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The Effectiveness of Using the Thinking Hand Strategy in the Achievement of Second Graders Average in Social and Mental Alertness

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The introduction

The contemplator on the progress reached by the advanced countries of the world is the thinking human mind that presents the applicable theory and that results in everything that would develop life, as the real wealth of any society must lie in its human energies, which are represented in today's students, the leaders of the future that creates A conscious generation that seeks creativity in all fields, thus contributing to the progress and advancement of its country, and education is one of the priorities of any country that is always striving to keep pace with the development in human .(knowledge (Al-Olayan, 2019: 272

Perhaps educational institutions are concerned with taking their role and keeping pace with scientific progress in choosing strategies that care for the development of thinking and the use of higher levels, including the thinking hand strategy created by the French scientist George Charpak in 1996, which emanates from the applications of the constructivist theory, which sees that the learner is an active and effective being who always seeks For the state of equilibrium, starting from the introductory stage (let's start) by linking, deducing, and applying what he learned in new situations, and it is one of the strategies based on the use of the senses and experimentation, that is, it tends to the practical side more than the theoretical side and the possibility of its application in the study curricula (Egyptian , 2016: 3).

Sociology is one of the important curricular subjects because of its direct relationship and contact with human life and society. It explains many

natural and life phenomena. Therefore, it is preferable to use teaching methods and methods that help students build knowledge in a meaningful way, especially that the methods and methods of teaching it that teachers follow are still Traditional and ineffective, as some teachers often do not make good use of the class time in teaching or treat students' shortcomings and weaknesses, or even diagnose them and find out their causes.

There is a clear shortcoming in the use of effective and modern teaching methods, especially in the subject of social studies, and this is one of the problems that teachers face in the field of teaching and learning it. That the students be flexible and able to successfully deal with everything that is new in the environment, and move forward with vitality towards the human and social transformations that occur in individuals to help them adapt in their social environment, and the tendency to practice

Negative mental habits characterized by monotony and irrational repetition, this is called mindfulness that eliminates this kind of vicious cycle behavior (Al-Ruwaili, 2019, 116).

Mindfulness: It is a way of thinking that stimulates attention to environmental changes without making positive or negative judgments about them, which enables the individual to think realistically (Park et al, 2013: 237).

Research problem

The problem of the research is summarized by the weak achievement in the subject of social studies and the reliance on the traditional teaching methods, this is what was shown by the results of a questionnaire directed by the researcher to the teachers of the subject of social sciences for the intermediate stage (and their number is 30 teachers) in one of the training courses, which included two questions the first: What are the teaching methods that you use in teaching social sciences The second is what is your information about the thinking hand strategy. The results of the questionnaire showed that the majority of the sample (90%) approved the lecture method, and 10% of them used the discussion method.As for their

information, the strategy of the thinking hand, the answers of the whole sample were that they did not know anything about it.The researcher formulates his research problem with the following question: The effectiveness of using the thinking hand strategy in the achievement of second-grade students in average in the subject of social sciences and their mental alertness?

research importance

.The importance of the research can be summarized as follows

1-It may provide teachers in the intermediate stage with an unconventional teaching method that may help in increasing their students' acquisition of .social concepts

2-Directing the teachers' eyes to an important emotional aspect in teaching .social studies, which is to develop their curiosity towards learning

3-This research is an extension of the studies that applied the thinking hand strategy in different specializations, but it was not applied in the social .subject, which allows a new enrichment of knowledge in this field

4-Its application to an educational stage (the second intermediate), which is the first building block for learning social studies and which affects the .success of the subsequent educational stages

5-It is presented to the authors of the social studies courses for the .intermediate stage by making use of the thinking hand strategy

research aims

The research aims to identify:

1. What is the effect of the thinking hand strategy, compared to the traditional method, on the achievement of second-grade average students in the subject of social studies.

2. What is the effect of the thinking hand strategy compared to the traditional method on the mental alertness of second-grade students of average in the subject of social studies.

research assumes

In order to achieve the two objectives of the research, the following :hypotheses were formulated

1-There is no statistically significant difference at the level (0.05) between the mean scores of students who study using the thinking hand strategy and .those who study the traditional method in achievement

2-There is no statistically significant difference at the level (0.05) between the average scores of the mental alertness test for students who study using the thinking hand strategy and those who study in the traditional way

search limits

The search is determined by the following:

1. Second year average students in Anbar Governorate for the academic year 2018-2019.

• The first chapter of the sociology book is related to geography

define terms

:The terms included in the search were defined as

First: Effectiveness: the set of positive or negative changes in the situation, whether these changes were planned or unplanned by the implemented project or program after a specified period of time (Dunlosky, John, et al, .(2013: p. 20

Procedural definition: The size of the change in the achievement of second grade students average in the subject of social sciences (geography), after teaching using the thinking hand strategy, and it is measured statistically by the effect coefficient (eta square μ^2), between the mean scores of the .experimental group and the control group

Second: The thinking hand strategy: The psychological process of intentionally drawing one's attention to the internal and external experiences that occur at the present time, which can be developed through the practice of meditation and other training in non-judgmental situations" (Wilson, 2014, 35).

Procedural definition: A set of attitudes and activities carried out by the experimental group students in the second intermediate grade in studying the first section of the sociology book (Geography), which helps them to employ their senses in increasing achievement and mental alertness.

Third: Attainment: the level of education that has been achieved after passing educational experiences in a specific period, and it is measured by written or performance tests (Sahin, et al, 2018: p.2).

Procedural definition: The knowledge acquired by students of the second grade average from teaching social studies (geography), and it is measured .by the degree obtained in the test prepared for research purposes

Fourth: Mental vigilance: a mental process that includes awareness, attention and focus on positive or negative events in the present moment without resorting to interpretation or making evaluative judgments (Al (Dabaa and Talib, 2013, 12

Procedural definition: a personal vision of what the second-grade student hopes to obtain or achieve from practicing the mind, through three mental mechanisms (intention (intention), attention (attention), and direction (attitude). It is measured by the total score that he will obtain on a scale. Mental alertness that was prepared by the researcher to achieve the .objectives of the research

Theoretical framework for research

First: The theoretical basis of the thinking hand strategy

The thinking hand strategy is one of the modern strategies through which students deal with the things they study in a practical way such as - rocks -

water - mountains - magnetic fields and dealing with laboratory tools of all kinds.

A physicist who wrote a book entitled "Enfantscherchants et citoyens" in 1998. In the same basket, the program Hands on,: The Thinking Hand, was reconstructed and drafted. As a result, the French National Institute of Pedagogical Renewal published the ten principles on which the approach :was based (September 1998), which are

(1) The student observes a phenomenon or an object from its surroundings and conducts experiments on it.
(2) During the experiment, the student justifies his observations and conclusions and discusses them with a group.
(3) The proposed activities are organized according to axes that take into account an appropriate gradation in the acquisition of scientific knowledge, while leaving a wide scope for self-learning.
(4) A time slot of two hours per week is allocated to a specific unit over a period of several weeks.
(5) Each student holds a notebook in which he records his observations, conclusions and drawings in his own way, without the intervention of any party.
(6) The scientific concepts are gradually adopted, during which oral and written expressions are processed.

The guardian is invited to assign the work that is being done in the department by providing some means to assist in conducting the experiments and by reviewing the student’s booklet and having a dialogue with his son about it without prejudice to the booklet (mistakes are not corrected by the guardian.
(8) The necessity of finding partners in a variety of specializations who continue to work in the school by putting their expertise at the disposal of the group without interfering in the issues that are within the competence of the teacher.

(9) The administration and specialists in the educational field put their expertise within the reach of the teacher.
(10) The teacher links with specialists in the aforementioned fields through a website to contribute to enriching the discussion or asking questions.
(Al-Masry, 2016: 10-11)

Jacques Scherbak defined it as a systematic arrangement in which the five senses of students are employed in learning science and developing their connection with the natural world that surrounds them, so that they can discover and understand it. The thinking hand strategy aims to:-

1. Students notice objects and phenomena in a tangible way.
2. Giving students the opportunity to participate in activities and discover scientific knowledge.
3. Sharing the surrounding environment in a coherent manner with the school to improve the conditions and climate for learning the school subjects at the school.
4. Teachers help each other through a special website on the Internet

(Muhammad, 2011: 629)

Teaching steps using the notebook hand strategy

The first stage: Let's start: It begins with a set of questions posed by the teacher to provoke the student to express their previous experience and knowledge related to the topic of the lesson, while giving them the freedom to express their ideas even if they are wrong, which is the stage of imposing assumptions.

The second stage: research and discovery, in which students work in small groups ranging from (4-6) students, where:

- The student practices various activities through his use of tools and materials himself, such as using geographical maps and charts

It achieves the investment of students' abilities in order to provide sufficient time for learning and discovery

- The work of the groups is accompanied by the rise of some voices, and this is not considered a problem, but rather it may be a motive towards forming ideas.

The third stage: constructing meaning and clarification: in which the class students meet with their teacher, where the following is done:

- Students discuss everything they noticed and reached during the stage of research and discovery through dialogue.

Students make comparisons between the results of the groups

Fourth stage: Expansion of knowledge: Students use their findings in solving other new problems and realize the relationships between what they have learned and their daily lives. The teacher should provide students with some new tasks that require them to use their previously learned knowledge. In this stage, students link between: -

New ideas and previous perceptions.

The knowledge gained while working with the knowledge acquired when studying other subjects.

Acquired knowledge and the surrounding environment.

(Al-Masry, 2016: 13-15)

Second, mental alertness

The history of the discovery of the term mental alertness by the psychiatrist and creator of the stress reduction clinic, "Kabat-Zinn" (1979), describes (Langer) one of the theorists in mental alertness as a state of mental discipline that involves attention to training, and then Mental alertness revolves around giving attention, and it does not mean the presence or absence of attention, but rather it is intended to test and know the direction of attention, and then the function of the mind is to regulate attention, and there are other elements that are generally associated with mental alertness such as acceptance and openness to what is observed. (Langer) is not a relaxation exercise, so relaxation is the side effect and not the main objective of this practice (Langer, 2014: 631)).

Langer pointed out that mental alertness has five components, which are:

Openness to novelty: the ability to think about new types of stimuli.
b- Vigilance to distinguish, which is the ability to compare and contrast and make judgments about similarities and differences in the information that is obtained.
C - Awareness of multiple points of view: It is the ability to see things from different points of view, and not to take any idea from one direction.
D- Sensitivity to different contexts: It is awareness of the characteristics of certain situations and the changes that occur in such situations.
E - Orientation at the present time: It means the ability to pay attention to the immediate situation.
Ling, 2015:18))

Previous Studies (The Thinking Hand Strategy)

1- Study (Wei & Ford, 2015): The study aimed to identify the effectiveness of using the thinking hand strategy and the team-based learning approach in developing problem-solving skill in mechanics. The study sample consisted of (50) university students from the Technical Institute of New Mexico, A test was prepared from the material and showed the results of the effectiveness of using the thinking hand strategy and the team-based learning approach in developing problem-solving skill.

2- Study (Al-Masry, 2016): The aim of the research is to identify the effect of using the thinking hand strategy to correct some alternative perceptions and develop some science processes among primary school students, and the experimental method was adopted. The sample consisted of 42 students from the fifth grade, who were equally divided into two groups, experimental and control. The tools were: a teacher's guide for teaching the unit of the subject, a correction test for alternative concepts, and a test for science operations. The results of the research concluded that the thinking hand strategy led to the development of science operations skills among the experimental group members and to correct misconceptions.

Previous studies (mindfulness)

1- Study (Al-Hashem, 2017): The knowledge of the study aimed to identify the level of availability of mental alertness among a sample of government secondary school principals in the Governorate of Amman. The sample consisted of (313) teachers and schools, and they followed the descriptive approach. It has an average level of mental alertness, and there is no effect of gender in the mental alertness of the sample.

2- **Flaxer study, 2018):** The study aimed to build a counseling program for developing mental alertness among middle school teachers and students using the theory of change model. The study sample consisted of (40) teachers and students. The results showed that there is an effect of the counseling program in developing mental alertness among teachers and students, and there are no statistically significant differences between teachers and students in developing mental alertness.

dependent variable	independent variable	parity	the group
1- Post-achievement test. 2- Postural Mental Vigilance Scale	notepad hand strategy	1. Chronological age. 2. Previous collection. 3. Intelligence. 4. The educational attainment of the parents. 5. Tribal Mindfulness Scale.	Experimental
	traditional way		control

Al-Shumukh Secondary School for Boys was chosen to conduct the experiment to support the administration and the willingness of the social teacher to implement the experiment. The school includes (68) students in the second grade average distributed over two divisions, one of the two divisions (A) was chosen at random to represent the experimental group and Division (B) to represent the control group, And (6) students were

statistically excluded from the repeaters in the last year, for the purpose of ensuring parity, and thus the number of sample members was (62) distributed equally between the two research groups.

Equivalence was conducted in the tribal mental alertness scale, and prior knowledge from the last year's degrees in the social subject, and the intelligence test (Otis Lynion) for mental abilities was applied as shown in the following table (1):

Statistical significance	T value		The control (31) students		Experimental (31) students		group variables
	lated tabular	calcu	variance	mean	variance	mean	
Not significant at the 0.05. level	2.00 at a degree of freedom of 60	1217	56.18	122.68	64.36	120.42	mental alertness IQ score
		0.423	214.16	177.7	321.62	176.64	scale
		0.533	136.45	61.84	144.12	60.42	age in months
		1.218	5.86	21.64	6.12	22.41	Previous knowledge IQ score

It is clear from Table (1) that all the calculated values are less than the tabular value (2,000) in the degree of freedom of 60, which is the difference that is not statistically significant at the level (0.05).

Using chi-square test to test the difference between the experimental and control groups in the educational level of the parents. The results showed that there is no statistically significant difference at the significance level (0.05), which means that the two research groups are equal in this variable.

The scientific subject that is taught by experience has been determined based on the sociology book to be taught to second-grade students in the middle school in Iraq and for the academic year (2019-2020), which is the first chapter of the geography of the Arab world from the book and includes: Chapter One: its geographical location, its area / natural characteristics. 160 behavioral goals were formulated and the six levels of Bloom's classification were adopted (remembering = 50, understanding =

Total 100%	Target levels and weights	Content Weigh	number of pages	seasons

42, application = 26, analysis = 14, synthesis = 20, evaluation = 8). After applying the chi-square, the teaching plans of the two research groups were prepared according to the thinking hand strategy and the traditional method.

search tools

First: **The achievement test**: In light of the content of the specific scientific material, (40) test items were prepared of a multiple-choice type according to the following table of specifications (2):

	calendar 5%	installation 13%	analysis 9%	App 16%	understand 26%	to remember 31%			
22	**1**	**3**	**2**	**3**	**6**	**7**	53%	34	the first
18	**1**	**2**	**2**	**2**	**5**	**6**	47%	30	The second
40	**2**	**5**	**4**	**5**	**11**	**13**	100%	64	Total

And the achievement test in its initial form was presented to a group of arbitrators in the specialization of social sciences and its methods of teaching social studies, and the experts agreed on the test questions after using the chi scale. In each cell of the paragraphs, it requires an appropriate distribution of the paragraphs that represent the content that covered the objectives.

The test was applied to an exploratory sample (30 students) other than the original research sample (Mirbid average for boys), and it became clear that the paragraphs were clear and no questions were asked from the students.The second application was applied to an exploratory sample other than the original research sample of (100) second-grade students who gathered at Tahrir High School to find the psychometric properties, and it was found that the coefficients of difficulty and ease ranged between (42% - 64%), and the coefficients of distinction ranged between, (0.32-0.48), and it was found that the wrong alternatives for the test items were all negative. The stability was found in two ways, the first using the retest method on the exploratory sample and the second method using the Kewder-Richardson equation (R20-K): and the reliability coefficient was (0.89), and (0.82)

respectively. With this achievement test, it is ready to be applied to the main sample, and the scores range between (0-40) and the hypothetical average is (20) degrees.

Second, the mental alertness scale

After reviewing multiple studies, the number of the scale's items was prepared in its initial form of (48) items, distributed in 3 domains of intent, attention, and direction, in contrast to a five-point scale of the degree of applicability to identify the apparent validity of the items of the Mental Vigilance Scale. A group of arbitrators specialized in the field of education and psychology, numbering (12) arbitrators, using a chi-square and percentage. (43) paragraphs were kept and presented to a survey sample (20) students from outside the research sample. It became clear that the paragraphs are clear and the average time taken is (20)) Accurate,The validity of the construction was verified through the correlation of the paragraph with the scale as a whole. It was found that there were (4) items that were not statistically significant, so they were deleted from the scale. The reliability coefficient was calculated by the method of preparing the scale application, and the coefficient reached (0.81). Thus, the scale is ready for application. The highest score that the respondent can get is (195), the lowest score is (39) and the hypothetical average is (117).

research results

Presentation of the results of the first hypothesis: which states: There is no statistically significant difference at the level (0.05) between the mean scores of students who study using the thinking hand strategy and those who study in the traditional method of achievement, and by using the t-test for two equal samples in number to calculate the differences between the arithmetic averages of the two groups. The differences in favor of the experimental group are shown in the following table (3), the details of which are:

indication	t-test	degr	varian	average	the	the

group	number	Arithmetic	ce	ee of freedom	calculated	tabular	at . level 0.05
Experimental	31	28.98	16.58	60	6.616	2.00	Statistically significant
control	31	22.12	15.67				

From the table it is clear that the differences are in favor of the experimental group in the mental alertness scale.

The effect size was calculated according to the following equation for the t-test:

$$\eta^2 = \frac{t^2}{t^2+df} = \frac{(\mathbf{4.916})^{\mathbf{2}}}{(\mathbf{4.916})^{\mathbf{2}}+\mathbf{60}} = 0.29$$

Interpretation of results

The results demonstrated that the students of the experimental group outperformed their peers in the control group, in the average scores of the achievement test, and in the degrees of mental alertness, a statistically significant advantage at the level of significance (0.05). This result is attributed to the thinking hand strategy, which makes the student the focus of the educational process, and is a major contributor to building and organizing his knowledge and then reorganizing it when needed, which gives meaning to learning and contributes to individual and group work. Or in writing, from what we acquire, we learn geographic material gradually, which increases their achievement and mental alertness

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