

THE EFFECT OF SELF - QUESTIONING STRATEGY TRAINING FOR THE TRAINEE TEACHER IN THE ENRICHING OF STYLES OF THINKING AND ATTITUDE OF THEIR STUDENTS TOWARDS MATHEMATICS

Dr. Rafah. Aziz. Kareem*

Assistant Prof. Baghdad/ al- Mastansiriah Iraq.

Article Received on
29 July 2015,

Revised on 18 Aug 2015,
Accepted on 07 Sep 2015

***Correspondence for
Author**

Dr. Rafah. Aziz. Kareem

Assistant Prof. Baghdad/
al- Mastansiriah Iraq.

ABSTRACT

The study was conducted in Iraq and the purpose of the study was to identify the effect of self-questioning strategy training for the trainee teacher in the enriching of styles of thinking and attitude of their students towards mathematics. The sample of the present study consisted of (96) trainee teachers which divided into (35) represented the experimental group while (41) represented the control group. Concerning the sample of the trainee teachers students, which total number was (769) divided to (415) students represented the experimental group and (354) students were the control group

sample. The two groups of trainee teachers sample were exposed to thinking styles scale before and after training. The subjects were exposed to a post thinking style scale in the level of training which every group was exposed to. They were tested to choose the best (8) trainee teachers aim each group and followed up to the secondary stage in teaching their students, after finishing their training period which last (45) days, The trainee teacher students were exposed to an attitude test towards mathematics. After the data were analyzed statistically, It has been observed that the self-questioning strategy has effect on the trainee teacher style thinking and this reflected positively on their students attitude towards mathematics. An any the suggestion of the present study, is the necessary of adopting the self-questioning strategy, within the preparation programs for mathematics in Education colleges and in the minatory of Education.

KEYWORDS: self-questioning strategy training, styles of thinking, attitude, mathematics.

The problem the present study

The majority of students and their parents complain of difficulty and underachievement in the study of mathematics and this complaint came as a result of students' possessed of a negative attitude towards mathematics, especially in the early stages of basic education, as in. Al alias, (2003) study and Mahrazis (2003).

And that this negative attitude and underachievement resulting from the methods followed by the teacher in the delivery of mathematics from (concepts, generalizations, skills, solve problems) as there is a direct correlation between what is provided by the teacher and acquired by the student and this has been confirmed by Al-Mayouf's study (1999).

While the mathematics of the subjects that will help the enriching of thinking among students and this has been demonstrated in the study of each of (al-Qubaisi, 1989) and (Ka'ad,2003) and the the first responsible of forming a positive attitude towards mathematics, or the enriching of thinking among students is the teacher of this subject, the role of the creation of the student mind of to deal with subjecte-dominated nature of abstraction and abound with questions, so that the teacher training before the service on how to deal with his students and how they led to the mathematical aims this will return to a positive effect on both the teacher and the student towards mathematics, and considered the application stage a critical stage of training when they are trained by students even enable them to move from the learning stage to the stage of working One of the main concerns how to deal with their students in the schools and how to deliver them to a mathematical idea.

So, it is necessary of the trainee teacher preparation to be appropriate with the importance and the role that represented by this subject in the peoples movement Among the topics which emphasizes the enriching of thinking is (meta- cognition) as confirmed by study Al-Cannabis (2011) study, Basims (2010) study, which includes strategies have a direct relationship with the student that is (self-questioning) strategy, which enables the student to ask were questions about reaching the aim such as finding a solution or knowing the concept or generalizing or mastering or mathematical skill , as stated in Fatens (2013) study. So highlights the problem of the research in the following question: What is the effect of self-training strategy question for the trainee teacher to the enriching of method of thinking and attitude of their students towards mathematics.

The importance the present study

Given the characteristic of mathematics from the many advantages have made many of the world calls to reconsider the mathematics curriculum and began teaching and learning of mathematics is shifting from the student is a recipient of information to an active person builds knowledge and mathematical information by himself. And addressed it by using all of his potential cognitive and creative this makes him gain confidence in his abilities and called its potential .The most important direction that should be taken when dealing with the content of school work mathematics is to increase the achievement and enriching of the attitude towards mathematics among students by teaching math, especially through the use of strategies of modern topics, such as meta cognition strategies.

The students who use the meta cognition strategies are effectively aware of the special behavior, and are aware of their thinking when they perform a specific task and can use this awareness to control what they're doing and control it. And teachers should help students to learn strategies beyond the the metacognition? through helping students to plan and do the learning process and strategies meta cognitive to make students more active and thus improve their performance, especially among students less skilled in performance.

(Thamransa, 2004: 125).

Among the meta cognition strategies which have the ability to develop problem solving skills in mathematics is self-question strategy where considered this strategy of the best strategies to help the student develop the problem solving question, because this strategy is based on asking questions on himself and draw a plan to resolve the question itself, this is done by the student to answer questions put forward by himself and this is done under the guidance and help from the teacher.

As a benefit of this strategy in achieving many of goals of like focusing attention on the elements to be learned, the excitement and attention in the process of learning, thinking in solving problems and thus the enriching of thinking skills. (Henri Usen, et al, 1996: 52).

As the self- questioning strategy to guide the learner to direct a set of questions for himself during the processing of information, making more integrated with the information hes learned, and has created awareness of thinking processes. (Baker & Piburn, 1997: 361).

Bahlouls (2004) study shows that it is useful for the learner to draw questions before learning, during and after, these self questions facilitate understanding and encourages them to stop forward elements of the job, and think about the scientific material they are learning and connecting the old with new and predict new things and awareness of their comprehension degree and to motivate their imagination. (Bahloul, 2004. 37).

Also, the self-questioning encourage thinking in various method, with different levels of complexity and these questions may help in the enriching of the reflective thinking use. (Clements, et al, 1992: 83).

The effectiveness structure of these question Is attributed to that, it creates emotional motivation and cognitive structure and when students begin using the questions become more responsible for their learning, and they make more positive role, and it seems that the processing of information by raising questions, motivated students to consider learning in the context of their previous experience, and the situations of their daily lives, in creasing the possibility of storing information in long-term memory, and makes its future use in different situations is easy (Khaznadar et al, 2006: 140).

The self- questioning strategy established on the students to direct to himself a set of questions before, during and after the dissolution of the question and through the answers to these questions the student can solve the question and develop the skills to solve the and this is reflected positively on the attitude of the students towards learning mathematics when he finds himself able to a continuous solving of a particular problem through continuous answering the questions which directed to him at every stage of the self-questioning strategy.

The importance of The research highlights of in following points

1. formation of a positive attitude towards mathematics through the adoption of new method in teaching math and that positive attitude is reflected on student achievement.
2. Adoption of the closely linked strategy to the characteristics of mathematics.
3. Adoption of continuous training for teachers of primary schools and teachers of secondary schools on modern teaching strategies, especially in mathematics.
4. Attention to the trainee teacher thinking styles which makes him benefit of the building himself and his students education.

Aims of the present study

The current research aims to:

1. Identify the impact of the training self-questioning strategy of the trainee teacher to the enriching of their method of thinking.
2. The impact of the training self-questioning strategy of the trainee teacher of their students attitude towards mathematics.

Limits of the study

1. Fourth year (trainee teacher) at Faculty of Education, University of Al-Mustansiriya.
2. secondary schools student at Rusafa and Karkh students (trainee teacher) for the secondary to the application stage.
3. The academic year (2011-2012) for period from 1st March (2012) to the 15th April (2012).
4. Self-questioning strategy: stages (before learning - learning during - after learning).
5. The adoption of thinking style scale: (Legislative, Executive, estoppel, Royal, hierarchical, minorities, chaotic, global, local, progressive, conservative, external, internal).
6. Questionnaire for students attitude towards mathematics.

Hypotheses of the present study

1. There is no statistically significant difference at the level of significance (0.05) between the average scores of (trainee teacher) in the experimental group that were subjected to training on self-questioning strategy and the control group that studied by the usual way in the enriching of styles of thinking.
2. There is no statistically significant difference at the level of significance (0.05) between the mean scores of students of (trainee teacher) in the experimental group who were subjected to training on self-questioning strategy and the control group that studied by the usual way in the enriching of the attitude towards mathematics.

Define the terms**1. Self-questioning strategy**

Coyne (2007) defined it as:"a set of questions posed by the students before the reading process, or during, or after reading, and these questions require integration of information, and the students' thinking in the process of reading, and require students answer these

questions." (Coyne, 2007: 85).

Theoretical definition

"It is the search for solutions to the issues of sports through answering questions in the three stages of strategy: the stage before the solution, and the solution phase during, and after the solution phase.

Operational definition

is training (trainee teacher) on how to guide the use of strategic stages of the three stage before the solution, and the stage during the solution, and the stage after the solution in dissuading the teaching of mathematics for students of intermediate stage in the application period to resolve issues and problems sports facing.

1.styles of thinking

Sternber (1997) defined it as: "the preferred way of thinking" (Sternber, 1997, 19).

Theoretical definition

"is a description of how the individual prefers to think about the information he learned during or after the learning."

Operational definition

"the degree to which the teacher obtained / applied after their answer to a question naire method of thinking to Sternberg and Wagnr 1991, as amended by the researcher."

3. The attitude towards mathematics

Rajah (1996) defined it as: "ready sentimental acquired relatively constant, attitude to the individual to certain topics and accept them and favored or welcome her and loved her, and tends it by Vigolh displays them or reject them or dislikes." (Rajah, 1996, p 113).

Theoretical definition

the attitude that a state of readiness or inclination to act a certain way or respond when faced with a particular individual's exciting.

Operational definition

that the attitude is ready to respond to the students acquired the intermediate stage in a positive or a negative subject about Riyailat measured procedural primarily obtained

from the student responses to the scale items prepared for this purpose.

Theoretical background

First - a self-questioning strategy: Steps of self-questioning strategy

(Marzano and others, 1998) see that he could split the questions that the reader asks himself into three major phases, according to the site the question of the timing of the use of the learning process itself (before - and during - and after) learning as follows.

Stages of pre- learning

Where the teacher begins to view the subject of the lesson to the students, then trained on the use of methods of self- questioning (ie, questions that students can ask her for himself) in order to activate the operations meta cognitive and examples of these questions:

1. What do I learn that I want to resolve this question? In order to create a focus point (helps short-term memory).
2. What I want to know about this question? For the purpose of creating a goal.
3. What prior knowledge that will help in resolving this question? Order to identify the appropriate domain or the relationship between new knowledge and prior knowledge or knowledge of similar situations and linking new knowledge long-term memory.
4. What is my expectation in resolving this question?
5. How long is the solution to this question?

The researcher believes that these questions are important because they help to:

1. access to scientifically acceptable concept.
2. encourage students to set goals, especially motivated to undertake the activities required of it.
3. use the skills of information gathering.
4. Identify what is the students information earlier about the lesson.
5. design concepts or form(V), charts, or diagrams to help him thinking.

Learning phase

Where the teacher trains students to question the methods of self- activation processes meta cognitive of the time these questions are as follows:

1. How to solve this question? In order to design a way to learn.
2. What is the strategy that should be used to resolve the question?
3. What is the missing data, which helps in the resolution of the question? Raises toward

reaching the goal.

4. Should I use a different strategy to resolve the question?

The researcher believes that these questions are important because they help to:

1. help students answer these questions in the organization of his information and remember it.
2. helps students to generate new ideas, making him thinking of the steps that help in solving the problem of its various aspects.
3. help in identifying the mysterious aspects of the student and that needs to be studied.
4. assist in the enriching of the steps and tools and appropriate rules to resolve.
5. help in setting goals and guidelines set by the teacher in advance so that the student keeps in his mind to dissuade the solution.

Post learning

Where the teacher trains students at this stage on the methods of self- questioning to activate operations meta cognitive, and examples of these questions:

1. How did the solution of this question? In order to assess progress.
2. Do I need to re- solve the question? Offer follow-up if there is a need for further action.
3. Do what I have learned close to what I expected?
4. Can I solve the question in another way?
5. Is this what I want to reach it, exactly?
6. How can validate the solution?
7. Can I circulate the solution for other questions? We show interest in the positions of the other application to connect the new information experience far-reaching.

The researcher believes that these questions are important because it helps:

1. Student learning to pass judgment on the validity of his work.
2. Students learn to think critically of the steps by which time.
3. Thinking about alternative solutions and steps.
4. Trying to generalize the learning that have been reached to in similar positions.
5. The student to form structures new knowledge to prior to previous structures.

The answer to these questions will help the of students to handle and analyze the information reached by the integration and then evaluate and how to use them. (Shihab 2000.19) According to (Abdullah, 2000) point of view who see that students can be train to use this strategy through the following steps:

1. predicting and activate prior knowledge

The teacher begins the lesson introduced the subject of his students , and encourages them to raise some questions to stimulate meta cognitive operations, in order to identify what their previous experience on the topic of the lesson, each student is seen to the title of the lesson and then ask himself :

1. What form of questions on this lesson?
2. Why do I expect it?

It is useful tools in that students do mapping concepts, shapes, pictures or diagrams of what information they have on the subject of the lesson. Or write a paragraph summarizing the information about him.

2. Evaluating predicting and self-reflection

The teacher discusses the students about the information available to them about these questions, and encourage them to raise some questions that contribute to clarify the objectives and thus be able to see the main ideas contained in the question. And organize information and to generate new ideas, identify problems and planning for the activities necessary to answer them, execution and reach to the results and evaluation.

If student predict, he continues to predict about what is happening in the rest of this question and then ask himself what the proposed solution to this question? If the predictions were not matching to the subject of the question, the student has to ask himself:

Why my expectations or predictions were incorrect? And how can I make different predictions?

3. Final Evaluation

The teacher discusses his students in their findings by solving the question by some of the questions that help students taking the information that they have found and, analysis and evaluate it and determine how to use them in the positions of other life, and it can be done by comparing new information with information earlier, and re- organizing concept maps or other forms of fees or summaries that preceded and new experiences, and become able to use the new information in different positions or if there is a question resolved the student is still not clear in his mind as indicated by the piece through this step, it would probably be best if here the student to re- solve the question again. researcher has used

the previous steps in the teaching self-questioning strategy. (Abdullah, 2000. 256-257).

The characteristics of self- questioning strategy

1. based on positive student , The questions that he asks her students to create themselves according emotionally, and cognitively motivated, and become more responsible for their learning.
2. helps students to formulate questions about the topic, and make them able to engage in dialogue, and show what they know, and what they would like to know.
3. Increase their understanding of the subject and motivated them about teamwork.
4. depends on the students themselves in the construction of meaning through his discovery, and thus its impact remains long.
5. The students questions reveal a pattern of thinking, and alternative concepts, and their understanding of cognitive impairment, and they want to know.
6. students become more sensitive to the important parts of the lesson content, and they monitor their understanding of the educational material, ie, they become aware of what did not understand, and are conducting therapeutic by asking direct questions on themselves, and questions to their peers.
7. strengthens the feeling of student self- efficiencies, and personal power, control and feel self- understanding recognize their own goals. (Abu Ajwa 2009.40).

In light of the above strategy is self-questioning is one of the strategies and metacognition, which helps the student to enter solving mathematical problems and wondering how his ideas and how he builds and modifies them.

Secondly

styles of thinking

Theories that explain the styles of thinking

1. the leadership of the brain to Herman.
2. Tire.
3. Harrison and Bramson.
4. self- control mental.

The most important factors influencing the growth of the styles of thinking

1. culture.
2. Age.

3. parental treatment methods.
1. 4-Education and Labor. (I lham, 2007.17-39).

Importance of styles of thinking in learning

1. help explain individual differences in school performance.
2. the methods of thinking that lead to success in any branch of knowledge is not necessarily lead to success in the professional.
3. method of thinking and interested in the success of vocational school. (Sternberg and Zhang, 2005).

The role of the teacher

1. Provides opportunities for all students may show their opinion.
2. Students are required to write the data in the table to recall previous knowledge and review ideas.
3. To encourage the learner to talk about his ideas.
4. Excitability prior knowledge of the learner and encourage them to evocation.
5. Provide feedback in appropriate time.
6. Discusses the student's findings with by raising some questions that help to address and analyze information, evaluate and determine how to use them in other life situations.

The role of the learner

1. Linking prior knowledge of new knowledge.
2. The ability to predict everything that is new.
3. Data processing in which they had the knowledge and linked to the new.

ADVANTAGES

1. Train students to think more carefully and examine their scientific knowledge, skills and attitudes of personal orderly manner.
2. Help students to listen to themselves while they are thinking so they were more aware of their strengths and weaknesses points.
3. Increase the students control of themselves, and enable them to improve their academic performance and non- academic.

DISADVANTAGES

1. The weakness of learners ability to self-control.
2. Students who are used memorize find it very difficult to learn.

Previous studies

Firstly

self-questioning strategy

1 - (Buthainah, 2006) study

The study carried out in Saudi Arabia and the aim of this study is to demonstrate the impact of training on the strategies behind the enriching of knowledge in the method of thinking among students of the Department of Mathematics in the College of Education in Makkah. The number of respondents (67 students). The results of the study showed: - The use of meta cognition strategies (modeling, self-questioning, thinking out loud, cooperative learning and K, W, L))) have a positive influence in the enriching of each mode of thought synthetic and analytical third year students at the Department of Mathematics.- The lack of statistically significant differences between the mean scores of the study group in the pre and post application for each style of thinking (the ideal, practical and realistic). (Buthainah, 2006).

2 - (Khitab, 2007) study

The study carried out in Egypt and the study aimed to identify the effect of a strategy meta cognitive in the teaching of mathematics achievement and the enriching of creative thinking among students of second cycle of basic education. The sample consisted of two experimental groups represented by (70) pupils and one control group represented by (67) pupils the results have founded the superiority of the students of the experimental group that studied the strategy meta cognitive to the students who have studied by the usual methods in achievement and creative thinking in mathematics and found a direct link relationship between achievement and creative thinking in mathematics. (Khitab, 2007).

3 - (Alaziqi, 2009) study

The study carried out in Saudi Arabia and the study aimed to identify the effectiveness of the self-questioning strategy in the enriching of some of the skills of reading comprehension among students in the first grade of secondary school in Mecca. The sample consisted of 50 students represented the experimental group and the control group (25 students). It concluded that there are statistically significant differences at the level (0.05) in the

achievement and posttest in comprehension skills (literal, inferential, critical and creative gastronomic) for students of the experimental group. (Alaziqi, 2009).

4 - (Abu Ajwa, 2009) study

The study was carried out in Palestine, it aimed to identify the effect of using the self-question strategy enriching skills to resolve the chemical issue of the eleventh grade students in Gaza. The research sample formed (62) students were divided two groups, the experimental group numbered (31) student control group numbered (31) student, and the results showed that there are statistically significant differences at the level of significance (0.05) among the students of the experimental group and the control group students attributed to the self- questioning strategy in resolving the chemicals issue skill. (Abu Ajwa, 2009).

5 - (Al-Janabi, 2011) study

The study was carried out in Iraq and the aim of research is to find out the effectiveness of trainee students on the meta cognitive strategies in their communication in mathematic and performance of teaching, and consisted of 38 students, represented the experimental group (20) students represent the control group (18 students), prepared sessions training based on the strategies and meta cognition which each of the (learning meaningful - imagine the visual -coding - action diagrams and analogies - the question of self - concept maps - records thinking -brainstorming - collaborative learning - the exchange of roles) and the results showed that the training of students on the meta cognitive strategies did not contribute to the improvement of their communication in math strategies compared to their colleagues who have been trained according to the usual program me, and that training students on meta cognitive strategies has contributed to the improvement of their teaching performance compared to their colleagues who have been trained according to the usual program. (Al-Janabi, 2011).

6 - (Faten, 2013) study

The study was conducted in Iraq and aimed to investigate the effect of a self-questioning strategy in the achievement of second grade students and their multiple intelligences. The total number of members (50 students), the results showed no difference in achievement for the experimental group and there was no difference in the multiple intelligences (Faten, 2013).

The benefits from previous studies

1. Results of previous studies to highlight the problem of the research and its importance.
2. Statistical methods used are appropriate to the present study.
3. To prepare lesson plans appropriate for the present study.
4. It can be useful for some of the results of these studies in the interpretation of the results of this study.

Procedures of the study

Experimental Design

group	Equality of group	Before training	Independent variable	The first dependent variable after training	The second dependent
Empirical		Test styles of thinking	self-questioning strategy	Test styles of thinking	Tool of attitude
Control			Control strategy		

Methodology of the study

In the current study, the empirical research procedure was used for (the fourth year level) trainee student at university and descriptive procedure for intermediate stage students of the trainee students so as to suitability of the nature of the aims of the study.

Society of (trainee/ teacher) and sample

The fourth level includes students (trainee/teacher) Faculty of Education / Department of Mathematics / Mustansiriyah University, and the better (8) trainee teacher After training was selected by the community the as in Table (1):

Table (1).

group	total	the better(trainee/teacher)
Empirical	35	8
Control	41	8

Society of (trainee teacher) students

Community includes students in the intermediate stage (14005007) in Baghdad for the academic year (2012-2013), while the research sample includes a number of (trainee /teacher) students in the intermediate and the total number of (769), where it represented the experimental group (415) represented the student while students in the control group (354) as a student in the table (2).

Table (2)

group	The number of better(trainee/teacher)	(trainee /teacher) students	schools
Empirical	8	415	8
Control	8	354	8

Equalization of groups

The experimental and control groups were equalization variables of (chronological age - grade material methods of teaching mathematics curriculum for the third phase in college – the total achievement for the third year in college - Intelligence).

Table (3) Equalization of students experimental and control groups in the number of variables.

Sign.	T-test to compute	variance	standard deviation	mean	The number	class	group	variables
No sig.	985,0	73,171	10,13	5,263	35	B	Empirical	The life time
		72,120	98,10	61,259	41	A	Control	
No sig.	686,0	31,152	34,12	69	35	B	Empirical	Teaching methods
		84,84	21,9	55,66	41	A	Control	
No sig.	363,0	25,4717	68,68	592	35	B	Empirical	achievement
		96,518	78,22	83,585	41	A	Control	
No sig.	730,0	79,340	46,18	5,77	35	B	Empirical	intelligence
		82,799	92,27	94,71	41	A	Control	

The study requirement

1.Preparation of training sessions according to self-questioning strategy

the researcher Prepared (11) training sessions for both experimental and control groups.

self -questioning strategy adopted in the experimental group training sessions while the control group routine training strategy was adopted.

2. Search Tools

2.1. Styles of thinking questionnaire

The researcher adopted a questionnaire that have (Sternberg & Wagner, 1991) have been formed from (104) items , measuring thirteen thinking style (Legislative - Executive - estoppels - Royal - hierarchical - minorities - chaotic - Global - Local - Progressive -conservative - external - procedure) and every style is measured through eight paragraphs of randomly distributed within the list , and given the degree of each style by collecting items degrees , and to be answered by Likert five levels .

2.1.1. The validity of the tool

To achieve the tool validity, the external validity the tool was exposed to number of experts for their opinion see appendix () In the light of the opinions of experts; all the items; has been accepted and did not object to any provision that items had reached the agreement 100 % and (Ewad,1988)in this respect confirms the percentage of the agreement would be acceptable to the experts if an 80 % or more. (Ibidy, 1998: 370).

2.1.2. The reliability of the tool

The pilot study sample was consisted of (33) students from the College of Education Ibn al-Haytham / Department of Mathematics / fourth level, The value of reliability was (86%). the researcher have use alpha cronph formula to calculate the test reliability.

2.2. The scale of attitude towards mathematics

The research has prepared a scale attitude toward mathematics benefit from some of the previous scales Adopting 26 items distributed on the following dimensions:

- 1 . The nature of mathematics (8) items.
2. Enjoy math and its study. (10) items.
3. The importance of mathematics (8) items.

The researcher followed in estimating the degree of the scale on Likert scale with a gradient triple (yes - not sure - no) and the corresponding grades (1,2,3) in the case of positive items and grades (3,2,1) in the case of negative items.

2.2.1. The validity of the Scale

exposing the scale to a group of experts to make sure of the validity of the scale has happened on the proportion of agreement (90%),which is a good proportion of the scale

in order to be valid.

2.2.2. The reliability of the scale

to calculate the scale reliability, the researcher used Alpha Cronph Formula after the pilot study of (50) from (Al-Zahra secondary school for girls in Palestine street was determined and the valued of reliability was (83%).

The number of items	items		distance
	positive	negative	
8	7-4-1	8-6-5-3-2	Quality of math.
10	18-17-15-14-12-11-9	16-13-10	Pleasure of math.
8	26-23-21-19	25-24-22-20	Importance of math.
26	14	12	total

Applied research

1 - the application of a self-questioning strategy in teacher training / applied.

Session of training	Activity Coach	Activity trainee
2-1	<ul style="list-style-type: none"> - Definition of the self-questioning strategy. - Give a sample lesson plan to include the application of a self-questioning strategy in mathematics. - The division of the lectures the students so that all students provide a lesson for the miniature items in mathematics from the decision within the intermediate stage. Imam colleagues include the use of self-questioning strategy. - This division is ten session. 	-Participate in the discussions
3 -10	<ul style="list-style-type: none"> Display mini lesson by the student allotted. - Guidance and counseling for dialogues and discussions by the coach. 	-Participate in the discussions - Monetary active and passive mini- lesson, and the lesson plan allocated.
11	<ul style="list-style-type: none"> - Exam students about previous training - Choose the best eight students. 	- Participation in the exam

2-the application of usual strategy in the training of trainee teacher.

Session of training	Activity Coach	Activity trainee
2-1	<ul style="list-style-type: none"> - Definition of the self-questioning strategy. - Give a sample lesson plan to include the application of a self-questioning strategy in mathematics. - The division of the lectures the students so that all students provide a lesson for the miniature items in mathematics from the decision within the intermediate stage. Imam colleagues include the use of self-questioning strategy. - This division is ten session. 	Participate in the discussions
3 -10	<ul style="list-style-type: none"> -Display mini lesson by the student allotted. - Guidance and counseling for dialogues and discussions by the coach. 	<ul style="list-style-type: none"> -Participate in the discussions -Monetary active and passive mini-lesson and the lesson plan allocated.
11	- Exam students about previous training - Choose the best eight students.	- Participation in the exam

Statistical methods

1. Chi square to find the educational level of the parents.
2. Alph Cranph Formula to calculator the rebility.
3. T-test for two independent samples.
4. The statistical bagful (SPSS) has been used.

DISCUSSION OF RESULTS

1. There is no statistically significant difference at the level of significance (0.5) between the average scores (trainee teacher) in the experimental group who were subjected to training on self-questioning strategy and the control group who studied in the usual way in the enriching of method of thinking.
2. There is no statistically significant difference at the level of significance (0.5) between the average scores (trainee teachers) in the experimental group who were subjected to training on a self-questioning strategy and the control group who studied in the usual way in the attitude of their students towards mathematics.

Table (5): thinking styles of the experimental group and the control group (pre - post).

group	number	before		after		T-test computed	T-test table
		mean	Stv.	mean	Stv.		
Empirical	35	121,67	12,08	147,44	17,76	3,238	2,021
Control	41	120,57	11,99	126,59	12,06	0.000387	2,000

Table (6): tool thinking styles of the experimental group and the control group for the application of after.

group	number	mean	Stv.	T-test computed	T-test table
Empirical	35	147,44	17,76	9,527	1,980
Control	41	126,59	12.064		

As shown in Tables (5) and (6) respectively that there is statistically significant at the level of significance (0.05) for the experimental group who trained on a self-questioning strategy, where style of thinking in comparison with the scale of control group who have been trained in the usual thinking styles, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

Table (7): the attitude of the (trainee/ teachers)students for the experimental group and the control group (pre-post).

group	number	before		after		T-test computed	T-test table
		mean	Stv.	mean	Stv.		
Empirical	415	85,72	16,56	97,019	13,78	4,862	1,960
Control	354	85,64	14,06	87	13,97	0,198	

Table (8): attitude of (trainee /teacher) students for the two experimental and control groups after.

group	number	mean	Stv.	T-test computed	T-test table	Df.
Empirical	415	97,019	13,78	4,517	1,960	767
Control	354	87	13,97			

As shown in Table (7) (8) that the attitude of the (trainee teacher) students in the experimental group is statistically significant at the level of significance (0.05) comparing with (trainee teacher) students in the control group, so the null

hypothesizes rejected and alternative hypothesizes is accepted.

CONCLUSIONS

1. There is enriching for the benefit of the trainee teacher in the experimental group who are trained to self- questioning strategy in terms of the style of thinking comparing with the trainee teacher in the control group who trained according to the usual training in thinking styles scale in math's.
2. There is an increase in the attitude of (trainee teacher) students in the experimental group comparing with (trainee teacher) students in the control group in mathematics.

RECOMMENDATION

1. the need to adopt a self-questioning strategy in the training of male/female teachers of math because of their impact on the styles of thinking towards the teaching of mathematics.
2. the need to train students in the school to study math on how to direct right questions to himself that enables him to reach the right solution and the right thinking.
3. The formation of a positive attitude by students in the material predominantly recipe thinking in finding solutions to the problems, so it is necessary to be adopted within the academic preparation in colleges of education.

Suggestion for Further Studies

1. conducting a study to investigate the effect of self- questioning strategy in students achievement in mathematics.
2. conducting a study to find out the effectiveness of self-questioning strategy in the enriching of verbal problem-solving skill.
3. conducting a study to find out the impact of other strategies of strategies meta cognitive in the training of mathematics teachers in the enriching of attitude students towards mathematics.

Appendix (1): model studied the strategy of self-questioning Lesson Subject.

Relations

Specific objectives

to know the form of the relations and their types and how each type of solution.

Behavioral purposes

that the student is able to:

1. Recognize the shape of relations.
2. Gives an example of the relationship reflectivity.
3. Find the relationship reflectivity in the group.
4. Explains how to find a relationship.
5. Plans to resolve the relationship.
6. evaluation types of relationship.

Teaching aids

the use of the blackboard and crayons **Showing stages Lesson.**

CREATE (INTRODUCTION)

Multi relations and link in our daily lives example imagine that the group and not any group we consider it represents the people (father, mother, Zainab, Muhammad) are one family, Valraboth that binds the Father with the Son called relationship and write on the form of a pair salary (Father, Muhammad), as well as the mother they have experienced with the girl also represents the relationship and write on the form of a pair salary (mother, Zainab) either in relations reflectivity: is a relationship, for example, the element a with himself, anything to do with a person with himself when he thinks the solution to the problem or meditating or remembers all of a relationship with the self.

SHOWING LESSON**• pre-teaching**

It is the questions that can be viewed and raised on the subject of the lesson:

1. What do we mean the relationship?
2. What is the format?
3. What kinds of relationships?
4. What is the difference between the types of relationships?

• the stage of teaching

1. symbolizes the relationship symbol R It is a correlation relationship between the two and write on the form of the salary of a pair (a, b).
2. the relationship reflectivity: - is the relationship with the same element, the reflectivity R relationship to Group A check if a R a per aba.

3. If the element was not associated with the same, it does not achieve this relationship.
4. Terms of reflexivity relationship: each must be an existing item Group A is linked with the same pair in the form of salary.
5. If no one element is associated with the same does not lead to a relationship reflexivity.

•Post-teaching (True posttest)

1. What is the relationship and what it symbolizes?
2. What is the format?
3. Are you in a relationship reflexivity must be associated with the elements are all the same?
4. if it was not associated with an element of the group with the same reflexive relationship you called?

CALENDAR

1. Are the following process called relationship? $A = \{1,2,3\}$, $R1 = \{(1,2), (2,1), (1,3)\}$.
2. Yes, because it's a relationship component A is linked with b in the form of a pair salary.
3. reflexive relationship because each element in A is linked with the same $R1 = \{(1,1), (2,2), (3,3)\}$.
4. not reflexive, because not all the elements are associated with the same $R2 = \{(1,2), (2,1), (3,3)\}$.
5. Let: - $A = \{1,2,4\}$ / $R = \{(1,1), (2,2), (4,4)\}$ Give an example of a relationship reflexivity.
6. grandparent relationship reflexivity in Group B of the following: - $B = \{5,6,7,8\}$ $R = \{(5,5), (6,6), (7,7), (8,8)\}$.
7. $C = \{2,5\}$ must be linked to each element in Group A with the same component of the reflexivity of any relationship with the same 2 (2,2) And 5 with the same (5,5) $A = \{(2,2), (5,5)\}$.
8. how to solve the relationship: - when you are asked to look at the reflexivity link elements with each condition that all be linked with and found herself in the relationship $R A = \{8,9,10\}$ Relationship reflexivity $R1 = \{(8,8), (9,9), (10,10)\}$ Relationship analog $R2 = \{(8,9), (9,10), (10,9)\}$.

HOMEWORK

1. What is the relationship has ever known?
2. The number of types of relationships?
3. Reflexivity knew the relationship?

4. Give an example of reflectivity shows the relationship?
5. Do the following relationship on $A = \{1,1,2\}$ represents the relationship with the
6. reflectivity of the reason? $R = \{(1,1), (1,1), (2,2)\}$.
7. Do the following relationship to $B = \{5,6,7,8\}$ represents the reflectivity.
8. relationship with the reason? $R = \{(5,5), (6,6), (7,7), (8,8)\}$.

Appendix (2): scale trend toward mathematics.

number	items	yes	Not sure	no
1	Mathematics material is clear and understandable.			
2	I can not imagine the study of mathematics in the middle stage.			
3	I feel that math symbols, and a set of laws in the complex.			
4	Can simplify the mathematics topics vague so easy to understand.			
5	I am afraid of failure in mathematics.			
6	I feel I can not get high scores in mathematics.			
7	Mathematics material easy to understand.			
8	I am very concerned at the performance of the mathematics exam.			
9	I love math lesson.			
10	Once bothered to enter math teacher lesson.			
11	Wait eagerly share mathematics (longing).			
12	I have a willingness to attend the extra rations in mathematics.			
13	I wish that at least the number of servings per week of mathematics.			
14	Spend a great time in the recall mathematics.			
15	Be sure to resolve the duties of mathematics constantly .			
16	I hate to participate in the activities of mathematics.			

17	I would like to continue in the study of mathematics in the future.			
18	When solving exercise Aatlina do not like that one.			
19	I think that the task of mathematics in everyday life.			
20	The study of mathematics waste of time.			
21	Mathematics me think of a good.			
22	I see the emergence of a calculator downplayed mathematics.			
23	I think the math based on the evolution of other sciences.			
24	Limited use of mathematics in the lesson only.			
25	Help me to learn mathematics most other materials.			
26	I do not feel that mathematics contribute to the progress of society.			

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