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The Effectiveness of Differentiated Education Strategies in Developing Critical Thinking Among First Graders from the Perspective of First Grade Teachers in Jordan

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ABSTRACT
This study aimed to identify the effectiveness of differentiated education strategies in developing critical thinking among first-grade students from the point of view of first-grade teachers in the Directorate of Education in the Ramtha District. And education for the Ramtha District, which numbered (302) male and female teachers, and a random sample of (170) male and female teachers was selected. The study tool was represented by a questionnaire that consisted of two parts. The first part included demographic data: gender, educational qualification, and experience, while the second part included (22) items. The results showed that differentiated education strategies greatly help in developing critical thinking among students from the teachers' point of view. The results also showed that there were statistically significant differences in the responses of the study sample due to the variable of gender, experience or educational qualification. The study recommended a set of recommendations, the most important of which are: Inclusion in the curriculum on classroom activities based on the use of differentiated education strategies and educational activities that contribute to the development of critical thinking skills because of the importance of these skills in the student's life.
KEYWORDS: DIFFERENTIATED EDUCATION, FIRST GRADE TEACHERS, CRITICAL THINKING.
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INTRODUCTION

The era in which we live is characterized as the era of the information revolution, the era of the money and communications revolution, globalization, which is the era of rapid growth, scientific discoveries and technological innovations. In this situation, education occupies a leading place in the development of individuals and societies, and it is upon it that the continuous preparation of individuals is characterized by the refinement of the mind and the development of their ability to Imagination, innovation and thinking, which would keep pace with individuals with the requirements of this century, so the goal of education is to increase the ability to think, and education for thinking and teaching thinking skills has become an important goal of education.

Students vary in their abilities, interests, and needs, and variation and differentiation are a natural aspect of life. Individual differences among students contribute to defining the various roles, and to them are attributed their different characteristics and capabilities, whether genetic or environmental, and all individuals must be given equal opportunities to develop their capabilities, benefit from their capabilities and The difference and differentiation of their talents and qualities, so that each of them can perform his role in the future efficiently and effectively (Qumra, 2018).

This diversity and difference in their abilities, interests and needs necessitates teachers to use teaching strategies that help them stimulate their thinking and sharpen their potential to create meaningful learning related to their lives. Also, the teacher's knowledge of students' abilities, levels of development, mental characteristics, achievement, scientific, social and economic backgrounds, and knowledge of their tendencies, tendencies, and values, makes them more effective in interaction and communication with them, and it also helps students towards the material in the formation of positive mentalities (2009).

Students in the basic education stage, particularly in the first grades, are characterized by a high ability to receive and acquire; Therefore, care and attention is required at this stage by choosing modern teaching methods and strategies that take into account the differences between students, and work to provide the physical and psychological conditions that help them to learn stronger and more permanently, and there are many modern strategies through which excellence and differences between students can be taken into account to achieve the planned goals.

Critical thinking is reflective mental thinking, focusing on deciding what an individual should believe in, or what he should do. Critical thinking revolves around the preparation and use of specific criteria, on the basis of which judgments can be made about the topics of focus and attention, such as: assumptions and principles, research methods and methods, or political decisions and public opinion topics, ... etc.

- Critical thinking is the important and effective element in conducting some general cognitive processes, or verifying their veracity and truthfulness (Ibrahim, 2010).

Critical thinking is an important educational goal. Students in advanced societies are trained to practice and develop critical thinking. Hence, the idea of this study came to reveal the effectiveness of differentiated education strategies in developing critical thinking skills for first graders from the point of view of their teachers.

STUDY QUESTIONS:

The study attempted to answer the following questions:

THE FIRST QUESTION: What is the level of effectiveness of differentiated education strategies in developing critical thinking among first-grade students from the perspective of first-grade teachers in Jordan?

THE SECOND QUESTION: Are there statistically significant differences in the responses of the study sample due to gender, experience and educational qualification?

THE IMPORTANCE OF STUDY:

Through the results of this study, it is expected to identify the impact and importance of differentiated education strategies, and to clarify its principles and forms; This contributes to raising awareness of differentiated education practices and their effectiveness in developing critical thinking skills among first graders; Which is considered the stage of building students' mental abilities and skills, where the importance of the study is theoretically represented in that it dealt with one of the important topics that the previous studies did not address, which is the effectiveness of differentiated education strategies in developing critical thinking skills, which is one of the most important skills that the educational process seeks to acquire and develop among the students.

OBJECTIVES OF THE STUDY:

The current study aimed to:

- Recognizing the effectiveness of differentiated education strategies in developing critical thinking skills from the perspective of first grade teachers.
-Identifying the differences in the responses of the study sample that are due to the variables of gender and experience.

TERMINOLOGY OF STUDY:

- DIFFERENTIATED INSTRUCTION: A framework or philosophy for effective teaching that involves providing students with a variety of different methods to help them acquire content, construct meanings, and generate ideas, as well as develop appropriate learning materials and methods of assessment, so that all students in the classroom can learn effectively". (Abdel-Al, 2013).

THE RESEARCHER DEFINES IT PROCEDURALLY: it is a set of strategies and practices that the teacher follows during the lesson in order to communicate information to the students.

-CRITICAL THINKING: Critical thinking: the process of using higher mental abilities from analysis, installation and evaluation through the five thinking abilities represented by conclusion, evaluation of arguments, knowledge of assumptions, deduction and interpretation (Awad, 2022)

THE RESEARCHER DEFINES IT PROCEDURALLY: the ability of first graders to infer, evaluate, elicit and explain phenomena.

STUDY LIMITATIONS:

This study was limited to teachers of the first grades (first, second and third) in the second semester 2021-2022, in Ramtha District Education Directorate.

The results of this study were determined by its tools, veracity and reliability coefficients.

THEORETICAL FRAMEWORK AND RELATED STUDIES:

THEORETICAL FRAMEWORK:

The term differentiated education appeared in 1999 by Tomlinson to denote the teacher's response to the individual differences between students and the continuous adaptation of the content, processes and educational outputs to correspond with the previous experiences of the students. It is a teaching approach based on recognizing the various educational needs of students and their willingness to learn and identifying their different interests, then responding to these differences in needs, preparations and interests through the elements of the teaching process, so that the teaching elements are differentiated to meet the differentiation and differences of students within the same classroom, in order to provide Everyone has equal opportunities for learning to occur (Abdel-Al, 2013).

Differentiated education is defined as a process (reorganizing) what is happening in the classroom so that students have multiple options to access information, create meaning for ideas and express what they have learned. of learning effectively. Differentiated education has also been defined as a teaching method in which the teacher provides multiple entrances that meet the different needs of each learner in the classroom, in order to

unleash the highest potential of individuals (Hamdan, 2018).

Among the justifications calling for the use of differentiated education, as mentioned by Nasr (2014):

- The difference between students and the increase in class sizes, which may negatively affect their academic achievement.
- General education curricula, as there is one curriculum that is applied to all students, which requires adapting this curriculum to suit their different needs.

Differentiated education shortens time and effort, and results in more fruitful results.

PRINCIPLES OF DIFFERENTIATED EDUCATION:

Differentiated education stems from a set of principles on which it depends in practical application, including that the teacher has a clear idea about what is important in the subject, that the teacher knows, appreciates and builds on the differences between students, and that each student has the right to study in a manner tailored to his needs Evaluation and teaching are two things that go hand in hand. Comprehensive and continuous assessment is a means of discovering students' needs, and the teacher adjusts content and results in response to students' readiness, inclinations, and teaching style, and also the need for positive and effective participation among all students in a work characterized by mutual respect in which all students participate in Respected work, and students and teachers cooperate in learning and work together in a flexible manner, where flexibility is the distinguishing feature of the differentiated class. The most important objectives of the differentiated class are to achieve maximum growth and achieve success for each student. Learning is for all students regardless of their skill level or background, and it assumes that each classroom contains students who are distinguished in their academic abilities, learning styles and personal Differentiated education is based on the need to provide a variety of educational resources and tasks in line with students' abilities, interests and learning styles (Hamdan, 2018).

The role of the teacher, learner and parents in differentiated education:

Nasr (2014) mentioned that the different roles of the elements of the educational process in differentiated education are:

FIRST, THE ROLE OF THE STUDENT:

There are many roles that the student must play in differentiated education, including: that students realize the goals and understand what is going on around them in the classroom, and students in differentiated education must be positive partners who have commitments that must be made and are keen on them. They must accept the idea of different tasks and activities that the teacher provides to some of them, and this is not considered a preference for some of them. Also, students in differentiated education must get used to the large number and diversity of assessment processes and methods, and enhance confidence in themselves and their abilities to achieve the work required of them, and accept the challenge. And make an effort to raise their level.

SECOND: THE ROLE OF THE TEACHER:

The teacher is the leader and the main driver of all the elements of the educational process, as he plays the role of supervisor, coordinator, observer and guide. The teacher must pay attention to the individual differences between students, and adjust the content, process, and outcomes according to the strategy used, and the teacher and students work together in a flexible manner, and try to know the capabilities of The learning tendencies and patterns of his students, and he prepares the appropriate tools for this, as he plans the learning process from the first day in school. Taking on more than one responsibility during the lesson, and that the teacher is interested in evaluating the achievements of each student so that he knows his needs. time effectively, and the teacher works to involve parents in achieving the goals of differentiated education, because the guardian is aware of the characteristics and tendencies of his son, so he The complement and cooperator with the school.

THIRD: THE ROLE OF PARENTS IN DIFFERENTIATED EDUCATION:

The active participation of parents is important in achieving the goals of education. Parents know their children more than the teacher, and the teacher knows more about the characteristics of students than his guardian. The integration between the two sides achieves the positive.

Nasr (2014) believes that there is an effective role for the guardian in achieving the goals of differentiated education, because he is more familiar with his son, the student, in terms of his characteristics, inclinations and talents ... than the teacher, so his role becomes cooperating with and complementing the school, which gives an opportunity to benefit from differentiated education, as well as The school principal has an active role in encouraging those who try modern methods and strategies for teaching and learning and seek to disseminate them among teachers in all specialization.

PREVIOUS STUDIES:

The researcher came up with a set of these studies that are indirectly related to her study, and they are arranged

according to their relevance to the study, from the most recent to the oldest.

Al-Shafei (2018) conducted a study that aimed to identify the effectiveness of using differentiated teaching strategies in developing scientific thinking skills and motivation to learn among first-year preparatory students in home economics. The quasi-experimental approach was used, and the sample consisted of (22) individuals representing the experimental group that studied Using differentiated teaching strategies, and (20) individuals representing the control group that studied in the usual way, and the study tool was to test scientific thinking skills and the learning motivation scale, and the results showed a statistically significant difference between the mean scores of the experimental group and the control group students in the post application of the scientific thinking test. Its different skills, the learning motivation scale and its various dimensions in favor of the experimental group, and the existence of a statistically significant difference between the mean scores of the experimental group members before and after teaching in the scientific thinking test and its various skills, and the learning motivation scale and its various dimensions in favor of the dimensional application. Scientific thinking and learning motivation among the experimental group members Libyan.

El-Sherbiny (2017) conducted a study that aimed to determine the impact of differentiated education strategies on developing achievement, reflective thinking and self-motivation among first-year secondary students of mixed achievement in geography. The descriptive analytical method and the quasi-experimental method were relied on. The study group consisted of 34 individuals. The study tools were an achievement test, a test of reflective thinking skills, and a measure of self-motivation. The results showed that the use of differentiated education helped students make the most of the various accompanying activities that helped develop self-motivation. She pointed out that reflective thinking is characterized by social interaction on both the male and female levels." The teacher and the student" .

Ahmed (2017) conducted a study aimed at developing critical thinking skills and positive thinking skills through differentiated education among student teachers at the Faculty of Education, Helwan University. The research sample consisted of (40) students; They studied two teaching units of Operations Technology, and the descriptive analytical approach was used; In determining critical thinking skills, positive thinking skills, and the quasi-experimental approach; To demonstrate the effectiveness of the independent variable (differentiated education) on the dependent variable (critical thinking skills, positive thinking skills), a list of critical thinking skills, a list of positive thinking skills, a teacher's guide, and a student's handbook were prepared. The research tools consisted of (critical thinking skills test, and thinking skills scale). The research tools were applied before and after, and the results showed that most of the students had improved in all critical thinking skills, and that all students had improved in positive thinking skills and the researcher attributed this result to the use of differentiated learning.

Youssef (2017) conducted a study aimed at revealing the effectiveness of a program based on the use of some differentiated teaching strategies in teaching history on acquiring some historical concepts and developing creative thinking skills for second year preparatory students. The sample consisted of (38) individuals. Study with a test. The results of the study showed that there was a statistically significant difference at the level (0.01) between the mean scores of the study sample in the main skills included in the creative thinking test, as well as the total score of the test in favor of the post application, and this indicates the effectiveness of differentiated education strategies in teaching history on developing some creative thinking skills represented by In fluency, flexibility and originality skills.

Hassanein's study (2016) aimed to identify the effectiveness of teaching a science course using differentiated education strategies in developing achievement, developing creative and critical thinking skills, and communication skills among fourth-grade students in the Saudi city of Tabuk. The study was applied to a sample of (60) female students, who were divided into two equal groups, one control and the other experimental. , which indicates the effectiveness of the differentiation of education in raising achievement, and developing students' creative and critical thinking skills.

COMMENTING ON PREVIOUS STUDIES:

Previous studies differed in terms of studying the effectiveness of differentiated education strategies in developing critical thinking skills from the perspective of first grade teachers in the Ramtha District Education Directorate, and it is the first study that dealt with these variables according to the researcher's knowledge.

This study differed from the previous studies with the sample, the limits, and the study tools, and the researcher benefited from the previous studies in defining the study method, developing the study tools, and determining the appropriate statistical treatments for the purposes of the study.

METHOD AND PROCEDURE:

STUDY METHODOLOGY:

The descriptive approach was used for its suitability to achieve the objectives of the study.

THE STUDY COMMUNITY AND ITS SAMPLE:

The study community included all first grade teachers in the Ramtha District Education Directorate, and the sample consisted of (170) male and female teachers. With demographic variables that include gender, experience and academic qualification, as these factors have an impact on the study axes, as Table (1) presents the distribution of the study sample members on it.

TABLE (1): DISTRIBUTION OF STUDY SAMPLE MEMBERS ON DEMOGRAPHIC VARIABLES

Number	Variable	Category	The number of sample members	Percentage%
1	Gender	Male	42	25%
		Female	128	75%
		Category	170	100%
2	Experience	Less than 5years	44	26%
		More than 5 years	126	74%
		Total	170	100%
3	Qualification	BA	155	91%
		Higher than Bachelor's	15	9%
		Total	170	100%

STUDY TOOL:

The study tool aimed to identify the level of effectiveness of differentiated education strategies in developing critical thinking skills from the point of view of first grade teachers in the Ramtha District Education Directorate. The second part included (22) paragraphs developed by the researcher after referring to the theoretical literature and previous studies.

CORRECTION OF THE STUDY TOOL:

The cut-off point or a certified criterion divided into three levels was determined in the study through three levels, where the value of the difference between the highest value on the scale (3) and the lowest value on the scale (1) was calculated divided by three levels (1-5)/ 3 = 1.33 and then this value is added to the lowest value in the scale, which is (1) in order to determine the upper limit of the category, and to determine the importance of the category, and Table (2) shows the limits of the three levels.

TABLE (2): CRITERIA FOR THE DEPENDENCE OF THE DEGREE OF RESPONSES OF THE SAMPLE MEMBERS TO THE STUDY ITEMS

Category length	Degree of response
Low	1-2.33
Medium	2.34-3.66
High	3.67-5

VERACITY OF THE TOOL:

In order to verify the internal veracity of the study tool, the researcher used Cronbach's alpha coefficient, in order to calculate the internal veracity coefficients of the study variables in order to measure the internal veracity of the tool items, as the alpha Cronbach coefficient is equal to (0.946). Which is a good value as it is greater than the critical value (0.7) which is acceptable for the purposes of the current study, and the internal veracity coefficient is (0.972), which is a good and acceptable value as it is greater than (0.7).

TOOL STABILITY:

To verify the stability of the study tool, the stability was calculated using the Cronbach alpha method for the internal consistency between the paragraphs, and the value of the Cronbach alpha coefficient was (0.946), which is a high and acceptable value for the purposes of the study, and it is a high and acceptable coefficient for the purposes of the study (Awda, 2014).

RESULTS:

First: The results related to the first question: What is the level of effectiveness of differentiated education strategies in developing critical thinking among first-grade students from the perspective of first-grade teachers in Jordan?

To answer this question, the following statistical analyzes were carried out:

First: The arithmetic averages and standard deviations of the effectiveness level of differentiated education strategies in developing critical thinking skills were extracted, and Table (3) illustrates this.

TABLE (3): ARITHMETIC AVERAGES, STANDARD DEVIATIONS, AND THE ORDER OF THE FIRST AXIS ITEMS (THE EFFECTIVENESS OF DIFFERENTIATED EDUCATION STRATEGIES IN DEVELOPING CRITICAL THINKING)

Number	Paragraphs	Arithmetic average	Standard deviation	Evaluation level	RII% Importance Indicator
1	Using graded activities allows all students to support or work with the same important concepts and skills	3.77	0.979	High	0.7
2	Through differentiated instruction, the teacher uses a variety of levels of tiered tasks or activities to ensure that students discover ideas.	3.76	0.848	High	0.69
3	Differentiated education works to provoke students to think separately.	3.93	1.01	High	0.67
4	Some differentiated learning strategies allow students to discuss ideas in pairs and in groups.	3.71	0.962	High	0.66
5	Differentiated learning activities develop student's curiosity.	3.78	0.881	High	0.63
6	Critical thinking strategies work to increase the passion in the student so that he can think deeply.	3.76	0.772	High	0.65
7	Differentiated instruction strategies enhance the student to understand the appropriate way to carry out activities.	3.74	0.909	High	0.68
8	Differentiated teaching strategies work to increase the student's awareness in evaluating the information obtained through the activities.	3.71	0.929	High	0.62
9	Differentiated teaching strategies enable the student to have problem solving skills and develop his thinking skills.	3.82	0.879	High	0.64
10	Use the differentiated education strategy to develop students' love of experimentation	3.71	0.881	High	0.65
11	Differentiated teaching strategies make the student more interactive with the stimuli around him	3.69	1.035	High	0.66
12	Differentiated teaching strategies develop the process of analyzing and evaluating students' ideas	3.75	0.857	High	0.75
13	Differentiated education strategies develop students' ability to take the appropriate decision when facing any controversial issue	3.70	0.927	High	0.74
14	Differentiated education strategies create a new information environment for students	3.71	0.891	High	0.74
15	Differentiated education strategies pose questions that stimulate thinking and generate critical thought	3.71	0.891	High	0.74

Number	Paragraphs	Arithmetic average	Standard deviation	Evaluation level	RII% Importance Indicator
16	Differentiated education strategies avoid the student from feeling cognitively isolated	3.72	0.900	High	0.74
17	Differentiated education strategies contribute to the provision of effective audio-visual content	3.71	0.849	High	0.74
18	Differentiated teaching strategies develop students' active listening skill	3.74	0.909	High	0.74
19	Differentiated teaching strategies develop the skills of analyzing information among students	3.82	1.002	High	0.73
20	Some strategies of differentiated instruction develop students' insights strategies of differentiated instruction help the student to be independent in his thinking.	3.74	0.787	High	0.75
21	Differentiated education strategies develop students' ability to link previous educational experiences with new educational situations.	3.71	0.918	High	0.7
22	Differentiated teaching strategies encourage the student to express as many opinions as possible about the topic being discussed.	3.98	0.971	High	0.69
	Total	3.75	0.9051	Medium	0.70

It is evident from Table (3) that the arithmetic averages and standard deviations of the questionnaire items range between (3.69-3.98). It also appears from the table that the paragraphs were at a high level and paragraph (22) was the most important for a sample, and paragraph No. (11) got the lowest arithmetic average, meaning that the degree of evaluation of the effectiveness of differentiated education strategies in developing critical thinking skills was high, meaning that the degree of evaluation of the effectiveness of differentiated education strategies in developing critical thinking skills Differentiated education strategies work on developing critical thinking skills from the point of view of the study sample. The researcher may attribute this result to the effectiveness of the (differentiated education) strategy, and what is characterized by it, as it allows students to interact, enthusiastically, think and participate with the group. The activities provided through differentiated education allow students of all levels and types of intelligence and learning styles to integrate and interact with the topics presented in the lesson.

Second: The results related to the second question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the responses of the study sample due to the demographic variables (sex, experience and educational qualification)?

To answer this question, the differences between the arithmetic averages of the responses of the study sample members were tested. Table (4) shows the differences test.

TABLE NO. (4): TESTING THE DIFFERENCES BETWEEN THE RESPONSES OF THE SAMPLE MEMBERS

Variable factor	Domains	"T" test values	Degree of freedom	Statistical Significance Level	Average difference	Standard error of difference	Trust period	
							Min	Max
Gender	The effectiveness of differentiated education strategies in developing critical thinking skills	0.198	168	0.697	0.12354	0.18155	-0.24582	0.47589
Experience		-0.978	168	0.468	-0.23649	0.27132	-0.77576	0.30278
Qualification		1.348	168	0.356	0.19879	0.18852	-0.17592	0.57350

Table (4) shows that there are no significant differences with statistical significance at the level of statistical significance (α = 0.05) between teachers' responses due to the gender variable, because the probability value that is greater than the level of statistical significance = 0.05, and therefore there is no statistically significant difference, It is attributed to the gender variable in the study sample's viewpoint on the effectiveness of differentiated education strategies in developing critical thinking skills. As shown in the table, there are no significant statistically significant differences between teachers' responses due to the variable years of experience or educational qualification through the probabilistic value, which is greater than the level of statistical significance (= 0.05 α), and therefore there are no statistically significant differences in the level of estimating the effectiveness of teaching strategies Differentiated in the development of critical thinking skills from the point of view of the study sample.

This result may be attributed to the fact that teachers with their various experiences, scientific levels and gender were subjected to training on modern teaching strategies, especially differentiated education strategies. This result also indicates teachers' awareness of the importance of differentiated education strategy and its role in developing critical thinking skills.

RECOMMENDATIONS

Through the findings of the study, the researcher recommends the following:

-Conducting more studies to reveal the effect of differentiated education strategies on different variables.

-Conducting a study similar to the current study on other samples so that the Ministry of Education can identify the importance of differentiated education strategies.

- Inclusion in the curricula of classroom activities based on the use of differentiated teaching strategies and educational activities that contributes to the development of critical thinking skills because of the importance of these skills in the student's life.

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