

The Effectiveness of the Use of the Gibbs Meditative Model in Academic Achievement and the Development of Visual Thinking in Fourth Students in Biology

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Current research aims to recognize the effectiveness of using the Gibbs reflective model in academic achievement and to develop visual thinking in Biology students in the fourth science classroom the researcher assumed the two zero hypotheses: 1- no statistically significant difference at the level of an indication (0.05) between the average scores of experimental group students studying the biology subject according to the Gibbs reflective model and the average achievement of control group students who study biology in a traditional way. 2-There is no statistically significant difference at an indication level (0.05) between the average differences in degrees test the visual pre-and-post thinking of experimental group students and the average differences in degrees test the visual pre-and-post thinking of the control group's students, the sample research was composed of (49) students with (25) students in the experimental group who studied using the Gibbs reflective model and (24) students in the control group who studied in the usual way To achieve the research objective, a 30-paragraph, post-graduate test and a 20-paragraph pre-visual-thinking skills test were prepared, the results showed that there was a statistically significant difference between the two mathematical averages in the test scores of the students of the two research groups and for the group Experimental, as well as statistically significant differences between the average of the differences in the degrees of pre-visual and dimensional thinking skills test for the students of the two research groups and also for the experimental group.

Chapter 1:

The problem of research: The success of any educational system depends on the standard of education practiced by the teacher within the classroom, and it's noted that the fact of the tutorial process - learning - has to be maintained with technological development, the modernization of teaching methods, models and methods, and also the expansion of the employment of contemporary educational techniques teaching philosophy is predicated on interest within the scientific way of thinking and caring about learners' mental potential, Biology is one in all the foremost important materials for developing all sorts of thinking, especially the visual thinking that several educators have recently taken care of the many studies confirm the low level of accomplishment in biology and also the reason is thanks to methods traditional teaching that neglected the role of scholars, which led to their being passive and not engaged within the lesson.

The current study, therefore, came to acknowledge the effectiveness of using the Gibbs reflective model within the achievement of the college and also the development of visual thinking of biology for fourth-degree students.

The importance of the study: The importance of the study is highlighted from the following:-

- 1 - Biology may be a major material that develops all sorts of thinking and teaching, especially reflective instruction and visual thinking
- 2 - Develop Biology pedagogy through the employment of contemporary instructional models like the Biology reflective Gibbs model
- 3 - Enable the Biology teacher to speak what's required to students by using modern models of instruction
- 4 - Enrich libraries and studies using the Gibbs reflective model in Biology teaching
- 5 - As a researcher, there's no study titled (the effectiveness of the Gibbs reflective model in academic achievement and also the development of visual thinking in Biology students)

Study objective: Current research aims to spot the effectiveness of the Gibbs reflective model in academic achievement and to develop visual thinking among fourth-grade students in biology

Assumptions Zero to study:

- 1- There isn't any statistically significant difference at the extent of significance (0.05) between the common grade of scholars who study on the Gibbs reflective model and also the average grade of scholars who study the conventional course of biology within the test
- 2- There isn't any statistically significant difference at the extent of significance (0.05) between the common grade of scholars who study on the Gibbs reflective model and also the average grade of scholars who study the conventional way of biology within the Visual Thinking Test

Limit of Study: Current study be limited:

- 1- Fourth-grade preparatory students within the State secondary and preparatory schools within the Department of top-notch Education of Baghdad Governorate
- 2- Biology topics for the fourth-grade preparatory grade for the primary semester of the college year (2018 – 2019).

Terminology Study:

First: Template He was defined by:

1 – Qrishi: "it is that the strategy the teacher uses within the learning situation to attain learning outcomes in students supported assumptions underlying the model and during which the teacher and student extend, and also the appropriate assessment method" (Qrichi:2000, 28)

2 - Dramca: "It may be a formula of organizational frameworks that are supported explanatory perspectives to attain important goals in evaluating teachers' professional performance or guiding teacher activity within the classroom " (Dramca 2002,109).

Second: Model Gibbs Contemplative

He defined it (Safa Muhammad): "a circular model that encourages reflection and consists of the subsequent steps: Description, feeling, evaluating, analyzing, observing, and a concept for improvement" (Safa Muhammad:2008, 177).

Procedural definition: "a model of learning through force of thinking, an organized process of mentoring learners"

Third: Collection: are aware of it (Shehata and Al Najjar) "The amount of knowledge, knowledge or skills the coed has obtained within the prescribed test grades in a very way that may measure the required levels" (Shehata and Al Najjar: 2003, 89)

Procedural Definition: "The markers obtained by the scholars of the 2 groups (experimental and control) the sample research within the fourth-grade grade's studied content survey "

Fourth: Optical Thinking: (Affanh) defined that -" is an activity and mental skill that helps the learner obtain, interpret, represent, recognize, save, and so express information and its ideas visually and verbally" (Affanh: 2009, 41)

Procedural definition: "A set of visual thinking skills acquired by a researcher from previous studies that enable the learner to be ready to have visual distinctions, to acknowledge relationships, interpret information, analyze it, draw meaning, and to live cathedrals with the marks students receive through visual thinking testing"

Secondly: Conceptual Framework and Previous Studies

Theoretical Framework : first: Reflective instruction and also the Gibbs Model: within the previous few years the word reflective instruction has become common within the field of education, because the philosophy of reflective instruction always emphasizes the examination and evaluation of teachers' attitudes and beliefs and academic activities, using the results of this assessment to develop the training process (Richards,& Lockhart:1994, 5.1)

Reflective instruction could be a sophisticated concept and John Dewey defined reflection as a full of life, effective, continuous examination of beliefs (ideas), and practical practices their sources and results (Stanley:1998,584-591).

Since then, reflective instruction has been influenced by many philosophies and academic theories, including constructivist theory, which sees learning as a full of life and effective process through which learners reflect on their past and present knowledge and experiences to make new ideas and ideas. (Kullman:1998,471).

Hart and Nagyolah have discovered that the reflective teaching model is that the innovative teacher model that changes its concepts, providing a framework for teachers to look at gradually, experience, and reflection provide teachers with a divergence of experience and discovery of their teaching practices.

The models of reflective instruction were numerous: The Gibbs reflective model (1988): Gibbs proposed a circular model that encourages reflection and consists of the subsequent steps:-

- 1- Description of things or events: Includes an in-depth description of the event being addressed, including asking questions such as: Where are you? Who is there? Why are you there? what's your role during this and what's the results of this?
- 2- Analysis of feelings and ideas (self-awareness): During this phase, events and objects found in mind are called and discovered, including questions such as: How does one feel toward the event? What does one give some thought to the event? How does one feel about the result of the event?
- 3- Assessment of experiences: During which the assessment and judgment are made about the event, the proper and wrong experience is identified, what happens, and what doesn't happen in an exceedingly good way?
- 4- Analysis: Analyzing the event to its components, so we discover the small print, be experienced, and include asking questions such as: what's happening well? What does one do well? What do others do well? what's the error of the event? What didn't happen well and what do others do and do well? and the way are you able to et al. contribute to that?
- 5- Conclusion: During this stage, the difficulty is discovered from a unique point of view, after the trade-off between the choices offered, and determining what to try and do and obtaining interesting information.
- 6- Make an idea of action: Includes reflection on experience to work out what to try and do to confront things if it occurs frequently, and formulate plans, must you know differently? Or is it better to grasp the identical way

Atkins & Murphy : 1993,1188-1192)(Anderson & Giboume: 2004,).

Second: Visual Thinking

Visual thinking could be a kind of thinking which will be developed in students supported the shapes, drawings, and pictures displayed within the situation and also the real relationships involved in it, as these shapes, drawings, and pictures comprise the hands of the learner and check out to seek out meaning for the content they contain. (Campbell: Collis & Watson, 1995)

Developing the quality of a learner helps to develop and improve their thinking and thereby strengthen their learning within the multiple intelligences theory, which adopts eight strategies for developing intelligence, most significantly visual exploration by drawing on different shapes and drawings and answering teacher questions at school with reliance On optical imaging and representation (Ibrahim,2003,25)

Visual thinking could be a system of processes that translates the power of a person to read visual form, to remodel the visual language of the shape into a verbal language (written or spoken), and to extract information from it.

Visual Thinking skills: "Visual Thinking skills are a group of skills that encourage a student to visually differentiate practical information by incorporating his or her insights into skills access." (Nezal: 2016, 494) these are as follows:

- 1- Visual highlight skill: "Means the power to acknowledge and distinguish the visual form displayed from other shapes".
- 2- The skill of recognizing spatial relationships:" means having the ability to acknowledge the position of objects in space and also the difference of their positions in step with the placement of the one who is being seen".
- 3- The skill of analyzing information: "It means that specialize in the precise details and a spotlight to the partial and macro data".
- 4- The skill of interpreting information:" refers to the power to interpret each a part of the particles of the visual form".
- 5- Meaning conclusion skill: "Means reaching scientific concepts and principles through the displayed form." (Affanh, 2001, 33).

Previous studies: A study was considered for the shortage of previous studies in step with the researcher's science on the Gibbs reflective model within the academic achievement and development of visual thinking in biology, therefore the researcher will attempt to specialize in studies that restricted a variable of research variables in numerous subjects:

1 - The Study of (Torna (2014 m): Study Title (following the utilization of the circular House shape Strategy in developing Visual Thinking within the Ninth Grade students in Physics Research) the study was aimed toward indicating the impact of using the circular House strategy in developing visual thinking within the 9th Grade students in Physics Research. The sample study was made of two groups, one among which was experimental with several members (25) students who studied, the opposite is a politician with (26) students who studied within the usual way, and to realize the study goal, a teaching material was prepared in step with the circular house strategy, and a test for measuring visual thinking, the results showed that there was

The statistical Dal difference between the arithmetic averages of student scores within the two research groups on the visual thought test and for the experimental group, the study recommended that the circular house shape be included As a Physics research instructional strategy, similar studies are conducted on other rows and topics. (Tonah, 2014, 798)

2 - AlChalhout Studying (2012m) Title of the study (effective use of the circular House strategy in developing concepts and visual thinking skills in geography for 11th-grade students in Gaza) The study aims to analyze the effectiveness of the circular House strategy in developing concepts and visual geo-thinking skills of 11th-grade students in Gaza, the sample research was formed from (76) students distributed within the first two experimental groups and studied with the circular House strategy. The second could be a control and has been studied traditionally, the results of the study showed the effectiveness of the circular house strategy in developing the concepts and skills of visual thinking among the experimental group students compared to the control group's female students (AlChalhout, 2012,312)

The previous studies have emphasized the:

- 1- The importance of visual thinking and therefore the need for the event of scholars at different levels of education and different subject
- 2- The scientific method was the common denominator of all previous studies yet as current experience using the scientific method.
- 3- Previous studies varied in situ as follows:
 - a - study conducted in Gaza because of the Calhoun Study 2012.
 - b - Study conducted in Jordan because of the Trona Study 2014.

I found the like previous studies:

- 1- Choosing a suitable research methodology is that the experimental design supported two equal groups (experimental and control).
- 2- Define procedural definitions for search terms
- 3- Identify the statistical processors employed in hypothesis testing, data analysis, and results
- 4- founded search tools may be a truthful setting
- 5- the capacity of the researcher's horizon by identifying many books, scientific journals, and references that serve the research
- 6- Assist within the scientific and objective interpretation of the findings of the current research.

Third: search procedure (Experimental design)

In research, the researcher uses the suitable design for his research purposes and circumstances of his inevitability and necessity, and that we mean experimental design, "Planning the conditions and factors surrounding the phenomenon we study during a particular way and observing what's happening" (Aziz and Anwar,. 1990, 256)

"Since tightly disciplined designs are difficult and not always possible, so that educational research has not reached a pilot design that's perfect for control because of the importance of

the tutorial phenomenon" (Dalden:1993, 40) Since this research involves one variable, the Gibbs reflective model and two related changes, collection and visual thinking, the experimental partial-control design of the experimental and pre-test-and-dimensional groups has been adopted to live visual thinking skills, the dimensional test is within the measure of accomplishment and as shown in diagram 1.

A diagram (1) between the experimental design of the search

Group	parity	Independent variant	variable quantity
Experimental	mental test chronological age	Model Gibbs reflective	(collection DimensionalTesting) (dimensional visual thinking skills)
Control	(previous collection degrees) (Test pre-visual thinking skills)	traditional method	

Research Community and Sample

1- Research Community: The present research community represents all the scholars of the secondary and preparatory state schools of 1 of the three departments within the Rasafa side of Baghdad (General Directorate for top-notch Education, General Directorate for second-grade Education, General Directorate for Third-Class Education), the overall Directorate for Education of first Sand was specifically the number of boys in Mustansiriya is intentional because of the presence of a coach to revive the researcher's friend and depend upon him in an action excellent experiment

2- Research Sample: After the junior researcher has identified the preparatory researcher for his research experiment, the researcher chose the fourth stage, which has four people, two of which were randomly selected The Division a, C selected Division a because the experimental group during which biology is taught within the Gibbs reflective model, and Division C was selected because the control group that traditionally taught biology, the amount of scholars within the two divisions (57) was 30 students in Experimental group, 27 students within the control group, and after excluding the established 8 students from the group (5) students within the experimental group and (3) students within the control group, the amount of scholars within the experimental group (25), the amount of scholars within the control group (24), and also the table (1) show this, and also the reason why established students are excluded from the procedures experience the researcher believes that students who are established to own prior knowledge and knowledge of the vocabulary of the fabric that the researcher will study during the experiment, which affects the results of the experiment, but the researcher kept them at school to learn from the experiment and maintain the varsity system, Table (1) shows the amount of scholars within the two groups after exclusion.

Table 1

Group	Number of students before opting-out	Number of students who fail	Number of students opting-out
Experimental	30	5	25
Control	27	3	24
Total	57	8	49

Parity of two groups of research: Before the experiment, the researcher was keen to perform the equivalence between the experimental group and therefore the control group with the variables associated with the research.

1- The 2 groups' students' intelligence: Raven's test was adopted for the five-part, five-part, sequential matrices that include each (12) question, and therefore the test was applied to the scholars of the 2 groups before the trial began (3/10/2018) and after the scholars' answers to the test were corrected. The mean and therefore the contrast of the students of the 2 groups were extracted using the subsequent test of two separate unequal eyes that showed the results to the 2 groups' equivalence (experimental and controlled) during this variable and table (2) shows this

Table 2

Group	Number of members sample	Arithmetic mean	variation	Degree of freedom	Value T counted	Value T tabular	Statistical significance
Experimental	25	35,28	80,41	48	0,0690	2,000	0,05 is not a valid
Control	24	32,85	64,21				

2- Chronological age in years: Student age is calculated by years, student age data is approved from their school cards, and after calculating the mean and contrast of the life variable. In the years for each experimental group and control using the next test of two independent unequal eyes, the results showed that the two equations are equal in the time-age variable and as shown in Table 3.

Table : 3 shows the age of time in years for the students of the two groups.

Group	Number of members sample	arithmetic mean	variation	Degree of freedom	Value T counted	Value T tabular	Statistical significance
Experimental	25	15,3	20,32	47	0.074	2.000	0,05
Control	24	14,8	19,65				

3- Biology Grades: The grades of the Grade 7 Biology sample students are the topic of the Grade 9 Biology, and also the researcher has obtained them from the school's administration and at the time of calculation, the mean and contrast of the innumerable each group and their

application within the equation for the subsequent T-test of two samples Unequal the results showed that the 2 groups are equal within the previous collection variable for a substance Biology in Grade 9, and Table (4) this shows.

Table (4) shows the mean and contrast of student grades Grade 9 Biology research groups

Group	Number of members sample	arithmetic mean	variation	Degree of freedom	Value T counted	Value T tabular	Statistical significance
Experimental	25	72,25	119,20	47	0,927	2,000	0,05 Is not valid
Control	24	70,30	132,12				

Identification and adjustment of variables: "Designs vary in their advantages and downsides, in other words in their power and weakness, in terms of the adequacy of controlling the variables affecting the variable and from (internal and external honesty) For research" (Al-Obeidi: 2013, 89) that the researcher tried to manage the external and external variables, especially people who may affect the search procedures and follow them up, including:-

1-Extraneous variables (Internal honesty)

- A- Selection of sample search:** Although the sample search was selected randomly and to extend the integrity of the inner truth of the search, the equivalence between the 2 search groups was performed with the variables associated with the research because it was previously.
- B- Maturity:** There are no biological, psychological or mental changes to the members of the 2 groups that negatively or positively affect the results of the research, as all the individuals within the sample search were at a detailed age
- C- Research tools:** The research tools used were of high accuracy, with a tribal test prepared - a visible thinking skill set-up and adjusted for honesty and stability, moreover as a post-biological test set-up and adjusted for honesty and stability
- D- The research sample was leaked:** During the experiment, the experimental and control groups weren't leaked or interrupted, but they continued regularly for the duration of the search

2- External variables (external honestly)

A-The researcher agreed with the varsity administration to not tell students about the character of the research and its goals, to make sure the accuracy of the results and to stop students from changing their activity and treatment, which affects the protection and accuracy of the results.

B-Interaction with Circumstance Experimental

The teacher studied the 2 research groups by himself, which provides the experience some precision and objectivity because the members of a tutor for every group make it difficult to return the results to variable quantity thanks to the power and strength of a tutor to the fabric without another or the passion of the teacher and to bias to his or her students or other factors

Subject: The topic has been distributed between the experimental and control research groups equally and uniformly within the subjects I've got studied.

Environmental and physical conditions: The experimental and control groups were taught in two adjacent classrooms with approximately the identical specifications.

Educational means: The methods were similar between the 2 research groups in terms of the similarity of the board and also the use of colored pencils.

Creating Requirements Experiment

- 1- **Selection of Scientific Article:** The researcher has determined the scientific material he studies for the sample of research during the primary semester of the varsity year (2018 - 2019), including five first chapters in biology consistent with the Department of Education Biology Course (2018m).
- 2- **Formulating behavioral objectives:** "Formulating behavioral objectives isn't a random process or personal diligence but a process that takes place within the light of the study of the sources of objectives "(al'amin: 1986,55) Bloom's ranking of data at its sixtieth levels of goals is one in all the foremost common and used classifications, and that I see what topics you'll study within the experiment the researcher (115) has created a cognitive-behavioral goal, Distributed at six levels and table (5) shows this still

Table 5 shows the number of behavioral goals and their distribution according to Bloom's cognitive classification

	subject	knowledge						Total
		remind	understand	Apply	analysis	makeup	evaluation	
1	The general approach	4	6	4	2	2	0	18
2	Ecology and ecosystem	3	8	2	1	1	0	15
3	Food chain and the cycle of elements in nature	3	9	3	3	5	1	24
4	Habitats and biomes	3	13	4	5	0	4	29
5	Factors impacting on environment	4	11	3	4	5	2	29
6	Total	17	47	16	15	13	7	115

To ensure that behavioral objectives are valid and per their respective levels, they're presented with the content of the fabric to many educational, bioscience, and biology experts. After using the agreement formula Cooper to understand the ratio of arbitrators' agreement on the validity of the behavioral targets, they appeared as a result of their opinions on an agreement ratio of not but 80%, so the behavioral targets were founded validly, with some modifications to some targets in light of the observations

3- Preparation of the educational plans: The researcher prepared (20) model instructional plans for every group (10) instructional plans, all of which were presented to former experts and arbitrators, several of which were modified consistent with the observations and opinions of experts and arbitrators Supplement. (1) .

Set up the Search Tools:

- 1- Prepare a test to live visual thinking skills:** After the researcher has been informed of some studies and literature on this goal, the visual thinking skills are identified as five skills (visual excellence, relationship recognition, information interpretation, information analysis, meaning conclusion). After the choice of visual thinking skills, the researcher formulated the test items, which consisted of (20) multiple-test-type paragraph with four alternatives, Appendix 2 the researcher should verify the virtual truth of the test offer the test as its initial image to a bunch of experts and specialists within the field of science and biology teaching methods using the Cooper equation agreed at (83%) the expert opinions and modified some paragraphs in language and scientific terms, after which the visual thought test was applied to a sample survey the coed consists of 30 students representing the fourth-grade preparatory division B of the identical school, the duration of the test application took a full class (45) minutes, and therefore the sample student responses were then corrected The examination of the visual thought test, given one score for every complete answer and an index for every incorrect answer, the coefficient of difficulty for test paragraphs was calculated by the equation of difficulty and located to range from (26% to 54%) to the force of distinction between paragraphs applying the equation of power of excellence and ranged between (27%-61%) these values for difficulty and distinction are accepted by quadratic (alzzahir: 1999, 130) and therefore the stability factor for test paragraphs applied to the survey sample was calculated using the Coder-Ricardson equation 20, with the soundness factor (81%) indicating that the test is extremely stable
- 2- Preparation of the examination:** To gather students and to understand a way to achieve the specified objectives of the course, there must be an evaluation tool to the present end, assessment is an element of the educational curriculum and tests is one among the foremost important and customary assessment methods accustomed collect students for simple preparation and collection (alzzahir: 1999,51) The researcher prepared a Biology exam for the fourth grade preparatory consistent with the test map (specification chart) Table (6) showing this.

Table 6: The test map for the fourth grade of preparatory biology exam is a test map

	Subject	Thread Number of Pages	Weight Goals The weight of the content	remembered 15%	absorption 41%	application 14%	analyses %13	installation %11	calendar %6	Total %100
1	Chapter 1 Rated Living Organisms	12	16,6%	0,7 1	2,04 2	0,69 1	0,64 1	0,54 0	0,29 0	0
2	Chapter Ecology and Ecosystem	10	14%	0,63 1	1,72 2	0,58 1	0,54 0	0,46 0	0,25 0	4
3	Chapter 3 Food Chain and Cycle Elements in Nature	18	25%	1,12 1	3,07 3	1,05 1	0,97 1	0,82 1	0,45 1	8
4	Chapter 4 Environmental Citizenship and Biological Areas	20	27,8%	1,25 1	3,4 3	1,16 1	1,08 1	0,91 1	0,5 1	8
5	Chapter 5 Factors Affecting the Environment	12	16,6%	0,7 1	2,04 2	0,69 1	0,64 1	0,54 0	0,29 0	5
	Total	72	100%	5	12	5	4	2	0	30

Formulated (30) objective test paragraphs of a multi-test type with four alternatives to annex (3) due to its advantages because it is usually accustomed measure the cognitive level of learners from a reminder of data and facts and also the absorption and application of scientific concepts and analysis and it's Symone and might be answered Most of them are on time, and to realize the test representation of the content and to indicate the extent to which the paragraph relates to the target content and also the integrity of the wording of the paragraphs and their suitability for the amount of objectivity that we measure, the test was presented with the content and behavioral objectives to the experts and specialists attached and using the Cooper equation was agreed by (80%) From the opinions of the experts and amended the formulas of some paragraphs within the light of their opinions and failed to delete any paragraph. The researcher then applied the achievement test to the 30 students who represented division B of the identical school where the experiment was applied to verify the clarity of the vertebrae and his instructions and also the time taken to answer it and to diagnose the amount of difficulty of the vertebrae and their distinct strength, the time required to answer ranged from (30-45) minutes the problem factor of the vertebrae ranged (0.24 - 0.53) and also the strength of its distinction ranged (0.68 -0.77) and thus the test is suitable and valid, so the steadiness factor of the test paragraphs was calculated using the

strategy of internal homogeneity and also the application of the Kuder Richardson equation - 20 and reached (0.87).

After preparing the wants of the physical experiment and adjusting a number of the variables that may be available within the experiment and after applying the test of tribal visual thinking skills to the scholars of the experimental and control research groups, the teacher began teaching on Sunday (21/10/2018) in light of the subsequent procedures:

- 1- Applying the teaching plans of the experimental group consistent with the Gibbs meditative model within the biology subject of the fourth grade preparatory
- 2- Applying the teaching plans assigned to the control group following the same old method utilized in teaching neighborhoods to the fourth grade preparatory

The experiment ended on Sunday (5/1/2019) because the distance attainment test was applied on Monday (13/1/2019) on both groups simultaneously, but the test of visual thinking skills was applied on Tuesday (14/1/2019) on the 2 groups at a time additionally as in cooperation with the college administration, all finished the solution in time for the 2 tests.

Statistical means: The researcher within the processing of research data has adopted statistically the subsequent statistical methods.

- 1- The central type and dispersion scale (arithmetic mean, contrast, standard deviation) for the grades of every group
- 2- T-test for 2 independent, uneven samples
- 3- T-testing of two interconnected samples to determine the differences between the tribal test of visual thinking skills
- 4- The difficulty factor to calculate the problem of every one of the paragraphs of the gathering test.
- 5- The power of discrimination calculates the strength of discrimination in each of the test paragraphs.
- 6- Kuder Richardson-20 equation to calculate the target question stability consider the visual thinking and achievement skills test $Q-20 = [N/N-1] (1-MS/P)$ (Ahmed: 1985, 29)
- 7- Cooper's equation of the arbitrators agreement = $(\text{number of times of agreement} / \text{total number of arbitrators}) \times 100\%$ (alnidar:2007, 11)
- 8- T-test to search out the importance of the correlation coefficients $T = R.S.S. (N-2)$ where $RSS = \text{parametric statistic}$ (Ahmed: 1985, 305)

Fourth: Presenting and interpreting the results: The researcher within the research will try and present the results and explain them with mention of the foremost important conclusions reached by the research additionally as mentioning recommendations and suggestions.

View results:1- Results of the dimensional collection test: To verify the goal of the search through its first zero hypothesis, the mathematical average and variation of the grades of both the experimental group and also the control group were found within the dimensional collection test and using the T-test for 2 independent, uneven samples, the T value was found as in table 7

Table 7 Shows: the mean and calculated and tabular T-value of the experimental and control groups' grades in the dimensional test

Group	Number of individuals	Mean	Variation	Degree of freedom	Calculated T value	Statistical T value	Statistical indication
Experimental	25	25,21	20,32	47	2,85	2,000	functions
Control	24	21,32	17,65				

The table above shows that the calculated T value (2.85) is greater than the table value of (2,000) at 0.05 and the degree of freedom (47) therefore rejects the first zero hypothesis: there is no statistically significant difference at the level of significance (0.05) between the average achievement score of the experimental group students studying the subject according to the Gibbs meditative model and the average achievement of the student officer group who study the study of the study method in the traditional way

2- Tribal and dimensional visual thinking skills test: To verify the second zero hypothesis, the two experimental and control groups were compared with the differences between the tribal and dimensional tests to test visual thinking skills in biology and this was done by subtracting (the degree of the dimensional test - the degree of tribal test) for each student in the two groups, then the average and variation differences of the grades were calculated for each group and using the T-test for two independent, uneven samples and then finding the T value as in table (8)

Table (8) the arithmetic average and the differences and the calculated T value of the grade differences for the experimental and control groups to test tribal and dimensional thinking skills

Group	Number of individuals	Mean	Variation	Degree of freedom	Calculated T value	Statistical T value	Statistical indication
Experimental	25	14,43	15,55	47	3,80	2,000	functions
Control	24	10,64	13,52				

The table above shows that the calculated T value (3.80) is larger than the scheduled value of (2,000) at the extent of (0.05) and therefore the degree of freedom (47), which implies a statistically significant difference between the experimental and control groups and for the good thing about The experimental group, which indicates the rejection of the zero hypothesis that (there isn't any statistically significant difference at the extent of (0.05) between the typical differences for the grades of the tribal and dimensional visual test for the scholars of the experimental group and therefore the average differences for the grades of the tribal and remote visual test for the scholars of the control group).

The experimental group excelled in developing visual thinking skills after the experiment for people who studied using the Gibbs meditative model over their peers who studied within the usual way

Interpretation of Results: the prevalence of the experimental group students who studied in step with the Gibbs reflective model to their peers who studied within the usual way in their academic achievement and visual thinking is attributed to following:

- 1- Gibbs' meditative model and therefore the mechanism of presenting it to students provoked their motivation for the lesson and urged them to retrieve information from memory promptly, which led to the utilization of thinking skills normally and visual thinking skills particularly, which led to the educational of scholars better and helped them to be told the skill of visual excellence to acknowledge the components of the topic and so identify and identify the relationships between concepts and statistical terms to achieve conclusions with logical analysis and provides convincing explanations of these conclusions additionally to integrating students into the academic process through the recording of inauspicious observations, they focused their attention on what's to be learned and so directly coping with the academic situation.
- 2- The experimental group students within the Gibbs reflective model found the simplest way to know accurately the lesson's course, enabling them to answer the test items with remarkable distinction and in strong, reflective language compared to their peers within the control group
- 3- The Gibbs reflective model took students out of the state of the stage, relaxed them within the cycle of inertia and inertia, and moved them to the circle of vigilance and activity supported effective participation within the learning process
- 4- The Gibbs reflective model is skillful and hard in its facts, and has led to attention in developing visual thinking skills

Conclusions:

In light of the results of the research the subsequent conclusions were reached:

- 1- The use of Gibbs meditative model in teaching biology to fourth-grade students affects raising their academic achievement
- 2- The use of Gibbs meditative model in teaching biology to fourth-grade students affects the event of visual thinking skills

Recommendations:

In light of the results of the present research, the researcher recommends the follows :

- 1- Use the Gibbs reflective model to show Biology to fourth-grade preparatory students because it's an effect on raising school achievement, developing visual thinking skills, and attempting to include them as a teaching model for that material.
- 2- Try to coach teachers at different stages within the Gibbs reflective model and use it in teaching.

Suggestions:

In light of the search results, the researcher suggests:-

- 1- Conduct an analogous study for the present study to determine the effect of the Gibbs reflective model on other variables
- 2- Conduct an analogous study of the present study at school stages and other materials.

REFERENCES

- Afana and Azzo Ismail (2001): The impact of the use of visual input in the development of the ability to solve and retain sports issues among students in the eighth grade in Gaza, the 13th Conference, the curriculum of education and the contemporary cognitive and technological revolution, volume two, the Association for Curricula and Teaching Methods, Ain Shams University
- Afana, Azzo Ismail (2009): Strategic Teaching of Modern Mathematics, I3, Jordan, Al-Falah Publishing and Distribution House
- Ahmed, Salman Odeh (1985): Measurement and evaluation in the educational process, I1, Amman, National Press.
- Al-Amin, Shaker Mahmoud et al. (1986): The origins of teaching social materials for the second grades of teachers' institutes, I2, Baghdad, Ministry of Education
- Al-Darmaka, Maamoun et al. (2002): Quality in Modern Organizations, Safa Publishing and Distribution House, Amman, Jordan
- Ali, Safaa Mohammed (2008): The effectiveness of a proposed meditative model in the teaching of history to develop reading understanding, thinking skills and awareness beyond knowledge among first-grade secondary students, Egyptian Curriculum Society, Studies Journal, Issue (141), December, Cairo
- Al-Kahlot and Amal Abdel Kader Ahmed (2012): The effectiveness of employing the strategy of the circular house in the development of concepts and visual thinking skills in geography among the students of the eleventh grade in Gaza.
- Al-Nazar, Saleh bin AbdulAziz (2007): The impact of the use of the five stages of the book in the development of the ability to express writing in second graders average, published research, Gulf Message Magazine, Issue (104).
- Al-Obaidi, Walid Abdul Rahman (2013): Following the use of educational motivation methods in the Qur'an in the collection and development of meditative thinking skills among students of the Faculty of Education, an unpublished doctoral thesis, Republic of Iraq, The Iraqi Institute of Graduate Studies.
- Al-Quraishi, Ihsan Kazem Sharif (2000): Teacher methods and laminate methods in statistical tests, Baghdad, Diwan Press
- Al-Zahir, Mohammed Zakaria et al. (1999): Principles of Measurement and Evaluation in Education, I1, Amman, House of Culture and Publishing
- Atkins, s.& K.Murphy (1993): Reflection: a review of the literature: Journal of Advanced Nursing. Vol.18
- Anderson, Alisa G.& Zoe Knowles & David Gilbourue (2004): Reflection Practical for sport psychologists; Concepts Models practical implications & thoughts on Dissemination
- Aziz and Anwar, Hanna Dawood, and Anwar Hussein (1990): Educational Research Curriculum, I1, Baghdad, Al-Hikma Publishing House.
- Campbell, J, Collis, F. & Watson, M.(1995); Visual Processing during Mathematical Problem Solving, Educational Studies in mathematical, 28(2);177
- Hart, L .C. & Najee – Allah, D.H.(1996): the Reflective teaching Model, CD ROM, producing by Galileo, inc. Atlanta, GA.



- Ibrahim, Insherah Abdel Azi (2003): Employing educational games in the development of visual culture skills among the hearing impaired, 9th Annual Scientific Conference on Education Technology for People with Special Needs, Egyptian Society for Education Technology in partnership with Helwan University.
- Kullman, J.(1998): Mentoring and the development of reflective practice; Concepts & Context System, Vol.26, No4.
- Nazzal, Haidar Khazal (2016): The impact of Davis's model of visual thinking among fourth-grade literary students in history, Journal of the Faculty of Basic Education / Babylon University, Issue (26).
- Richards, J.& Lockhart, C.(1994): Reflective teaching in Second language classrooms, Cambridge; Cambridge University Press . Stanley, C.(1998): A framework for teacher reflectivity Tesol Quarterly
- Shehata, Hassan, and Zainab al-Najjar (2003): Dictionary of Educational and Psychological Terms Arabic-English, I1, Cairo, Egyptian House
- Tarwana, Mohammed (2014): Following the use of the circular house shape strategy in the development of visual thinking among ninth graders in the physics research, Journal of Educational Science Studies, Volume 1, Issue /1.
- Van Dalbin, Diolup (1993): Curriculum research in education and psychology, translated by Nabil Nofal et al., I1, Baghdad, National Press, Dar al-Amal