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# The Effect Of The Strategy To Accelerate The Thinking In The Collection Of Second Grade Students And The Development Of Their Sports Culture

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**Abstract**

**The aim of this study is to know (the impact of the strategy of accelerating thinking in the achievement of second grade students and the development of their sports culture). Two sections of the second intermediate class were chosen in (Makkah Girls) of Nineveh governorate to represent one experimental group which is studying according to (accelerating thinking). The number of students was 33 and the other group is an officer who is studying in a regular way. The number of students (30), and thus the number of individuals sample study (63) students. To achieve the objectives of the study prepared a test of achievement of (40) paragraphs were verified reliability and stability and a measure of sports culture. Data were treated statistically using Spss program. The results of the study showed that there are statistically significant differences between the average scores of students of both groups in the test of achievement and mathematical culture in favor of an experimental group.**

# El Efecto De La Estrategia Para Acelerar El Pensamiento En La Colección De Estudiantes De Segundo Grado Y El Desarrollo De Su Cultura Deportiva.

Resumen:
El objetivo de este estudio es saber (el impacto de la estrategia de acelerar el pensamiento en el logro de los estudiantes de segundo grado y el desarrollo de su cultura deportiva). Se eligieron dos secciones de la segunda clase intermedia en (Makkah Girls) de la gobernación de Nínive para representar un grupo experimental que está estudiando de acuerdo con (pensamiento acelerado). El número de estudiantes era 33 y el otro grupo es un oficial que estudia de manera regular. El número de estudiantes (30) y, por lo tanto, el número de individuos de la muestra (63) estudiantes de estudio. Para lograr los objetivos del estudio se preparó una prueba de logro de (40) párrafos donde se verificó la fiabilidad y la estabilidad y una medida de la cultura deportiva. Los datos fueron tratados estadísticamente utilizando el programa Spss. Los resultados del estudio mostraron que existen diferencias estadísticamente significativas entre los puntajes promedio de los estudiantes de ambos grupos en la prueba de rendimiento y cultura matemática a favor de un grupo experimental.

Chapter One
Research problem :
The development of mathematics has clear implications in their educational level, which led to the emergence of many difficulties facing his student in particular, and students suffer from this development because of non-coping, which led to a decline in the level of achievement and mathematical culture, due to the teaching methods used empty The educational means and activities that do not provoke the enthusiasm of students to study on the contrary of them raise the monotony, and therefore does not help students to keep pace with the development in mathematics and deal with the numbers and processes and solve exercises smoothly and increase in their sports culture and this is confirmed by studies (Obeidi, 2016).
Therefore, the researcher considered the use of a new strategy in teaching, a strategy to accelerate thinking, which is one of the constructive strategies that activate both sides of the brain, which may contribute to creating awareness and building relationships between parts of the material and increase the control of students themselves and increase their culture math-

ematical.
The impact of the strategy to accelerate the thinking in the achievement of second grade students and the development of their sports culture.
research importance
1 - The current research deals with the strategy of accelerating thinking, which is expected to benefit learners in the discovery of mathematical associations of daily life, and thus a sense of importance and benefit from them in solving life problems.
2 - The results of this research may be useful in drawing the attention of the authors of writing mathematics textbooks by employing the fields of mathematical culture in the formulation of the content of mathematics books in the intermediate stage.
3 - .knowing the impact of the strategy to accelerate thinking in the collection of second grade students and the development of their mathematical culture.
Research target
Current research aims to know the impact of the strategy to accelerate thinking
1 - in the collection of second grade students average.
2 - in the development of sports culture for second grade students average.

Hypothesis search
For the purpose of achieving the research objective, the null hypothesis was formulated
1 - There is no statistically significant difference at the level of significance (0.05) between the average scores of students of the experimental group who are studying accelerated thinking strategy and the control group who are studying in a normal way in the achievement test.
2 - There is no statistically significant difference at the level of significance (0.05) between the average scores of students of the experimental group who are studying the strategy of accelerating thinking and the control group who are studying in a normal way in the scale of sports culture.
Research Limitations:
1- Second Grade Intermediate Students, (Makkah Intermediate School for Girls).
2- Second Semester (2018-2019).
3 - the content of two chapters of the book of mathematics for the second grade intermediate, seventh edition of 2016

Search terms
Strategy
1 - defined (Oxford, 1996) as: the processes used by the learner to assist in the acquisition and use of information. (Oxford, 1996: 21)
B - accelerate thinking
"An educational strategy based on Piaget (cognitive constructivism) and Vikotsky (social constructivism) theory as knowledge is built on the personal and social aspects of learning."
(Najdi et al., 2005: 293)
C. Collection:
- He defines him (Khalili, 1997) as: "The end result showing the level of student and the degree of progress
In learning what to expect to learn. "(Khalili, 1997: 6)
- Sports culture:
(Pugalee, 2001): It is to put the mathematical subject in the context of my life meaningful, that is, at the heart of their daily lives, in their literature and stories and in other sciences, as well as to ask questions and learn about the history of mathematical subjects, and this will create a classroom environment that develops Sports culture among students. (Pugalee, 2001: 296-299)

Chapter II
Theory Background:
Cognitive constructivism and Vikotsky's theory of learning paved the way for the emergence of multiple teaching strategies that contribute to the development of students' thinking abilities, such as accelerating thinking.
According to the researcher Najdan the most important problems faced by a teacher in teaching are: how to teach students thinking and what is the most effective ways to support the process of learning in classrooms, which had a negative task those students who have become thinking the way they think their teachers, because the teacher explains and discusses and asks and answers .
Therefore, there are many strategies based on a constructivist theory that can be adopted in the classroom during the teaching, such as the recent teaching strategies that took Piaget's theory of accelerating thinking strategy to accelerate mental-cognitive development in teaching, and teachers did not find difficulties to adopt such a strategy that offers a subject In them students have problems that challenge their mental abilities and enable them to practice new types of thought-provoking activities that are

commensurate with the growth of their thinking (Adey, 1992; 145).
The stages of this strategy are:
Stage 1: Classroom discussions
The teacher divides the students into groups, and then poses the problem to the students after which discussions are held between the students before, during and after the experiment. The role of the teacher in this case is directed to activities, and discussions that play an important role in thinking.

Phase II: - Cognitive conflict:
His application is subjected to an activity that may be inconsistent with their expectations or previous experiences, and thus consists of a state of cognitive conflict that motivates them to carry out an activity motivated and motivated to resolve a conflict of knowledge and reach a balance.
THIRD PHASE: THINKING IN THINKING:
This stage aims to reach a student to the stage of consciousness that makes him realize what he says and what works and why he thinks this way through a set of questions asked by a teacher to the students so that they are aware of the type of thinking adopted in solving the problem.
Fourth Stage: Bridging:
The aim of this stage is to link the experiences obtained by the request of the activity that he has done with his experiences in scientific life and in other materials in order to help him transfer the experiences of education to various fields of study and help him in the formation of an integrated image of knowledge. (Najdi et al., 2005: 293)
Sports Culture:
We live in an age of epistemological explosion, so everyone must have an appropriate amount of mathematical culture, with its mathematical knowledge, concepts and skills, and proper thinking methods necessary to know mathematics, to understand its nature and historical development. (Mufti et al., 1990: 171)
Therefore, the way in which his application is mathematically intellectuals, is the same way that they are Bmthagvien in reading, Valmthmat is not just numbers. (Jaber A), 2004: 53)
Pugalee (2001) referred to a mathematical culture as putting a mathematical theme in the context of their lives in their stories and literature, as well as asking and discussing questions and planning appropriate strategies to put forward solutions (pugalee, 2001: 296-299).

Mathematical culture goal of teaching mathematics

One of the objectives of teaching contemporary mathematics is to prepare mathematically educated individuals by providing them with an appropriate mathematical culture that enables them to pursue their studies at later stages of education (Saleh, 2012: 256).

Fields of sports culture 1. Mathematical culture associated with natural language Language is a means of thinking, culture and the means of civilization, as language is a tool through which successive generations inherit the experiences of their ancestors, and in language we manage our lives daily, (Ashour and Mohammed, 2009: 11) Also, mathematics is not a tool to help a student To think and solve problems only, but a tool of great importance in the exchange of ideas and express them clearly, and also named global language; because people of different languages can be used to communicate and exchange of mathematical ideas. (Al-Saeed, 2005: 1)

2 - sports culture associated with the reality of life

Mathematicians invaded other fields of science, entered their daily lives, and lived with the individual to help them solve their daily problems, as well as organize their daily life faster than they could. (Abu Zeina, 1994: 43)

3 - Culture sports linked to other sciences.

Mathematics represents a spring that scoops different fields of science without taking anything from it, it feeds all fields of science: physics, chemistry, engineering, astronomy, and others, where mathematics is a bridge for other subjects. (Mashhadani, 2011, 44)

4. Mathematical culture related to history

An interest in studying the history of mathematics gives students the opportunity to learn about the evolution of human thought on the one hand and the development of mathematical ideas on the other, which makes them aware of their importance and appreciate the role of mathematicians who have helped to grow and develop them (Abu Al-Hadid, 2013: 185-187).

Based on the above, a researcher considers that a mathematical culture is a multi-faceted intellectual entity based on several areas:

الرياضية Mathematical culture associated with natural language.

 Sports culture related to life reality.

 Mathematical culture associated with other sciences.

الرياضية sports culture associated with history.

All of which must be integrated to develop culture within the mathematical subject and to achieve its goal of meaningful learning.

Chapter III :

Research Methodology

Experimental design: - The researcher relied on one of the semi - experimental designs, with partial control of two equal groups (experimental and control) as in table (1).

The Design of research semi - experimental Table 1:

| Measure In depend variable | In depend variable | Depend variable | Equivalence between two gropes | Groups |
|---|---|---|---|---|
| -TEST the collection<br>-sports culture Scale | -the collection<br>-<br>sports culture | accelerate the thinking | -Intelligenc otis lenno<br>- Previou collectio | Experimenta |
| | | Normal way | Chronologica ag | Contro |

Society and sample research

Research community: The research community identified second grade students in middle schools and secondary schools belonging to the center of the province of Nineveh for the academic year (2018-2019).

Sample research: Sample was chosen deliberately, and was chosen through the selection of Division (C) to represent the first group that will study students strategic accelerating thinking, as the number of students (33) and Division (B) to represent the second group, which will study the way as usual, the number of students (30 )Student .

Adjustment procedures: The two groups were rewarded with variables (previous mathematical knowledge, chronological age, intelligence) after the researcher got the chronological age from the school records, the previous knowledge was obtained students' scores after testing and examining their answers and determine the scores of each, and was applied (Levin test) for two independent samples to know the significance of the difference between the different grades of students of the two groups, and knowledge of the value (F), at a certain level of significance, and the level of significance for the value of F)), for each of the equivalents greater than

the level of the significance of certified (0.05), and this means that two groups Homogeneous in this variable. As shown in Table (2)

Table 2: Equivalence of the Research Sample According to their Age, Previous Achievement and Intelligence

| Statistic significanc at (0.05 | df | t-test fo Equality of Mean | | Levene s Tes fo Equality o Varian e | | Stand r deviat o | Averag calculat o | Orde numb e | Divi on | grou | variabl |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | sig | | sig | F | | | | | | |
| No sig | 61 | 0.182 | 1.36 | 0.50 | .49 | 3.6 | 17.5 | 33 | G | Experim nta | Chronolo ical ag |
| | | | | | | 3.0 | 16.4 | 30 | B | Contro | |
| No sig | 61 | 0.86 | 0.19 | 0.58 | .32 | 3.22 | 145.5 | 33 | G | Experim nta | Intelligen otis lennor |
| | | | | | | 3.04 | 147.4 | 30 | B | Contro | |
| No sig | 61 | o.60 | 0.55 | 0.85 | 038 | 4.1 | 24.0 | 33 | G | Experim nta | Previou collectio |
| | | | | | | 3.9 | 23.5 | 30 | B | Contro | |

Research Supplies

Determination of scientific material: Determined the scientific material chapters (fifth - geometry, sixth - measurement / areas and volumes,) from the book of mathematics for the second grade medium / second part, first edition, for the year 2011.

Determining behavioral objectives: Specific objectives for teaching the subject in the form of behavioral purposes were set according to six levels of Bloom. They were presented to a group of arbitrators and took 95% agreement on each goal and adopted in teaching plans.

3 - Preparation of teaching plans: The preparation of teaching plans for each group and presented to a group of arbitrators and amend them and output them in a final manner.

Search tools

1- Achievement test: It is a research requirement to prepare an achievement test within the chapters included in a subject, so a researcher followed the following steps:
Determine the goal of the test
Determination of scientific material.
Formulate behavioral purposes.
4. Determine the number of test items.
5. Preparation of the test map.

(specification table) Table 3

| Number of paragraphs | | | | Cognitive domain levels | | | The relative weight of thecl ass | Chapter title | Chapter |
|---|---|---|---|---|---|---|---|---|---|
| | evaluation %6 | installation %6 | analysis %7 | Implementation %25 | %16 understanding | remember %38 | | | |
| 19 | 1 | 2 | 1 | 5 | 3 | 7 | 43.5 % | Engineering | fifth |
| 21 | 1 | 2 | 2 | 5 | 3 | 8 | 52.5 % | Spaces and sizes | VI |
| 40 | 2 | 4 | 3 | 10 | 6 | 15 | 100 % | total | |

6. Formulate paragraphs of achievement test: After preparing the specification table (40) paragraphs, two types of questions were formulated.
Answer instructions:
7. Preparation of test instructions:
(7-A) Answer Instructions:
The test instructions are necessary instructions to guide the student to take the test.
(7-b) Correction Instructions: The answer instructions were prepared on the achievement test, and were given (grade 1 for the correct answer) and (zero for the wrong). The first question included (32 paragraphs) objective, and the second question (8) paragraphs essay was a total score (19), and thus be the total score for the achievement test as a whole 54 degrees.

8- Validity of the test: The validity of the achievement test has been extracted as follows:
(8-a) Al-Dhaheri: The researcher presented the test items of achievement with behavioral purposes for each paragraph to a group of arbitrators and experts specialized in the methods of teaching mathematics and teaching methods of science, to ensure the safety of the paragraphs and suitability for the purposes and the rate of agreement (85%).
(B) Validity of the content: This was achieved through the preparation of a test map, and in the light of the preceding procedures, an achievement test is ready for implementation.
9. Sample information and statistical analysis sample for achievement test:
-9) a) Sample information: For the purpose of determining the time required to answer an achievement test, and to know the clarity of paragraphs and instructions, applied a test test on the sample of the first survey consisting of (32) students in the second intermediate grade in the (Makassed medium for girls) under the task facilitation book , The average time was (40) minutes.
(9-B) Statistical Analysis Sample: The test was applied to a second sample of 100 students from the second intermediate class in Makassed Girls School, after making sure that the students completed the study of the classes covered by the research and after it was agreed with the administration of a teacher and a teacher in a school. Mentioned to conduct a test application and inform all students a week before the test date.
10 - Statistical analysis of achievement test items: After applying the test and determining and sorting the scores of the group with the highest (highest) scores, as well as the scores of the group with the lowest scores (minimum) through the use of a higher percentage (27%) and the lowest (27%) for the two groups to Statistical analysis.
(10-a) Difficulty coefficient: Objective difficulty was between (0.21 - 0.52) and paragraphs of the article found that the value of between (0.44 - 0.63), as seen (Allam, 114: 2006) Difficulty between (0.85-0.15) is good.
10) -B) discriminatory force: It was found to be between (0.32 - 0.75), and calculated discriminatory force paragraphs article between (0.32 - 0.61), and all paragraphs are acceptable as Achadrlime and Adnan 90: 2005,) that the paragraph is good if The differential coefficient (20%) was more.
(10-c) the effectiveness of the wrong alternatives: The effectiveness of the alternatives was calculated by applying the hostility was 35) paragraph and found that the effectiveness coefficient of all negative alternatives,

ranging from () -0.50] - [0.04 [-).
11- Stability of the achievement test: Stability coefficient was calculated according to the equation (Elva-Kronbach), as this equation is suitable for the application of the test, which consists of paragraphs essay and objectivity, and the value of the stability of the test achievement (0.84) and is a good value.
12. Achievement test in its final form and its application: Achievement test in its final form was applied at the same time to the two research groups on 28/4/2019 after the teacher (researcher) informed the students one week before the test date.

3 - Sports culture scale
* Steps of building scale
1 to determine the purpose of the scale:
2 - Identify the fields of sports culture: In the light of access to literature and previous studies and the opinions of the arbitrators in the methods of teaching, education and psychology, the researcher identified four areas of sports culture, are: -
1 - Mathematical culture linked to natural language.
2 - sports culture linked to the reality of life.
3 - Mathematical culture linked to other sciences.
4 - Sports culture linked to history.
3 - the formulation of paragraphs of each area: The paragraphs of each area was formulated after the identification of areas, as the number of paragraphs scale (40) paragraphs, included a measure of positive and negative paragraphs to reveal the sincerity of the responsive response, as paragraphs were distributed between areas.
4. Drafting the Sports Culture Scale Instructions The instructions for the Scale were developed and included giving an idea of the purpose of the Scale.
5- Method of correction and calculation of scores: For each of the paragraphs of the scale, three alternatives have been put in place (they apply a lot, sometimes apply, and do not apply), and therefore positive paragraphs take (3,2,1), and negative paragraphs are given scores (1,2,3 Thus, the range of degrees (45-135) degree.
6 - Salah paragraphs Sports Culture Scale: Paragraphs of sports culture scale consisting of (40) paragraphs were presented to a group of arbitrators in the methods of teaching mathematics and educational and psychological sciences. Because the verdict issued by them is an indicator of the sincerity

of the scale and the rate of agreement (84%) of the opinion of the arbitrators. This indicates the scale is ready for application.
7 - Clarity of the instructions of the scale and paragraphs: It was confirmed the clarity of the paragraphs of the scale, and was calculated time taken to answer paragraphs by calculating the average time for the answers of all students, and the average time taken to answer is (35) minutes.
8 - Statistical analysis of the paragraphs scale sports culture

The mathematical culture scale was applied to a sample of (100) students in the secondary school, and then identified, the first group represented (27%) which is a higher group, while the second group represents the lowest (27%) which is a lower group, and then conducted two statistical analyzes Latte:
8-1-discriminatory force of the paragraphs of scale: (T-test) was used for two independent samples between two extremist groups to find a discriminatory force for paragraphs scale sports mathematical, and it turned out that all the paragraphs of the scale statistically significant at the level of significance (0.05) and the degree of freedom (62), so I returned All paragraphs of the scale are able to distinguish between students of the upper and lower groups.
8-2- Validity of the scale: For the purpose of verifying the validity of the scale, the researcher used two indicators of honesty:
8-2-1 - Apparent validity: It was verified that the paragraphs of the sports culture scale were presented to a number of arbitrators in the methods of teaching mathematics to judge the validity of the paragraphs of the sports culture scale.
Building Approved

This type of honesty can be achieved by finding the correlation between:
1 - the degree of paragraph by the degree of the total scale:, Pearson correlation coefficient was used to extract the correlation between the degree of each paragraph of the scale and the total score of the scale and ranged between (0.27 - 0.57) which is good.
2. The degree of the paragraph in the total degree of the field to which you belong

The researcher used the Pearson correlation coefficient to extract the relationship between the degree of each paragraph and the field to which the paragraph belongs. The results showed that (0.38 - 0.67) that all paragraphs are statistically significant
4- The degree of field in the total score of the scale: Pearson correlation coefficient was used, and the results showed that it ranges between (0.78-

0.84) that all paragraphs are statistically significant
5- Factor validity: Factor validity was extracted between the fields of the scale by finding the correlation matrix between the degree of each field and the other fields, the total sum of correlations was found = 10.5 and the degree of saturation of each field of the scale of mathematical culture, ranging from (0.86-0.75), which is Longer acceptable.,
9 - Stability of the scale: Use the equation (Alpha-Kronbach), and the coefficient of stability (0.89), which is good values, and this indicates that the scale has a high degree of stability (Allam, 2006: 236), the scale is ready to apply to the sample search.
the fourth chapter
1- The first hypothesis: There is no statistically significant difference at the level of significance (0.05) between the average scores of the first group students who studied according to the strategy of accelerating thinking and the average scores of the students of the second group who studied according to the usual method of achievement, as shown in table (4).

table4: Statistical results of the achievement test for the two research groups experimental and control)...

| Statistical significance at (0.05) | df | t-test for Equality of Means | | Levene's Test for Equality of Variances | | Arithmetic mean error | Standard deviation | Average calculation | Order number | The group |
|---|---|---|---|---|---|---|---|---|---|---|
| sign | 61 | Sig. (2-tailed) | t | sign | F | 0.77 | 4.4 | 33,6 | 33 | Experimental |
| | | 0.002 | 3.47 | 0.37 | 0.83 | 0.98 | 5.4 | 29.3 | 30 | Control |

2 - There is no statistically significant difference at the level of signifi-

cance (0.05) between the average scores of the first group of students who studied according to the strategy of accelerating thinking and the average scores of the total number of students who studied according to the usual method in the scale of sports culture, as shown in table (5)

Table5: Statistical results of the sports culture scale for the two research groups (experimental and control)

| Statistical significance (0.05) | df | t-test for Equality of Means | | Levene's Test for Equality of Variances | | Arithmetic mean error | Standard deviation | Average calculation | Order number | The group |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Sig. (2-tailed) | t | sign | F | | | | | |
| sign | 61 | | | | | 2.0 | 11.5 | 112.5 | 33 | Experimental |
| | | 0.007 | 2.80 | 0.88 | 0.02 | 2.1 | 11.8 | 104.3 | 30 | Control |

Conclusions:

1 - that the impact of the strategy to accelerate thinking in the culture of sports was large, and this indicates that it has helped to improve the level of sports culture for students, and in the collection was a significant impact helped raise their level of achievement.

2 - Strategy helped to increase the interest of students to learn mathematics, by exploring a new mathematical topic for themselves, and attract their attention and draw them to the information provided by linking to life.

Recommendations: It is essential that the textbooks of mathematics, especially mathematics II average, contain some historical glimpses of Arab and Muslim scholars who contributed to the discovery and development of mathematical topics, such as the introduction of some methods used by Arab scientists in solving equations of the first degree, which increases the culture of mathematical students.

Proposals:

1- Conducting a similar study for this study in other dependent variables, such as (solving mathematical problems, mathematical thinking, creative thinking, and the tendency towards mathematics).

2 - Build an enrichment program according to the fields of sports culture and its impact on both achievement and mathematical thinking skills.

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