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THE EFFECT OF USING THE MANTLE OF THE EXPERT STRATEGY ON ACHIEVEMENT AND DECISION-MAKING FOR FIRST GRADE INTERMEDIATE STUDENTS IN MATHEMATICS

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Abstract

This study aimsat measuring the effect of using the expert's mantle strategy on achievement and decision-making for first-grade intermediate students in mathematics. The researchers has followed the semi-experimental approach with a post-test. The study sample consisted of (42) students divided into an experimental group of (21) students, who studied using the strategy and an expert gown and a control group, which consisted of (21) students. This sample studied in the usual way, and the two groups were matched in the extraneous variables.

The researcher prepared an achievement test consisting of (30) test items to measure students' achievement after completing the teaching. And is a list of decision-making skills that included (42) skills, and verified its validity and consistency, and applied the two tests to the students of the experimental and control group at the end of the experiment that lasted (10) weeks, and after analyzing the data using the statistical program of SPSS for two independent samples, the researcher reached:

1. There is a statistically significant difference between the average achievement of the students of the research group at a level of significance (0.05) for the benefit of the experimental group that studied mathematics according to the use of the expert's mantle strategy in the achievement test.

2. The existence of statistically significant differences at the level of (0.05) in favor of the experimental group in the decision-making scale.

Keywords: expert mantle strategy, decision making.

1.Introduction.

Research Problem

The research problem stems from the reality of current education in Iraq, which is considered a traditional education that depends on the use of ordinary methods based on cognitive theory in teaching and its focus on the material stipulated in textbooks and work to end it regardless of what the student acquires in terms of knowledge or experience and neglects the development of expertise and skills It is necessary to form an individual capable of dealing with the amazing and accelerating scientific development. Therefore, it is necessary to search for special strategies that work to introduce an element of suspense in teaching mathematics and help students develop their imaginations and motivate them to think that helps them solve the problems they face in the future. Therefore, it is imperative to use modern teaching strategies that participate in improvement and development through which the student acquires continuous learning that is applicable, design and employment in other situations. Hence the research problem is to study “the effect of using the strategy of the expert’s mantle in achievement and decision-making for middle-grade students in mathematics. ".More about this source text

Research Importance:

In view of the information and technological revolution that the world is witnessing today that included all aspects of life and formed this information revolution,a challenge to the educational system and the need to reform it by absorbing the huge amount by preparing scientific cadres that take their active role In all its dimensions (Al-Kubaisi, 2008: p. 5), effective education in light of the knowledge explosion has become concerned with teaching students an appropriate amount of functional knowledge, and this in turn represents a basis for more fruitful learning and the provision of various means to help learners acquire new knowledge, strategies, theories and ideas. With some experiences and training on them, they can face their future life in the light of the rapid and successive changes (El-Sherbiny and El-Tantawi, 2011: p. 187).

Also, the students ’weakness in mathematics is not hidden from any mathematics teacher, in addition to the spread of unfamiliar methods in recent

years, represented by the students' lack of seriousness in studying and the increase in the percentage of private lessons, which led to a decrease in achievement in school subjects, including mathematics, which does not need only to study, but It needs reflection and focus, in addition to the complaints of parents, teachers and students themselves, as the teacher accuses students of their weakness in understanding and mastering the basics of mathematics in the previous stages,

More about this source textBecause mathematics is an accumulative subject in which subsequent information depends on previous information, so when the student has not mastered the previous learning, he will face difficulties in new learning, as well as being a scientific intellectual material that helps in developing various methods of thinking, the ability to organize, and accuracy of expression. Without mathematics, we cannot solve many problems in daily life as it helps us in solving the problems that face us (Abu Asaad, 2010). From the above, there is no doubt that this may increase the concerns of the teacher and serious educational institutions, so they will look for ways to help the student. The student is the focus of the educational process in the modern educational system, and among the methods supporting the teacher are multiple strategies, among which is the strategy of the expert cloak, as this strategy works on the interconnection of topics and their overlapping in their side relationships and is mostly based on several elements from different life domains and knowledge fields that unite together In a specific context, to adopt a project through dramatic employment that takes into account mathematics, history, geography, culture and society (Al-Kurdi, 2010: p.5).

Therefore, the importance can be summarized in the following points:

1- Informing mathematics teachers on modern strategies and how to apply them, and knowing the role of each teacher and student in them to develop their teaching methods.

2- This study may benefit the supervisors, by working to establish workshops for teachers and training them to employ the strategy of the expert cloak in teaching..

3- The experience of using new teaching strategies in the educational process to increase achievement in mathematics.

4- It may be useful for curriculum designers to include modern strategies in different subjects.

The current research aims to measure

1- The effect of using the expert's mantle strategy on achievement for first grade intermediate students in mathematics.

2- The effect of using the strategy of the expert's mantle in decision-making for first grade intermediate students in mathematics.

The research assumes:

1- There are no statistically significant differences at the level of (0.05) between the average grades of female students in mathematics between the experimental group that is taught using the expert's cloak strategy and between the control group that is taught in the usual way in the achievement test.

2- There are no statistically significant differences at the level of (0.05) between the average grades of female students who study mathematics using the expert cloak strategy and the average scores of female students who study mathematics using the usual method of decision-making.

The research study:

The current research has been limited to the following: -

1-Spatial and Human Boundaries: First-grade intermediate students in Dhi Qar Governorate / Iraq.

2-Temporal boundaries: This research is in the academic year 2019/2020, the first semester of it.

3 - Objective boundaries: The first and second chapters of the mathematics book scheduled for the first intermediate grade (Jassim and others, 3rd edition, 2018) that includes mathematical topics (integers, relative numbers, polynomials, open sentences).

4- Determine terms.

First: The Strategy: Everyone knows it

1- Al-Kubaisi(2008): Any move or action that the teacher takes in the classroom, and these moves are regular and sequential, and for the teacher's movements to be effective, he demands teaching skills: activity and vitality. (Al-Kubaisi, 2008,118)

2-Attia (2008) "A set of practices and procedures that the teacher performs in order to achieve the outputs that reflect the goals he set, and thus it includes

activities, methods, means, and evaluation methods that help to achieve the goals" (Attia, 2008, p. 341) .

3- Procedural definition: Coordinating and employing all educational learning activities for the purpose of reaching the achievement of goals, which is a set of methods, methods and capabilities.

Second: Mantle of the expert:

1- Defined it (Heathcote, 2004) as "an approach with resulting learning outcomes related to cognitive and social development, in addition to its relationship to the acquisition of life skills (Heathcote, 2004,15).

2- Procedural definition: a dramatic educational situation, in which the learner is exposed to many stages of exploration and investigation of a specific topic, where the subject is deepened through a dramatic situation and contributes to changing the roles that students take to be experts in the subject.

Third: Academic achievement was defined by:

1- Alderman (2007) that: the ability to accomplish what has been gained from educational experiences that were put for him (Alderman, 2007, p. 101)

2- Procedural definition: All that is achieved by female students of the first intermediate grade in mathematics measured by the final grade that they will obtain upon taking the achievement test prepared by the researcher.

Fourth: Decision making known by:

1- (Al-Najdi and others, 2005) "as an ordered intellectual process aimed at choosing the best alternatives and solutions available to the learner in a particular situation depending on what he has of certain criteria and values related to his choice" Al-Najdi and others: 2005, 226).

3- Procedural definition: a complex process that takes place through sound thinking to analyze alternatives and solutions, arrange them according to their preferences, and then choose the best solution.

2.The theoretical Framework and Previous Studies

First: The Theoretical Framework:

Social constructivism: It is a theory that descends from the constructivist theory and it is a theory that emphasizes the role of the other in building knowledge in the individual as well as it emphasizes the struggle in individual and social growth. This theory emphasizes the occurrence of fruitful exchanges between individuals, and this interaction helps the growth of the individual's knowledge structure and its continuous development, Vygotsky, who is one of the greatest advocates of social constructivism, believes that intellectual growth is a social and not biological nature, as Piaget sees it, and believes that learning can be a factor in intellectual growth, just as knowledge has a social formula, and the intellectual activity of the individual cannot be separated from intellectual activity. To the group he belongs to (Abd al-Salam, 2001).

Mantle Expert Strategy

There are many teaching models based on social constructivism theory, including this strategy, which is an approach with resulting learning outcomes that have a relationship to social and cognitive growth, in addition to its relationship to the acquisition of life skills, and It is a strategy based on interesting drama in the teaching and learning process, and includes its basic idea that students learn the curriculum as if they were an imagined group of experts discovering and learning by taking on special responsibilities (Heathcote, 2004).

Elements of the Expert's Mantle:

Heathcote and Bolton state that this strategy must be comprised of essential core elements and include:

1- Project: Students (learners) take responsibility for a project and gradually build in an imaginary world.

2- The customer: The students (learners) are interested in collecting the activities necessary to achieve the goals.

3- Experts: Students (learners) interact with themselves and imagine that they are acting as if they are experts working for the success of a project or task entrusted to them.

4- Tasks: Students engage all the time in order to complete the project (curriculum requirements) from within the imagined world.

5- Location: The position of the teacher is a participant and supportive of the students as a colleague, and he checks the students' sites in the project in order to build their point of view on the role in which they are playing.

6. Reflection: Students reflect on their work in order to produce knowledge, where the teacher gives students sufficient time to think and develop an appropriate plan before starting work and train them to examine possible alternatives and choose the most appropriate. (Heathcote & Bolton, 1995: 14).

Advantages of Mantle Expert Strategy in the Education process

The teacher's role within this strategy is an organizer of behavior, presenting information and being outside this strategy as an assistant. He no longer uses the voice of the expert, for today he is the assistant colleague, the teacher frequently engages in deftly jumping and sliding lightly and turning suddenly, a time that takes a few seconds where he keeps his turn, and quickly what is waived, then resumed, and it is possible to communicate with a word or even raise an eyebrow in a manner of ambiguity adopted between the two. This is something that is paradoxical. Use in a role generates a healthy relationship between teacher and student while actions, as well as speaking outside the role, already foreshadow the adventure of drama and its strength, both of which are essential (Heathcote, 2012: 35).

As for the students' role within this strategy, they represent and express their feelings so that they work to develop self-monitoring because they create a world in which they control and feel In addition to that, each student represents the role of maturity and bears the responsibilities of adults so that their integration in the tasks assigned to them is based on their level of social integration, imagination and information. . Their involvement in the tasks gives them the pleasure of challenging the teacher with confidence, and provides them with the freedom to express responsibility, make decisions, and lead the group (Morgan and Sachston, 2012: 9)

Decision making

A rational, rational process that crystallizes in sub-processes, namely research, comparison, or differentiation, and selection is the judgment process by favoring one side over the other or finding solutions to reach the approval or stability of something (Khater and others, 2001, p. 256).

Stages of Decision Making

Decision making is a complex process with multiple stages

1- Defining the problem: accurately diagnosing the problem and developing appropriate solutions to that problem.

2- Defining goals: to guide the decision to the correct destination that is being achieved.

3- It is necessary to obtain the largest possible number of facts about the decision within the time limits imposed to obtain facts and information.

4- Searching for suitable alternatives to the problem, and this search process is not easy.

5- Alternatives: An evaluation and screening of those available alternatives is performed in order for management to choose the appropriate alternative.

6 - Choosing the best alternative: the decision-making stage. This stage is one of the most dangerous and difficult stages, since at this stage the appropriate alternative is chosen.

7-Implementation and follow-up: The most important items are the implementation and evaluation of the decision (Zaghoul and Zaghoul, 2009, pp. 324-p. 327)

Previous studies

1- Taylor study (2009)

The study conducted by Taylor aimed at knowing the extent of awareness of both students and teachers from the point of view of these participants between the approach of the expert cloak and the traditional education found in schools, as well as studying the effects resulting from this strategy that appear on the participants in this experiment and on teachers and schools, and the study came through Conducting focused interviews for teachers whose experience ranges from ten to twenty years and who have tested the mantle expert approach in the education process for a period of one to three years. As for the interviews with students, they were conducted with students between the ages of five to seven years, and upon analyzing the results showed agreement Both students and teachers believe that the Cloak expert's strategy approach is one characterized by encouragement, motivation and enjoyment, increasing their desire to learn and their ability to deal with educational learning situations.

2- Hadi study (2013)

This study conducted by Hadi aimed to identify the effectiveness of the RISK program in acquiring concepts and decision-making to solve physical problems among fourth-grade students of science. The researcher followed the experimental approach. The test and scale was applied to 36 students of the control group and 35 students of the experimental group. For the benefit of the experimental group in the concept acquisition test and the decision-making scale for solving physical problems.

3.Methodology

First: Research Methodology:

The researcher relied on the quasi-experimental approach in the current research, in order to suit this type of educational and psychological approaches to the requirements of the current research and its procedures.

Second: Experimental Design:

In order to achieve the objectives of the research, the researcher adopted the experimental design with partial control (Daoud, 1990, p. 250). , a shown in the following figure:

Figure No. (1) experimental design for the research

The group	The two groups are equivalent	Independent variable	Dependent variable
Experimental		Mantle expert strategy	Post-test achievement Make decision
Control		traditional way	

This type of design requires the preparation and preparation of two equal groups in some of the variables that can affect the dependent variable, and the researchers were keen on the possibility of controlling these variables through the equivalence of the two research groups in (the chronological age of students in months, the students' previous achievement in mathematics, intelligence).

Third: Research Society:

The current research community includes all morning middle and high schools in Dhi Qar Governorate Center for the 2020-2019 academic year.

Fourth: Research Sample:

The researcher chose Dar Al-Salam Academy high school from among several secondary schools an intentional choice in order to know the researchers about

the capabilities of this secondary and its advanced educational means in addition to its proximity to their place of residence, and this in turn is an essential element that helps the application of such modern strategies.

The school consisted of (42) female students in the first intermediate grade divided into two divisions, comprising Division (A) 21 female students, and Division (B) comprising 21 female students. Division (A) was selected as an experimental group that taught using the expert's mantle and Division (B) as a control group taught in the usual way.

All the students were taken to the class.

Fifth: Equivalence of the two research groups:

Although all the students are from the same governorate, at the same school, and from the same sex, the experimental and control groups were equal before starting the experiment, as the researcher extracted the arithmetic averages, standard deviations, and the calculated and tabular T value for the three variables.

Table No. (1) Equivalence of the two research groups

Statistical significance	T-value		Control		Experimental		group / Variables
	Computation	Tabular	standard deviation	Arithmetic mean	standard deviation	Arithmetic mean	
Not a function	0.034	5.506	36,609	169,598	46,445	168,36	age of the students
Not a function	5.12		9.337	74.43	9.035	76,33	Previous academic achievement

Not a function	0.23		8.43	48.26	8.10	47.95	Intelligence

Table No. (1) shows that the two research groups are statistically equivalent, as there are no statistically significant differences, as the calculated T values are less than the tabular value of 5.506.

Sixth: The study requirements

1- Scientific material:

The researcher determined the scientific subject that she will teach and relied on the mathematics book scheduled for first intermediate grade students for the 2019-2020 academic year. Which included the fifth and sixth semesters covering topics (geometry, measurement, areas and volumes).

2- Formulating behavioral goals:

After the researcher analyzed the content of the subject and specified in the fifth and sixth chapters of the mathematics book, she formulated (64) behavioral objectives, as she relied on the general objectives and levels of Bloom's classification, which are among the most common classifications. Teaching, and in light of the observations made, the researcher reformulated the goals and omitted them, until their final form became (60) a behavioral goal.

3- Preparing teaching plans:

The researcher prepared the teaching plans for the two research groups according to the strategies used, as it prepared teaching plans for the experimental group using the strategy of the expert’s cloak, and plans for the control group using the traditional method. The researcher presented these plans to a group of experienced and specialized arbitrators in light of the observations and proposals they submitted. The researcher made all the required adjustments, and then became ready for implementation.

Sixth: Research:

First: Achievement test: The researcher prepared an achievement test in The light of the behavioral goals that she previously prepared and the content of the scientific material represented in the fifth and sixth chapters for the

purpose of measuring the impact of the expert's mantle strategy compared to the usual method.

1- Test map:

The researcher followed several steps to prepare the table of specifications, such as finding the relative weight of the subjects in which the student's achievement will be measured, knowing the number of pages for each topic of the test material in relation to other topics and the behavioral goals of the levels of the cognitive domain from Bloom's classification, as well as calculating the weights for the levels of goals depending on the number of behavioral goals in each A level according to the goals for each topic to the total number of goals. The researcher identified the number of test items with (50) items and distributed them on the cells of the specification table.

2- Test items and instructions:

The researcher relied on one of the types of objective tests, which is multiple choice, and she informed the students of the need to carefully study the questions, read them correctly, not rush, and not leave any paragraph without an answer because it will be considered wrong.

Test validation:

The researcher used two types of validity for the purpose of verifying the validity of the test, namely, the outward validity and the validity of the content.

a. Apparent validity: The researcher verified the apparent validity of the test by presenting it to a group of specialists and experts in the field of teaching mathematics in its initial form consisting of (50) paragraphs, and she asked them to express their opinions on the test paragraphs, and in light of their observations, some of the paragraphs were amended, and the paragraphs obtained were accepted. Acceptance rate (80%) of the experts, and in light of the aforementioned, all the items are considered acceptable and valid for testing.

B. Validity of the content: This type of validity was achieved because the researcher had used the specifications table in developing the test items.

3- Exploratory Experience:

The researcher applied the test to an exploratory sample consisting of (40) female students of the first intermediate grade from the Hittin intermediate

school from the research community that had not been appointed, and the goal of this application was to know the time spent by the students in answering the test as well as to ensure the clarity of the test, its paragraphs and instructions, and time The necessary answer was determined as (50) minutes as an average of time depending on the time spent in the answer to the fastest student, and the time it took for the slowest student, and the researcher benefited from this sample and the results of her test in determining the discriminatory strength and finding the coefficient of stability, difficulty and ease.

5- Statistical analysis of the test:

The researcher applied the test to (40) female students of the first intermediate grade, and for the purpose of analyzing the test vocabulary, The researcher corrected the answers and then arranged them in descending order, and the sample was divided into two upper groups of (20) students and a minimum group of (20) students in the class tests (tests) which are built to be applied to one of the school classes or the tests that are built to be applied to small groups whose number of students does not exceed the number of students of any class in the school (in this case, and because the sample is small, the same grades are divided 50% upper and 50% lower) Al-Kubaisi 2007. , P. 171).

The difficulty factor was calculated and was between (0.36-0.76), which is an acceptable ratio, as the percentages are acceptable if they range between (20-80)%. (Bloom, 1970, p, 66)

The strength of paragraph discrimination ranged between (0.25-0.47), which is an acceptable percentage as well.

6- Effectiveness of wrong alternatives:

After the researcher completd the statistical operations and analyzd the responses of the pilot sample, it became clear that all the wrong alternatives for the achievement test items are where effective and of the attractive type.

7- Stability test:

The researcher reported from the exploratory sample to calculate the coefficient of stability, and repeated the test on the same sample after two weeks .

8- Application of the test:

After completing all the statistical procedures related to the test items, the post test was applied under the supervision of the teacher in charge of the

experiment and with the help of other teachers as his assistants during supervision.

9- Correcting the test:

The researcher corrected the students' answers after taking the achievement test, so she gave one score for the correct answer, and zero for the wrong or abandoned answer, or the answer that gave more than one indication, and on this basis, the test's upper score was (50) marks, and the minimum score was zero.

Second: Building a decision-making scale:

The researcher took several steps to build a decision-making scale, including defining the goal of the scale, which is determining the ability of middle-class students to make decisions.

The numbers of the decision-making scale formula in its initial form, included:

1- Prepare five decision-making skills.

2- The scale consists of (53) paragraphs in its initial form, and many things have been taken into account during preparing the scale, including the paragraph should be simple, easy and expressive of experience or a specific position and direct in measuring the skill.

Scale instructions

The researcher determined the number of the scale paragraphs in its final form (42) paragraphs, and clarified the instructions for answering the scale paragraphs, in a simple and easy way that suits the first intermediate grade students.

Scale correction

The researcher selected a triple Likert scale consisting of three alternatives for each paragraph, which are (large, medium, few) and for the purpose of correcting the answers to the paragraphs of the decision-making scale, weights were given for the purpose of converting these three alternatives into a quantitative number for the purpose of making statistical operations easy, which are (3,2,1) Thus, the highest score for this scale is (150).

Validate the scale

The researcher used two types of honesty

1- Apparent honesty:

The researcher presented the scale to a group of referees, experts and educators, and amended the paragraphs that need to be modified. Thus, the scale in its final form consisted of (42) paragraphs.

2- Validation of construction:

The researcher took the following steps to verify the authenticity of the building:

1- Extracting the correlation coefficient, not the scale dimensions, with the total score of the scale, and they were all significant at the level of significance (0.5).

2- Extract the correlation coefficient between each paragraph of the scale and the dimension to which it belongs.

3.Apply the scale:

The researcher applied the scale on a sample of (50) female students from the research community in order to ensure the validity and clarity of the paragraphs and the time they took to answer, as the average answer for the scale paragraphs was (45) minutes and after making the correction for the students' answers and arranging them in descending order, the researcher By taking the highest (25%) of the grades to represent the higher group and the lowest (25%) of the grades to represent the lower group for the purpose of conducting statistical analysis and extracting the discriminatory power of the scale paragraphs. After that, the calculated value for the two groups was calculated, and it was found to be between (2.23-7.34). All these values are greater than the tabular value of (t), whose value is equal to (2.006). This value is considered acceptable and therefore all the scale paragraphs are distinct.

Stability of scale:

The researcher used the Alpha Crownbach method to calculate the reliability coefficient for the decision-making scale, where it was found that its reliability coefficient is equal to (0.82), and accordingly, the scale reliability coefficient is good.

Statistical means:

The researcher used several methods consistent with the research objectives, and also used the statistical program (spss) in processing the data.

4.Findings,conclosions and Recomendations

Presentation and interpretation of findings, conclusions, proposals and recommendations

First: Presentation of Results:

The first hypothesis:

1- There are no statistically significant differences at the level of (0.05) between the average degrees of achievement in mathematics between the experimental group that is taught using the expert's cloak strategy and between the control group that is taught in the usual way.

In order to verify this null hypothesis, and to know the significance of the difference between the achievement test scores, the arithmetic mean and the standard deviation of the post-test scores of the experimental and control groups were calculated in the field of achievement, and the spss statistical program was applied to test the statistical significance of the difference between two arithmetic averages of the scores of the students of the two groups in the post-achievement test. The arithmetic means of the experimental group was (20.86) and the arithmetic mean of the control group was (17.81) and the computed value of t reached (2.334), while the p-value reached (0.025) at the level of significance (0.05). And since the calculated t value is greater than the p-value values, the hypothesis is rejected The null hypothesis and the alternative hypothesis, i.e. there is a statistically significant difference between the two research groups in favor of the experimental group that studied using the expert cloak strategy, and the superiority of the experimental group students may be attributed to the fact that using this strategy in teaching increases the achievement of the students, as shown in the following table:

set	Sample volume	Arithmetic mean.	standard deviation	The computed t	**p-value**	**The significance level is at 0.05**
Statistical function	21	20.86	3.941	**2.334**	0.025	Experimental
	21	17.81	4.501			Control

The second hypothesis:

1- To verify the second null hypothesis, which states (there are no statistically significant differences at the level of (0.05) between the average scores of students who study mathematics using the expert's mantle strategy and the average scores of students who study mathematics using the usual method of decision-making).

To verify this hypothesis, and to know the significance of the difference between the students' scores in decision-making, the researcher used the SPSS statistical program for two independent samples, where the arithmetic mean of the experimental group was (120.71), and the arithmetic mean of the control group was (109.01), where the value of was (4.149) while the value of p-value reached (0.000) at the level of p-value, this means rejecting the second null hypothesis, i.e. there is a statistically significant difference between the two research groups in favor of the experimental group that studied using the strategy in their decision-making As shown in the following table:

Table No. (3)Test results the two independent samples to test the decision-making scale

set	Sample volume	Arithmetic mean.	standard deviation	The computed t	**p-value**	**The significance level is at 0.05**
Statistical function	21	120.71	9.946	4.149	0.000	Experimental
	21	109.01	**7.892**			Control

Second: Interpretation of the Results:

The results of the research revealed the superiority of the experimental group students over the control group students in the post test that was applied after the end of the experiment. The researcher attributes this superiority to that

Teaching using the expert's mantle strategy works to attract and attract the students' attention and gives the students opportunities for reflection, thinking, self-expression, discussion, interaction and negotiation with the group, not in order to achieve a common goal, In addition to that this strategy is based on realistic problems that are directly related to the student's life, making it more integrated. There so involvement in the problem, and the students generate a desire to solve it and take a correct decision for the problem.

Third: Conclusions:

In light of the researcher's findings, the following can be concluded:

1- The strategy of the expert's gown had a positive effect on increasing the achievement of the first intermediate grade students in mathematics more than the usual method.

2- The teacher's use of the strategy of the mantle of the expert in the process of teaching mathematics needs more time and effort than it is in the regular method..

4- Going to what the literature has confirmed, that the strategy of the expert's gown helps clarify and communicate information to the student in an interesting and effective manner.

Fourth: Recommendations:

In light of the research results, the researcher recommends the following:

1- The necessity of the interest of mathematics teachers and female teachers in using the strategy of the expert cloak.

2- The necessity of organizing training programs for supervisors and teachers of various subjects and training them in the use and numbers of the expert's mantle.

3- Interest in introducing and activating classroom and extra-curricular activities in schools and for all academic subjects.

Fifth: Proposals:

1- Conducting studies to identify the effect of the expert's mantle strategy on other subjects and other academic stages.

2- Conducting other studies to compare the strategy of the expert's cloak with other strategies emanating from the constructivist theory.

3- Study the effect of employing the mantle of the expert on developing other patterns such as problem-solving, comprehension, and scientific thinking.

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