

## The Role of Art Education Teachers in Developing Arts-based Environmental Education among Elementary School Students in Najran Region

Burhan Mahmoud Hamadneh<sup>1</sup>, Lamia KhairEddeen<sup>2</sup>

### *Abstract*

*Arts-based environmental education is a form of learning that aims to develop environmental understanding and responsibility in learners. The student becomes more receptive to the perceptions and observations of the sense of the environment and the use of artistic methods to express personal environmental experiences and ideas. Technical experiences improve the student's ability to know and understand the high value of learning about the environment and how to preserve it and its natural and innate wealth and resources. Therefore, this study aimed to identify the role of Art Education teachers in developing environmental education based on arts among elementary school students, and the differences in their responses according to gender, years of experience, and educational qualification. In this study, the descriptive survey method was followed; an electronic questionnaire was applied to a sample of (119) male and female teachers of Art Education in governmental elementary schools in Najran region in the south of the Kingdom of Saudi Arabia. Means, standard deviations, and t-tests for independent samples were used to draw the results. The study concluded that the means for the domains of the study tool ranged between (2.78-3.03), with a mean level. The domain of implementation came in the first place, followed by evaluation in the second place, and then planning in the third place. The mean of the role of Art Education teachers in developing environmental education based on arts among elementary school students as a whole was (2.93), at an average level. The results also showed statistically significant differences in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students, due to the effect of the years of experience; the results came in favor of the category ten years or more. In addition, the educational qualification variable impacted the participants' responses, which were in favor of the higher*

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<sup>1</sup> Department of Special Education, Faculty of Education, Najran University, Najran, Saudi Arabia, bmhamadneh@nu.edu.sa

<sup>2</sup> Department of Curriculum and Teaching, Faculty of Education, Najran University, Najran, Saudi Arabia, lmkhairuddin@nu.edu.sa

*studies category. However, there were no statistically significant differences due to the gender variable. The study recommended the need to improve the mean level shown by the study results concerning the level of the role of Art Education teachers in developing environmental education based on arts among elementary school students. The improvement is based on the adoption by those in charge of educational policies in the Ministry of Education of a strategic plan to raise the level of competence and competence of Art Education teachers in the elementary stage. As a result, teachers can activate teaching practices (planning, implementation, and evaluation) to employ environmental issues in producing and designing artistic and creative works that enhance the value of students' love for the environment and attitudes toward preserving it.*

*Keywords: Art Education teachers, arts-based environmental education, elementary stage, environmental education, art.*

## **Introduction**

Art is one of the basic components of human civilization and the development of its growth and awareness. Art helps a person to understand the surroundings in which he and to clarify his vocabulary to describe it as a speaking image of the era in which he lived. The arts are considered one of the civilizational, heritage, and cultural foundations. It contributes to the enrichment of intellectual, philosophical, and scientific diversity and creativity. Art communication requires the ability to question, explore, and compare, including the expansion and development of one's ideas and those of others. Artistic creativity requires a certain professional specificity, adaptation to work discipline, and the ability to respond positively to challenges (Apritosaie-Iftimi, 2020). Art is a communicative language that represents a process of communication or communication that takes place between the individual and the group. Likewise, art constitutes free creativity and creating new patterns in which people express themselves, their feelings, and their attitudes toward the universe, in which they live (Kazem, 2018). Each era has its intellectual, social, economic, and political dimensions, whose influence extends to artistic subjects in terms of their creativity and production conditions (Al-Amiri, 2016). Thus, art reflects an important aspect of the life and existence of people and expresses their customs, traditions, and beliefs, as well as its role in the establishment of civilization (Muhammad, 2018). Believing in the importance of art and its role in civilized progress, human advancement, intellectual diversity, and the preservation of human heritage and education, the focus has been placed on art and its teaching in the educational system at its various levels (Al-Saidi, 2016). Art became one of the most important

educational activities that led to the emergence of Art Education (Apotosoie-Iftimi, 2020).

Art Education is defined as educating learners by promoting their artistic growth, which expresses their thoughts, feelings, and feelings in an unusually creative way. Also, it is an educational scientific discipline resulting from the interaction of education and art. It invests in the practice of artistic activities and the appreciation and evaluation of beauty by learners to bring about the desired change in the behavior of learners (Kazem, 2018). In addition, Art Education is a means of accustoming learners to analysis, learning methods of reaching problem-solving and developing independent thinking skills. Likewise, Art Education is a means of developing the learners' ability to appreciate artistic, aesthetic, and creative taste, art criticism, and artistic and creative production. Therefore, the value of the subject of Art Education and the role of the great Art Education teacher in providing students with values, inclinations, and attitudes aimed at art and its colors, and forming the accuracy of observation and the tendency towards love, appreciation of beauty, taste for it, and creativity among students is evident (Abdulmajid, 2020). In light of the successive developments in producing knowledge and experiences and their applications in various fields, the Art Education teacher is in a race against time to keep up with the rapid pace of life around him. The teacher can play his role in developing his students' abilities in general and in particular in the production of artistic and creative works (Mohammed, 2015). Therefore, the Art Education teacher is required to develop the rules and laws that regulate his roles inside and outside the classroom and even his workplace. His role centers around practicing multiple tasks and functions that ensure the quality of the performance of the educational process, monitoring and following up on all technical educational activities, discovering gaps and estimating their size, and using various means and tools to bring about the desired change in learners' behavior and attitudes (Brinia et al., 2018). Moreover, Art Education is considered one of the important educational aspects that aim to build students' personalities through art. Students do not become complete unless they develop concepts of aesthetic taste and artistic and creative work (Khazali, 2014). To achieve this role, an artistic environment and an artistic approach should be found that help them in that development so that they can think, be aware, feel, and grow with their mental and physical processes. Thus, Art Education has an important and special role in integrating personality. Its emotional, sentimental, and philosophical core focuses on sound and innovative facts, affirming values, improving educational performance, and achieving sound psychological, social, and spiritual education for students and the entire school community positively. All of this achieves the objectives

of the subject of general and specific Art Education and the objectives of the teaching and learning process (Brinia et al., 2018).

The educational value of the Art Education subject and its teacher is highlighted in the use of the means, tools, and raw materials available in the environment to achieve the goals of the Art Education subject. These goals included consolidating students' abilities to practice the colors of art in addressing environmental issues and problems, investing in environmental materials, and recycling and reproducing them in the design and production of artistic and creative works that reflect the value of preserving the environment and creatively solving its problems (Warskow, 2014). The teacher can employ appropriate teaching practices when planning, implementing, and evaluating the Art Education subject (Al-Sakani, 2018). Therefore, the present time requires the Art Education teacher to invest all his abilities, capabilities, and experiences to teach Art Education and its foundations, rules, and correct principles to his students. He can employ the raw materials of the environment in the production and design of artistic and creative work, and use theater, drama, and photography to promote environmental awareness and preserve the environment (Brinia, et al, 2018). Therefore, in the nineties of the twentieth century, a new term appeared in the educational field known as "Arts-based Environmental Education". The term was first coined by the Finnish art teacher Miri Helga Manter. She described arts-based environmental education as a form of learning that aims to develop environmental understanding and responsibility in learners. To become more receptive to sensation perceptions and observations and to use artistic methods to express personal environmental experiences and ideas. Technical experiences improve their ability to know and understand the environment. Therefore, Manter asserts that environmental education based on the arts can be of high value in helping learners become familiar with the environment and become aware of its conservation (Vasko, 2016).

Arts-based environmental education is defined as an educational strategy that combines Art Education with environmental education and the development of art-related practices that strengthen deep connections between learners and the environment (Raatikainen et al., 2020). Art-based environmental education can also support individuals and learners with pro-environmental mindsets who love the environment and have a high sense of responsibility towards and protection of the environment (Vasko, 2016). Art has been shown to have an important role in environmental education or environmental education as it explores the creative use of fine art for students' environmental awareness. Artistic creativity in all its forms is drawing, sculpture, architecture, music, dance, literature, theater, cinema, and comic photography. It can activate the senses, stimulate, and enrich

students' experiences and develop their imagination. Critical thinking provides new ways to express feelings, perceptions, and reflections, enhances creativity, and develops creative thinking. The educational use of art in educational programs to enhance children's communication with the environment helps children deepen their knowledge and strengthen their relationship with the environment. Art also contributes greatly to environmental awareness; it is cultivated through a passionate approach to learning about and developing the environment. Therefore, educational planning and implementation are of scientific importance, which includes taking advantage of different forms of artistic expression with the help of creative educational techniques to form active citizens (Pavasileiou et al., 2020). It is possible to take advantage of the materials of the environment and employ them in Art Education in recycling and developing products to increase creativity, and to allow students to express their feelings and address those regarding environmental problems. This represents an important contribution to increasing students' understanding, commitment, and competence in working towards sustainable development and environmental conservation. In addition, it helps learners express some of the deep artistic meanings that the Art Education teacher and students want. It makes the teaching and learning process more exciting and interesting and adds innovative aesthetics and creative educational and artistic values (Stoll, Gårdvik & Sørmo, 2022). Environmental education based on the arts provides learners with great additional value, as it addresses all the senses of students in the elementary stage, which is known as the stage of imagination, creativity, and exploration. Therefore, it is more suitable for them to increase their motivation towards learning in Art Education and environmental education for them. It is also more suitable for increasing their love and a positive attitude toward the realization of the mind and the development of their creative thinking and illusion, and towards preserving the environment (Al-Ajeel, 2014).

Given the importance of keeping pace with modern educational developments that focused on environmental education based on the arts, creativity, and innovation in the students' thinking and actions, it has become important for the Art Education teacher to discover the student's artistic and creative talents. There have also been attempts to develop them in a manner consistent with ensuring the quality of preparation, which is considered one of the contemporary global trends that modern Art Education has focused on in the twenty-first century. They include understanding the environment, environmental awareness, high productivity, creative thinking, and innovative entrepreneurial work (Sharaf, 2017).

It can be concluded from the aforementioned that the most important characteristic of the Art Education teacher is the forward-looking view

of the future and the talent and creativity of students, directing them to the sources of science and knowledge, developing the creative aspect of their personalities, and guiding them professionally to excel in what they love. They also can invest in art in understanding and awareness of the environment and recycling used environmental materials to preserve the environment and to enhance the values and elements of their environmental awareness. Hence, the need for the current study emerges, which is hoped to be a new and important addition and contribution to the field of education, specifically the field of Art Education curricula and teaching methods at the Arab and international levels. Therefore, this attempted to find out the role of Art Education teachers in developing environmental education based on arts among elementary school students in Najran, Saudi Arabia.

#### Statement of the problem

The problem of this study emerged from the development witnessed by the current era in various fields of humanity, including the field of art, artistic creation, and environmental education. The Art Education teacher has become an integral part of an essential axis in developing a love of art and artistic and creative work. He is required to employ the appropriate methods and methods that develop the technical and creative abilities of his students. It is also necessary for them to acquire the various skills that make them capable of environmental awareness. They invest in the raw materials of the surrounding environment with all its contents and appreciate the value of the environment and the raw materials it contains to achieve renewal and production of artistic and creative works and support their environmental education (Brinia et al., 2018). Previous studies, such as Muhammad and Al-Khatim (2015) and Al-Harbi (2018) emphasized the need for Art Education teachers to be keen on promoting the spirit of artistic and creative work among students; they can direct them toward the use of local environmental raw materials in producing educational aids and artworks to achieve learning and better education, especially environmental education. The Kingdom of Saudi Arabia, represented by the Ministry of Education, has been keen on the importance of showing self-confidence and the creative, aesthetic, and artistic abilities of learners at the elementary stage. This came through the design and production of original artistic and creative works inside and outside the school using artistic works and various environmental materials. It also focused on the importance of promoting environmental awareness and environmental education to protect the environment and reduce its problems (Ministry of Education, 2022). Through an exploratory study conducted on a sample of (20) male and female teachers of Art Education in the elementary stage in Najran region, south of the Kingdom of Saudi Arabia, the researchers showed that (65)% of the respondents focused

on drawing in their teaching of Art Education and playing with clay without taking care of environmental education based on Art Education. Also, (35%) of the sample focused on artistic formation by investing in environmental materials and directing students to benefit from them in the production of original artworks or various artistic means. However, they focus on using specific types, such as pebbles, stones, sand, empty cans, cardboard, leaves of plants and trees, and not others. Accordingly, the problem of this study emerged, which can be identified in the following questions:

1. What is the role of Art Education teachers in developing environmental education based on arts among elementary school students?
2. Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the gender variable?
3. Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the variable of years of experience?
4. Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the educational qualification variable?

#### Objectives of the study

This study aimed to identify the role of Art Education teachers in developing environmental education based on arts among elementary school students in the Kingdom of Saudi Arabia. It also searched for statistical differences in the role of Art Education teachers in developing environmental education based on arts among elementary school students in the Kingdom of Saudi Arabia, according to the variables of gender, years of experience, and educational qualification.

#### Significance of the study

The significance of this study stems from the importance of its topic, which dealt with the role of Art Education teachers in developing environmental education based on arts among elementary school students. This importance stems from the global interest in art and its role in developing creativity and promoting environmental education as well as recycling environmental materials and training students to produce works of art that highlight their talents and creative abilities. The importance of this study is also represented in being one of the modern and original studies in the field of Art Education. The Arab and

local environment represented in the Kingdom of Saudi Arabia lacks studies that reveal the role of Art Education teachers in developing environmental education based on the arts among elementary school students and in developing their abilities to invest the raw materials of the environment in producing innovative artistic and creative works. Thus, the study may contribute to shedding light on an important modern approach to Art Education that is consistent with contemporary global trends that seek to develop the artistic work of learners by investing in environmental materials and promoting the concept of environmental education based on the arts. It is hoped that the results of the study will draw the attention of educational supervisors and teachers of Art Education, to the importance of this field and its study, contribute to the development of this field, and bring it to the world given the importance of this aspect in the life of young elementary school students. He has a role in creating a generation capable of understanding the values of environmental education and investing in environmental raw materials and transforming them into artistic and creative works that serve society and its civilized movement and develop in them a sense of responsibility towards the environment and its preservation.

## **Methodology**

The descriptive survey method that describes reality was followed in this study. It is the most appropriate approach to the nature of the current study. An electronic questionnaire was used as the study tool to collect the necessary data to achieve the study objectives and answer the questions.

### **Population and sample of the study**

The study population consisted of all teachers of Art Education in government elementary schools in Najran region in the Kingdom of Saudi Arabia. Their number has reached about (225) male and female teachers in the academic year 2022/2023, according to the statistics of the General Administration of Education in the Najran region for the academic year 2022-2023. The study sample consisted of a stratified random sample of teachers of Art Education in government elementary schools in Najran region in the Kingdom of Saudi Arabia. They were (119) male and female teachers, including (60) male and (59) female teachers, in the academic year 2022/2023.

The study tool was distributed electronically using an electronic link on the (Google Drive) form to the study sample. It has been published in teachers' groups via the WhatsApp application, in cooperation with educational supervisors in Najran educational region. Table 1 shows the distribution of the study sample according to their variables.



**Table 1. Distribution of the study sample according to variables**

Variable	Group	Freq.	%
Gender	Male	60	50.4
	Female	59	49.6
Years of experience	10 or less	53	44.5
	10 or more	66	55.5
Educational qualification	Bachelor	82	68.9
	Higher studies	37	31.1
	Total	119	100.0

#### Instrument of the study

To achieve the study objectives, the study tool, a questionnaire, was developed to measure the role of Art Education teachers in developing environmental education based on arts among elementary school students. The scales used in previous studies, such as Aprotosoai-iftimi (2020), Abdulmajid (2020), and Brinia et al. (2018) were adopted. The final version of the tool consisted of (25) items after verifying its validity and reliability in the Saudi context. The scale was distributed in three domains: planning (8 items), implementation (8 items), and evaluation (9 items). To estimate the responses of the study sample, a five-point scale was used (strongly agree, agree, neutral, disagree, strongly disagree). The respondent puts a sign (v) in front of each item of the tool to express his opinion and evaluation of the role of Art Education teachers in developing environmental education based on arts among elementary school students. To correct the tool, the criterion approved by Hamadneh and Almogbel (2023) was relied on by giving the values, respectively (5, 4, 3, 2, 1) for the degrees (strongly agree, agree, neutral, disagree, strongly disagree). The following scores were approved for the achievement of the study tool items and the overall result: 1.00 - 1.80 = very low, more than 1.80 - 2.60 = low, more than 2.60 - 3.40 = medium, more than 3.40 - 4.20 = high, more than 4.20 - 5.00 = very high.

#### Validity of the study tool

The validity of the study content was verified by presenting it in its initial form to ten experts of faculty members in Art Education curricula and teaching methods, science curricula, and teaching methods in Saudi universities. They were asked to check the suitability of the items for the domain in which they were placed and the tool as a whole. Also, they ensured the accuracy of the linguistic formulation and the tool's suitability to achieve the study objectives. In light of experts' opinions, the required amendments were made, with an agreement of 80% on the importance of amending the items. The most important remarks of the experts were rephrasing some items to be clear and measurable to the respondents. Thus, the study tool was produced in its final version, consisting of (25) items. The validity of

the study tool was also verified by extracting the indications of the construct validity of the tool. The correlation coefficients of each item and domain in which it was placed and the total score of the tool were extracted. The study tool was applied to an exploratory sample from the study community and outside the main sample. It consisted of (25) male and female teachers of Art Education in the elementary stage in the Najran region. Table 2 shows the results.

**Table 2. Correlation coefficients between items, domains, and the whole scale**

Item	Correlation coefficient with domain	Correlation coefficient with scale	Item	Correlation coefficient with domain	Correlation coefficient with scale	Item	Correlation coefficient with domain	Correlation coefficient with scale
1	.83**	.82**	9	.93**	.90**	17	.81**	.72**
2	.88**	.83**	10	.90**	.87**	18	.84**	.82**
3	.86**	.86**	11	.76**	.74**	19	.92**	.93**
4	.90**	.86**	12	.76**	.70**	20	.79**	.79**
5	.86**	.78**	13	.86**	.86**	21	.74**	.73**
6	.91**	.83**	14	.89**	.89**	22	.66**	.61**
7	.89**	.84**	15	.83**	.80**	23	.60**	.56**
8	.79**	.78**	16	.63**	.60**	24	.66**	.62**
						25	.86**	.79**

\*\*Statistically significant at the significance level (0.05).

Table 2 shows that the correlation coefficients of the items with the tool as a whole ranged between (0.56-0.93) and the domain (0.60-0.92). It should be noted that all correlation coefficients were of acceptable and statistically significant degrees. Therefore, none of these items was deleted. These results confirm the tools' validity to measure what is intended to measure.

#### Reliability of the study tool

The reliability of the study tool was verified in two ways: the test-retest method. The tool was applied to a survey sample consisting of (25) male and female teachers of Art Education in Najran region. They were chosen from the study population and outside its sample. Then, in two weeks, the tool was re-applied to the same sample. After that, the Pearson correlation coefficient was calculated between the respondents' scores on the tool total and its domains in the two application times. As for the second method, the internal consistency reliability coefficient (Cronbach's Alpha) was calculated for the tool as a whole and its domains. Table 3 shows the results.

**Table 3. The coefficients of test-retest and internal consistency "Cronbach's alpha" on the domains and overall score of the study tool**

No	Domain	No. of items	Test-retest	Internal consistency
1	Planning	8	0.82	0.76
2	Implantation	8	0.80	0.79
3	Evaluation	9	0.83	0.80
	Total	25	0.89	0.85

Table 3 shows that the reliability coefficients for the domains of the study tool using the test-retest method ranged between (0.80-0.83), and for the tool as a whole in the same way, the stability coefficient was (0.89). The reliability coefficients for the domains of the study tool using the internal consistency method ranged between (0.76-0.80) and the tool as a whole in the same way (0.85). These values were considered appropriate for the study.

#### Data analysis

To answer the study questions, the means and standard deviations were used to know the role of Art Education teachers in developing environmental education based on artistic elementary students. Also, the t-test for the independent samples was used to explain the statistical differences in the role of Art Education teachers in developing environmental education based on the arts of elementary school students according to sex variables (male, female), years of experience (less than 10 years and more than 10 years, the educational qualification (Bachelor and higher Studies). From the point of view of Audah and Alqadi (2016), the t-test for independent samples is appropriate when comparing the mean derived from independent samples that may be the variable used in the composition of the groups already exists. However, a cutting point can be provided on a constant variable to create groups dynamically during the analysis. The test was used after its conditions were achieved to indicate the mean differences. They are the size of each sample, where each category exceeds (30) individuals, the difference between the size of research samples was close, and the extent of homogeneity of the sample in terms of its affiliation to one nature, which is teachers and teachers of Art Education in the elementary stage in Najran region of the Kingdom of Saudi Arabia. They are similar in their cultural and social characteristics and the extent of moderation of the repetitive distribution of both research samples. The data was free from extreme or random values, and the data curve was moderate and similar to the shape of the bell as confirmed by Kolmogorov-Smirnov Test for Normality.

## Results

Results of the first research question: What is the role of Art Education teachers in developing environmental education based on arts among elementary school students?

To answer this question means and standard deviations were extracted for the role of Art Education teachers in developing environmental education based on the elementary stage students. Table 4 shows the results.

**Table 4. Means and standard deviations for the role of Art Education teachers in developing environmental education based on arts among elementary school students in descending order**

Rank	No.	Domain	Mean	Standard deviation	Degree
1	2	Planning	3.03	.860	Medium
2	3	Implementation	2.97	.780	Medium
3	1	Evaluation	2.78	.890	Medium
		Total	2.93	.800	Medium

Table 4 shows that the means of the domains of the study tool ranged between (2.78-3.03). The domain of implementation came first with the highest mean (3.03) and a standard deviation (0.86) at an average level. In the second place, the domain of evaluation came with a mean of (2.97) and a standard deviation of (0.78) at an average level. The domain of planning came in third place with a mean of (2.78) and a standard deviation of (0.89) at an average level. The mean for the role of Art Education teachers in developing environmental education reached based on arts among elementary school students as a whole was (2.93) with a standard deviation of (0.80) at an average level.

Results of the second research question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the gender variable?

To answer this question, the means and standard deviations were extracted for the role of Art Education teachers in developing environmental education based on Art Education for elementary students according to the gender variable. To show the statistical differences between the means, the t-test for independent samples was used. Table 5 shows the results.

**Table 5. Means, standard deviations, and the t-test for independent samples of the impact of the gender variable on the role of Art Education teachers in developing environmental education based on arts among elementary school students**

Domain	Gender	No.	Mean	Standard deviation	t	df	Sig.
Planning	Male	60	2.85	.890	.930	117	.354
	Female	59	2.70	.890			
Implemnetation	Male	60	3.08	.860	.580	117	.563
	Female	59	2.99	.850			
Evaluation	Male	60	3.04	.740	.962	117	.338
	Female	59	2.90	.820			
Total	Male	60	2.99	.790	.872	117	.385
	Female	59	2.86	0.80			

Table 5 shows that there were no statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all domains of the study tool (planning, implementation, evaluation) due to the effect of gender variable. The calculated t-values on the domains of the study tool, planning, implementation, and evaluation, were (.930), (.580), and (.962) with statistical significances of (.354), (.563), (.338) respectively. It was also found that there were no statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students on the total score due to the effect of the gender variable. The calculated t-value was (.872), and the statistical significance was (.385).

Results of the third research question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the variable of years of experience?

To answer this question, the means and standard deviations were extracted for the role of Art Education teachers in developing environmental education based on Art Education for elementary students according to the experience variable. To show the statistical differences between the means, the t-test for independent samples was used. Table 6 shows the results.

**Table 6. Means, standard deviations, and the t-test for independent samples of the impact of the experience variable on the role of Art Education teachers in developing environmental education based on arts among elementary school students**

Domain	Experience	No.	Mean	Standard deviation	t	df	Sig.
Planning	-10 years	53	2.52	.89	2.922	117	.004
	+ 10 years	66	2.98	.840			
Implementation	-10 years	53	2.77	.840	3.083	117	.003
	+ 10 years	66	3.24	.810			
Evaluation	-10 years	53	2.76	.750	2.668	117	.009
	+ 10 years	66	3.14	.770			
Total	-10 years	53	2.69	.770	3.059	117	.003
	+ 10 years	66	3.12	.770			

Table 6 shows that there were statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all domains of the study tool (planning, implementation, and evaluation) due to the effect of years of experience. The differences were in favor of the category 10 years or more. The calculated t-values on the domains of the study tool, planning, implementation, and evaluation were (2.922), (3.083), and (2.668) with statistical significances of (.004), (.003), (.009) respectively. It was also found that there were statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students on the total score due to the effect of the variable years of experience. The differences were in favor of the category 10 years or more.

The calculated t-value was (3.059) with a statistical significance of (.003).

Results of the fourth research question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students due to the educational qualification variable?

To answer this question, the means and standard deviations were extracted for the role of Art Education teachers in developing environmental education based on Art Education for elementary students according to the educational qualification variable. To show the statistical differences between the means, the t-test for independent samples was used. Table 7 shows the results.

**Table 7. Means, standard deviations, and the t-test for independent samples of the impact of the educational qualification variable on the role of Art Education teachers in developing environmental education based on arts among elementary school students**

Domain	Educational qualification	No.	Mean	Standard deviation	t	df	Sig.
Planning	Bachelor	82	2.56	.850	4.128	117	.000
	Higher studies	37	3.25	.810			
Implementation	Bachelor	82	2.84	.830	3.895	117	.000
	Higher studies	37	3.47	.770			
Evaluation	Bachelor	82	2.79	.750	4.047	117	.000
	Higher studies	37	3.38	.700			
Total	Bachelor	82	2.73	.750	4.279	117	.000
	Higher studies	37	3.37	.720			

Table 7 shows that there were statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all domains of the study tool (planning, implementation, evaluation) due to the effect of qualification. The differences were in favor of the higher studies category. The calculated t-values on the domains of the study tool planning, implementation, and evaluation were (4.128), (3.895), and (4.047) with statistical significances of (.000), (.000), (.000), respectively. It was also found that there were statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students on the total score due to the effect of the educational qualification variable. The differences were in favor of the higher studies category. The calculated t-value was (4.279) with a statistical significance of (.000).

## Discussion

### Discussion of the first research question

The results showed that the domain of implementation came in first place with the highest mean (3.03) and a mean degree. This result may be due to the weakness of Art Education teachers in the elementary stage in some aspects, such as directing learners towards the use of environmental materials in the production of artistic and creative work, or artistic formation from industrial materials such as cork and

wire. Also, there is a weakness in the implementation of Art Education lessons to enhance environmental education by using environmental materials in the light of the available artistic values and elements and benefiting from the heritage of the past and its connection to the present. In addition, there is also a lack of linking the surrounding environment with interesting and attractive works of art such as theater, drama, and photography. Furthermore, there is a deficiency in enabling learners to practice artistic expressions, such as drawing and shaping with the materials of the environment, and a decrease in the chances of taking them to art galleries and museums to benefit from their existing experiences and models. The evaluation domain came in second place with a mean of (2.97) and a medium level. This result may be due to the teachers' neglect of expressing their opinion on the quality of the artwork, the failure of the learners' observation during the implementation of the artwork during the educational situation, and the teachers' lack of attention to the diagnostic evaluation of the artworks and their analysis to indicate the strengths and weaknesses and to reveal the creative manifestations in them. The result is also due to the low level of evaluation of artistic and creative work among Art Education teachers to ensure that it reflects the stage of growth experienced by learners. In addition, there is a low level of care in asking oral questions to ensure that the learners know the information about the raw materials of the environment and the tools used in the artwork. The domain of planning came in the third rank with a mean of (2.78) and a mean level. This result may be attributed to the failure of Art Education teachers in the elementary stage to plan well in environmental education based on the arts. This failure appears in the existence of an educationally unacceptable level of investment in environmental materials in recycling them to produce artistic and creative works and to enhance environmental awareness among students. The result is also attributed to teachers' non-positive attitudes towards collecting natural environmental materials that stimulate the learners' sense of beauty and motivate them towards artistic and creative work. The results of this question showed that the mean of the role of Art Education teachers in developing environmental education based on arts among elementary school students as a whole was (2.93), at an average level. This result may be due to the lack of Art Education teachers' beliefs in the importance of environmental education based on the arts and the role of the various colors of art in promoting learners' attitudes toward preserving the environment. Perhaps, this result is due, according to the point of view of Vasko (2016), to the existence of trends among some teachers of Art Education in the elementary stage towards the practice of other types of arts, such as drawing. Art Education teachers believe that this artistic color is the easiest and easiest for them in terms of training learners in the elementary stage, dealing with them, and evaluating



their artwork. There is no view on the importance of environmental education based on all the arts and their significant role in promoting values of preserving the environment and environmental awareness among students at the elementary stage.

#### Discussion of the second research question

The results showed that there were no statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all domains of the study tool (planning, implementation, evaluation) attributed to the effect of the gender variable. Also, no differences appeared in the total score. This result may be attributed to the equal knowledge of the study sample, male and female teachers, about the importance of developing environmental education based on the arts among elementary school students by investing art in awareness of the environment and preserving it. The Ministry of Education in the Kingdom of Saudi Arabia, through the curriculum and standards for Art Education in the year 2020, stressed the need for Art Education teachers to have knowledge of environmental materials and how to benefit from them in teaching students to produce artistic and creative work. It also confirmed its practice in the classroom and Art Education workshops and laboratories. In addition, the Ministry of Education has also implemented over the past years a set of training programs for Art Education teachers aimed at training on teaching practices, such as planning, implementation, and evaluation to develop environmental education based on the arts by teaching Art Education and investing environmental materials in producing and forming artistic and creative works among students. Perhaps, the presence of male and female teachers in those training courses based on the modern educational trends that the Ministry sought to achieve in the region contributed to the non-statistical differences according to the gender variable.

#### Discussion of the third research question

The results revealed that there were statistically significant differences at the significance level of (0.05) in the responses of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all domains of the study tool (planning, implementation, evaluation) and the total score due to the effect of years of experience. The differences were in favor of the category 10 years and more. This result may be attributed to the importance of the teaching experience factor in the formation of the scientific personality of the teacher. Therefore, it is noted that Art Education teachers with more experience possess a set of cognitive and physical skills, behaviors, and experiences in environmental techniques, materials, and raw materials that are used

in making and designing artistic and creative works to develop environmental education among students in the elementary stage (Al-Muqrin, 2016). This was reflected in their role in developing the abilities of elementary school students to invest the raw materials of the environment in the production of artistic and creative works.

#### Discussion of the fourth research question

The results revealed that there were statistically significant differences at the level of significance (0.05) in the estimates of the study sample about the role of Art Education teachers in developing environmental education based on arts among elementary school students in all areas of the study tool (planning, implementation, evaluation) and the total score due to the effect of qualification variable. The differences were in favor of the higher studies category. The result of this question may be attributed to the fact that the study sample with higher academic qualifications (higher studies) have full knowledge of how to apply the art-based environmental education strategy and invest it in enhancing understanding and awareness among students about the environment and its issues and problems through their university studies. The study plans at the higher level focus on the abundance of information, knowledge, and artistic applications and benefits from the surrounding environment in the colors of the arts and in the production and design of artistic and creative works of artistic value and material return, and beneficial to society. They foster in the students' hearts a love of the environment, preserving it, and awareness of the problems that surround it and reducing them (Shaheen, 2014).

### **Recommendations**

In light of the results of the study, it is recommended that the mean level shown by the results of the study should be improved regarding the level of the role of Art Education teachers in developing environmental education based on arts among elementary school students. This improvement is based on the adoption of those in charge of educational policies in the Ministry of Education by developing a strategic plan to raise the level of efficiency and ability of Art Education teachers in the elementary stage to activate teaching practices (planning, implementation, evaluation) to employ environmental issues producing and designing artistic and creative works. These works enhance the value of student love for the environment and trends toward preserving it. Also, educational officials in educational departments and education supervisors should hold training programs to support the role of Art Education teachers in the elementary stage and urge them to use environmental education based on the arts to promote a sense of responsibility

towards the environment and its protection. In addition, they should urge teachers with educational qualifications less than higher studies and those with less teaching experience to attend and participate in them. Moreover, educational research centers in universities and researchers should be directed to conduct more descriptive and comparative future studies to include all teachers of Art Education at all levels of education in the Kingdom of Saudi Arabia to give a degree of knowledge diversity and understand the phenomenon with a more in-depth and comprehensive view.

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