin Yaşam Becerileri ve Çevresel Duyarlılıklarına Etkisi: İnsan ve Çevre Ünitesi Örneği

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ABSTRACT

This study aimed to investigate the effects of the creative drama method on students' life skills and environmental sensitivity within the "Human and Environment" unit in a fifth-grade science course. A quantitative, experimental approach was adopted, utilizing a quasi-experimental design with a one-group pretest-posttest model. The sample comprised 29 fifth-grade students from a middle school in a large metropolitan area. Creative drama activities were conducted with these students, and the application scenarios, aligned with the science curriculum's objectives for the "Human and Environment" unit, were developed by the researcher. The "Life Skills Scale" and "Environmental Sensitivity Scale" were administered to students before and after the intervention. Findings demonstrated that the creative drama method had a strong impact on communication and teamwork skills as part of life skills within the unit. Additionally, a moderate effect was observed on communication skills, with a minor effect on decision-making skills. The study also found a significant improvement in students' overall life skills and environmental awareness levels. Based on these results, it is recommended that teachers incorporate more creative drama activities into their lesson planning.

Keywords: Environment, environmental sensitivity, creative drama, life skills.

ÖZET

Bu araştırma, 5. sınıf fen bilimleri dersindeki "İnsan ve Çevre" ünitesinde yaratıcı drama yönteminin kullanılmasının öğrencilerin yaşam becerileri ve çevresel duyarlılıkları üzerindeki etkilerini incelemek amacıyla yürütülmüştür. Çalışmada, nicel araştırma yöntemlerinden biri olan deneysel yöntem tercih edilmiştir ve tek grup ön test-son test modeli kullanılarak zayıf deneysel bir tasarım oluşturulmuştur. Araştırmanın örneklemi, büyük bir şehirde bulunan bir ortaokulda öğrenim gören 29 beşinci sınıf öğrencisinden meydana gelmektedir. Bu öğrencilere yaratıcı drama yöntemi kullanılarak çeşitli uygulamalar gerçekleştirilmiştir ve bu uygulama senaryoları, fen bilimleri müfredatında yer alan "İnsan ve Çevre" ünitesinin kazanımlarına uygun olarak araştırmacı tarafından hazırlanmıştır. Çalışma kapsamında, uygulama öncesinde ve sonrasında öğrencilere "yaşam becerileri ölçeği" ve "çevresel duyarlılık ölçeği" uygulanmıştır. Elde edilen sonuçlar, yaratıcı drama yönteminin kullanıldığı "İnsan ve Çevre" ünitesinde,

yaşam becerileri kapsamında yer alan iletişim ve takım çalışması becerilerinde güçlü bir etki yarattığını ortaya koymuştur. İletişim becerisinde orta düzeyde, karar verme becerisinde ise düşük düzeyde bir etki saptanmıştır. Öğrencilerin genel yaşam becerilerinde ve çevresel duyarlılık düzeylerinde de anlamlı bir artış gözlenmiştir. Bu nedenle, öğretmenlerin ders planlarında yaratıcı drama uygulamalarına daha fazla yer vermeleri önerilmektedir.

Anahtar Kelimeler: Çevre, çevresel duyarlılık, yaratıcı drama, yaşam becerileri.

INTRODUCTION

Advancements in science and technology, shifts in individual and societal needs, and progress in innovative learning and teaching theories have had a direct impact on the roles anticipated from individuals. This change is related to people who can produce knowledge, use it functionally in life, solve problems, think critically, be entrepreneurial, decisive and communicate. Curricula that help people to attain these qualities are not based on programmes that only convey information. They are programmes that take into account individual differences and aim to provide values and skills in a simple and comprehensible structure. (Ministry of National Education [MNE], 2018).

It is stated that the understanding of education in the period we live in is to aim to raise people who know the ways to access the necessary information, who can express their thoughts and feelings creatively, who can solve problems, and who can cooperate, by centring the learner's wishes, interests, skills and needs related to all areas of development. In line with this purpose, teachers should guide students in the learning process by knowing the developmental characteristics, wishes, interests and needs of children and planning activities in which they can actively participate, make discoveries and make sense of the world they live in. In this context, it is stated that one of the activities that teachers can do is creative drama activity (Günay Bilaloğlu, 2019)

Drama is one of the methods that can ensure the active participation of the student in the process. The permanence of the information learnt by increasing the success of the students at school can be possible by associating the information with daily life. In addition to the fact that drama is one of the most effective methods, the necessity of including drama at all levels of education has been put forward by many researchers (Çelikkaya, 2014). Research findings show that creative drama contributes to both increasing the level of academic achievement (Aktepe & Bulut, 2014; Adıgüzel & Karaosmanoğlu, 2017; Batdı & Batdı, 2015; Başbuğ & Adıgüzel, 2019; Öztürk & Sarı, 2018) and making the learned information more permanent compared to traditional teaching methods (Altındal, 2019; Özoğlu, 2019; Soylu Makas, 2017; Ütkür & Açıkalin, 2018). Research findings reveal that creative drama improves daily life skills (Bayrak & Akkaynak, 2020; Erdoğan, 2018; Kaçira Çapacıoğlu & Yıldız Demirtaş, 2017; Namdar & Çamadan, 2016).

In the field of education, drama is realised in two basic dimensions. In other words, there are two ways of using drama. Firstly, it is seen that drama in education is used as a discipline and secondly, drama in education is used as a method. In both forms of use, drama and drama in education are accepted as a meta-concept. Drama as a method or discipline is applied with techniques such as role playing, improvisation, dramatisation etc. (Aykaç et al., 2016; Özcan & Uysal, 2020; Yenen Avcı, 2015). The common point of all techniques is that they are based on animation (Adıgüzel, 2020; Aksakal, 2015; Özensoy, 2022).

Drama activities, in which different techniques are used in the application process, affect the development of students in many ways. This trend has led to a growing body of research on the use of drama in education in recent years (Gürkan, 2023; Najami et al., 2019; Marjanovic-Shane, 2016; Piriaphokanont & Sriswasdi, 2022). On the other hand, at the end of the literature

review, it was seen that there are limited studies on the effects of creative drama activities on students, especially in the field of science where abstract concepts are high.

Creative drama workshops encourage students to engage in critical, collaborative, and creative thinking. These workshops are designed to address sustainable development goals and help students develop solutions to global challenges (Şahin, 2023).

Among the specific aims of the 2018 science curriculum, there are objectives such as arousing interest in nature and the events in the environment, studying nature and teaching the interaction between humans and the environment (MNE, 2018). The most effective factor in raising environmental awareness and creating a sustainable environmental perspective is raising environmentally sensitive people (Delican & Sönmez, 2013).

Environmental problems related to education have gained importance again in recent years and the extent to which schools increase people's environmental awareness has started to be investigated and questioned (Atasoy & Ertürk, 2008). Different teaching methods and techniques are used in environmental education. Creative drama can be used to increase and develop environmental awareness. Children can establish relationships with themselves and their environment with the help of drama. Drama can contribute to the development of positive attitudes and behaviours of the child towards the environment. The level of knowledge learnt by the child does not remain the same. When the child learns by doing and experiencing, learning can become permanent. Creative drama is very important for effective learning and is based on these perspectives (Aydın & Aykaç, 2016). Drama-based activities have been shown to improve students' understanding of environmental issues, motivating them to reflect on their actions and lifestyle choices (Curtis et al., 2013).

The 2018 science curriculum identifies life skills as including analytical thinking, decision-making, creativity, entrepreneurship, communication, and teamwork. These core skills are essential for developing critical thinking, informed decision-making, innovation, effective communication, and collaborative abilities (MNE, 2018). It is thought that examining the effect of using creative drama method in the environment unit on life skills, one of the field-specific skills, will fill an important gap for science. Drama, on the other hand, encourages a deeper understanding of the interconnectedness of environmental problems by encouraging a sense of responsibility and agency in students (Lehtonen, 2022).

Based on all these reasons, the problem statement of the research is as follows. In the 5th grade science course, what is the effect of using creative drama method in terms of environmental sensitivity and life skills of the students studying in the class where creative drama method is used in the teaching of 'Human and Environment' unit?

The science course encompasses an interdisciplinary structure that integrates various skills [MNE], 2018). Similar to other subjects, it is essential to avoid rote learning approaches in science education. In this context, incorporating diverse methods into the curriculum that emphasize experiential learning and foster students' creativity holds significant importance.

The most enduring solution to addressing environmental challenges and achieving sustainable environmental management lies in cultivating environmentally conscious individuals (Atasoy & Ertürk, 2008). In this regard, researchers have recently dedicated significant efforts to fostering environmental awareness among individuals (Aksoy & Karatekin, 2011; Çabuk & Karacaoğlu, 2003; Erten, 2005; Keleş & Uzun, 2010). From this standpoint, devising innovative and critical approaches to environmental issues and implementing preventative measures before such problems arise represent the most effective strategies (Şimşekli, 2004). Considering the critical importance of environmental education, it becomes imperative to explore what additional measures can be taken to effectively promote this awareness. Real-life applications, including field trips, games, animations, and videos, should be integrated into environmental education

practices (Schaal & Lude, 2015). Furthermore, the creative drama method presents an alternative to traditional lesson plans based on technological materials, offering an interactive and experiential approach to teaching environmental concepts. Art-integrated projects, such as printmaking exhibitions, can raise awareness about specific environmental issues, like river pollution, and inspire action for restoration efforts (Mahmood & Ali, 2024). Programs that incorporate arts into place-based education foster a personal connection with the environment, promoting socially responsible and pro-environmental behaviors. These immersive experiences help students develop a deeper understanding of their natural surroundings (Gray & Thomson, 2016). Simulated outdoor camps and thematic units engage students in hands-on activities that enhance their appreciation for the outdoors and improve their observational and reporting skills (Waitman, 1998).

The Science Curriculum (MNE, 2018) incorporates various life skills, including communication, social and civic competences, and entrepreneurship. In addition to the competencies outlined in the Science Curriculum, life skills are also highlighted as discipline-specific skills that should be developed. The program's specific objectives emphasize the importance of fostering life skills. Objectives that directly address the use and development of life skills are reflected below [MNE], 2018).

- Developing scientific process skills and adopting a scientific research approach to explore the natural world and comprehend the interaction between humans and the environment, while formulating solutions to the challenges encountered in these contexts.
- Promoting awareness of the interconnected relationship between individuals, the environment, and society, alongside fostering an understanding of sustainable development in relation to societal, economic, and natural resource considerations.
- Encouraging individuals to take responsibility for addressing daily life challenges by effectively utilizing scientific knowledge, process skills, and other essential life competencies.
- Cultivating awareness of career opportunities and entrepreneurial skills within the field of science.
- Highlighting the importance of safety in scientific practices and fostering a strong sense of responsibility for safe working environments.
- Strengthening reasoning skills, fostering scientific thinking habits, and enhancing decision-making abilities through the integration of socio-scientific issues

Assessing the effectiveness of teaching these life skills within the environmental unit through the use of the creative drama method would serve as a valuable practice, as it would underscore the critical role of life skills in science education.

The aim of this study is to examine the impact of creative drama activities on fifth-grade students' life skills and environmental awareness within the "Human and Environment" unit. Efforts to enhance individuals' environmental sensitivity focus on educating them about environmental issues and transforming this awareness into tangible and lasting behaviors through various activities. However, in our country, the prevailing attitude tends to contrast with this ideal scenario (Çağlar, 2011).

In recent years, the creative drama method has been more frequently integrated into science education. Nonetheless, studies exploring its application in teaching "environmental" topics and examining its effects on students' life skills and environmental awareness remain insufficient.

The integration of the creative drama method into the primary science curriculum is regarded as an effective approach for facilitating the attainment of the program's targeted learning outcomes. It is expected that the results of this study will serve as a valuable reference for guiding future research in this field.

The development of life skills is a crucial aspect for young individuals transitioning into adulthood. Research suggests that academic performance, whether successful or unsuccessful, is not the sole predictor of an individual's overall well-being or life satisfaction. To support young individuals in becoming successful and well-adjusted adults, it is imperative to provide them with opportunities to explore and express their identities, identify their strengths, enhance their communication abilities, take on responsibilities, and establish plans for their future (Kutsal, 2018). The essential life skills that facilitate personal development are elaborated below.

Self-Awareness: Self-awareness is defined as an individual's ability to recognize their physical characteristics, thoughts, emotions, desires, needs, strengths, weaknesses, values, goals, skills, and abilities. It also involves the capacity to assess these attributes objectively and to accept them in a healthy manner (Kutsal, 2018; Subasree & Nair, 2014).

Effective Interpersonal Communication Skills: As social beings, individuals engage in a variety of behaviors, both consciously and unconsciously, in their daily lives. Examples of such interactions include greeting acquaintances during a walk, making phone calls, going to the cinema, reading emails, sharing photos on social media, making eye contact with others in an elevator, maintaining personal space during conversations, smiling at a child on the street, examining a noticeable advertisement, reading the morning newspaper, engaging in internal dialogues, or muttering to oneself. These activities, among others, are all components of interaction. It is noted that the list of such examples can be expanded with numerous other scenarios from daily life. In fact, it is almost impossible for individuals living in a society to go through a single day without engaging in some form of communication (Tuna, 2012). Therefore, possessing effective communication skills is essential for individuals to experience happiness and fulfillment in their social lives.

Responsibility: It is recognized that individuals living within a society both influence others and are influenced by them. The acquisition of certain values through interpersonal communication, the continuation of exemplary behaviors and practices, and the maintenance of a healthy societal structure are considered significant. In this context, it is accepted that individuals who fulfill their responsibilities demonstrate attitudes and behaviors rooted in their awareness of these obligations (Aktepe, 2015). Furthermore, within the framework of social structures, the family unit is highlighted as a legally supported and defined institution. It is built upon the unity and solidarity created by individuals who are emotionally connected, aware of their responsibilities, and act accordingly within shared boundaries (Aluş & Selçukkaya, 2015).

Career Planning: The concept of career encompasses activities related to an individual's professional life as well as matters influencing their social life. It is a dynamic and comprehensive concept that evolves alongside individuals throughout their lives. Career planning holds significance not only in facilitating personal development through one's abilities, interests, thoughts, and emotions but also in enabling individuals to attain status, motivation, and success in both social and professional spheres (Merdan, 2011). In today's world, it is essential for employees not only to perform their duties but also to continuously develop themselves, stay updated, and engage in teamwork. Additionally, factors such as career advancement, higher income, the ability to exercise initiative, and gaining respect and prestige are increasingly important for employees. Achieving these changes and innovations largely depends on fostering employees' existing skills and knowledge, as well as strategically planning their progression within the organization—commonly referred to as career planning (Taşlıyan et al., 2011).

Career planning is a continuous process that involves individuals gaining a clear understanding of themselves and their goals, while also staying informed about opportunities and obstacles in the labor and education markets. Ideally, it encompasses making informed decisions regarding one's life and professional trajectory. Career planning impacts both individuals and organizations directly. Although individuals play a primary role in this process, the organization

also has a critical function in supporting career planning. Organizations are expected to provide necessary assistance and resources to individuals who engage in career planning, as personal effort alone may not always yield desired outcomes. Thus, it is emphasized that both parties bear equal responsibilities in this process. Institutions should provide information about opportunities and tools available within the organization to individuals with career plans. Furthermore, these resources must be systematically planned and implemented by the organization (Sever-Sarıcı, 2020).

METHODOLOGY

This section provides explanations regarding the research model, study group, data collection instruments, and data analysis methods.

2.1. Research Model

This study employed the experimental research method, a type of quantitative approach. It is a quasi-experimental study structured using a one-group pretest-posttest design. Weak experimental design consists of single group designs without random assignment and comparative group designs without random assignment and matching. There is no control group in weak experimental studies. The intervention tool is applied to a single group to investigate the effect on the dependent variable (Yıldırım & Şimşek, 2013).

Since there was only one independent variable (creative drama method) whose effect was investigated in the study and the teacher taught only one class at the classroom level, a research method with a control group was not preferred. In the implementation of the research, firstly, life skills and environmental awareness pre-tests were applied to the students and then the lesson plan scenarios prepared were applied for 4 weeks. In order to reveal the effect of the applied method, life skills and environmental awareness post-tests were applied. The data obtained from both tests were compared and analysed.

2.2. Working Group

The study group for this research comprises 29 fifth-grade students (11 boys and 18 girls) from Class A in a public school located in a metropolitan area during the 2022-2023 academic year. The participants were selected using the convenience sampling technique. Convenience sampling technique was chosen in order to apply the research to the current teaching class and to select the sample from this class and to prevent loss of time. Considering the socioeconomic structure and student profile of the school where the research will be conducted, it is seen that it is a middle level school.

2.3. Data Collection Tools

In this section, the data collection tools to be used in the study will be emphasised.

2.3.1. Life Skills Scale

In the study, the life skills scale developed by Yayla Eskici (2017) was used to measure the effect of creative drama method on students' life skills. The scale used consists of 23 items. The scale serves 4 different categories as communication skills, teamwork skills, leadership skills, and decision-making skills. With the use of the scale, the development of life skills of 5th grade secondary school students can be observed. As a result of the reliability calculation of the scale, Cronbach's alpha internal consistency coefficients for the whole test were found to be 0.819. The

reliability coefficients were 0.812 for communication skills, 0.705 for teamwork skills and 0.364 for leadership skills. The discrimination power of the item is at an acceptable level (Yayla Eskici, 2017).

2.3.2. Environmental Sensitivity Scale

In order to measure the environmental sensitivity of the students, the environmental sensitivity scale prepared by Açar (2010) was used. There are 31 items in the scale. The scale was prepared as 3-point Likert type ‘always, sometimes, never’. The internal consistency of the scale was determined, yielding a Cronbach’s Alpha coefficient of 0.82 (Açar, 2010). This scale was prepared by Açar (2010) in order to determine the effect of observation trip practice on students' environmental sensitivity in 5th grade social studies course.

2.4. Data Collection Process

The data of this study were collected from 5th grade students studying in a public school in a metropolitan area in the second semester of the 2022-2023 academic year by applying life skills scale and environmental sensitivity scale pre-tests at the beginning of the human and environment unit. After the 4-week lesson plans were implemented, life skills scale and environmental sensitivity scale post-tests were applied. The necessary permissions for the research and data collection were obtained from the relevant institutions.

2.5. Data Analyses

In this study, the data obtained from the environmental sensitivity scale and life skills tests were analysed. This study is a quantitative research and the data obtained from the pre-test and post-test results were analysed using the SPSS statistical package and the standard deviations of the pre-test and post-test scores and the difference between the mean scores were calculated. Skewness and Kurtosis coefficient values were analysed in order to examine whether the scores were normally distributed. To test the significance of the difference between the mean scores of the experimental group, the t-test, one of the parametric tests, was used due to the normal distribution of the scores. ‘t-test’, arithmetic mean (M), standard deviation (Sd) and frequency (n) calculations were used to analyse the data obtained from pre and post test applications. Cohen's d formula (Cohen, 1988) was used to calculate the effect size of the single group t-test. The obtained d value is interpreted as follows: Cohen generally suggests that an effect size can be considered weak if the d value is below 0.2, medium if it is 0.5, and strong if it exceeds 0.8. The formula used to calculate the Cohen-d effect size value and the symbols used in the formula:

d: Cohen-d Effect Size Value;

M1: Pre-test Mean Value; M2: Post-test Mean Value;

SD1: Pre-test Standard Deviation Value; SD2: Post-test Standard Deviation Value

$$d = \frac{M_2 - M_1}{\sqrt{\frac{SD_1^2 + SD_2^2}{2}}}$$

The normality values of the research data of the life skills scale are given in Table 1.

Table 1

Normality Values of Life Skills Scale Research Data

Life Skills Scale	Arithmetic Mean	Hydrangea	Mod	Skewness Coefficient	Kurtosis Coefficient
Pre-Test	20.34	20.0	20.0	-.025	-1.026
Post-Test	29.51	29.0	29.0	.233	-.983

In the problem in which the effectiveness of creative drama method on life skills was investigated, life skills test was applied to 5th grade students as pre-test and post-test. Firstly, it was examined whether the data obtained had a normal distribution or not. For this purpose, Skewness and Kurtosis coefficient values of the data were examined. Acceptable values for Skewness and Kurtosis values, which are indicators of normal distribution, are between -2 and +2, while perfect values are between -1 and +1 (George & Mallery, 2003).

As seen in Table 1, it was determined that the test results had normal distribution according to the pre-test and post-test data and the use of parametric tests was appropriate ($p < .05$).

The normality values of the research data of the environmental sensitivity scale are given in Table 2.

Table 2

Normality Values of Life Skills Scale Research Data

Environmental Sensitisation Scale	Arithmetic Mean	Hydrangea	Mod	Skewness Coefficient	Kurtosis Coefficient
Pre-Test	22.06	22.00	20.0	.075	-1.102
Post-Test	28.72	29.0	30.0	-.237	-1.507

In the problem in which the effectiveness of creative drama method on environmental sensitivity was investigated, the environmental sensitivity scale was applied to 5th grade students as pre-test and post-test. Firstly, it was examined whether the data obtained had normal distribution or not. For this purpose, Skewness and Kurtosis coefficient values of the data were analysed. As shown in Table 2, the pre-test and post-test data indicated a normal distribution, confirming that the use of parametric tests was appropriate. ($p < .05$).

FINDINGS

The impact of teaching the objectives in the "Human and Environment" unit through the creative drama method on students' life skills and environmental sensitivity was assessed using the Life Skills Scale and Environmental Sensitivity Scale. The results of the data obtained from the results of the dependent sample t-test applied for this purpose and the results of the sub-dimensions are discussed in the headings below.

3.1. Life Skills Scale t-test Analysis Results

The results of the dependent sample t-test analysis of the Life Skills Scale are presented in Table 3.

Table 3*Life Skills Scale Dependent Sample t-test Analysis Results*

Life Skills Scale	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	20.34	1.17	28	-65.06	.000	7.78
Post-Test	29	29.51	1.18				

As shown in Table 3, a significant difference was found in students' life skills based on the pre-test and post-test results of the Life Skills Scale, indicating the effect of the creative drama method on life skills [$t(28) = -65.06$; $p < .05$]. According to the test results of students who participated in the study, the average life skills score was 20.34 before the creative drama application, rising to 29.51 after the application. The difference was found as $M(\text{post}) - M(\text{pre}) = 9.17$. In addition, Cohen-d value was calculated as 7.78. Since the Cohen-d value is greater than 0.8, it is understood that the creative drama method has a strong effect on increasing students' life skills (Kılıç, 2014).

3.2. Life Skills Scale t-test Analysis Results

The t-test analysis results of the Communication Skill Subdimension of the Life Skills Scale are given in Table 4.

Table 4*Results of the Dependent Samples t-test Analysis for the Communication Skills Sub-Dimension of the Life Skills Scale*

Test	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	7.03	.73	28	-34.24	.000	6.77
Post-Test	29	11.86	.69				

As shown in Table 4, the pre-test and post-test results of the Life Skills Scale, conducted to assess the impact of the creative drama method on life skills sub-dimensions, indicate a significant difference in the communication skills sub-dimension of students' life skills [$t(28) = -34.24$; $p < .05$]. (Kılıç, 2014). According to the test results of the students before the creative drama application, the mean score for the communication skill sub-dimension of students' life skills was 7.03, while this value increased to 11.86 after the application. The difference was found to be $M(\text{post}) - M(\text{pre}) = 4.83$. Additionally, the Cohen's d value was calculated as 6.77. Since the Cohen's d value is greater than 0.8, it is understood that the creative drama method has a strong effect on enhancing students' communication skills, which is a sub-dimension of life skills.

3.3. Teamwork Subdimension t-test Analysis Results

The t-test analysis results of the Life Skills Scale Teamwork Subdimension are given in Table 5.

Table 5*Results of the Dependent Samples t-test Analysis for the Teamwork Sub-Dimension of the Life Skills Scale*

Test	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	4.31	.66	28	-8.45	.000	1.84
Post-Test	29	6.03	1.14				

As shown in Table 5, the pre-test and post-test results of the Life Skills Scale, conducted to assess the impact of the creative drama method on life skills sub-dimensions, indicate a significant difference in the teamwork sub-dimension of students' life skills [$t(28) = -8.45$; $p < .05$]. According to the test results of the students before the creative drama application, the mean score for the teamwork sub-dimension of students' life skills was 4.31, which increased to 6.03 after the application. The difference was found as $M(\text{post}) - M(\text{pre}) = 1.72$. In addition, the Cohen's d value was calculated as 1.84. Since the Cohen's d value is greater than 0.8, it is understood that the creative drama method has a strong effect on increasing teamwork, which is a sub-dimension of students' life skills (Kılıç, 2014).

3.4. Leadership Skill Subdimension t-test Analysis Results

The t-test analysis results of the Leadership Skill Subdimension of the Life Skills Scale are given in Table 6.

Table 6

Dependent Sample t-test Analysis Results Of The Teamwork Sub-Dimension Of The Life Skills Scale

Test	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	4.51	.63	28	-25.13	.000	0.63
Post-Test	29	6.48	.63				

As shown in Table 6, based on the pre-test and post-test results of the Life Skills Scale, which was conducted to measure whether the creative drama method has an effect on the sub-dimensions of life skills, there is a significant difference in the leadership skill sub-dimension of students' life skills [$t(28) = -25.13$; $p < .05$]. Based on the test results of the students involved in the study before the implementation of the creative drama application, the mean of the communication skill sub-dimension of the students' life skills was = 4.51, while this value increased to = 6.48 after the application. The difference was found as $M(\text{post}) - M(\text{pre}) = 1.97$. In addition, Cohen- d value was calculated as 0.63. Since the Cohen- d value takes a value between 0.5 and 0.8, It is evident that the creative drama method has a moderate impact on enhancing students' leadership skills, a sub-dimension of life skills.(Kılıç, 2014).

3.5. Decision Making Skill Subdimension t-test Analysis Results

The t-test analysis results of the Decision Making Skill Subdimension of the Life Skills Scale are given in Table 7.

Table 7

Dependent Sample t-test Analysis Results Of The Decision-Making Skill Sub-Dimension Of The Life Skills Scale

Test	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	4.31	1.41	28	-2.28	0.30	0.43
Post-Test	29	4.86	1.09				

As shown in Table 7, the pre-test and post-test results of the Life Skills Scale, conducted to determine whether the creative drama method impacts the sub-dimensions of life skills, there is a significant difference in the decision-making skill sub-dimension of students' life skills [$t(28) = -2.28$; $p < .05$]. Based on the results of the students who participated in the study prior to the

creative drama application, while the mean of the communication skill sub-dimension of the life skills of the students was = 4.31, this value increased to = 4.86 after the application. The difference was found as $M(\text{post}) - M(\text{pre}) = 0.55$. In addition, Cohen-d value was calculated as 0.43. Since the Cohen-d value takes a value between 0.2 and 0.5, It is understood that the creative drama method has a mild effect on enhancing students' decision-making skills, which is a sub-dimension of life skills (Kılıç, 2014).

3.6. Environmental Sensitivity Scale

Dependent Sample t-test analysis results of the Environmental Sensitivity Scale are given in Table 8.

Table 8

Environmental Sensitivity Scale Dependent Sample t-test Analysis Results

Test	n	M	SD	df	t	p	Cohen-d
Pre-Test	29	22.06	1.51	28	-28.41	0.00	4.89
Post-Test	29	28.72	1.19				

As shown in Table 8, the pre-test and post-test results of the Life Skills Scale, conducted to assess the impact of the creative drama method on the sub-dimensions of life skills, there is a significant difference in the leadership skill sub-dimension of students' life skills [$t(28) = -25.13$; $p < .05$]. According to the test results of the students participating in the study prior to the creative drama application, the mean of the communication skill sub-dimension of the students' life skills was = 4.51, while this value increased to = 6.48 after the application. The difference was found as $M(\text{post}) - M(\text{pre}) = 1.97$. In addition, Cohen-d value was calculated as 0.63. Since the Cohen-d value takes a value between 0.5 and 0.8, It is understood that the creative drama method has a moderate impact on enhancing students' leadership skills, which is a sub-dimension of life skills (Kılıç, 2014).

CONCLUSION, DISCUSSION AND SUGGESTIONS

When compared with the pre-test scores of the students participating in this study, it was found that a significant increase occurred in the post-test life skills. According to these results, it was seen that students' communication, decision-making, teamwork and leadership skills improved in parallel with the creative drama practice. Additionally, the findings indicated a significant improvement in the students' overall life skills scores. In a study conducted in the literature on examining the effects of creative drama education on the acquisition of life skills by students, it was reported that creative drama education had an effect on life skills (Sefer & Akfirat, 2009). In the studies conducted by Altok (2022) and Jjarrah (2019), it was aimed to examine the effects of creative drama method on students' life skill levels. As a result of their studies, it was concluded that the use of creative drama in education improves students' life skills at a positive level. Creative drama method is a method in which the participants are constantly active and produce a common solution to the problems that arise in the creative drama process by using their skills such as interpersonal communication, empathy, critical thinking, recognition and reflection of their emotions (Üstündağ, 2020). Seen from this angle, it can be stated that life skills are naturally integrated into creative drama. The inherent structure of the creative drama method not

only supports cognitive learning processes but also significantly contributes to individuals' social and emotional development. This characteristic underscores the effectiveness of creative drama as a pedagogical approach in fostering life skills. Furthermore, research highlights that creative drama serves as a powerful tool in the development of essential competencies such as communication, empathy, and critical thinking. Its integration into educational processes has been shown to positively influence students' individual and social development. Consequently, the systematic and widespread implementation of creative drama within educational curricula is anticipated to further enhance its impact on students' acquisition of life skills.

In this study, it was seen that the creative method had a strong effect on increasing students' communication skills, which is a sub-dimension of life skills. There are studies supporting the results in the literature. The development of communication skills can be achieved through the use of creative drama, which encourages students to solve problems alone or in groups and educates independent learners. In a study aimed at examining the effects of creative drama education on the communication skills of 6-year-old students, it was reported that creative drama education was effective on the communication skills of students and that a notable difference was found in the communication skills of the experimental and control groups when the pre-test and post-test values were compared (Akoğuz, 2002; Dere, 2019; Erbay, 2009; Erdem, 2021). In other studies in the literature, Dereli (2018) and Öztürk (2017) examined the effects of creative education on students' communication skills. In these studies, creative drama was found to be effective in increasing communication skills. Creative drama is a means of 'playing and applying life'. Participants can understand and experience events that happen to others. Creative drama can be used to improve communication skills. The most important difference of the creative method compared to other teaching methods is that it focuses on the individual-student and includes interactive participation. Creative drama provides 'learning and teaching by creating, living and having fun'. By using this as a method, the student moves from a passive position to an active-active position. In addition, by creating awareness with the applications used in this method, the sensitivity of the individual is increased and an environment where originality and creativity can be revealed is created. In addition to developing communication skills, it is also necessary to integrate them into society. It can be said that creative drama is one of the most effective methods in the development of children's communication skills (Kuşdemir, 2016). These findings suggest that the impact of the creative drama method on communication skills may vary depending on contextual factors. Specifically, variables such as the demographic characteristics of the sample groups, age ranges, and the duration of the intervention appear to significantly contribute to the differences observed in the results across various studies.

In a study in the literature, it was reported that there was a significant and positive relationship between creative drama education and communication skills (Arslan et al., 2010; Soyulu, 2017). In the study conducted by Güler (2019), it was aimed to examine the effect of creative drama education on students' communication skills and self-efficacy beliefs. The study concluded that the creative drama education provided to students led to a significantly higher level of communication skills in the experimental group compared to the control group. A significant difference was observed between the experimental and control groups, while no change was noted in the pre-test and post-test scores within the control group. In another study on the same subject, it was reported that creative drama education was effective on communication skills and while the pre and post-test scores of the experimental group were high, there was no difference in the pre and post-test scores of the control group students (Ali, 2019). However, it was reported that there are studies in the literature that did not find a significant

difference between creative drama and communication skills, and when the pre and post tests of the students were examined, it was reported that there was no change in development (Murat, 2021). It can be said that the reason why the results of the study in question have the opposite findings of our study is that the sample group and age group are different.

In this study, it was seen that creative drama method had a moderate effect on increasing students' leadership skills, which is a sub-dimension of life skills. Adıgüzel (2013), Erdeveciler (2016) examined the effects of creative drama on leadership skills. In their study, they concluded that it improved students' leadership skills. It is important that the participants are respectful, tolerant and not prejudiced towards each other during the drama process. Çelik and Sümbül (2008), as cited in Hodgets (1999), stated that effective leadership skills can be affected by many factors such as age, experience, expectations of the participants, personality traits, the processes they go through while making decisions, and the type of work done. In another study conducted in the literature, it was aimed to examine the effects of online creative drama training on leadership skills. 122 students were included in the study. The study reported a negative relationship between creative drama education and students' leadership skills. (Alpaydın, 2022). The online implementation of this study may have had a negative effect on the development of this skill.

According to the results of the study conducted by Yolcu (2021) and Kömeçoğlu (2017), It is evident that the creative drama method has a significant effect on improving teamwork, a sub-dimension of students' life skills. Yolcu (2021), Kömeçoğlu (2017) reported that creative drama education improved teamwork skills positively as a result of their studies. In another study conducted by Ong et al. (2022), it was aimed to examine the effects of creative drama on situational interests, career interests and science-related attitudes of science students and non-science students. Based on the results of the study, it was reported that students' drama activities increased their teamwork skill levels. All realities in the fictional world are created through creative drama processes, which in a sense means that the group lives together. Images contribute to the effectiveness of the process, the development of group dynamics and the learning of the internal target audience (Adıgüzel, 2010). The development of group dynamics, the presence of common experiences, and the constant interaction of the participants make them a team. All these reasons show that creative drama is effective in increasing teamwork. These findings highlight the effectiveness of the creative drama method in fostering teamwork, which is a critical sub-dimension of life skills. The collaborative and interactive nature of creative drama processes strengthens group dynamics, facilitates shared experiences, and enhances participants' ability to function cohesively as a team, making it a valuable pedagogical tool for developing teamwork skills.

In the study conducted by Çakmakçı and Özabacı (2013), it was seen that creative drama training of 5th grade students improved their decision-making skills. The study reported a significant difference between the creative drama and decision-making skill pre-test and post-test scores of the students, and the difference was found to be significant in favour of the experimental group. In some studies in the literature, on the contrary to the findings in question, it was concluded that creative drama education was not effective on decision-making skills (Seven, 2021). The reason for the difference between the results of the studies may be that the studies were conducted on students with different ethnic structures. These findings indicate that the effectiveness of creative drama education on decision-making skills may vary depending on contextual factors such as the demographic and cultural characteristics of the sample groups. The divergence in results suggests that further research is needed to explore how creative drama interacts with diverse student populations and to identify the conditions under which it is most effective in enhancing decision-making skills.

When compared with the pre-test scores of the 5th grade students participating in this study, it was found that a significant increase occurred in the post-test environmental sensitivity levels. According to these results, it was seen that the creative drama method contributed to increase the environmental sensitivity levels of secondary school students. It is seen that the studies in the literature support this. In the study conducted by Karabulut (2020), it was aimed to examine the effect of creative drama education on students' environmental awareness. The study concluded that creative drama education led to a significant increase in students' environmental awareness. In the research conducted by Nalçacı (2021), it was aimed to examine the factors related to the use of creative drama applications in the environment and human unit of science courses. The study concluded that lessons conducted with creative drama were effective in enhancing students' environmental sensitivity, leading to an improvement in their levels of environmental awareness. In another study in the literature, it was aimed to examine the relationship between creative drama practice and environmental awareness. As a result of the study, it was reported that creative drama education had positive effects on students' environmental awareness levels and improved students' environmental awareness levels (Aydın & Aykaç, 2016). In a similar study, Tokmak et al. (2023) aimed to examine the relationship between drama education and environmental awareness. The study concluded that drama education had a positive impact on improving students' levels of environmental awareness.

Many studies in the literature support the findings of this study (Teker, 2023). Öcal and Çavdar (2022) aimed to examine the relationship between drama education and environmental awareness education. The study concluded that drama education enhanced students' environmental awareness levels, leading to a positive increase. In the study conducted on environmental education and creative drama applications in the literature, it was aimed to examine the effects of creative drama education on environmental awareness. Based on the findings of the study, it was concluded that there was a significant increase in the environmental awareness levels of the students as a result of the environmental education they received with creative drama education and that this increase was positive (Özyürek, 2021). These findings emphasize the effectiveness of creative drama as a pedagogical tool in fostering environmental awareness among students. The integration of experiential learning methods, such as creative drama, into environmental education not only enhances students' understanding of environmental issues but also promotes the development of pro-environmental attitudes and behaviors.

It was observed that creative drama scenarios applied to 5th grade students participating in this study increased their general life skills. Although creative drama method seems to be effective in increasing communication skills from the sub-dimensions of life skills, it is stated in the literature that it may have the opposite effect depending on age and group dynamics. In the study, the effect of creative drama method on leadership sub-skill was found to be at a moderate level. In the literature, it is generally seen that creative drama method is effective in increasing communication skills. However, it is also seen in the literature that creative drama method may have a negative effect on improving communication skills. It is seen from the literature and research data that creative drama method positively affects decision-making skill and teamwork skill among life skills. In addition to all these, it is seen that the 'Human and Environment' unit planned with the creative drama method of 5th grade students positively affects the environmental sensitivity of the students.

As a result of the findings obtained in this study, it was seen that creative drama education improved students' decision-making, teamwork, communication skills, leadership skills and all life skills. It is therefore recommended that teachers frequently incorporate creative drama practices into their lesson planning. 5th grade students' environmental sensitivity is effectively increased and improved by creative drama training, so it is recommended that creative drama

activities should be integrated into the lessons while gaining environmental sensitivity behaviours.

While creative drama-based education effectively fosters environmental awareness and life skills, it is important to consider the broader educational context. Traditional educational methods may not always prioritize these aspects, potentially limiting students' exposure to creative and experiential learning opportunities. Therefore, integrating creative drama into the standard curriculum could bridge this gap and provide a more holistic educational experience.

Since this study was conducted with a single group at the 5th grade level, there is no control group in the study. Therefore, it is recommended that a similar study be conducted again by adding a control group.

It is recommended to apply the creative drama method in different science subjects.

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GENİŞLETİLMİŞ ÖZ

Giriş

Bilim ve teknolojiadaki hızlı değişimler, bireyin ve toplumun değişen ihtiyaçları, yenilikçi öğrenme ve öğretme kuramları ve bu yaklaşımların gelişimi bireylerden beklenen rolleri doğrudan etkilemiştir. Bu değişim bilgiyi üretebilen, onu hayatta işlevsel olarak kullanabilen, problem çözebilen, eleştirel düşünebilen, girişimci olabilen, kararlı ve iletişim kurabilen insanlarla ilgilidir. İnsanları bu kaliteli yapıya kavuşturmaya yardımcı olan müfredat, yalnızca bilgi aktaran programlara dayanmamaktadır. Bu programlar bireysel farklılıkları dikkate alan, değer ve becerilerin kazandırılmasını amaçlayan basit ve anlaşılır bir yapıda üretilen programlardır (Milli Eğitim Bakanlığı [MEB], 2018).

Yaşadığımız dönemdeki eğitim anlayışının öğrenenin bütün gelişim alanlarına ilişkin istek, ilgi, beceri ve ihtiyaçları merkeze alıp, gerekli bilgiye ulaşabilecek yolları bilen, düşünce ve duygularını yaratıcı bir şekilde ifade edebilen, problem çözebilen, iş birliği yapabilen kişileri yetiştirmeyi amaçlamak olduğu belirtilmektedir. Bu amaç doğrultusunda çocukların gelişim özelliklerini, istek, ilgi ve ihtiyaçlarını bilip onların aktif katılımının sağlanabileceği, keşif yapabileceği, yaşadığı dünyayı anlamlandırabileceği faaliyetler planlayıp öğrenme sürecinde öğretmenlerin öğrencilere rehber olması gerekmektedir. Bu kapsamda öğretmenlerin yapabileceği faaliyetlerden birinin de yaratıcı drama etkinliği olduğu belirtilmektedir (Günay Bilaloğlu, 2019).

Drama, öğrencinin süreç içerisinde etkin katılımını sağlayabilen yöntemlerdendir. Okulda öğrencilerin başarılarının arttırılmasıyla öğrenilen bilgilerin kalıcılığı, bilgilerin gündelik yaşam ile ilişkilendirilmesiyle mümkün olabilmektedir. Dramanın en etkili yöntemlerden biri olmasının yanında tüm eğitim kademelerinde dramaya yer verilmesinin gerekliliği birçok araştırmacı tarafından ortaya koyulmuştur (Çelikkaya, 2014). Yapılan araştırma bulguları geleneksel öğretim yöntemlerine kıyasla yaratıcı dramanın hem akademik başarı düzeyinin yükselmesine (Aktepe ve Bulut, 2014; Adıgüzel ve Karaosmanoğlu, 2017; Batdı ve Batdı, 2015; Başbuğ ve Adıgüzel, 2019; Öztürk ve Sarı, 2018) hem de öğrenilen bilginin daha kalıcı olmasına katkı sağladığını göstermektedir (Altındal, 2019; Özoğlu, 2019; Soylu Makas, 2017; Ütkür ve Açıkalın, 2018). Yapılan araştırma bulguları yaratıcı dramanın günlük yaşam becerilerini geliştirdiğini ortaya koymaktadır (Bayrak ve Akkaynak, 2020; Erdoğan, 2018; Kaçıra Çapacıoğlu ve Yıldız Demirtaş, 2017; Namdar ve Çamadan, 2016).

Uygulama sürecinde farklı tekniklerin kullanıldığı drama etkinlikleri öğrencilerin gelişimlerini çok yönlü olarak etkilemektedir. Bu durum son yıllarda eğitimde drama kullanımı üzerine yapılan araştırmaların artmasına zemin hazırlamıştır (Gürkan, 2023; Najami ve diğerleri, 2019; Marjanovic-Shane, 2016; Piriaphokanont ve Sriswasdi, 2022). Buna karşılık yapılan literatür taraması sonunda özellikle soyut kavramların fazla olduğu fen bilimleri alanında yaratıcı drama etkinliklerinin öğrenciler üzerindeki etkilerinin ele alındığı çalışmaların sınırlı olduğu görülmüştür.

Fen bilimleri programının özel amaçları arasında, insanlarda doğa ve çevredeki olaylara ilgi uyandırmak, doğayı incelemek ve insan ve çevre arasındaki etkileşimi öğretmek gibi hedefler bulunmaktadır (MEB, 2018). İnsanlara çevre bilinci kazandırmada ve sürdürülebilir çevre bakış açısı oluşturmada en etkili faktör çevreye duyarlı insanların yetiştirilmesidir (Delican ve Sönmez, 2013).

Eğitimle ilgili çevre sorunları son yıllarda yeniden önem kazanmış ve okulların insanların çevre bilincini ne kadar arttırdığı araştırılmaya ve sorgulanmaya başlanmıştır (Atasoy ve Ertürk, 2008). Çevre eğitiminde farklı öğretim yöntem ve teknikleri kullanılmaktadır. Çevre bilincinin arttırılması ve geliştirilmesi amacıyla yaratıcı dramadan yararlanılabilir. Çocuk drama yardımıyla kendisi ve çevresiyle ilişkiler kurabilir. Drama oluşturularak çocuğun çevreye yönelik olumlu tutum ve davranışlarının gelişmesine katkı sağlanabilir. Çocuğun öğrendiği bilgi düzeyi aynı kalmaz. Çocuk yaparak, yaşayarak öğrendiğinde öğrenme kalıcı hale gelebilir. Yaratıcı drama etkili öğrenme için oldukça önemlidir ve bu bakış açılarına dayanmaktadır. (Aydın ve Aykaç, 2016).

Fen bilimleri öğretim programında yer alan yaşam becerileri, analitik düşünme, karar verme, yaratıcı düşünme, girişimcilik, iletişim ve takım çalışması başlıklarını içermektedir. Temel yaşam becerileri arasında analitik düşünme, karar verme, yaratıcılık, girişimcilik, iletişim ve takım çalışması yer alır (MEB, 2018). Çevre ünitesinde yaratıcı drama yöntemi kullanımının, alana özgü becerilerinden yaşam becerilerine etkisinin incelenmesinin fen bilimleri için önemli bir boşluğu dolduracağı düşünülmektedir.

Tüm bu gerekçelerden yola çıkarak araştırmanın problem cümlesi aşağıdaki gibidir. 5. sınıf fen bilimleri dersinde 'İnsan ve Çevre' ünitesinin öğretiminde yaratıcı drama yönteminin kullanıldığı sınıfta öğrenim gören öğrencilerin çevreye duyarlılıkları ve yaşam becerileri açısından yaratıcı drama yönteminin kullanılmasının etkisi nedir?

Yöntem

Bu çalışmada insan ve çevre enerjisi ünitesinin yaratıcı drama yöntemiyle öğretiminin yaşam becerileri ve çevre tutumuna etkilerine yönelik etkisi araştırılmış olup zayıf deneysel araştırma yöntemi uygulanmıştır. Araştırma tek grup ön test-son test modeline göre desenlenmiş zayıf deneysel türde bir çalışmadır.

Araştırmada etkisi araştırılan tek bağımsız değişken (yaratıcı drama yöntemi) olması nedeniyle ve öğretmenin sınıf düzeyinde tek bir sınıfa öğrenim vermesi dolayısıyla kontrol gruplu bir araştırma yöntemi tercih edilmemiştir. Araştırmanın uygulanmasında öncelikle öğrencilere yaşam becerileri ve çevre duyarlılığı ön testleri uygulanmış sonra hazırlanan ders planları 4 hafta boyunca uygulanmıştır. Çalışma 2022-2023 eğitim öğretim yılı 5. Sınıf insan ve çevre ünitesi kazanımları ve önerilen süreler dikkate alınarak 9 oturum şeklinde hazırlanmıştır. Oturumlar 40+40 dk şeklinde ders bütünlüğünü bozmayacak şekilde planlanmıştır. Uygulanan yöntemin etkisini ortaya çıkarmak için yaşam becerileri ve çevre duyarlılığı son testleri uygulanmıştır.

Bu çalışmada çevresel duyarlılık ölçeği ve yaşam becerileri testlerinden elde edilen veriler analiz edilmiştir. Bu çalışma nicel bir araştırma olup ön test, son test sonuçlarından elde edilen veriler SPSS istatistik paketi kullanılarak ön test son test puanlarının standart sapmaları ve puanların ortalamaları arası fark hesaplanmıştır. Ön ve son test uygulamalarından elde edilen verilerin analizinde “t-testi”, aritmetik ortalama (X), standart sapma (S) ve frekans (N) hesaplamaları kullanılmıştır. Deney grubunun puan ortalamaları arasındaki farkın anlamlılığını test etmek içinde puanların normal dağılım göstermesi nedeniyle parametrik testlerden t-testi kullanılmıştır. Puanların normal dağılım gösterip göstermediğinin incelenmesi amacı ile Çarpıklık(Skewness)-Basıklık(Kurtois) katsayı değerlerine bakılmıştır.

Her iki test sonucunda elde edilen veriler karşılaştırılıp verilerin analizi yapılmıştır. Yaşam becerileri ölçeği araştırma verilerinin normallik dağılım değerlerine tablo 1’de ve çevresel duyarlılık ölçeği araştırma verilerinin normallik değerlerine tablo 2’ detaylı yer verilmiştir.

Sonuç ve Tartışma

Yapılan bu araştırmaya katılan öğrencilerin ön test puanları ile kıyaslandığı zaman son test yaşam becerilerinde anlamlı artış meydana geldiği bulunmuştur. Ortaya çıkan bu sonuçlara göre, yaratıcı drama uygulamasına paralel olarak öğrencilerin iletişim, karar verme, takım çalışması ve liderlik becerilerinin geliştiği görülmüştür. Aynı zamanda öğrencilerin genel yaşam beceri puanlarında da anlamlı artış meydana geldiği sonucuna ulaşılmıştır. Yaratıcı drama yöntemi yaşam becerilerinin alt boyutlarından iletişim becerisini artırmada etkili olduğu görülse de literatürde yaş ve grup dinamiklerine bağlı olarak tersi yönde etkisinin olabileceği yer almaktadır. Araştırmada yaratıcı drama yönteminin liderlik alt becerisine etkisinin orta düzeyde olduğu görülmüştür. Literatürde genel olarak yaratıcı drama yönteminin iletişim becerisini artırmada etkili olduğu görülmektedir. Ancak literatürde yaratıcı drama yönteminin iletişim becerisini geliştirmede negatif yönde etkisi olabileceği de görülmektedir. Yaratıcı drama yönteminin yaşam becerilerinden karar verme becerisi ve takım çalışması becerisine pozitif yönde etkilediği literatür ve araştırma verilerinden görülmektedir. Tüm bunların yanında 5. sınıf öğrencilerin yaratıcı drama yöntemi ile planlanan “İnsan ve Çevre” ünitesinin öğrencilerin çevresel duyarlılıklarına pozitif yönde etkilediği görülmektedir.