

# Protecting the environment and rationalizing energy sources for future generations

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## Key Words :

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**ABSTRACT :** The research aims at revealing the current state of the environment and energy sources for early childhood and how the child contributes to rationalization for future generations in Saudi Arabia. The research used the descriptive approach on a sample of mothers of children and kindergarten teachers. A randomized stratified sample of the study population (669) was selected as follows: Mothers: 83, Kindergarten Teachers: 586. This sample was distributed to the diverse regions of the Kingdom to be representative of the original community of the study. The questionnaire was used as a tool to identify the views of the sample of the study. The tool was presented to a number of arbitrators to get rid of some of the paragraphs that are not related to the subject and were rephrased in their final form to be composed of 30 words divided into three axes with a reality of 10 per axis. The results of the study showed that there is a great consensus of more than 80 per cent among the respondents about the terms of the questionnaire, which is considered an important result of the study or the study revealed the existence of some activities and activities that aim to awareness of the child and his participation in energy conservation and protection of the environment, On the one hand, the child needs regular environmental education and not just activities and activities.

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Since the dawn of history and the relationship of man to his environment turn into a stronger role for the human race, after the man was afraid of his environment and escape everything he did not know, then turned to the stage of making the most of the resources available around him, and then after digging for resources Deep in the depths of the earth. In continuation of this growing role, it is incumbent upon man not only to exploit today's energy sources but to preserve them for the benefit of future generations. And children can do a lot in protecting the environment and rationalizing energy consumption if we encourage them

and trust in their abilities to understand the hope of today and the future generation.

## Research problem:

Although Saudi Arabia has the largest proven reserves of oil, a quarter of the world's reserves and fifth in terms of natural gas reserves, it faces many challenges, the most important of which is the rise in domestic demand for energy to high levels to become the Kingdom in sixth place for the largest oil consumers in the world. In view of the nature of non-renewable and renewable oil and gas resources, it is imperative that these resources be exploited optimally for the sake of

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development, which necessitates the pursuit of raising the child in its early stages to rationalize the consumption of energy in general and petroleum or the result of petroleum such as electricity, especially in terms of protecting the environment and preserving the rights of future generations.

The annual growth rate of energy consumption in the Kingdom exceeded 5 per cent, the economic growth rate was 4 per cent and the total energy consumption (refined products, crude oil and natural gas) reached about 3.8 million barrels of oil equivalent per day. The world's largest energy sector, and power consumption is concentrated in the electricity and desalination sector, 52 per cent, the transportation sector 21 per cent and the industrial sector 15 per cent (Al-Youm, 2014). According to the Central Intelligence Agency (2017) 3 million barrels of refined oil for 2016. According to the World Bank: CO<sub>2</sub> emissions Carbon monoxide in Saudi Arabia has escalated dramatically from 200,000 kt for 1990 to nearly 500,000 kt for the year 2010 (World Bank, 2015). Hence, the link between the irrational use of energy that is the right of future generations and the weakness The ability to protect the environment, so the main problem of research can be formulated in the following question: How can the formation of the child in its early stages to protect the environment and rationalize energy sources for future generations? - What forms of environmental pollution and ways to protect it for future generations? What is the role of the child in its early stages in rationalizing energy sources and protecting the environment?

#### **Research objectives :**

This research aims to:

- Disclosure of the current state of the environment and sources of energy and means of protection.
- Identifying the child's role in protecting the environment and rationalizing energy in Saudi Arabia.

### EXPERIMENTAL METHODOLOGY

The research follows the analytical descriptive approach, which is based on data collection, classification, analysis and linking of its meanings, in order to interpret them and reach general conclusions and recommendations.

#### **The importance of the study:**

The importance of the study lies in the importance

of the study on the seriousness of the phenomenon of climate change and the emergence of problems that have worried the world because of the pollution caused by excessive consumption of excessive and irrational energy, and thus, rationalization is the easiest way available for children to participate in the protection of the environment.

#### **Search terms:**

The living organism needs certain conditions for its life and continuity, and wherever such conditions are available, it is the environment of this organism. The United Nations Conference on the Human Environment, held in Stockholm in 1972, recognized the generosity as "the balance of material and social resources available at some time, and somewhere to meet the needs and aspirations of man" and the environment: the framework in which man lives and receives the elements of his life from food clothing and shelter and in which he maintains relations with his peers (Jamal Aweys, 2000).

#### **There are many studies that dealt with the issue of the environment and the interaction of children and affected by them, including:**

(Metorie's Study, 2015) The study aimed to identify the role of socialization institutions in the development of the values of environmental education as the issues of the environment and its problems of issues that have imposed itself at all levels, due to the emergence of problems that threaten the lives of humans and other living organisms has turned attention to Education, education and environmental education. Institutions of socialization are the best environments that work to provide the individual with the values of environmental education. The pre-school stage plays an important role in the development of environmental awareness as it attempts to provide children with the right habits, attitudes and values that protect, preserve and maintain the environment. In this context, the role of the school and its components in the development of environmental education values were raised by asking how to contribute. The school is engaged in the development of the values of environmental education. This research differs in its focus on early childhood and attention to the role of the child in its early stages in protecting its environment.

The study of Maoushi (2014) concerned the study of energy of various types, where it plays a leading role both in the present and the future, which made it a large material consumption, but the correlation of a large part

of this energy with the factor of scarcity made it imperative to develop steadily to exploit, Most countries - especially developing ones - are linked to a development process that is now linked to sustainability. Through this study, the relationship between sustainable development and the process of rationalizing energy consumption and its impact on future generations has been addressed. The study used the questionnaire as a tool for collecting data. The results of the study confirm the emergence or support of many changes in the methods of production, distribution and consumption of energy, or advocated public participation and did not exclude early childhood, she said, so that energy becomes a means to support sustainable development. All levels are better focused on how to connect and rationalize energy services rather than simply seek to increase energy supply.

Mathieu-Nolf (1990) the study aimed to identify the harmful or toxic carbon dioxide of children in France and the study considers that the risk of this compound on the child and the environment comes from being with toxicity, colourless, odorless and being a nuisance and The study applied a questionnaire on a diverse sample of physicists, doctors, educators, workers and civil protection personnel to identify their views on co-operation to protect the environment against the damage of these gases. The study concluded that the adverse effects of exposure to carbon monoxide can be reduced using anti - Prevention by raising children on skills Live sound and raise awareness of these materials and how to protect ourselves and our environment from them.

The study focused on the issue of air pollution and its impact on children and improvement of respiratory symptoms in children as a result of pollution control strategies in the province of Sao Paulo, Brazil. The study deals with the problem of pollution and the study found that children were more vulnerable to the effects of pollution because they are more sensitive than adults are. The study was based on the questionnaire. 150 questionnaires were distributed focusing on children, pollution and factors affecting health and To Several outcomes have been identified, most importantly, positive impact on breathing in children as a result of pollution control strategies.

### **Theoretical framework:**

The nature of the environment and its components  
 “The environment is the total of things that surround

us and affect the existence of living organisms on the surface of the earth including water, air, soil, minerals, climate and organisms themselves and can be described as a set of systems intertwined with each other to the extent of complexity and affect and determine our survival in this small world, “Ecology has transcended the traditional boundaries between natural, human and applied sciences with its traditional branches. In the interest of early childhood, we can not lose sight of the elements of the environment in which the child lives. The components of the environment can be divided into two parts Iisien: (Ahmad, 2003b).

**Natural environment:** What surrounds man from phenomena that has no impact in its existence such as: terrain, climate, water, plants and animals.

**The human environment:** What is human or grandfather within the natural environment. It is diverse and is divided into:

**The social environment:** a set of laws and regulations governing the internal relations of individuals as well as political and social institutions and bodies. The cultural environment: The child’s cultural environment is determined by a set of variables such as: (Ahmad, 2003).

**The level of parents’ culture.** - The availability of kindergartens in the environment in which the child lives.

**Ideas, knowledge and information for man** - The availability of non-formal education programmes in the environment in which the child lives.

As Kellert (2005) argues, the child’s relationship to the environment, with all its social, psychological, educational and physical components, has positive effects on the child in his early stages if he is interacting daily with his environment. This means developing the child in all the main areas: mentally, emotionally and socially. Spiritually and physically.

### **Energy and environmental pollution:**

The environment is the framework in which the child exercises his life, the material elements that derive from him the requirements of his life and the group of factors that affect his physiological and social development, but this environment is increasingly exposed to a wave of pollution due mostly to energy misuse, air pollution is a serious problem to be treated in because it causes children breathing problems and lung disease. In early childhood, the child is exposed to pollution every day due to the misuse of energy and these pollutants:

Chemical pollutants, pesticides and gases from fire, cars, factories, volcanoes, petroleum and its derivatives, which affect the health of the child strongly in terms of the air inhaled and the water that he drinks and the food he eats (Saudi Arabia, 2007).

Physical pollutants include noise, thermal pollution, radiation of all kinds, nuclear reactors and nuclear explosion experiments. Noise affects the child psychologically and psychologically. Radiology affects the genetic characteristics. "Lead affects the child especially, causes mental retardation and large head size" And Al-Hamad (1994). As the population of the Kingdom continues to increase, the demand for energy sources increases, the problem of pollution increases and the risks for children increase.

### **Child awareness and role in energy conservation and environmental protection :**

Child awareness is the starting point for energy conservation, protection of the environment, care for children's awareness and culture, as well as community-based institutions. Today, children need to take care of their own culture and consciousness. "The cultivation of starch and its recognition that it is not excessive and rational to use what is available is educational in itself" (Maoushi, 2014). Principle 10 of the Renault Declaration states that "environmental issues are best dealt with by all citizens" (United Nations, 1972).

"Involving children in these campaigns and programmes raises children's awareness by 40 per cent for those who are seven years old compared with others who have not participated in awareness campaigns," said specialists in awareness campaigns and awareness programs on energy conservation.

The Kingdom has been active in the efforts of the National Energy Efficiency Program, which is being prepared by the Saudi Energy Efficiency Center at King Abdulaziz City for Science and Technology. The campaigners believe in the importance of direct communication with the public, especially the children. (Al-Youm newspaper, 2015). As a result of understanding the role of the child, the Ministry of Water and Electricity recently issued a number of pamphlets, brochures, posters and leaflets to introduce the national campaign to rationalize electricity consumption and its goals and programmes (Al-Riyadh, 2008).

The environmental awareness of children should be

raised to avoid the dangers of ignorance of the importance of protecting the environment and addressing pollution by introducing environmental protection into education programmes, starting with kindergartens and thereby helping children to conserve energy. "Kindergartens play an important role in raising children These institutions have been in America since 1922 and are, of course, run by NGOs and have received government expenditure only from the beginning of 1967 "(Couchenour and Chrisman, 2016)." Environmental awareness should be nurtured through the family. "When a person grows up in a family that learns its habit "(Jabal, 2000).

### **Child participation in energy conservation measures:**

It is important for the child to participate in all matters related to his environment, to be explained to him in a manner appropriate to his age so that he can form his view on these things and express them appropriately. When the child has opportunities to participate in his or her family's organizational or social matters or challenges, they develop social skills and self-confidence. "The Convention on the Rights of the Child envisages a new eye for the child as an individual or not and then as a member of the family and then society where: the family is promoted and defended in the child's life (Manna, 2006).

"The extent to which children's rights to access or participate in environmental matters is still unclear" (UNICEF, 2014). Children also lack access to timely and effective remedies when severely affected by the environment. Their participation in energy conservation and environmental protection is essential. "A society that loves its children gives them a suitable environment and provides them with the conditions and reasons that allow them to develop their abilities and talents to the maximum extent that prepares them to live a decent life" (Al-Zoghair, 2003).

Article 14 of the convention on the rights of the child states that all States Parties shall ensure that a child capable of forming his or her own views has the right to express such views (1989). The child's participation in the protection of his or her environment must come within a social framework where social aspects are in fact the human and human dimension of the environment. The treatment of the child is one of the human elements Almk As an individual who lives in a family and a human being

that affects his / her biological, social and cultural development (Abdelkader, 2010).

This is from the rights side, but from the educational and psychological side, it is necessary to take into account the developmental stages of the child characteristics and requirements. For early Childhood Erikson (1993) states that “the sense of initiation versus guilt is the most important developmental stage according to this age.” Thus, the participation of the child to protect his environment and energy conservation for future generations comes from the desire to start from the child himself needs to support the family and community.

**Environmental education for children:**

Having exhausted a great deal of environmental resources and wasted a great deal of energy, it is now required to deal with it gently to be able to continue to give, thus providing a healthy life for the present and for future generations. Environmental education has become the focus of many bodies under pressure on the environment and pollution, which has affected human health, especially children. We need more environmental education. “Most children who lack access to environmental education can not learn the basic facts about environmental risks. In their communities and therefore, can not make conscious decisions or make choices about the air they breathe or the food they eat”. (UNICEF, 2014) and environmental education is a systematic education and education for the knowledge of the environment. “Children should be made aware of their role in protecting the environment so that they do not fall prey to mental and physical illnesses resulting

from pollution. Children make up 50 per cent of the world’s population, and their health concerns are increased by environmental pollution.” (2004) (1991) states that “approximately 1.7 billion children worldwide are at risk of environmental pollution, including 1.4 billion children in third world countries, where pollution causes the death of approximately 14 million people worldwide. Million children annually and the injury of 3 million others with serious disabilities “Every child has the right to grow up in a healthy home, a clean school and a clean environment” because development is linked to good health, so environmental risks must be minimized to ensure a proper future. For our children “(Al-Faouri, 2007).

**EXPERIMENTAL FINDINGS AND DISCUSSION**

The findings of the present study as well as relevant discussion have been presented under following heads :

**Results of the field study and its interpretation:**

*Steps of the field study:*

The current study relied on the questionnaire as a main tool, as it is more suitable for the nature of the study and its methodology, In addition, allows more accurate collection of information and data. The steps of the field study went according to the following:

**Formulation of the questionnaire in its initial form:**

The initial picture of the questionnaire was formulated in light of the theoretical framework of the present study and some previous studies, taking into consideration the nature of early childhood and its

**Table 1: Distribution of selected from the regions of the Kingdom**

N	Area	City	Number of sample members		Total
			Kindergarten members	Mothers	
5	Riyadh	Riyadh	145	22	167
		Magmah	70	6	56
		Dawadmi	54	2	37
6	Qaseem	Buraidah	32	5	37
		Eneiza	44	4	48
		Arras	17	6	23
7	Mecca	Mecca	91	9	100
		Jeddah	110	23	133
		Allaith	23	6	29
Total number of sample members			586	83	669

interaction in rationalizing energy consumption to protect the environment. The identification axes were identified.

In light of the theoretical study axes as follows:

- The first axis (the child's awareness of the environment and energy sources).

- The second axis (Child participation to protect the environment and rationalize the use of energy).

- The third axis (environmental education for the child to protect the environment for future generations).

In light of the above, the terms of the questionnaire were formulated according to these axes and it was noted that the responses of the sample members of the study sample in the form of a tripartite scale are achieved to a large extent - to a medium degree.

After the supervising professors did their best to amend the questionnaire, it was presented to some of the Messengers to review their opinions on the following: (The affiliation of the phrases to each axis - and the appropriate wording of the phrases - and what should be deleted or added or modified from the statements) Expressions of the axes and the modification of the wording of some statements and emphasizing that the phrases are not compounded and delete the words that do not belong to the study axes.

#### **Formulation of the questionnaire in its final form:**

After the terms of the questionnaire were amended in light of the comments of the arbitrators, then the questionnaire was presented again to the supervising professors and some of its terms were also amended based on their proposals and reached its final form.

#### **Application of the questionnaire:**

Validated the questionnaire: to identify the extent of the ability of the questionnaire to measure what was set for measurement and the validity of the questionnaire was confirmed by the agreement of the majority of arbitrators on the validity of its terms for the purpose for which it was established.

#### **Stability of the questionnaire:**

The researcher applied the questionnaire to a sample of (30) individuals divided as follows: 27 members of kindergartens, 3 mothers. Fifteen days after the first

application was applied again, the stability co-efficient was calculated by calculating the correlation co-efficient between the results of the two applications .

This is one of the most important methods used to calculate the correlation co-efficient of Pearson from the raw grades, where the number of sample members, the degrees of the sample members in the first application,  $p$  the degrees of the sample in the second application, the sum of the total score in the two applications. The sum of the first application scores in the total application of the second application, the sum of the two squares of the first application, the sum of the squares of the second application.

The correlation co-efficient of the two applications was obtained (84.0), which is a relatively high degree of stability. It is clear from Table 1 that diversity in sample selection has been taken into consideration in some regions and 10 cities belonging to a few regions have been selected to represent the Kingdom of Saudi Arabia with their environmental and social diversity.

From the data of Table 1, it is clear that the total loss from the number of distributed questionnaires amounted to 45 per cent by 6 per cent of the number of distributed questionnaires and the number of those excluded was 36, approximately 5 per cent of the number of returnees.

#### **Statistical processing:**

After unloading the valid questionnaire data from the distributed questionnaires, the researcher processed the statistical data for the statements that followed each axis. The data obtained from the application of the questionnaire were processed using the SPSS Package to perform the statistical treatments for the results of the study. The following statistical methods were used:

- Calculating repetitive percentages to identify the distribution of responses of sample members on each of the questionnaire items.

- The total score and the percentage of total approval of the study sample were calculated to determine the percentage of the existence of the phrase in the field situation. (77%) and (57%), respectively. The sample of kindergartens was 71% and 63%, respectively.

- Chi-square  $X^2$  test to demonstrate the differences

**Table 2 : Number of distributed, lost, returned, excluded and valid questionnaires and percentage of interest**

The distributor	The lost	The benefit	The odd	The valid	The interest rate
750	45	705	36	669	89%

between the responses of kindergartens and mothers to the field reality to protect the environment and rationalize consumption in children.

**Results and interpretation of the field study: The following is the presentation of the results of the field study and its interpretation as follows:**

*Regarding the first axis: the child's awareness of the environment and energy sources:*

The Table 3 shows the following:

The phrase 1:

“Kindergartens work with local partners to link their plan to environmental protection plan”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (35.5%), (30.72%), and the total approval rate for kindergartens (36.18%), indicating the agreement of individuals in the sample (36.18%). The study of kindergartens and mothers on the weak link between the kindergarten plan and the plan to protect the surrounding environment (Table 3).

The phrase 2 :

“Information exchange between kindergartens and interested members of the community and its institutions about the environment and energy” was found: It was found that this phrase is achieved in the field reality with a weak degree. The total verification rate for the sample of the study as a whole was 49.85% (44.58%) and the total approval rate for kindergartens (50.6%), which indicates an agreement (44.5%). The study sample members of kindergartens and mothers of the lack of information between the kindergartens and the mother Htmin members of the community and its institutions on the environment and energy (Table 3).

The phrase 3 :

“Kindergartens promote environmental awareness among children”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (36.02%), which falls below the limits of confidence (26.51%) and the total approval rate for kindergartens (37.37%). This indicates the agreement of the sample members of the sample of the kindergarten teachers and mothers to double the work of kindergartens on the

dissemination of environmental awareness among children (Table 3).

The phrase 4 :

Which reads: “The university professors who specialize in the formulation of the kindergarten vision and its mission towards the environment”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (7.92%), (13.86%), and the total approval rate for kindergartens (7.08%), indicating the agreement of the sample members of the study sample of kindergartens and mothers of the scarcity of the use of university professors specialized in the formulation of the vision of kindergartens and rs Towards the environment for Tha (Table 3).

The phrase 5 :

“Kindergartens participate with parents in the development of alternatives that achieve their common objectives”: It was found that this phrase is achieved in the field reality to a high degree, where the total verification rate of the sample of the study as a whole (90.96%), (86.75%) and the total approval rate for kindergartens (91.55%), indicating the agreement of individuals in the sample (71.5%). The study of kindergarten and mother employees to achieve the participation of parents in the development of alternatives that achieve their common goals (Table 3).

The phrase 6 :

“Kindergartens determine the appropriate means for the child to rationalize energy”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (16.97%), The total approval rate for mothers was 19.28 per cent and the total approval rate for kindergartens was 16.64 per cent. This indicates that the sample members of the sample And mothers on the scarcity of identifying kindergartens for the appropriate means for the child to rationalize energy (Table 3).

The phrase 7:

The recommendations of the kindergartens link between rationalization of energy and reduction of environmental pollution.” It was found that this phrase is achieved in the field reality with a weak degree. The total

**Table 3 : Results of the first axis (the child's awareness of the environment and energy sources)**

Sr. No.	The term	Responses	Mothers		My employees Kindergarten		The value of Ca 2	Significance statistics
			No	%	No	%		
1.	Kindergartens work with local partners to link their plan to their environmental protection plan	Achieved significantly	9	10.8	145	24.7	14.54	Function at level 0.01
		Achieved to a medium degree	33	39.8	134	22.9		
		Not achieved	41	49.4	307	52.4		
		Total score	51	30.72	424	36.18		
		Total and percentage						
2.	Information exchange between kindergartens and those interested in the community and its institutions about the environment and energy	Achieved significantly	9	10.8	124	21.2	4.9	Not functional
		Achieved to a medium degree	56	67.5	345	58.9		
		Not achieved	18	21.7	117	20		
		Total score	74	44.58	593	50.6		
		Total and percentage						
3.	Kindergartens promote environmental awareness among children	Achieved significantly	6	7.2	148	25.3	16.19	Function at level 0.01
		Achieved to a medium degree	32	38.6	142	24.2		
		Not achieved	45	54.2	296	50.5		
		Total score	44	26.51	438	37.37		
		Total and percentage						
4.	University professors are involved in the formulation of the kindergarten vision and its mission towards the environment	Achieved significantly	8	9.6	12	0.2	14.5	Function at level 0.01
		Achieved to a medium degree	7	8.4	59	10.1		
		Not achieved	68	81.9	515	87.9		
		Total score	23	13.86	83	7.08		
		Total and percentage						
5.	Kindergartens share with parents the development of alternatives that achieve their common goals	Achieved significantly	68	81.9	507	86.5	4.73	Not functional
		Achieved to a medium degree	8	9.7	59	10.1		
		Not achieved	7	8.4	20	3.4		
		Total score	144	86.75	1073	91.55		
		Total and percentage						
6.	Children participate in energy conservation competitions	Achieved significantly	10	12	50	8.5	1.17	Not functional
		Achieved to a medium degree	12	14.5	95	16.2		
		Not achieved	61	73.5	441	75.3		
		Total score	32	19.28	195	16.64		
		Total and percentage						
7.	The home is shared with kindergartens in activating child participation to protect the environment	Achieved significantly	16	94	18.1	15	2.91	Not functional
		Achieved to a medium degree	61.3	359	67.5	56		
		Not achieved	22.7	133	14.4	12		
		Total score	46.67	547	51.81	86		
		Total and percentage						
8.	The child's interaction with the environment advances the child's age in kindergarten	Achieved significantly	13	15.7	87	14.8	0.206	Not functional
		Achieved to a medium degree	15	18.1	118	20.1		
		Not achieved	55	66.3	381	65.00		
		Total score	41	24.7	292	24.91		
		Total and percentage						
9.	The child shows a tendency to participate in outdoor activities	Achieved significantly	22	26.5	132	22.5	0.655	Not functional
		Achieved to a medium degree	14	16.9	106	18.1		
		Not achieved	47	56.6	348	59.4		
		Total score	58	34.94	370	31.57		
		Total and percentage						
10.	The community is involved in supporting kindergarten initiatives towards rationalizing consumption	Achieved significantly	15	18.1	85	14.5	1.57	Not functional
		Achieved to a medium degree	13	15.7	74	12.6		
		Not achieved	55	66.3	427	72.9		
		Total score	43	25.9	244	20.82		
		Total and percentage						



verification rate for the sample of the study as a whole was 47.31 per cent (51.81%) and the total approval rate for kindergartens (46.67%), indicating the agreement of the sample members of the study sample of kindergartens and mothers of kindergarten teachers to fail to link kindergarten recommendations between energy conservation and environmental pollution reduction (Table 3).

The phrase 8:

“Increasing environmental awareness of the child after spending time in kindergartens”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (24.89%), (24.7%) and the total approval rate for kindergartens (24.91%). This indicates the agreement of the sample members of the study sample from my employees Kindergartens and mothers on the double increase of the child’s environmental awareness after spending a period in kindergarten (Table 3).

The phrase 9:

“Children are aware of the most important dangers surrounding their environment”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (31.99%), which falls below the minimum confidence limits (63) (34.94%), and the total approval rate for kindergartens (31.57%). This indicates that the sample of the sample of kindergarten and mother employees agreed to Lack of awareness among children of the most important dangers surrounding their environment.

The phrase 10 :

“The children have continuous training in dealing with the right sources of energy”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (21.45%), which falls below the limits (25.9%) and the total approval rate for kindergartens (20.82%). This indicates the agreement of the sample members of the study sample Kindergartens and mothers on the lack of receiving children for continuous training to deal properly with energy sources.

It is clear that the results of the first axis in general reveal the weakness in the child’s awareness of the environment and energy sources, but mothers and kindergarten staff agreed that the development of

alternatives that achieve their common goals are high.

*With regard to the child’s participation in protecting the environment and rationalizing energy use:*

The Table 4 shows the following:

The phrase (1):

”Children participate in improving the kindergarten environment in which they are present”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate for the sample of the study as a whole (32.51%), (29.52%) and the total approval rate for kindergarten (32.94%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers on the scarcity of child participation in improving the kindergarten environment in which they are located.

The phrase (2):

Which reads: “My school uses the opinion leaders of NGOs in planning and implementation of child participation.” It was found that this phrase is achieved in the field situation with a weak degree. The total verification rate for the sample of the study as a whole is 19.88% (24.1%), and the total approval rate for kindergartens (19.28%), which indicates the agreement of individuals in the sample Study of kindergartens and mothers of kindergartens on the scarcity of the use of kindergartens in kindergartens by opinion leaders from associations Eligibility in the planning and implementation of the child’s participation.

The phrase (3):

Which reads: “Government organizations shall cooperate in the involvement of children in efforts to conserve energy” (86.4%) which is higher than the upper confidence limits (71%). In the calculation of Ka 2, the significance of the differences was found to be significant. The total approval rate for mothers was (11.75) (95.31%). This indicates the differences in the opinions of the members of the study sample from kindergarten and mother employees about the cooperation of governmental organizations in involving the child in efforts to rationalize energy.

The phrase (4):

“Children participate in environmental service

**Table 4 : Results of the second axis (participation of the child to protect the environment and rationalize the use of energy)**

Sr. No.	The term	Responses	Mothers		My employees kindergarten		The value of Ca 2	Significance statistics
			No	%	No	%		
1.	Children participate in improving their kindergarten environment	Achieved significantly	17	20.5	137	23.4	0.501	Not functional
		Achieved to a medium degree	15	18.1	112	19.1		
		Not achieved	51	61.4	337	57.5		
		Total score	49	29.52	386	32.94		
		Total and percentage						
2.	My school uses opinion leaders from NGOs to plan and implement child participation	Achieved significantly	12	14.5	75	12.8	2.89	Not functional
		Achieved to a medium degree	16	19.3	76	13.00		
		Not achieved	55	66.3	435	74.2		
		Total score	40	24.1	226	19.28		
		Total and percentage						
3.	Government organizations collaborate to involve children in energy conservation efforts	Achieved significantly	17	20.5	551	94.00	344.2	Function at level 0.01
		Achieved to a medium degree	5	6.00	15	2.6		
		Not achieved	61	73.5	20	3.4		
		Total score	39	11.75	1117	95.31		
		Total and percentage						
4.	Children participate in environmental service camps	Achieved significantly	12	14.5	476	81.2	339.9	Function at level 0.01
		Achieved to a medium degree	10	12.00	90	15.4		
		Not achieved	61	73.5	20	3.4		
		Total score	34	20.48	1042	88.91		
		Total and percentage						
5.	Children contribute to art and literature exhibitions on the environment	Achieved significantly	17	20.5	197	33.6	6.66	Not functional
		Achieved to a medium degree	10	12.00	77	13.1		
		Not achieved	56	67.5	312	53.2		
		Total score	44	26.51	401	34.22		
		Total and percentage						
6.	Children participate in energy conservation competitions	Achieved significantly	21	25.3	147	25.1	0.007	Not functional
		Achieved to a medium degree	25	30.1	175	29.9		
		Not achieved	37	44.6	264	45.1		
		Total score	67	40.36	469	40.02		
		Total and percentage						
7.	The home is shared with kindergartens in activating child participation to protect the environment	Achieved significantly	68	81.9	467	79.7	0.87	Not functional
		Achieved to a medium degree	9	10.8	84	14.3		
		Not achieved	8	10.8	35	6.00		
		Total score	145	87.35	10.18	86.86		
		Total and percentage						
8.	The child's interaction with the environment advances the child's age in kindergarten	Achieved significantly	50	60.2	411	70.1	8.32	Not functional
		Achieved to a medium degree	16	19.3	117	20.00		
		Not achieved	17	20.5	58	9.9		
		Total score	116	69.88	939	80.12		
		Total and percentage						
9.	The child shows a tendency to participate in outdoor activities	Achieved significantly	13	15.7	87	14.8	0.595	Not functional
		Achieved to a medium degree	45	54.2	343	58.5		
		Not achieved	25	30.1	156	26.6		
		Total score	71	42.77	517	44.11		
		Total and percentage						
10.	The community is involved in supporting kindergarten initiatives towards rationalizing consumption	Achieved significantly	59	71.1	449	76.6	3.14	Not functional
		Achieved to a medium degree	11	13.3	15.7	55		
		Not achieved	9.4	55	15.7	13		
		Total score	83.62	980	77.71	129		
		Total and percentage						

camps”: It was found that this phrase is achieved in the field reality to a high degree, where the percentage of verification of the whole sample of the study as a whole (74.44%), which is higher than the upper confidence limits (20.48%), and the total approval rate for kindergartens (88.91%), indicating differences in the opinions of the sample members of the sample of kindergarten and mother employees About the participation of children in environmental service camps.

The phrase (5) :

“Children contribute to art and literature exhibitions on the environment”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (38.49%), (26.51%), and the total approval rate for kindergartens (34.22%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers that children contribute to artistic and literary exhibitions about the school environment.

The phrase (6):

“Children participate in competitions on energy conservation”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (40.06%), which falls below the minimum confidence limits (40.36%), and the total approval rate for kindergartens (40.02%). This indicates that the sample members of the sample of the kindergarten and mothers’ Children participate in energy conservation competitions.

The phrase (7) :

“The house shares with kindergartens in activating the participation of the child to protect the environment”: It was found that this phrase is achieved in the field reality to a high degree, where the percentage of total verification of the sample of the study as a whole (86.92%), (87.35%) and the total approval rate for kindergartens (86.86%), indicating the agreement of the sample members of the study sample from Kindergarten and Mothers’ Employees The House participates with kindergartens in activating child participation to protect the environment.

The phrase (8) :

The child’s interaction with the environment

advances the child’s age in kindergartens.” It was found that this expression was achieved in the field reality. The overall verification rate for the sample of the study as a whole was 78.85 per cent, which is higher than (60.88%), and the percentage of total approval for kindergarten (80.12%). This indicates that there is great consensus The child’s interaction with the environment advances the child’s age in kindergarten.

The phrase (9):

“The child shows a tendency to participate in activities advertised in the open spaces”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (43.95%), (42.77%) and the total approval rate for kindergarten (44.11%). This indicates the agreement of the sample members of the study sample Of kindergartens and mothers of the child are weak in expressing the child’s tendency to participate in activities advertised in open spaces.

The phrase (10) :

“The community participates in supporting the initiatives of kindergartens towards rationalization of consumption”: It was found that this phrase is achieved in the field reality to a high degree, where the total verification rate of the sample of the study as a whole (82.88%), (77.71%), and the total approval rate for kindergartens (83.62%). This indicates the agreement of the sample members of the study sample Kindergartens and mothers that the community’s participation in supporting kindergarten initiatives towards rationalization of consumption.

The second axis, which relates to the child’s participation in environmental protection and rationalization of energy use, has been proven to be highly effective in five terms, *i.e.*, 50 per cent of the total expressions of the axis.

*Regarding the environmental education of the child:*

The Table 5 shows the following:

The phrase (1):

Its text, “Kindergarten depends on the efforts of the state only in environmental education”: It was found that the phrase achieved in the field reality to a high degree, where the total verification rate of the sample of the study as a whole (96.11%), (91.57%) and the total approval rate

**Table 5 : Results of the third axis (environmental education of the child)**

Sr. No.	The term	Responses	Mothers		My employees Kindergarten		The value of Ca 2	Significance statistics
			No	%	No	%		
1.	The kindergarten depends on the state's efforts only in environmental education	Achieved significantly	72	86.7	557	95.1	9.02	Function at level 0.05
		Achieved to a medium degree	8	9.6	20	3.4		
		Not achieved	3	3.6	9	1.5		
		Total score	152	91.57	1134	96.76		
		Total and percentage						
2.	Community members and kindergarten institutions share the concepts of environmental education	Achieved significantly	29	34.9	191	32.6	0.193	Not functional
		Achieved to a medium degree	19	22.9	142	24.2		
		Not achieved	35	42.2	253	43.2		
		Total score	77	46.39	524	44.71		
		Total and percentage						
3.	Kindergarten allows community members and institutions to fund environmental education activities	Achieved significantly	13	15.7	87	14.8	0.176	Not functional
		Achieved to a medium degree	48	57.8	353	60.2		
		Not achieved	22	26.5	146	24.9		
		Total score	74	44.58	527	44.97		
		Total and percentage						
4.	Kindergartens are interested in linking the efforts of formation in a comprehensive educational framework	Achieved significantly	22	26.5	139	23.7	15.42	Function at level 0.01
		Achieved to a medium degree	15	18.1	37	6.3		
		Not achieved	46	55.4	410	70.00		
		Total score	59	35.54	315	26.88		
		Total and percentage						
5.	Child behaviour gradually improves towards the environment	Achieved significantly	10	12.00	64	10.9	0.126	Not functional
		Achieved to a medium degree	22	26.5	152	25.9		
		Not achieved	63.1	370	61.5	51		
		Total score	23.89	280	25.30	42		
		Total and percentage						
6.	Children participate in energy conservation competitions	Achieved significantly	14	16.9	93	15.9	0.085	Not functional
		Achieved to a medium degree	22	26.5	152	25.9		
		Not achieved	47	56.6	341	58.2		
		Total score	50	30.12	338	28.84		
		Total and percentage						
7.	The home is shared with kindergartens in activating child participation to protect the environment	Achieved significantly	14	16.9	86	14.7	0.3	Not functional
		Achieved to a medium degree	11	13.3	76	13.00		
		Not achieved	58	69.9	424	72.4		
		Total score	39	23.49	248	21.16		
		Total and percentage						
8.	The child's interaction with the environment advances the child's age in kindergarten	Achieved significantly	51	61.4	415	70.8	11.14	Not functional
		Achieved to a medium degree	21	25.3	145	24.7		
		Not achieved	11	13.3	26	4.4		
		Total score	123	74.1	975	83.19		
		Total and percentage						
9.	The child shows a tendency to participate in outdoor activities	Achieved significantly	13	15.7	94	16.00	0.096	Not functional
		Achieved to a medium degree	28	33.7	206	35.2		
		Not achieved	42	50.6	286	48.8		
		Total score	54	32.53	394	33.61		
		Total and percentage						
10.	The community is involved in supporting kindergarten initiatives towards rationalizing consumption	Achieved significantly	7	8.4	40	6.8	3.85	Not functional
		Achieved to a medium degree	13	15.7	54	9.2		
		Not achieved	63	75.9	492	84.00		
		Total score	27	16.26	134	11.43		
		Total and percentage						

for kindergartens (96.76%). This indicates the agreement of the sample members of the sample of the kindergarten teachers and mothers to adopt kindergartens on state efforts only in environmental education.

The phrase (2):

Its text “Community members and their kindergarten institutions share the concepts of environmental education”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (44.92%), (46.39%), and the total approval rate for kindergartens (44.71%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers on the lack of participation of community members and institutions with kindergartens in the adoption of the concepts of environmental education.

The phrase (3):

The kindergarten allows members of the society and its institutions to fund environmental education activities.” It was found that this phrase is achieved in the field of the field with a weak degree. The total verification rate for the sample of the study as a whole is 44.92 per cent (44.58%) and the total approval rate for kindergartens (44.97%). This indicates that the sample members of the study sample agreed with the employees of Kindergarten and mothers to allow kindergarten members of the community and its institutions to finance environmental education activities.

The phrase (4):

Which reads: “Kindergartens are interested in linking the efforts of the formation in a comprehensive educational framework”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (27.95%), (35.54%), and the total approval rate for kindergartens (26.88%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers are weak The kindergartens are concerned with linking the efforts of education in a comprehensive educational framework.

The phrase (5):

Its text “progressively improves the child’s behaviour

towards the environment”: it was found that this expression is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (24.07%), (25.30%) and the total approval rate for kindergartens (23.89%). This indicates that the sample of the sample of kindergarten and mother employees agreed on The scarcity of the child’s behavior gradually improves towards the environment.

The phrase (6):

“Family and Kindergartens in Environmental Education for Children”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (29%), which falls below the limits of confidence (30.12%) and the total approval rate for kindergartens (28.84%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers on the scarcity of family and kindergarten participation in environmental education for children.

The phrase (7):

The text of “walking kindergartens according to a clear plan for environmental education”: It was found that this phrase is achieved in the field reality is weak, where the total verification rate of the sample of the study as a whole (21.45%), (23.49%) and the total approval rate for kindergartens (21.16%). This indicates that the sample members of the study sample agreed with the employees of Kindergarten and mothers on the lack of functioning of kindergartens in accordance with a clear plan for environmental education.

The phrase (8):

“Mothers recognize the need for environmental education for children”: It was found that this phrase is achieved in the field reality to a high degree, where the total verification rate of the sample of the study as a whole (82.06%), (74.1%) and the total approval rate for kindergartens (83.19%). This indicates that the sample members of the study sample of the kindergarten and mother employees agreed that Mothers recognize the need for environmental education for children.

The phrase (9):

“The kindergarten invests some of the available

resources in supporting environmental education”: It was found that this phrase is achieved in the field reality is weak, where the percentage of total verification of the sample of the study as a whole (33.48%), which falls below the limits of confidence (32.53%), and the total approval rate for kindergartens (33.61%). This indicates the agreement of the sample members of the study sample from the employees of the Kindergarten Children and mothers on the poor investment of kindergarten some of the resources available in support of environmental education.

The phrase (10):

Its text, “The Kindergarten Involves the Universities in the Development of Environmental Education for Children”: It was found that this phrase is achieved in the field reality with a weak degree. The total verification rate for the sample of the study as a whole is 13.02 per cent (16.26%) and the total approval rate for kindergartens (11.43%). This indicates that the sample members of the study sample agreed with the employees of the kindergartens and mothers on the scarcity of universities’ participation in the development of environmental education for children.

The results of the three axes show that the points of agreement between the kindergarten and mothers’ members about the terms of the questionnaire are much greater than the points of difference. Only 4 expressions showed a significant difference between the kindergarten and mother members of the three axes, This is a reflection of the fact that kindergartens and mothers have a common understanding of environmental protection and energy conservation for future generations. This convergence of the views of the kindergarten and mothers’ Pray to in this study, given the data to achieve the development of environmental protection and energy saving for future generations in the Kingdom of Saudi Arabia.

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