

The Effectiveness of the MAIL (Math Assessment, Instruction, Learning) Cycle in Mathematics Achievement and Reflective Thinking among Intermediate Third Grade Students

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The aim of the research is to identify the effectiveness of a modern teaching model based on constructivist learning represented in the course (evaluation, teaching and learning in mathematics) in increasing mathematical achievement and developing contemplative thinking skills for the selected group of intermediate third grade students. In order to achieve the research goals, the researcher used the experimental approach with two groups (experimental and control), by applying two tests in mathematical achievement before and after, as well as using the meditative thinking scale for the same purpose. The research sample consisted of 60 students from the third intermediate grade, where the research sample was divided into two equal groups. The control group studied the subjects in the usual way, and the experimental group studied using the MAIL evaluation course. The experiment was applied in the second semester of the academic year 2018/2019. The researcher taught the two research groups. The experimental group was taught according to the six stages of the evaluation cycle, teaching and learning in mathematics MAIL (Preparation and participation-Deriving previous knowledge-Sounding and discovery-Development Concept and skill-transfer of concept and skill-self-evaluation and reflection), and the control group studied according to the usual method. The achievement test and the meditative thinking scale were applied to the research groups before and after test. To test the validity of the assumptions, data was collected and then statistically analysed using appropriate statistical means, the most important of which are the arithmetic averages and the standard deviations of the two groups' scores to determine the

statistical differences between the two groups. The results of the research revealed the effectiveness of the MAIL evaluation and teaching course in increasing students' achievements in mathematics and raising their level of contemplative thinking compared to the usual way. In light of the results of the research, several recommendations are suggested, the most important of which is to highlight the course of evaluation, teaching and learning in mathematics (MAIL), and to increase awareness of it, as according to the researcher's knowledge, it has not been applied in the Arab environment prior to this research. It would also be useful to apply the stages of the evaluation course, teaching and learning in mathematics MAIL in maths classes, as it combines several strategies for constructivist learning within all stages and through all school stages.

Keywords: *MAIL, Mathematics, Reflective Thinking, Teaching*

Research Problem

Mathematics is one of the most prominent subjects to cause difficulties for students, requiring more mental effort and that the mind work in order to reach sound solutions to the various problems contained in the mathematics curriculum, and one of the problems of teaching this subject stems from the low levels of achievement produced by many students, especially in the middle school in Iraq, where the student is still in transition after primary school, which has been confirmed by many studies. Badri, 2017, Fatlawi 2016, Jawad and Dawood 2018, highlight here the traditional reliance of teachers on traditional, old-fashioned strategies centred on the role of the teacher and his activity within the class, leaving behind the role of the student as one of the factors causing the decline of the level of athletic achievement, which necessitates the use and application of modern teaching methods and models, and from modern trends in the teaching of mathematics, which proved effective in raising the achievement in students' structural or formative assessment. The studies of (Black & William, 1998) and (Yusuf et al. 2012) in the mathematics course on the importance of the structural calendar in improving the processes of teaching and learning was confirmed by the study (Alma, 2003). The role of this calendar in raising achievement and learning in mathematics, due to the fact that the training calendar is a learning calendar or a calendar for learning, where the processes of evaluation are integrated with learning and teaching continuously on the length of class and that idea has evolved up to the evaluation course-teaching-learning in mathematics MAIL adopted by the current research, and therefore the problem of the research lies in the application of that course, where the current research is the first of its kind in the Arab world that adopts that modern course (Kelly, 2011). The goal is to raise the level of achievement in mathematics in middle school students, as well as the problem of research increases in that it seeks to determine the effectiveness of applying this

course to the development of meditative thinking skills in students, where meditative thinking is considered a higher thinking skill that is difficult to measure in students, despite the need of students to reach sound solutions during the study of mathematics.

The research also seeks to answer the following questions:

1. What is the effectiveness of the evaluation course-teaching-learning in mathematics MAIL in raising the athletic achievement of students in the third grade middle school?
2. What is the effectiveness of the assessment course-teaching-learning in mathematics MAIL in the development of meditative thinking in the students of the third grade middle school?

The Importance of the Research

First: The Theoretical Importance of the Research

1. The research contributes to highlighting the assessment-teaching-learning course in MATHEMATICS MAIL, which was developed in 2011 as an extension of previous stages of learning courses that have proven effective in teaching mathematics.
2. The importance of this research is due to the fact that it seeks to develop teaching methods by studying the effectiveness of a modern learning course that has not been applied before in the teaching of mathematics in the Arab region, and is based on the structural theory that has proven its success.
3. Reviews the literature and previous studies of constructive evaluation and learning courses for teaching mathematics, which enriches the Library of Educational Research and opens up prospects for future research.

Second: The Applied Importance of the Research

1. The current research derives its practical importance from the fact that it applies the MAIL course, which is a very modern course that has not been applied in any Arab research to the knowledge of the researcher, as well as investigating its effectiveness on both academic achievement and meditative thinking among students.
- 2- To draw the attention of educators to the importance of integrating evaluation within the classroom as an evaluation for learning and not an evaluation of the learning process.
3. Research tools such as a test to measure the athletic achievement of middle school students and another to measure meditative thinking in other educational situations may be used.
4. The research provides a booklet for the teacher containing lessons designed according to the stages of the evaluation course - teaching - learning in mathematics MAIL, which may help him later to develop more lesson plans in the subject of mathematics and choose the appropriate teaching strategy according to the stages of the proposed recommendations.



Search Objectives

The research seeks to achieve the following objectives:

Learn about the effectiveness of the assessment course - teaching - learning in mathematics MAIL in increasing the academic achievement of middle third graders.

Learn about the effectiveness of the assessment course- teaching - learning in mathematics MAIL in the development of meditative thinking in middle third graders.

Hypotheses: Research Seeks to Verify the Following Hypotheses

The first hypothesis: There are no statistically significant differences between the averages of the experimental group that studied the application of the evaluation and teaching course in mail mathematics and the control group that studied in the usual way for academic achievement in the thirdgrade middle school.

The second hypothesis: There are no statistically significant differences between the averages of the experimental group that studied the application of the evaluation and teaching course learning in mathematics MAIL and the control group that studied in the usual way in the meditative thinking scale in the thirdgrade middle school students.

Search Limits

Spatial Boundaries: Medium Stone Bani Uday, Baghdad Education Directorate, Karkh II.

Human boundaries: The limits of research are determined by the students of the third grade middle class who represent the research community and from whom the research sample was selected.

Objective limits: Objective research boundaries are challenged in its approach to variables: the course of evaluation, teaching and learning in mathematics MAIL (independent variable), achievement in mathematics (dependent variable), meditative thinking (dependent variable).

Time Limits: School Year 2018-2019 (Second Semester).

Definitions and Procedural Concepts of Research

Assessment - Teaching - Learning in Mathematics MAIL

MAIL a teaching model for a course that integrates assessment-teaching-learning in mathematics and is based on the technique of structural evaluation within the class, which consists of six consecutive stages and is centred on each stage of self-assessment and meditation (Keeley, 2011, p18).



It is known procedurally in the current research as a modern teaching course based on structural theory in learning, consisting of six stages (readiness and participation - the development of previous knowledge - sounding and discovery - development of concept and skill - transfer of concept and skill - self-assessment and meditation), and therefore it promotes teaching and learning in mathematics, and integrates evaluation with teaching and learning at the same time, which enhances the teaching of mathematics.

Mathematics Achievement

This is the progress achieved by the student in achieving the objectives of the studied educational subject which is measured by the mark obtained in the achievement test (Abria, 2013, p. 32). Achievement in mathematics achievement in mathematical rules and skills estimated by grades in achievement tests (Abu al-Khair, 2016, p. 519).

It is also the extent to which students acquire the skills and knowledge that the educational process aims to pursue through the objectives of the educational lesson, by employing those skills and knowledge to solve the mathematical issues of mathematics (Bedouin, 2017.5).

In this research, it is known procedurally as an indicator of the knowledge, information and skills gained by students during the study of mathematics by applying the proposed MAIL mathematics assessment using the teaching and learning course to teach mathematics and measured by the achievement test.

Meditative Thinking

Meditative thinking is a targeted activity, through which mental processes are directed to specific objectives, in a particular set of circumstances that we call a problem that requires a certain set of responses aimed at reaching a specific solution, thus meaning that meditative thinking is the mental activity aimed at solving problems (Al-Amawi, 2009, p. 67).

It is a reflection in which the individual reflects on the position in front of him, analyses it to his element, and draws the necessary plans to understand it in order to reach the results required by the situation, and to evaluate the results in the light of the plans developed (Al-Atum and his colleagues, 2009, p. 30). Kember et al 2000 defines it as: the process of self-testing, the discovery of important issues and topics through life experiences through which a person can create, and clarify the meaning himself (Kember et al 2000,p381). It is known procedurally as a process performed by the mind of the learner as a result of the presence of influential factors such as the participation of sounding, discovery, investigation and self-learning as early stages of the proposed course pushes him towards the study of a situation or a mathematical problem he faces while remembering the associated experiences with that problem, leading him to develop solutions to that problem.

Theoretical Literature and Previous Studies

This section provides a brief overview of the most important aspects of theoretical literature on research variables, as well as reviewing previous local, Arab and foreign studies related to both the MAIL learning course or the integration of evaluation with teaching and learning, and mathematical achievement.

Theoretical Framework

MAIL Math Assessment, Teaching and Learning Course

Page D.Keeley's SAIL model is based on the idea of evaluation for learning, and emphasises the link between evaluation, teaching and learning at the same time. It adopts fact-based structural assessment technology. The course is a development of many of the learning courses that preceded it, starting with the famous Carpels course, which involves three stages:

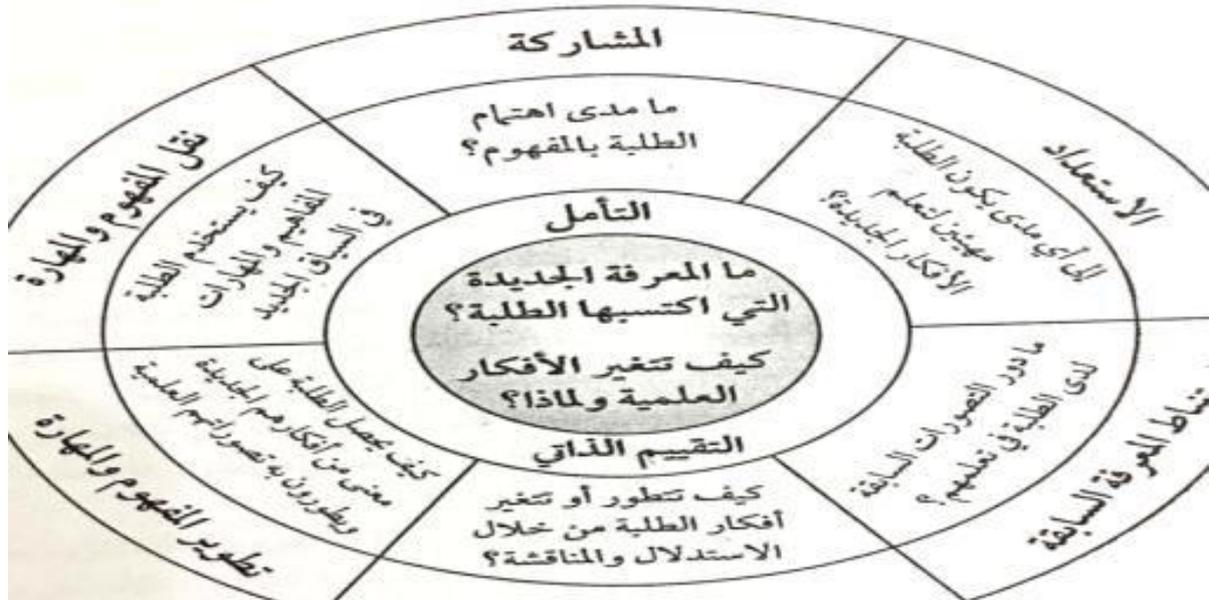
1. Exploration: students' experiences about a phenomenon are explored.
2. Invention: where it presents new scientific terms and definitions.
3. Discovery: discovery (karplus & Their 1967, p40).

The five-stage learning course for Bebe is: Participation, exploration, interpretation, expansion of concept, calendar (Bybee, 2009, p5). Kelly (2015) points out that the 1982 Posner model, the 1997 Pipe model and the evaluation, teaching and learning course are all modifications and developments of the SCIS trilogy course proposed by Carpels and Atkins in the 1960s. The course is a model for a continuous cycle of evaluation, teaching and learning for mathematics, and is used to apply in-class building assessment techniques that help math teachers choose the right teaching techniques that fit each goal and stage in the teaching or learning process, as promoted by this course. There is an association between evaluation, teaching and learning (Keleey, 2011, 18).

Teaching is carried out by applying the course through six stages, outlined as follows.

MAIL Math Assessment, Teaching and Learning Course Stages

The following figure shows the stages of the evaluation, teaching and learning course in MAIL Sports, where this course enables the teacher to re-stage whenever necessary, and we see the concentration of self-assessment and meditation in the middle as they enhance beyond cognitive thinking and are associated with each stage of the course.



The mathematics assessment, Instruction, and Learning (MAIL) Cycle Keeley, 2014, p19).

A Brief Explanation of the Stages of the MAIL Course Application

1. Prepare and Participate (One and Two in the Previous Format)

Here, the teacher uses the techniques of classroom evaluation to choose teaching materials or to design the lesson, where these stages provide the teacher with a clearer vision about the readiness of students in advance of the lesson and their interests related to it, as well as giving students the opportunity to participate and to stimulate their thinking and arouse their curiosity. Examples of methods of constructive evaluation for these two phases are, learning goals inventory and friendly talk probes.

2. Developing Previous Knowledge

The students' previous thoughts are inferred during their previous learning experiences, which gives the teacher a starting point on which he designs the lesson accordingly. Examples of constructive evaluation methods include card sorting sorts, committing and throwing commit and toss.

3. Sounding and Discovery

In which ideas and direct discovery of processes are detected during discussion with peers and can be applied through a and statements and concept card mapping.

4. Development of Concept and Skill

This refers to the absorption of mathematical concepts, the use of mathematical skills, the development of official definitions, and the discovery of various difficulties and gaps in the understanding of students and in how the methods used by them are assessed.

5. Transfer Concept and Skill

In this way, the teacher uses evaluation information to present barriers that may interfere with the delivery of information or with the introduction of new relevant concepts, and uses evaluation information to modify learning opportunities and provide key explanations of the main concepts through questions and activities and examples of methods used.

6. Self-Assessment and Meditation

Encouraging self-assessment and meditation helps students develop beyond cognitive thinking skills that help them guide their thinking and learning, where students learn to think about learning and thinking about thinking the same, and examples of methods used by the two minute paper, I used to think. But now I know I used to think But now I know (Keeley, 2011, p 20-25).

Based on the above, it is clear that the stages of the MAIL evaluation, teaching and learning course include methods and strategies within the theories of building learning that have proven effective in teaching and learning mathematics in the previous studies, and that they are characterised by helping the teacher to choose methods and strategies. It provides guidance for appropriate teaching, and enables him to learn the ideas of his students and their previous experiences, which provides him with a starting point through which he designs the course lessons, as well as helping the student to self-learn and giving him immediate feedback by sharing ideas with his peers and teachers.

Sports Achievement

Educational achievement is generally defined through the dictionary of educational and psychological terms as: 'The amount of knowledge, experience, skills and information expressed in degrees in the test prepared in a particular way with which the specified levels are measured and the test is characterised by honesty, consistency, and objectivity'. Shehata and Najjar, 2003).

The student acquires knowledge, skills, methods of thinking and problem-solving abilities as a result of a course of study, and therefore the achievement test in mathematics is a test that measures the knowledge and skills acquired by the learner to solve the issues and other teaching objectives that the mathematical courses he studied have developed. Pupil and achievement is measured by the marks obtained in the test (Obeid, 2004, p. 52).

Accordingly, raising the level of achievement for students means increasing the amount of knowledge, information, abilities and skills these students acquire, and therefore this becomes very important and entails seeking to use the latest and most effective teaching methods, and by going back to the stages of applying the evaluation, teaching and learning course. In Kelly's MAIL mathematics, all of these stages are based on methods that develop the student's acquisition of concepts and mathematical skills and help him apply them later, such as inference, investigation, sounding, discovery, self-learning and feedback, all of which promote the learning and teaching of mathematics.

Meditative Thinking

Meditative thinking is defined as one that encompasses those mental and effective activities in which individuals engage to discover their experiences in order to reach new concepts and assessments (Boud et al. 1984: 19).

Meditative thinking is one of the types of scientific thinking that leads to the active, continuous and careful study of educational experiences in the context of the foundations supporting them, and to reach the conclusions to which they tend, and meditation adds meaning to experiences and experiences by reorganising them, and rebuilding them, in order to lead to these experiences for more goals that need more comprehensive tasks (Basol, 2013)

Characteristics and Stages of Meditative Thinking

Meditative thinking is characterised by some characteristics and skills that have an impact on students' learning, especially in mathematics, and some of the most prominent of these characteristics are as follows.

1. It is a thought based on analysis of the situation and understanding the relationships that exist between its parts.
2. It includes a thorough mental activity and a survey of the individual's experiences and beliefs.
3. It includes a set of multi-level mental skills.
4. It requires linking previous experiences to the elements of the current situation (Rhea, 2016, p. 166).

Meditative thinking also goes through stages through which the learner (student) reaches to solve the problem, the most important of which are:

1. Feeling suspicious
2. Identifying the problem

3. Drafting hypotheses
4. Disclosure of evidence
5. Generalisation (Robert Barr et al. 1986, p. 103).

Previous Studies

Due to the lack of studies for the proposed course (the course of evaluation, teaching and learning in mathematics, MAIL) as a result of the novelty of that course and the lack of awareness in the Arab educational community, the researcher presents studies that adopt the previous learning courses of that course, which include stages similar to the same stages as the MAIL course.

The Al-Otaibi Study (2008) aimed to identify the effectiveness of using the method of 'learning course' in the achievement of mathematics at the three levels of knowledge (remember, understand, apply) and develop critical thinking skills in middle second graders in Mecca, using the semi-curriculum. The experimental methods was used after determining the study community, the sample was selected in a random way formed from two chapters, such as the first chapter the experimental group studied using the method of learning cycle, while the second chapter represented the control group that studied the traditional way and the study tools were represented by an educational unit (The four shapes), formulated in the way of the learning cycle of the experimental group, educational test, testing of critical thinking skills. The results of the study found statistically significant differences in mathematics achievement and critical thinking in favour of the experimental group, which confirms the effectiveness of teaching by applying a learning course (Abraham, 2015, p. 77).

A study by Abdul Razek (2014) aimed to investigate the impact of using the strategies of the four-way modified learning cycle and the seven-way modified learning cycle in solving the mathematical issue and trends towards mathematics among students in the tenth grade basic, the study followed the semi-experimental curriculum, and the sample of the study was made up of 95 students of the tenth grade in a school in Jordan who were selected intentionally, and then divided into an experimental group studied using the proposed strategies and an officer group studied in the usual way, and the study tools were to test the solution of the mathematical issue, and the measure of the trend towards mathematics. The results revealed the presence of statistically significant differences in the mathematical problem resolution test and trend scale in favour of the experimental group that studied the strategies of the four-cycle and seven-cycle learning cycle. The study recommended the application of the quadruple learning cycle and the seven-way learning course in mathematics teaching.

The (Waltlaw study, 2016) aimed to investigate the effectiveness of using the E'S7 modified seven-way learning course on the achievements of middle second graders in mathematics,



and to achieve this goal the researcher used the experimental method. The experiment was applied to a sample of 27 students randomly selected from middle students of the Marzok Al Awad Boys, which were deliberately selected to provide many facilities that serve research, and the students were divided into two groups, one experimental studied the educational subject using the method of the modified seven-course (E'S7), and the other an officer who studied the same educational material in the same way. The experiment was applied at the beginning of the first semester of the academic year (2014-2015), and the experiment lasted almost a full semester, and after the end of the experiment, the achievement test was applied to the students of the research sample and the results revealed the superiority of the experimental group, which studied according to the method Adjusted Seven-Way Learning Course (E'S7) over the control group that studied in the traditional way of achievement for middle-class secondgraders in mathematics.

As for the effect of these courses on meditative thinking, the researcher presents them as follows:

Westbrook & Rogers Study, 1991

The study aimed to know the impact of the learning course in stirring students to the motives of meditative thinking and developing their abilities to understand and facilitate the processes of scientific investigation among the students of the ninth grade basic in America where the sample included four grades. To achieve the objectives of the study a tribal and post-test application was given to the members of the group. The study revealed improved meditative thinking and the ability of scientific processes in members of the experimental group.

Study of (Chiarelli et al 2013)

The study aimed to find out the impact of the integration of the structural evaluation on the education of science in the early stages of the study of students and the study expanded to find the effect of integrating the structural evaluation in the basics of science learning on supporting the survey and meditation and the development of the concept among students. The study was applied in public schools in the city of New York as a research project promoting science learning (with the selection of buoyancy laws as selected subjects).

The study followed the pilot curriculum and was applied to 430 students (270 were subjected to educational intervention in the construction assessment, there were 186 control groups). At the rate of 40 semesters, students undertook the project of integrating the structural evaluation and 30 classes studying an officer in which the students studied in the traditional way, and through the survey of the opinions of teachers the study proved that:



Building assessment is a powerful tool to help teachers understand the current knowledge of students, support surveying, meditation and conceptual development among students. Integrating constructive evaluation links the teacher's educational gains to educational content with students' gains from scientific thinking.

The Raka Study (2016) aimed to investigate the impact and effectiveness of two structural learning models, the Wheatley model, and the Pipe model in the development of meditative thinking skills in science for first-graders. To achieve the goal of the research, a sample of 123 first grade students was selected. They were divided into three groups, one of which was an officer; the results of the study revealed statistically significant differences between the three groups in favour of the two experimental groups, as well as indicating differences between the two experimental groups in only three meditative thinking skills in favour of the experimental group studied in the Pipe model.

Comment on Previous Studies Related

- The previous studies have all emphasised the importance of the structural calendar and theories of building learning as a whole in teaching and learning mathematics.
- These studies have shown the positive effect of five-stage learning courses (five-year-sevens) in increasing students' achievements in mathematics and developing their meditative thinking.
- Most of these studies used the tribal and dimension test experimental method to determine the effectiveness of these courses.
- Previous studies have generally reported current research into the design of the research application tools (attainment test - meditative thinking scale).

Research Methodology and Procedures

Research Methodology

The research followed the experimental method, which depends on the existence of two groups, one controlled and the other experimental, in order to suit this method for the nature of the research, where the experimental method is distinguished from other research methods by taking experimentation as a tool to test the validity of the assumptions, and its ability to control various factors that can influence thoughtful behaviour, as it allows the disclosure between the causes and results of relationships (Solomon, 2014, p. 89).

Since the current research aims to identify the effectiveness of the evaluation course-teaching-learning in mathematics MAIL in raising athletic achievement and developing meditative thinking in students of the middle third grade, which means the existence of one independent variable, and two dependent variables and therefore the researcher has chosen

the experimental design with partial adjustment of two experimental and controlled groups with the application of dimensional selection of sports achievement and meditative thinking variables (curriculum shown in Table 1).

Table 1: Experimental design for two search groups

After testing	Dependent variable	Independent variable	Equivalence	Group
Achievement Test measure of meditative thinking	Achievement Meditative Thinking	MAIL assessment, teaching and learning course	Age in months Previous sports achievement Sports information	Experimental
		The usual way		The Controller

Research Community

This refers to all the students of the third grade in the middle school of Hajar Bin Uday, Directorate of Education of Baghdad, Karkh II.

Sample Search

The research sample was selected in the intended manner with the sample number of 60 students from the third grade middle school. The sample members were divided into two similar groups, one experimental (30 students), which applied the stages of the assessment, teaching and learning course in mathematics MAIL, and an officer group (30 students), which was taught in the usual way.

Equality of Research Groups

In order to adjust the variables related to research such as age group, mathematical knowledge, previous collection of the material, the researcher made sure that the control and experimental groups were equal, so as not to affect the dependent variables (mathematical achievement, meditative thinking) and thus the validity of the results of the research.

Search Requirements

1. Determining the scientific material for research: the scientific subject was specified in the mathematics book for the third grade medium (part two) for the year 2018, especially the fifth chapter under the title 'Engineering and Measurement'.



2. Determining behavioural goals: in order to identify those goals, the researcher analysed the structure of the proposed chapter, in order to ensure comprehensiveness and accuracy, the Bloom classification has been used in the cognitive field in the five levels (knowledge, assimilation, application, analysis, composition).
3. Preparing the teaching plans: two types of plans have been prepared for the two experimental research groups that will be studied according to the stages of the course of learning, teaching and learning MAIL (and) the officer that is taught according to the usual method.

Search Tools

To achieve the objectives of the research, the researcher will rely on two main tools: the math test and the scale of meditative thinking. In order to build research tools, the researcher the following steps:

First: Collection Test

Test Goal: The attainment test in the current research to measure the mathematical achievement of students aims at the research sample of the experimental group studied according to the evaluation course, teaching and learning MAIL, and the control group that was studied according to the usual method and then revealing the statistical differences between the two groups. This is calculated at both grades, and will be used to check the total swell of the study before the trial is applied. The same test was used to be tested after the confiscation.

Steps for Testing

- 1.To learn about the previous studies related to the subject of this study, especially which included tests as a tool, the researcher prepared the test of counting for the study of the students of information and basic skills contained in chapter five (engineering and measurement) of the third grade middle book.
- 2.Referring to the textbook syllabus for the curriculum of the teacher and the teacher's evidence, and drawing out the main and branch understandings, which achieve the general and private objectives.
3. Preparing the specification slate and setting the relative weights based on the number of goals set in the decision.
- 4.The test paragraphs were compiled in a way that covered all the understandings, skills and principles contained in the content of the chosen chapter.



5. Confirming the apparent honesty of the test: where the researcher presented the test paragraphs to a number of arbitrators specialising in the course and teaching of mathematics, to judge the validity of the test paragraphs and their suitability for the subject and objectives of the research, the final picture of the test was reached based on their opinions where the test is determined in (30) test paragraphs.

Scale of Meditative Thinking

The researcher relied on the scale of meditative thinking skills of Eysenck & Wilson 1976, which was researched, developed and reformulated to suit the Arab community (Barakat 2005), and consists of 30 items divided into 20 items reflecting the positive thinking of meditative thinking. It gives the student a degree if one of them is approved, while zero is granted if he disagrees with the clause, and ten items reflect the negative trend of meditative thinking where the student is awarded two degrees in the event of disapproval and one score at the time of approval and the scale range is between 1-30 according to the number of items of the scale.

True Scale

The scale was initially displayed to a number of specialised arbitrators, and therefore the scale was adopted in its final form in accordance with the amendments of the arbitrators.

Meter Stability: The stability of the scale was confirmed by the calculation of the stability factor using the Alpha Kronbach equation, and the scale recorded a 0.83 stability factor, which is a suitable stability factor for the purpose of research.

Search Application

The MAIL course was taught in the first semester of the 2018-2019 academic year at five weekly classes.

Results

First: View the Results

To ensure that the research objectives are achieved, the search results will be presented and discussed by testing the validity of its zero hypotheses as follows:

1. Hypothesis 1: There are no statistically significant differences between the averages of the experimental group that studied the application of the evaluation and teaching course learning in mathematics MAIL and the control group that studied in the usual way in athletic achievement in the third grade middle school.

The results showed statistically significant differences between the grades of students in the achievement test in mathematics for the experimental group applied to the proposed course, and the control group that studied in the usual way at the level of indication (0.05), indicating the rejection of the hypothesis and proof of the effectiveness of the MAIL course in increasing student achievement in mathematics. The following table presents the calculation averages and total standard deviations of students' grades in the achievement test and the difference between the experimental and control groups.

Table 2: Shows the Results of the (t) test of the Difference Between the Average Score of the Two Research Groups in the Attainment Test

Statistical indication	Level of significance	Degree of freedom	Test value (T)		Standard deviation	Average arithmetic	number	group	variable
			Calculated	Tabular					
It's for the experimental group	0.05	84	2.214	1.990	3.006	20.044	30	Experimental	Achievement in mathematics
					3.05	18.17	30	The controller	

2. Hypothesis 2: There are no statistically significant differences between the averages of the experimental group that studied the application of the evaluation and teaching course learning in mathematics MAIL and the control group that studied in the usual way in the meditative thinking skills of the third grade middle school students.

The results showed statistically significant differences between the grades of students in the experimental group applied to the proposed course, and the control group that studied in the usual way at the level of indication (0.05) in the measure of meditative thinking skills, which indicates the rejection of the hypothesis and the proven effectiveness of the MAIL course. The following table presents the calculation averages and overall standard deviations of students' grades in the meditative thinking skills scale and the difference between the experimental and control groups.

Table 3: Shows the Results of the t test of the Difference Between the Average Degrees of the Two Research Groups in the Meditative Thinking Skills Scale

Statistical indication	Level of significance	Degree of freedom	Test value (T)		Standard deviation	Average arithmetic	number	Group	variable
			Calculated	Tabular					
It's for the experimental group	0.05	84	11.28	2.021	2.335	12.217	30	Experimental	Achievement in mathematics
					2.021	20.43	30	The controller	

Second: Interpretation of the Results

1. Results Related to Achievement in Mathematics

It is clear from the researcher's findings through the statistical treatment of the first hypothesis concerning the effectiveness of the evaluation, teaching and learning course in mathematics MAIL in increasing the achievement of sports among students, the lack of acceptance of the hypothesis where it was established that there are statistically significant differences between students in favour of the Pilot group, which indicates the effectiveness of the MAIL assessment, teaching and learning course in increasing student academic achievement.

The researcher attributes this to the following reasons:

1. Teaching using the evaluation, teaching and learning course in mathematics MAIL goes through six stages, starting with the preparatory phase, which helps students to retrieve their previous information in the subject in question, and then the participation stage, which allows them to exchange information and experiences, which helps them to acquire more for information and retention
2. The two stages of investigation and self-learning also help them increase the outcome gained in the subject where the survey is one of the most effective means of learning mathematics, while self-learning makes the student able to process information by himself, which helps him to achieve more.
3. The two stages of transfer of skill, concept and application of concept and skill contribute to the consolidation of mathematical rules and theories and thus the student can apply them later, indicating the high achievement of his results.

Interpretation of Results Related to the Development of Meditative Thinking

It is clear from the researcher's findings by the statistical treatment of the second hypothesis concerning the effectiveness of the evaluation, teaching and learning course in mathematics MAIL in the development of meditative thinking in the students of the middle third grade , of the acceptance of the hypothesis where it has been proven that there are statistically



significant differences between students in favour of the pilot group, which indicates the effectiveness of the MAIL assessment, teaching and learning course in the development of meditative thinking among students.

The researcher attributes this to the following reasons: there is a strong correlation between the course of evaluation, teaching and learning in mathematics MAIL and the development of the ability to meditate in the student where meditation is a central stage in the course and is also linked to all stages, and helps the course to leave time and space for the student to think carefully and discover the fallacies and develop explanations, conclusions and then solutions, all of which are meditative thinking skills.

Conclusions

In light of previous findings of the research, the following conclusions can be reached:

1. The MAIL assessment, teaching and learning course is a teaching method suitable for mathematics.
2. The MAIL course assists students to the exchange of ideas and retrieval of their previous information, and helps them to investigate and learn self-learning, and establishes their concepts and math skills.
3. The Mail Course Helps Students Apply Their Mathematical Concepts And Skills In Other Situations And Problems.
4. The need to integrate evaluation into the classroom day teaching as an evaluation for learning and not for the evaluation of learning.

Recommendations

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

1. The need to pay attention to modern trends in teaching and learning mathematics, especially based on theories of constructive learning.
2. Attention to the application of structural (formative) assessment strategies and methods because of their positive impact on mathematics education and learning.
3. Highlight the course of evaluation, teaching and learning in MAIL mathematics, and raise awareness of it, as the researcher's knowledge was not applied in the Arab environment before this research.
4. Applying the stages of the course of evaluation, teaching and learning in MAIL mathematics in mathematics classes as a combination of self-learning, guiding the teacher towards choosing the most appropriate strategy, assisting in the time assessment during learning, through all stages of the study.



5. Further research on the effectiveness of the course in relation to other variables such as surveying application of concepts of self-learning.



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