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The Reality of Early Childhood Teachers' Practice of Their Roles in Spreading Environmental Awareness in Saudi Arabia

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ABSTRACT

The current study aimed to identify the reality of early childhood female teachers' practice for their roles in spreading environmental awareness among children. The study followed the descriptive analytical method. The study was conducted on a sample of 41 early childhood educators in institutions associated with the Department of Education in the Northern Border Region. The results of the current study indicated that early childhood teachers had an average level of practice for their roles in spreading environmental awareness, as the overall average was (3.77). The distribution of the levels of reality of early childhood teachers' practice for their roles in spreading environmental awareness among the study sample members was as follows: (22.0%) of early childhood female teachers had a low level, while (17.0%) had a medium level of practice for their roles in spreading environmental awareness, while (61.0%) had a high level. The results of the current study indicated that there were no statistically significant differences at the level of significance (0.05) between the categories of years of experience. The results of the current study indicated that there were statistically significant differences that may be due to the academic qualification e, the academic qualification specialty (kindergarten/other specialty) and the number of training courses variable. The findings suggest several implications for science educators broadly, and specifically for those in Saudi Arabia, are highlighted. It is argued that not only should teachers possess knowledge about environmental issues, but they should also demonstrate environmental concern themselves, as their actions and thoughts greatly influence the students they teach.

1. INTRODUCTION

Prior research highlights the significance of early access to education in alignment with the objectives and substance of sustainable development. Saudi Arabia places significant emphasis on the establishment of environmental education techniques in early life. This observation was included in the initial nationwide volunteer assessment of Vision 2030, titled "Towards the sustainable development of the Kingdom of Saudi Arabia". Internationally, The primary objective of environmental education (EE) globally is to provide individuals with the knowledge, skills, and values necessary for the preservation and enhancement of environmental quality, hence fostering environmentally literate citizens [1]. This is further substantiated by transformative education, which seeks to enhance their participation in exploration, engagement, and capacity for instigating change [2].

According to Georgiou et al. [3], environmental issues such as deforestation, climate change, glacier melt, pollution, waste disposal, loss of biodiversity, and resource depletion are among the primary concerns we must address. Given the magnitude and consequences of these environmental concerns, there is an urgent need for young individuals who are empowered and actively engaged in addressing these severe socioenvironmental challenges. The natural environment is the most closely connected to a student's daily existence. Environmental themes are crucial in science teaching. Teachers and students have distinct roles in the process of science learning. Teachers must take into account students' cultural knowledge as a lens through which they perceive the world and nature [4].

The imperative to promote environmental consciousness has become increasingly essential in all countries. Its poor and incorrect behavior is the primary cause of numerous environmental concerns. Efforts in education should be complemented by the implementation of laws and regulations aimed at safeguarding the environment. This will help individuals comprehend the intimate connection between humans and the environment, grasp its intricate characteristics, and steer them toward adopting positive behaviors. The ultimate goal is to ensure their protection and seek suitable resolutions to their issues [5].

Environmental Education has primarily emphasized the development of practical skills necessary for creating and implementing effective solutions to environmental issues. Moreover, numerous researchers have stated that the primary aim of Environmental Education ought to be to enable students to function as informed and empowered citizens [3].

Consequently, educators need to have a thorough grasp of environmental concepts to enhance students' knowledge of these notions [4]. Given the essential role of kindergarten teachers in preserving the environment, the research found the need to investigate their role in spreading environmental awareness, as well as the lack of Arab studies that addressed the topic of environmental awareness [6], this research is hence both arduous and notably important.

The institution is accountable for the education and development of children, imparting values, attitudes, and constructive behaviors. It also establishes the essential conditions for their physical, mental, social, and emotional growth, while imparting information and skills throughout all domains of life. Environmental education and awareness must constitute a crucial aspect of the school's responsibilities, as it embodies the societal imperative to safeguard and conserve the environment while fostering constructive behaviors in this domain. Teachers are essential in educating children on environmental conservation by instilling values and behavioral competencies. Despite the growing acknowledgment of environmental concerns, there exists a paucity of research examining early childhood educators' perceptions of the environment.

Al-Fursan et al. [6] posited that insufficient attention to environmental issues is frequently attributable to a lack of environmental consciousness among individuals. Consequently, it is imperative to consider the cultivation of environmental awareness in children from an early age, fostering positive attitudes toward the environment. Therefore, the school must fulfill its responsibility in fostering environmental consciousness among youngsters.

Saudi Arabia places significant emphasis on the establishment of environmental education techniques in early life. The statement was included in the initial nationwide voluntary assessment of Vision 2030, titled "Towards the enduring progress of the Kingdom of Saudi Arabia." Prince Mohammed Bin Salman stated that rules and methods will be established to ensure the preservation of the distinct and exceptional environmental features of the region, promoting environmental sustainability.

It is important to mention that further strategies and plans are presently being developed. These will enhance the extent to which national frameworks for sustainable development goals are covered, as stated in the National Voluntary Review of Saudi Arabia in 2018.

The present study contends that while the Saudi Ministry of Education expressed interest in fostering environmental awareness among kindergarten students, there was a deficiency in the behavioral performance of these children regarding the environment and its conservation. Environmental education was not included in a structured curriculum and system content. The environmental principles were conveyed indirectly through distinct modules.

Environmental education focuses solely on the systematic exploration of pedagogical principles related to the environment, neglecting the creative and practical aspects of raising awareness about the educational significance and benefits of these concepts.

Although there have been multiple studies conducted by Farias et al. [7] exploring the impact of early childhood on the formation of children's environmental consciousness, there exists a disparity between the theoretical research and the actual implementation of environmental awareness development be early childhood educators.

There is a lack of comprehensive examination of the curricula of present study programs in Slovenian universities with regards to Education for Sustainable Development (ESD). Thus, it may be inferred that prospective ECE teachers are exposed to the concepts of sustainable development indirectly, primarily through non-formal education. ECE instructors' lifelong education initiatives and networks, such as the network of eco-schools, help bridge this gap. Preschool education institutions play a critical role in introducing children to formal education. Preschool teachers working at these institutions have a significant responsibility to incorporate the concept of living in harmony with nature into the educational systems of societies and promote lasting and sustainable learning on this subject.

Therefore, there was a necessity for a study to uncover the actuality of early childhood instructors' involvement in fostering environmental consciousness among children. To solve this problem, the present research needs to answer the essential question: "What is the actual extent to which early childhood teachers fulfill their roles in promoting environmental awareness among children?"

2. LITERATURE REVIEW

2.1 Environmental awareness

In recent years, there has been significant emphasis given to environmental concepts due to the ongoing global environmental crisis. An examination of environmental conceptions is crucial in educational research as it reveals how individuals perceive the influence of environmental issues on others, society, and ecosystems, which is influenced by their cultural and personal background. These perceptions can shape attitudes and emotions towards the environment, and subsequently impact teaching practices [7]. Environmental awareness is rooted in the recognition of individuals' obligation to the ecosystem. This involves acquiring the essential information and knowledge, as well as honing the skills required to tackle environmental issues. Environmental awareness is distinguished by specific attributes, as outlined by Mohamed and Al-Hathloul [8]. Formal environmental education is not always necessary to cultivate and foster environmental awareness. The immediate surroundings of an individual have a significant influence in this regard. Environmental awareness encompasses two fundamental components: knowledge and conscience. Environmental awareness encompasses both emotional aspects and a wealth of diverse knowledge. In addition, it is important to note that environmental awareness does not always translate into positive actions towards the environment. While many persons are completely cognizant of the hazards and problems associated with the environment, they may not always engage in proactive behaviors to address them. Developing environmental consciousness is the initial stage in influencing environmental patterns that govern individual conduct. Environmental awareness is a determining factor in an individual's future behavior towards the environment.

2.2 Teachers' practice of their roles in spreading environmental awareness

Evans et al. [9] employed a phenomenographic methodology to investigate the diverse interpretations of the

notion of education for sustainability among a cohort of 30 pre-service teachers. The teachers were at various stages of completing their education degrees at a tiny provincial institution in Australia.These teachers were at different stages of completing their education degree at a small regional university in Australia. Both students and teachers, according to the results, do not have nearly enough environmental literacy, environmental values, or environmental optimism. Therefore, four types of education are recognized by Evans et al. [9]: (1) future-oriented education; (2) education on ecological and environmental systems; (3) education that is active, hands-on, localized, and pertinent; and (4) education that is continuous.

A study conducted in Kosovo recently utilized the New Ecological Paradigm (NEP) survey, which was administered to educators in both early childhood education and kindergarten by Zeqir et al. [10]. In all, 88 elementary school teachers from the three most populous areas of Kosovo took part in the research. Based on their teaching experience, the teachers' impressions and expectations of environmental changes, the sources of environmental knowledge they used, and their attitudes regarding the NEP statements, the teachers answered to the questionnaire. Teachers in the study had eco-centric views, meaning they advocated for global environmental changes, and they were cognizant of the detrimental effects of human interference with nature.

Nyberg et al. [11] examined the environmental and nature-related attitudes of 1,109 Swedish and French teachers and student teachers. The results indicate that in Sweden and France, most educators and student educators had an ecocentric viewpoint rather than an anthropocentric one. This could mean that there is a generally positive attitude towards environmental education and the environment. When looking at the two samples side by side, it becomes clear that the Swedish teachers and student are more anthropocentric than their French teachers and students.

Salama [12] asserts that kindergartens are essential in familiarizing young children with environmental challenges through the lens of their educators. The researcher employed a descriptive analytical technique to deliver a questionnaire addressing two subjects: the role of kindergarten educators in fostering environmental awareness and the role of kindergarten principals in this endeavor. The study involved 72 kindergarten teachers in Jordan, with a sample size of 51 participants. The research revealed that both kindergarten teachers and administrators had a significant regard for their efforts in fostering environmental awareness among young children. The research indicated that neither the extent of kindergarten teachers' appreciation for their work nor the influence of kindergarten administrations on fostering environmental awareness in preschool children varied significantly with the years of experience variable.

Based on interviews with kindergarten teachers in the State of Kuwait, Bou-Hamama and Al-Qattan [13] sought to determine the nature of environmental education in these settings and how factors including teachers' levels of education, years of experience, and geographic location affected their perceptions of this practice. The research aimed to accomplish its goals by using the descriptive analytical approach using a sample of 875 female kindergarten teachers in the State of Kuwait. The study's authors came to the conclusion that kindergarten environmental education programs help kids form good habits and teach them to respect the rights of others and the environment. Young people can benefit from environmental education by learning some of the fundamentals of contributing to society. The study found that the academic qualification variable significantly affected the averages of the study sample members' opinions on environmental education's aims and challenges, but had no effect on their opinions on the importance or methods of environmental education. Environmental education's goals and significance varied between educational regions, according to the results, but the field's approaches and challenges remained consistent.

2.3 The role of religion in shaping Saudi environmental attitudes and behaviors

The present research needs to provide a more in-depth discussion of the cultural context in Saudi Arabia and how it influences environmental education and teacher practices. Consider the role of religion, tradition, and societal values in shaping environmental attitudes and behaviors. A worldview is a framework that directs our cognition and may encompass metaphysical, ontological, and epistemological assumptions on God, the cosmos, and humans. The Islamic perspective is predominantly influenced by the concept of Tawhid, or the Unity of God, which is fundamental to most Muslim societies, especially within Saudi culture. The idea of Tawhid encompasses four sub-concepts: the Unity of Creation, the Unity of Humanity, the Unity of Truth and Knowledge, and the Unity of Life.

The Unity of Life is founded on the notion of khilafah, the vice-regency of God on Earth. The Quran states "…I will create a vice-regent on Earth… (2:30) [14]. Haidar [15] asserts that the notion of humanity as God's vice-regent arises from the principle of tawhid, which emphasizes the unity of mankind, the unity of humanity and nature, and the unity of knowledge and values. The Khilafah ideology perceives humans as custodians of God's creation, bearing societal responsibility for both the biophysical and socio-cultural environments, wherein science, as a human endeavor, is governed by the moral philosophy of Islam [16]. This obligation compels humanity to "comprehend nature, not subjugate it. As of today, Islamic science adopts a more comprehensive, human-centered approach rooted in beliefs that advocate for social justice, public welfare, and environmental responsibility [17].

Haidar [15] asserts that a human may only appropriately utilize it for his benefit rather than disturbing or corrupting it; for instance, while constructing a metropolis in the developed world, such as Europe or America, mountains would be obliterated to facilitate urban development. Individuals frequently reside in large urban areas, where life is dynamic, and they typically do not traverse natural settings. The present research argues that, within Saudi culture, there is a prevalent emphasis on preserving the mountains and leveraging their presence in urban areas, as Saudis possess a profound reverence for nature, perceiving it as a vast desert filled with divine symbols. Islam teaches Muslims to care for the environment, The Quran says "And when he goes away, he strives throughout the land to cause corruption therein and destroy crops and animals. And Allah does not like corruption" (2:250). Hence, Under the patronage of His Royal Highness Prince Mohammed bin Salman, Chairman of the Council of Ministers and Crown Prince, the Kingdom of Saudi Arabia has launched more than 80 initiatives to achieve the goals of the Saudi Green Initiative and work to bring about positive change

in the long term. These initiatives range from efforts to plant trees and protect biodiversity to efforts to reduce emissions and establish new nature reserves. The Kingdom is working hard to achieve its great aspirations within the framework of the Saudi Green Initiative to build a more sustainable future for all.

3. METHODOLOGY OF RESEARCH

The present study relies on the use of the descriptive approach to determine the reality of early childhood teachers ' roles in promoting environmental awareness among children; this is in keeping with the nature of the current study and the achievement of its objectives, as it is appropriate to collect data from the study sample, describe them accurately, interpret them and present the results in their light. The descriptive approach is concerned with the description of the phenomenon by gathering information on it, based on a study of the reality, and as a precise description and qualitative or quantitative expression, without interference by the researcher in the course of the phenomenon, by compiling, describing and analyzing the facts necessary to determine the current status of a particular phenomenon or subject to arrive at accurate and adequate information about it.

3.1 Research question

The present study attempts to answer the following questions:

1). What is the reality of early childhood teachers exercising their roles in raising children's environmental awareness?

2). Are there statistically significant differences in the practice by early childhood teachers of their roles in raising environmental awareness among children attributable to years of experience?

3). Are there statistically significant differences in the practice by early childhood teachers of their roles in raising children's environmental awareness due to their educational qualifications?

4). Are there statistically significant differences in the practice by early childhood teachers of their roles in raising children 's environmental awareness due to the variable specialization of the qualification?

5). Are there statistically significant differences in the practice by early childhood teachers of their roles in promoting environmental awareness among children due to the number of teaching courses?

3.2 Sample

The present investigation was executed on a simple random sample including 50% of the study population. The study was conducted on a sample of 41 early childhood educators in institutions associated with the Department of Education in the Northern Border Region. The particular administrations were chosen due to the convenience of conducting the study at the researcher's place of residence and employment. The administrative division of the Saudi Ministry of Education was requested to provide a list of email addresses for all scientific educators in the Northern Border Region where the research was undertaken. An email was subsequently disseminated to all early childhood educators. After four weeks, 41 educators had replied. The researcher subsequently dispatched another email to the educators to elucidate the objective of the present study and the additional investigative procedures.

3.3 Instrument

The Card for the Level of Practice of Early Childhood Teachers for Their Roles in Raising Environmental Awareness in Children" was developed by the researcher. In its initial form, the measure is made up of two sections; the first section is devoted to the collection of demographic data for the sample study. The second section is devoted to the collection of data on the practices of early childhood teachers for their roles in the dissemination of environmental awareness among children. This section consists of 33 modules divided into three dimensions: the first dimension is knowledge practices, and the second dimension consists of 11 modules; the second dimension is skilled practices, consisting of 14 modules; and the third dimension is emotional practices, consisting of 8 items. The notes on the observation card are taken on a Likert five-point scale, as shown in Table 1.

The overall grade and subgrades for kindergarten female teachers' practices in raising environmental awareness among children and the averages expressing each level are illustrated in Table 2.

Table 1. Categories of the Likert five-point scale for the study tool

Observation	Grade
The teacher practices frequently (if the practice occurred 5 times during the teacher's observation period).	5
The teacher practices often (if the practice occurred 4 times during the teacher's observation period).	4
The teacher practices occasionally (if the practice occurred 3 times during the teacher's observation period).	3
The teacher practices rarely (if the practice occurred twice during the teacher's observation period).	2
The teacher practices very rarely (if the practice occurred only once during the teacher's observation period).	1

Table 2. Averages expressing each level of kindergarten female teachers' practices in promoting environmental awareness among children

Practices	Number of Items	Overall Grade	Minimum Grade	Average Overall Grade	Average Minimum Grade	Low Practice Level	Medium Practice Level	High Practice Level
Cognitive Dimension	11	55	11	5	1	Average Less than 2.5	Average from 2.5 to 3.8	Average Higher than 3.8

Skill Dimension	14	70	14	5	1	Average Less than 2.5	Average from 2.5 to 3.8	Average Higher than 3.8
Emotional Dimension	8	40	8	5	1	Average Less than 2.5	Average from 2.5 to 3.8	Average Higher than 3.8
All Practices	33	165	33	5	1	Average Less than 2.5	Average from 2.5 to 3.8	Average Higher than 3.8

The researcher developed an observation card to assess early childhood educators' approaches to fostering environmental awareness in children. This card was created by the subsequent steps: Determining the primary aim of the study, which is to comprehend the reality of early childhood educators' involvement in fostering environmental awareness in children. A list of aspects of environmental awareness appropriate for early childhood educators was compiled, which would inform the primary criteria to be incorporated into the observation card.

The preliminary observation card comprised 35 elements. To confirm the apparent validity of the study, the preliminary version of the observation card was submitted to a cohort of professionals and educational experts from Jouf University. In total, there were three reviewers. A survey form was created to collect their assessments regarding the clarity of each item's formulation and its pertinence to the respective axis. They were solicited for feedback concerning additions, removals, or adjustments. In response to their criticism, certain item texts were modified, while others were eliminated. The definitive version of the tool was subsequently finalized. The survey ultimately included 33 practices.

After confirming the apparent validity, the researcher applied the tool in the field to a random sample of 10 female teachers from the study community. This was done to assess the internal consistency of the research tool. Pearson correlation coefficients were computed from the survey data to assess the internal validity of the observation card. These coefficients quantified the correlation between each item's score and the overall grade for the axis, along with the interrelations among several axes. The reliability of the observation card was evaluated using Cronbach's alpha coefficient, as illustrated in Table 3.

Table 3 indicates that the overall stability coefficient for the scale reached 0.966, which signifies high stability. The individual stability coefficients for the three dimensions-Cognitive Practices, Skill Practices, and Emotional Practices 0.945, 0.940, and 0.866, respectively. The stability values indicate that the scale's dimensions demonstrate robust consistency.

Table 4 demonstrates that the correlation coefficients of the three component axes of the scale were statistically significant regarding the overall grade of the scale at a significance level of 0.01 or lower. The correlation value for the first axis (cognitive practices) was 0.886, but the second axis exhibited a correlation coefficient of 0.968 with the total scale score. The correlation coefficient of the third axis with the overall grade score was 0.850. All these coefficients indicate a substantial degree of validity for the measure.

Table 5 demonstrates that the correlation coefficients for each item across all axes were statistically significant at significance levels of (0.01) or lower and (0.05) or lower. These coefficients indicate a substantial degree of reliability for the scale.

Table 3. Cronbach's alpha coefficient to measure the reliability of the research tool

Observation Card Axes	Number of Items	Axis Stability (Cronbach's Alpha Coefficient)
Cognitive Practices	11	0.945
Skill Practices	14	0.940
Emotional Practices	8	0.866
General Stability	33	0.966

Table 4. Pearson correlation coefficients for the dimensions of the observation card with the overall grade of the observation card

Axis	Axis-Overall Grade Correlation Coefficient
First Axis: Cognitive Practices	**0.886
Second Axis: Skill Practices	**0.968
Third Axis: Emotional Practices	**0.850

** is observed at the significance level 0.01 *D is observed at the significance level 0.05 or less

Table 5. Pearson correlation coefficients for each axis with the overall grade of the axis

Item Number on the First Axis	Correlation Coefficient	Item Number on the Second Axis	Correlation coefficient	Item Number on the Third Axis	Correlation Coefficient
1	*0.673	12	**0.789	26	**0.852
2	**0.878	13	*0.669	27	**0.649
3	**0.943	14	**0.859	28	**0.944
4	*0.764	15	**0.967	29	*0.654
5	*0.668	16	**0.884	30	**0.878
6	**0.885	17	**0.689	31	*0.681
7	*0.763	18	*0.655	32	**0.885
8	**0.987	19	*0.653	33	**0.864
9	*0.873	20	**0.807	-	-

10	*0.705	21	*0.723	-	-
11	**0.803	22	**0.859	-	-
-	-	23	**0.817	-	-
-	-	24	**0.648	-	-
-	-	25	**0.908	-	-

** is observed at the significance level of 0.01 * is observed at the significance level of 0.05 or less.

4. DATA ANALYSIS

"T" test and analysis of one-way variation; to reveal the statistical significance of differences in the practice of early childhood teachers of their roles in promoting environmental awareness among children, which may be attributed to variables of scientific qualification, number of years of experience, and number of teaching courses.

5. ETHICAL CONSIDERATIONS

To uphold ethical standards, the educators involved in this research were provided with informed consent forms for perusal and signature before the study's conclusion. The educators were informed of the research objectives and the responsibilities to be executed. They were notified that they might resign from the research at any time without justifying. The privacy of the teachers was adequately safeguarded and regarded with gravity throughout the research. Confidentiality of participants was protected during data collection by forbidding the revelation of names or personal information and by collecting only relevant details. The participants were entitled to detailed information concerning the objectives, methodology, and outcomes of the research. The subsequent feedback, study implications, and findings gave the participants insight into the obtained data. It also allowed them to confirm that the data truly reflected their authentic thoughts, ideas, expertise, and opinions.

6. RESULTS

To identify the reality of early childhood teachers' practice of their roles in spreading environmental awareness among children, the overall mean score obtained by the sample members for the responses recorded on the study tool was calculated, and the results were shown in Table 6. The preceding table illustrates the actual practice of early childhood teachers in promoting environmental awareness, with an overall mean of (3.77), signifying an average degree of engagement in their roles related to this initiative.

To ascertain the distribution of early childhood teachers' practices in promoting environmental awareness among the sample, means of scores, frequencies, and percentages were employed for the recorded data on the study instrument, with results presented in the following table.

Table 7 illustrates the distribution of the actual levels of early childhood teachers' practices in promoting environmental awareness among the study sample members as follows: (22.0%) of early childhood educators had a poor degree of engagement in promoting environmental awareness, whilst (17.0%) of childhood educators demonstrated a similar deficiency in their roles with environmental advocacy. Early childhood educators had a moderate level of engagement in promoting environmental awareness, whereas (61.0%) demonstrated a high level of involvement in this endeavor.

The preceding table indicates that no statistically significant variations exist at the 0.05 significance level among the categories of years of experience of the sample participants. A post-hoc comparison test was performed to confirm the absence of statistically significant differences, with findings presented in Table 8.

Table 9 shows that the highest mean score obtained by the sample members was in the age group from 11 to 15 years (4.96), followed by the mean score obtained by the sample members in the age group from 6 to 10 years (4.81), followed by the mean score obtained by the sample members in the category Age more than 15 years (4.53), followed by the mean score obtained by sample members in the age group from 1 to 5 years (3.54). Table 10 also shows that there are no statistically significant differences at the significance level (0.05) between the categories of years of experience from 1 to 5 years, from 6 years to 10 years, from 11 years to 15 years, and more than 15 years.

Table 10 shows that there are statistically significant differences at the level of significance (0.00) between the categories of academic qualifications of the sample members. To determine in favor of which category of academic qualifications the average was higher, a post hoc comparison test (Post-Hoc) was conducted and the results were as shown in Table 11.

Table 12 indicates a statistically significant difference between the group comprising sample members comprising individuals with master's degrees and a set of sample members holding non-educational bachelor's degrees. The disparity between the two means was 2.84, with a significance level of 0.00, favoring individuals with master's degrees. The table indicates a statistically significant difference between sample members with educational bachelor's degrees and those with non-educational bachelor's degrees. The disparity between the two averages was 2.92, with a significance level of 0.00, favoring individuals with educational bachelor's degrees.

Table 13 demonstrates statistically significant differences between the means of the sample group with qualifications in kindergarten specialization and those with qualifications in other specializations. The difference between the means was (2.59) and was statistically significant at the (0.00) significance level, favoring individuals with academic qualifications in kindergarten.

Table 14 shows that there are statistically significant differences at the level of significance (0.00) between the categories of the number of training courses in the field of teaching for the sample members.

To determine in favor of any category of the number of training courses in the field of teaching, a post-hoc comparison test was conducted and it came out. The results are as shown Table 14.

Table 14 indicates a statistically significant difference between the group including participants who completed five or more training courses and the group consisting of participants who did not undertake any training courses. The difference between the two means was (2.89), with a significance level of (0.00), favoring the group that included

people. Women who have completed five or more training courses. The preceding table indicates a statistically significant difference between the group comprising sample members who had completed less than 5 courses and the group consisting of sample members who had not undertaken any training courses. The difference between the two averages was (0.69), with a significance level of (2.41), favoring the group consisting of women who had completed fewer than 5 courses; The previous table also shows that there were no statistically significant differences between the group that included the sample members who had taken 5 or more training courses and the group that included the sample members who had taken less than 5 courses.

Table 6. The reality of early childhood teachers' practice of their roles in spreading environmental awareness

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
AllSec	41	1.00	5.00	3.7524	1.54397
Valid N (listwise)	41				

Table 7. The distribution of the levels of early childhood teachers' practice of their roles in spreading environmental awareness

AllSec					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1.00	9	22.0	22.0	22.0
	3.23	1	2.4	2.4	24.4
	3.31	1	2.4	2.4	26.8
	3.76	1	2.4	2.4	29.3
	3.80	1	2.4	2.4	31.7
	3.82	1	2.4	2.4	34.1
	3.86	1	2.4	2.4	36.6
	3.94	1	2.4	2.4	39.0
	4.39	1	2.4	2.4	41.5
	4.42	1	2.4	2.4	43.9
	4.43	1	2.4	2.4	46.3
	4.58	1	2.4	2.4	48.8
	4.60	1	2.4	2.4	51.2
	4.61	1	2.4	2.4	53.7
	4.61	1	2.4	2.4	56.1
	4.62	1	2.4	2.4	58.5
	4.63	1	2.4	2.4	61.0
	4.67	1	2.4	2.4	63.4
	4.71	1	2.4	2.4	65.9
	4.72	1	2.4	2.4	68.3
	4.75	1	2.4	2.4	70.7
	4.79	1	2.4	2.4	73.2
	4.80	1	2.4	2.4	75.6
	4.92	1	2.4	2.4	78.0
	4.94	2	4.9	4.9	82.9
	5.00	7	17.1	17.1	100.0
	Total	41	100.0	100.0	

Table 8. The categories of years of experience of the sample members based on Anova test

ANOVA					
AllSec					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.458	3	2.819	1.200	.323

Within Groups	86.896	37	2.349	
Total	95.354	40		

Table 9. The categories of years of experience of the sample members based on a post-hoc comparison

Descriptives								
All Sec	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1-5 years	34	3.5493	1.61531	.27702	2.9857	4.1129	1.00	5.00
6-10 years	2	4.8141	.26287	.18588	2.4523	7.1759	4.63	5.00
11-15 years	2	4.9697	.04285	.03030	4.5847	5.3547	4.94	5.00
More then 15 years	3	4.5350	.60042	.34665	3.0435	6.0265	3.86	5.00
Total	41	3.7524	1.54397	.24113	3.2651	4.2398	1.00	5.00

Multiple Comparisons						
Dependent Variable: AllSec						
LSD						
(I) Years of Experience	(J)Years of Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1-5 years	6-10 years	1.26482	1.11506	.264	3.5241	.9945
	11-15 years	1.42039	1.11506	.211	3.6797	.8389
	More than 15 years	.98569	.92300	.292	2.8559	.8845
6-10 years	1-5 years	1.26482	1.11506	.264	.9945	3.5241
	11-15 years	.15557	1.53250	.920	3.2607	2.9496
	More than 15 years	.27913	1.39897	.843	2.5555	3.1137
11-15 years	1-5 years	1.42039	1.11506	.211	.8389	3.6797
	6-10 years	.15557	1.53250	.920	2.9496	3.2607
	More than 15 years	.43470	1.39897	.758	2.3999	3.2693
More than 15 years	1-5 years	.98569	.92300	.292	.8845	2.8559
	6-10 years	.27913	1.39897	.843	3.1137	2.5555
	11-15 years	.43470	1.39897	.758	3.2693	2.3999

Table 10. The level of significance between the categories of academic qualifications of the sample members based on Anova test

ANOVA					
AllSec					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	68.170	2	34.085	47.646	.000
Within Groups	27.185	38	.715		
Total	95.354	40			

Table 11. The level of significance between the categories of academic qualifications of the sample members based post-hoc comparison test

Descriptives								
AllSec								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Non-educational bachelor's degree	11	1.6234	1.41027	.42521	.6759	2.5708	1.00	5.00
Educational bachelor's degree	25	4.5464	.47254	.09451	4.3513	4.7414	3.23	5.00
Master	5	4.4666	.69584	.31119	3.6026	5.3306	3.31	5.00
Total	41	3.7524	1.54397	.24113	3.2651	4.2398	1.00	5.00

Multiple Comparisons						
Dependent Variable: AllSec						
LSD						
(I) EducationalLevel	(J) EducationalLevel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Non-educational bachelor's degree	Educational bachelor's degree	2.92299*	.30602	.000	3.5425	2.3035
	Master	2.84318*	.45619	.000	3.7667	1.9197
Educational bachelor's degree	Non-educational bachelor's degree	2.92299*	.30602	.000	2.3035	3.5425
	Master	.07981	.41436	.848	.7590	.9186
Master	Non-educational bachelor's degree	2.84318*	.45619	.000	1.9197	3.7667
	Educational bachelor's degree	.07981	.41436	.848	.9186	.7590

Table 12. The group of sample members who hold qualifications in the kindergarten specialty and the group who hold qualifications in other specializations

Group Statistics					
	Specilization	N	Mean	Std. Deviation	Std. Error Mean
AllSec	qualifications in other specializations	13	1.9781	1.57750	.43752
	kindergarten	28	4.5762	.45386	.08577

Table 13. The level of significance between the categories of the number of training courses in the field of teaching for the sample members based on Anova test

ANOVA					
AllSec					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	64.759	2	32.380	40.216	.000
Within Groups	30.595	38	.805		
Total	95.354	40			

Table 14. The level of significance between the categories of the number of training courses in the field of teaching for the sample members based on a post-hoc comparison test

Descriptives								
AllSec								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Non-courses	11	1.6925	1.54318	.46528	.6558	2.7293	1.00	5.00
less than 5 courses	5	4.1053	.73164	.32720	3.1969	5.0138	3.23	5.00
5 or more training courses	25	4.5882	.43970	.08794	4.4067	4.7697	3.31	5.00
Total	41	3.7524	1.54397	.24113	3.2651	4.2398	1.00	5.00

Multiple Comparisons						
Dependent Variable: AllSec						
LSD						
					95% Confidence Interval	
(I) Number of Training Courses	(J) Number Of Training Courses	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Non-courses	Less than 5 courses	2.41276*	.48396	.000	3.3925	1.4330
	5 or more training courses	2.89564*	.32465	.000	3.5529	2.2384
Less than 5 courses	Non-courses	2.41276*	.48396	.000	1.4330	3.3925
	5 or more training courses	.48288	.43958	.279	1.3728	.4070
5 or more training courses	Non-courses	2.89564*	.32465	.000	2.2384	3.5529
	Less than 5 courses	.48288	.43958	.279	.4070	1.3728

* is observed at the significance level of 0.05 level.

7. DISCUSSION

This research has made an effort to delve into the idea that early childhood teachers have done their part to raise kids' environmental consciousness. The results show that 61 percent of the early childhood educators surveyed had extensive experience in carrying out their responsibilities to raise students' environmental consciousness. Bou-Hamama and Al-Qattan [13] found that kindergarten instructors primarily use high-level environmental education approaches, which is in line with these findings.

Teachers are unable to include environmental issues in their lessons due to a lack of subject matter expertise [18]. In their interviews, preschool instructors shared that the amount and quality of environmental education were impacted by their lack of enthusiasm and understanding of the subject [19]. According to Nyberg et al. [11], environmental education and the environment are subjects that instructors in France and Sweden tend to view in a good light. Environmentally conscious nations like Finland, Sweden, and Iceland do not place a strong emphasis on sustainability and environmental issues in their teacher education programs, according to Seikkula-Leino et al. [20].

Environmental degradation in Kosovo may worsen, according to Zeqir et al. [10], if environmental protection and law are lacking and public awareness is also low. The findings have significant policy implications for the Saudi Ministry of Education, which is responsible for determining what subjects and ideas related to the environment should be taught in kindergarten. Because the next generation will be more

environmentally conscious if today's educators are well-versed in the subject and able to impart this knowledge to their students.

Despite this, the opinions of Saudi Arabian educators have not been taken into consideration in the country's continuing efforts to reform its educational system. According to Alanazi [16] and other Saudi scholars, educators in the kingdom generally did not see themselves as collaborators in this endeavor, and they certainly did not behave accordingly. Nevertheless, according to the current research, the Saudi Arabian education system has been the most actively targeted by Vision 2030's efforts to diversify the country's revenue streams away from oil. Hundreds of summer programs have been developed by the kingdom to help teachers become more competent. In addition, environmental education is a top priority in Saudi Arabia, beginning in the early grades. Hence, environmental progress is contingent upon pedagogical shifts and societal paradigm shifts; the relationship between humans and their natural surroundings is fundamental to their fate.

Alanazi [21] asserts that additional efforts are required to modify, create, and formulate new educational policies that are appropriate and pertinent to contemporary Saudi society. Notwithstanding the participants' differing degrees of experience in environmental education, the present study revealed no major discrepancies in strategies for promoting environmental awareness.

Salama [12] found no statistically significant differences in the degree to which kindergarten teachers appreciated their role in spreading environmental awareness among pre-school children, regardless of their years of experience. These findings appear to be comparable with those of Salama. Studies by Al-Fursan et al. [6] and Bou-Hamama and Al-Qattan [13] found that participants' varying levels of environmental awareness-raising experience led to different practices, which contradicts our finding.

The present study found that academic qualification was a significant determinant of environmental awareness-raising practices. Consistent with these results are those of Al-Fursan et al. [6] and Bou-Hamama and Al-Qattan [13], who found that educational participants' varying levels of qualification led to variations in environmental awareness-raising strategies. On the other hand, different fields of study can lead teachers to have different perspectives on environmental issues.

Kara and Çelikler [22] discovered that compared to prospective teachers of primary and social sciences, those of science had far more developed attitudes towards solid waste recycling. This means that future science educators were far more open to incorporating environmental themes into their lessons than their primary and social studies counterparts. The current study argues that science educators in Saudi Arabia have a significant role to play in raising students' environmental consciousness. The importance of environmental topics in science education stems from the fact that scientific study is intrinsically linked to environmental protection. In the context of scientific education, both instructors and students play important but separate responsibilities. Alanazi [16] argued that educators should consider students' cultural knowledge as a perspective that shapes their understanding of the environment.

According to Türkoğlu [19], environmental education ought to begin in preschool and persist throughout school. However, before we can begin to educate children about the environment, we must ensure that educators are adequately trained and equipped to do so, as teachers have a significant impact on shaping students' perspectives on the subject [23, 19]. This study's authors observed a statistically significant difference between two groups: one consisting of participants who had completed five or more training courses, and the other consisting of participants who had not. In their study [6], Al-Fursan et al. discovered that schools can do their part to promote environmental protection by providing principals and teachers with resources (both human and material) and by hosting workshops and courses that raise awareness about environmental issues and renewable energy.

Gerde et al. [24] assert that when educators exhibit a deficiency in confidence with a subject, they frequently avoid it and minimally integrate it into their lesson plans. Educators need to possess an awareness of Environmental to possess environmental consciousness, as their actions and thoughts exert considerable influence on the children they educate. Türkoğlu [19] asserts that university attendance is essential for pre-service teachers, as it is the venue where they obtain the requisite knowledge and skills to instruct preschoolers on environmental issues and cultivate environmental awareness in their children. Also, after receiving in-service environmental education, Kerr [25] found that teachers' attitudes toward environmental issues and the incorporation of environmental education into their lessons changed significantly. Pedagogical information to assist teachers in teaching environmental ideas should be a part of kindergarten teacher training courses that contribute to promoting environmental consciousness [13].

According to research by Kotaman et al. [23], three main takeaways from in-service environmental education were higher levels of environmental awareness, more personal responsibility and action, and more motivation and preparedness for environmental education. Two major obstacles to environmental education, according to Anderson and Jacobson [18], are a dearth of pedagogical understanding and formal training in the field [24, 25]. Over half of Turkish educators said they lacked the knowledge to include environmental education into their lessons, and nearly all of those educators (95 percent) called for sustainability and environmental education in-service training, according to a recent study by Pamuk et al. [26].

The current findings have very important implications for the Ministry of Saudi Education and Science textbook writers, for example, Preparing a strategic plan to integrate environmental education into the general education system, which includes objectives, programs, activities, and implementation mechanisms, while considering the abilities, inclinations, readiness, and maturity level of the students. It should take into account the environment of the Kingdom of Saudi Arabia and the problems and challenges it faces. The plan should involve specialists in the fields of curricula and teaching methods, as well as experts and those interested in environmental issues to provide scientific advice. Additionally, this plan should be based on the educational policy in the Kingdom of Saudi Arabia and the values and culture of the community. Further, the a need to introduce environmental education courses and programs in the school curriculum for the preparation and qualification of future teachers in environmental education an adoptee a guideline to develop teachers' skills in the field of environmental education so that they can teach it and activate the related activities and Active the role of the school library and learning resources in schools by providing various learning sources, preparing research that addresses environmental issues, and discussing the

environmental challenges facing the Kingdom of Saudi Arabia. The need also to qualify teachers and training them in the field of environmental education by organizing training courses, preparing educational packages, conducting seminars and lectures, and inviting specialists for this purpose; to inform them about environmental issues and ways to overcome them, and to train them on methods to achieve the goals of environmental education. Further, the findings can be used to inform the development of new policies and programs to promote environmental awareness in early childhood education, this is important as The Kingdom of Saudi Arabia pays great attention to instilling environmental education practices in children in the early stages of childhood, as indicated in the first national voluntary review of Vision 2030, which came under the title "Towards Sustainable Development for the Kingdom of Saudi Arabia," where His Royal Highness Prince Mohammed bin Salman indicated in his speech the following: "In order to preserve the special and unique environmental character of the region, laws and mechanisms will be put in place for environmental sustainability, where work will be done to preserve natural resources in accordance with the best practices and standards applied globally." the findings can be used to inform the development of new policies and programs to promote environmental awareness in early childhood education for example, implicitly introducing environmental sustainability into all educational units without separating practical experiences and ensuring tree planting campaigns through kindergarten participation and obtaining educational opportunities in the middle of nature and not being restricted to classrooms.

8. CONCLUSION

In light of the results obtained from the current study, the researcher recommends to incorporating environmental education concepts into early childhood curricula in the Kingdom of Saudi Arabia in an appropriate manner, which could facilitate environmental awareness practices in the kindergarten stage. The need also to foucs on the local environmental issues faced by certain regions of the Kingdom of Saudi Arabia in the school curricula and preparing the educational environment in a way that allows for diversity in the use of supportive practices to increase environmental awareness among children, which facilitates collaboration among teachers in the kindergarten stage to implement supportive practices aimed at enhancing environmental awareness in preschool children. The current study suggests conducting the further research in linked to the effect of a proposed program on developing the skills of kindergarten teachers in raising environmental awareness and study the reality of early childhood teachers' practice of their roles in spreading environmental awareness in Saudi Arabia in other stages priamry , Intermediate and secondary and the extent to which environmental concepts are included in the content of science textbooks of the all stage schools in Saudi Arabia. However, Limitations to this study due to the influence of the Saudi culture, the Ministry of Saudi Education is divided into two separately administrated systems in terms of gender: general education for male teachers and female teachers. Hence, it was not only very difficult to find Saudi studies that looked at gender differences with regard to the conceptions covered in the present study, but also in many educational issues that both females and males are required to study. For this reason, all the participants in this study were female. Hence, it was outside the scope of this study to look at gender in particular. The study did not include gender as a variable since all those teaching kindergarten are female teachers, according to the regulations of the Saudi Ministry of Education.

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