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ENVIRONMENTAL THINKING AMONG SIXTH GRADERS

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Abstract:

The aim of the research is to identify the level of environmental thinking among sixth graders, and achieving this goal requires building a test for environmental thinking based on the theoretical definition and previous literature. Among the sample, and applied to a sample of sixth grade students, whichh amounted to (100) male and female students, who were intentionally chosen from the research community, and after collecting the data, they were treated using appropriate statistical methods, including the t-test for one sample, and the research reached a low level of environmental thinking among the students, in addition to There is no difference between males and females In the level of environmental thinking. Through the results, the researcher recommended the need to enable students to develop their ability in environmental thinking and invest it, and to hold educational and guidance seminars for students In order to improve their level of environmental thinking. The researcher suggested conducting similar studies on environmental thinking in different societies and stages. (high school, university), and conducting similar studies on environmental thinking and Its relationship to some variables such as social acceptance and academic achievement.

Keywords: Environmental Thinking

Chapter One: Introduction to the research

First: Problem of the Research

It is noticeable that the content of the science curriculum for the primary stage, whichh carries with it a lot of scientific concepts and new ideas, especially environmental ideas, as well as positive behaviors towards the environment surrounding the student, and what the teachers of the specialty do to encourage students, support good Ideas, and preserve the sustainability of the environment. Now there Is a lack of students, and this Is the observation of the researcher with his experience Modest In teaching in the primary stage and serving (15) years that students practice ideas and behaviors that are inappropriate at the level of the environment, such as throwing waste In unallocated places and leaving It on the ground, tearing books, distorting walls and even school chairs, as well as not participating In reducing waste in water consumption and lighting. All these indicators indicate There is a weakness in thinking about the environment, although some educational studies conducted In Iraq indicate that they have positive attitudes towards the environment, and they understand some of its issues well.

The problem of this study stems from this educational reality, as students do not lack environmental knowledge (the cognitive side) nor positive attitudes towards the environment (the emotional side), but they do not practice responsible and environmentally friendly behavior. This may be due to the weakness of their environmental thinking, which makes them indifferent

or indifferent to what happens to the environment in terms of destruction, and they see that restoring the environment to Its natural state is Impossible, so they are convinced of an unpromising future for the environment, as it Is inevitably doomed to destruction, and there is no difference between their practice of friendly behavior or harmful to It, and are waiting for catastrophic consequences that may destroy the whole ecosystem. Their environmental thinking may be Influenced by the method of teaching environmental education in the first grades of the primary stage, which does not give students the opportunity to learn outside the classroom, in the environment directly. Whenever they want according to their capabilities and capabilities, this method does not arouse their enthusiasm or their passion for learning, exploration, or solving the environmental problem (Al-Saadi, 2004, 171).

Through all these indicators, the research problem was crystallized by the researcher, to answer the following question:

What is the level of environmental thinking among sixth graders?

Second: Importance of the Research

The importance of the current research can be summed up in the following points:

1) It is the first local research - as far as the researcher knows – dealing with the variable of environmental thinking among students.
2) Those in charge of education may benefit from the results of the research in order to sober up the rules of the educational process and raise the student's positive and conscious level in the environmental aspect, which constitutes an important priority in his life.
3) The test of environmental thinking for primary school students can benefit the authors of science books for the primary stage and those in charge of developing curricula in order to help develop environmental thinking among students.
4) Directing or mobilizing the attention of researchers and specialists in the field of education to the importance of environmental thinking, especially in the elementary stageThird: The goals of the research: Goal of Research
5) The current research aims to:
6) Identifying the level of environmental thinking among sixth graders
7) Identifying the differences in environmental thinking among sixth graders according to the gender variable (male-female).
8) Fourth: Limitation The Research
9) The current research is limited to:
10) Sixth grade students at Dar Al-Salam Elementary School affiliated to the General Directorate of Education of Diwaniyah / Center.
11) The academic year (2020-2021 AD).
12) Sixth: Definition of The Terminology
13) Environmental thinking
14) Defined (Al-Saadi, 2004): it is "a behavior in which the student talks about himself with what he wishes to happen to the surrounding environment in terms of balance." (Saadi, 2004: 141)
15) (Sandra, 2004) defined It as "the individual's awareness associated with his environmental affiliation, a phenomenon that illustrates the comprehensive vision of the individual and society related to the steps related to nature that must be taken as normal behavior" (Sandra, 2004: 4
16) Palmer, 2006 defined It as "a group of Ideas and behavioral norms that aim to act rationally by using natural resources." (Palmer, 2006: 39).
17) The researcher defines environmental thinking procedurally: the total score obtained by the student when he responds to the environmental thinking test prepared for this research.The second chapter: (theoretical framework and previous studies)
18) The first axis: Environmental thinking
19) (Rashwan, 2000), referred to in (Sarah, 2016), believes that the environment is the totality 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 the organisms themselves. It can also be described as a set of systems intertwined with each other to the degree of complexity that affect and determine our survival in this world, which we deal with periodically. The previous definition concludes that the most important components of the environment are:

20) A) Culture: It is what a person has invented of specific vocabulary that has been added to the vocabulary of his social and natural environment. * Non-material cultural quantity: such as customs, traditions, values and teachings (Sarah, 35, 2016)

21) B) Natural Resources: This source includes the natural part that is considered the main source for the continuation of life that requires preserving it, whether it includes (water, air, soil, food) M (Al-Wakil and Muhammad, 2008: 81).

The concept of environmental thinking:

Before the Individual realizes the importance of preserving the natural environmental resources and is aware of the Importance of preserving them for their survival, so the natural conditions left their effects on the individual and made him think, scrutinize and scrutinize the emergence of those conditions, and strive to achieve a balance between his requirements on the one hand, and taking into account and respecting the environment. It is imperative to achieve sustainable development. Therefore, environmental thinking deals with environmental challenges in a comprehensive manner, and from here the initial signs began to form the foundations and landmarks of human thought In relation to the features of the ecosystem.

This contributes to the preservation of natural resources, the exclusion of environmental risks that threaten the survival of the individual, and the enhancement of his presence and civilizational development (Rabieh and Hadi, 2006: 205).

Environmental Thinking Assumptions:

(Esawy, 1997) assumes some postulates about the possibility of modifying the behavior of individuals towards the environment, as follows:

1. The normal and rational student whose information is inspired by the science lesson will change his motives in the light of the new information.
2. Focusing on a system of scientific knowledge and facts can change some methods or other negatives in their minds.Issawi, 1997: 101.

Objectives of environmental thinking:

Environmental thinking aims to achieve a set of goals, the most Important of which are:

Work to provide the student with sufficient scientific knowledge in order to think about the negative environmental effects resulting from human activities.

-Promoting environmental culture or ethics with the aim of working to educate students about the influences towards the natural environment and sustainable decision-making.

-Activating the spirit of the group and the role of the community by preserving the green areas and making the green belt the responsibility of all and avoiding the bulldozing of agricultural lands, which creates a balance in the environmental system (Rabee and Hadi, 2006: 205).The third axis: previous studies Al Hassan Study (2009).

This study aimed to reveal environmental ethical thinking and its relationship to environmental behavior and environmental education among Gedaref University students, and to reveal the difference in environmental ethical thinking among different groups of students. The researcher used the descriptive approach, and the study population was represented by students of the University of Gedaref at the bachelor's level.

To collect data, the researcher used the Environmental Ethical Reasoning Scale, which he designed by himself, and the Environmental Behavior and Environmental Education Scales, designed by Fatima Al-Siddiq (2003 AD). To analyze the data, the researcher used the following statistical treatments: (T) test to find out the differences between two groups and Pearson correlation coefficient and Mann-Whitney test to know the significance of the differences between two groups. The results indicated:

1- Gedaref University students have positive environmental ethical thinking with a statistically significant degree.
2- There is a direct, positive, statistically significant correlation between environmental ethical thinking and each of: environmental education and environmental behavior.
3- There are no statistically significant differences in environmental ethical thinking between male and female students at Gedaref University.
4- The environmental ethical thinking among the students of the Faculty of Agriculture is better than the students of the rest of the faculties at the University of Gedaref with a statistically significant degree.

5- The students of the science course faculties are characterized by better environmental ethical thinking than the students of the literary course faculties at the University of Gedaref, with a statistically significant degree.
6- The students of the final levels are characterized by better environmental ethical thinking than the students of the first level at the University of Gedaref, with a statistically significant degree.
7- There are no statistically significant differences in environmental ethical thinking between Gedaref University students who studied environmental courses at the secondary level and those who did not. Based on the results of this study, the researcher formulated some recommendations and proposals for future research and studies.

The third chapter: research methodology and procedures

This chapter deals with the procedures adopted by the researcher to achieve the objectives of the current research, and includes a description of the research community, the method of selecting the sample, the steps for building its tool, and the appropriate statistical methods for data analysis.

The following is a review of these procedures:

Research Methodology

The researcher used the descriptive approach due to its suitability to the nature of the objectives of the research, as it is defined as a form of organized scientific analysis and interpretation to describe a phenomenon or problem and develop it quantitatively by collecting data and standardized information about the phenomenon or problem, classifying it, analyzing it, and subjecting it to careful study. (Imam, 2011: 325)

Research community

The research community consisted of all sixth grade students in government day schools for the academic year 2020-2021 AD for the purpose of identifying their level of environmental thinking.

The research sample

The sample Is defined as a part of the community that is drawn in a way so that it represents the community as the best representation" (Abdul-Rahman, Zangana, 2008: 304). In this research, the sixth grade students In Dar Al-Salam Elementary School were intentionally chosen, and their number is (100). One male and one male student, with (50) males and (50) females, according to the following table

Table (1) Distribution of students (research sample) by gender Search tool:

Grade	gender	Number	total
sixth primary	male	50	100
	female	50	

For the purpose of collecting the necessary data to achieve the objectives of the current research, the researcher prepared a test to find out the level of environmental thinking for sixth graders, based on the theoretical definition of environmental thinking, benefiting from previous studies. Build the test with the following steps:

1) Determine the objective of the test: The test aims to measure the level of environmental thinking among the sixth grade students.
2) After defining the objective of the test, the researcher formulated test items that measure the level of environmental thinking among the sample individuals, taking into consideration the environmental life situations from outside the content. It has advantages related to comprehensiveness and efficiency of evaluation and its measurement of most aspects of the subject it deals with and the ease of scoring. The multiple choice test can also measure the student's ability to analyze, apply principles, distinguish, understand, interpret, solve problems, and determine cause and effect. (Shermis & Di Vesta, 2011, p162-163), citing (Shenif, 2012: 139). It is also characterized by high reliability and reliability, easy to correct, and can be used to measure various types of learners' abilities. (Molhem, 2005: 215).

3) The validity of the tool was verified outwardly by presenting It to a group of arbitrators in the field of study, and their number reached (10). The researcher adopted an agreement percentage of more than 90% of the arbitrators, the principle of accepting the paragraph, and after collecting their observations, he found that all paragraphs are acceptable with some modification.
4) The validity and reliability of the tool was extracted by applying it to an exploratory sample of (50) male and female students from Al-Rasoul Primary School with (25) students and Al-Zaitoun Primary School with (25) students, and then calculating the reliability coefficient, whose value ranges between (0-1). According to this criterion, stability is acceptable if the value of the stability coefficient is more than (0.60), and ensuring the validity and stability of the tool is an important matter because the lack of stability of the tool affects the results of the sample and Its generalization to the community.

The percentage, validity and reliability of the test were as follows:a. In order to achieve apparent validity, the test was presented in the initial form to a group of specialists in the field of methods of teaching science, measurement and evaluation to demonstrate the validity of the test items and their suitability for the theoretical definition of environmental thinking. Test paragraphs. Correlation coefficients were also calculated between the scores of each test item and the total score using the two-point correlation coefficient (Point Pacer Yale), which ranged between (0.24, 0.49), and compared with the tabular value of (0.16) at Significance level (0.05) and a degree of freedom (49). The results showed that the calculated value of the correlation coefficients is greater than the tabular value, which means that it is statistically significant.

B. And by using Cronbach's alpha equation, the stability reached = 0.843, and from this it is clear that the tool's validity and stability are at high rates, and this means that there is consistency and strong internal correlation between the test Items.

5) The tool consisted in its final form of (15) Items, so that the response to this test takes a score ranging between (1 and 15), and the low score indicates a low level of environmental thinking, while the high score indicates a high level of environmental thinking.

Statistical Treatment: The researcher used the Statistical Bag for Social Sciences (SPSS) and the Excel program to analyze the data and results and treat them statistically.Chapter Four: Presentation and interpretation of the results

The first goal :

For the purpose of testing the achievement of the first objective, the researcher used the t-test for one sample, where the general hypothetical average of the response to the items of the environmental thinking test was, while the general mean for the sample was (12.86) with a standard deviation of (4.69), and thus the calculated value of the t-test was (5.80), whichh is higher than its value. Tabularity at a significant level (0.05) and a degree of freedom of 98, which is (1.96), and this result indicates a low level of environmental thinking among the research sample, and the following table shows that.

Table No. (2) the results of the t-test on the first objective

hypothetical mean	arithmetic mean	standard deviation	computed value	degree of freedom	tabular value	statistical significance
15	1.96	98	5.80	4.69	12.8	not significant

The researcher believes that the reason for this is that the neglect of the laboratory and the basic aspects of science, based on teaching methods that depended on the theoretical aspect from a distance (e-learning), and this in itself does not care and focus on the theoretical aspect and neglects thinking about the environmental environment since the primary stage, which led to a reflection on Environmental thinking among students, especially in the primary stage, and the researcher agrees with the saying that learning from childhood is like engraving on a stone, in addition to that the teacher's inability to create the appropriate atmosphere to raise topics and concerns related to the environment, which generates a lack of most students to deal with environmental situations and their problems and the lack of development of some of their skills .

The second goal

For the purpose of testing the significant differences in the environmental thinking of the research sample according to the gender criterion, the researcher used the t-test for two independent samples, so the calculated t-value was equal to 2,034, which is less than its tabular value at the level of significance of 0.05 and the degree of freedom of 98, amounting to 1,985, and this means that there is no difference between females and males in the level of Environmental thinking and the following table Illustrates this

Table No. (3) Testing the significant differences In the environmental thinking of the research sample according to the gender criterion

gender	arithmetic	standa deviation	computed	degree freedom	tabular	statistica significance
male	3.89	0,476	2,034	99	1,98	not signific
female	3,76	0,47				

This is due to the similarity of circumstances, events, and problems faced by both males and females. The conditions that our country went through in terms of wars, crises, and problems did not exclude any individual. In addition, both sexes live within the framework of traditions and customs that are largely similar, and since the stimuli are similar in their starting points and nature. It is likely that individual differences do not appear in an effective way and that the responses are very similar to the items of the environmental thinking test. Also, the failure to provide environmental sources and information for students that include environmental issues directly related to society contributed to preparing a student with poor environmental awareness for both sexes.Conclusions, recommendations and suggestions First: Conclusions: Through the results, the following conclusions were reached

1. The low level of environmental thinking among the research sample.
2. There is no difference between females and males in the level of environmental thinking.

Second: Recommendations: The researcher recommends the following

1. The necessity of enabling students to develop their ability in environmental thinking and investing It in positive aspects.
2. Holding educational and guiding seminars for students in order to improve their level of environmental thinking.

Third: Proposals: The researcher suggests the following:

1. Conducting similar studies to measure the level of environmental thinking among other societies and stages (secondary, university).

2. Conducting similar studies on environmental thinking and its relationship to some variables such as social acceptance and academic achievement.

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