

The Efficiency of Multiple Intelligence Theory (MIT) in Developing the Academic Achievement and Academic-Self of Students with Mathematical Learning Disabilities in the Areas of Addition, Subtraction and Multiplication

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Abstract

This study aimed at exploring the effect of using a teaching strategy based on Multiple Intelligence Theory (MIT) in developing the academic achievement and academic-self of fourth-grade school girls with mathematical learning disabilities. The research sample consisted of 38 school girls who were divided into two groups: one experimental (18 students) and the other controlled (20 students). For the purposes of this study the two researchers designed an aptitude test made up of 25 multiple choice questions on the concepts of addition, subtraction and multiplication. The researchers also constructed a scale to measure the academic-self of the students. This scale was based on a number of universal scales and consisted of 20 items. The results revealed that there was a statistically significant difference at $(0.05=\alpha)$ between the average performance of the two groups on the aptitude test in favor of the controlled group who were instructed within a teaching strategy based on MIT. Moreover, the results revealed a statistically significant difference between the average performance of the two groups within the academic-self scale and that such a difference was attributed to the use of a teaching strategy based on MIT. In light of these results, the researchers recommend the use of a teaching strategy based on MIT to help students of all ages who suffer from mathematical learning disabilities.

Keywords: Multiple Intelligence Theory (MIT), students with mathematical learning disabilities, fourth grade

Introduction

Introduction and Background of the study Difficulties in Learning Mathematics are viewed as the most neglected areas in the field of research related to learning disabilities where the majority of such studies have focused on reading and writing disabilities very few of these studies focused on Mathematics learning disabilities despite the fact that arithmetic difficulties are common where a number of studies revealed that 6% of children of the school age may have serious learning disabilities in arithmetic ,(Al – Qudsi, 2009).

The term " difficulties of arithmetical processes " is used to describe chronic disability in learning mathematical, their disability in learning arithmetic, their disability is viewed as a specific disorder in learning mathematical arithmetical concepts related to the central neuro system. Their kind of disability may appear in the basic skills like addition, subtraction and multiplication; these difficulties increase to become clearer in higher grades and get represented in problems of dealing with common fractions, decimal fractions, geometry and algebras to go on until the secondary stage and later to appear in daily life situations (Sawalah, 2011; lerner, 2000).

Researchers Reisman and Kauffman, (1980) ascribe mathematics learning disabilities to two major factors: the first relates to cognitive factors and the second relates to the Psycho –Motivation factors. Despite that, most studies focused on the cognitive factors, while where is clear negligence in dealing with psychological variables related to motivation and other non –mental variables. (Fleschner of Garmett, 1989).

On the other hand, Mercer (1997) pointed out some problems which affect the academic performance of students with mathematics learning difficulties as visual perception, audio – perception, and Kinetic perception and the consequent disability in reading number, symbols and distinguishing between them as confusing 6 and 2 in Arabic (2,6) and the disability (+, -, *, /) and other difficulties.

As a result, modern research show that a lot of the student's wrong answers are viewed as slips (random mistakes) while in fact, they refer to real problems and difficulties that the students suffer from and that the teacher ignores and a scribed them to negligence and laziness on the part of the students and blames their parents who refuse their and scribe that to the teacher's failure and These, things get worse as students move forward toward higher grades Mazzacco (2008)and Riccomini (2005).

Furthermore, specifying and recognizing mistakes and their types and the way they occur contribute in diagnosing the difficulties suffered by the students and facilitates finding the proper mechanisms to treat them (Sawalhah,2011).

Of the most important mechanisms is using teaching strategies which consider diversity and differences between students; classes should respond to individual differences which requires that educators reconsider their student's capabilities and intelligence. Education research confirm that intelligence is available with all students including students with learning disabilities; here the big role is for the teacher to create and educational environment which provides opportunities for all students to grow and get advanced. In accordance with these requirements, serious attempts appeared to apply modern theories seeking to facilitate the learning process for the students of the most important dominating theory of these days is the (Multiple Intelligence Theory) which suggests that the traditional concept for intelligence is very limited and restricts human capabilities and confines them to a linear relation which does not cover the strangles aspects in them (Uysall,2004); here the question (How smart are you ?) should be converted into (How are you smart ?).

The concept "intelligence" is considered a controversial issue which has preoccupied specialists and psychologists since long time ago; the predominate belief for a lot of psychologists was that intelligence represent on ability or a non-changing permanent feature which has been traditionally defined by token of the intelligence quotient which measures the narrowness in linguistic and mathematical capabilities. Of the most famous theories in this regard is Spearman theory about intelligence which is called the one- factor theory based on a principle that intelligence is inherited through genes. According to this theory, intelligence can be measured through the individual's ability to obtain a certain total in a given mental test of the most famous tests here is Stanford IQ.

Contrary to the restrictions imposed by the one-factor theory, Gardener presented the theory of Multiple Intelligence in his book "Frames of the Mind " , where this theory suggests where are a number of separate system of capabilities named by Gardner as "Human Intelligences" and that every individual owns one or more of these intelligences with various percentages (Kagan,2000). It can be said that Gardener's theory has come with a creative view in the education process and that it provided teaching principles unlike those dominating in the field; these principles have been based on the necessity of moving from the traditional practices, which suppose that all students think the same and have one type of the intelligence, to practices that go along with result of the research based on the Lorain and which require using teaching strategies which provide comfortable teaching environments to the students, with an atmosphere of participation where teaching is for the sake of meaning and understanding (Nemrawi,2013) and (Awad,2011).

Gradener has headed different form the rest of the researchers in his attempt to explicate the nature of intelligence where he investigated and studied the individuals who enjoy extraordinary abilities in some mental capabilities, but they obtain in intelligence tests average scores or less which make them classified within the mentally retarded category, a thing that is not right and it is unjust for the individuals because the measuring tool which is based on traditional intelligence tests in inaccurate and unreliable in giving final and total judgment on the human abilities (Rettig,2005) (Al-Alwan ,2010), (Hussein, 2003) and (Nemrawi, 2013).

Gardener (2004) has comprehensive view by intelligence and he considers of the same time the individual's privacy where he sees that the individuals own unique features of points of strengths and points of weaknesses in different abilities; he presupposes that individuals differ in their intelligence abilities and interests ; they do not learn in the same way; and except for that, he also presupposes that there is no possibility for an individual's to learn all what he is presented since each individual owns one or more of the intelligences at different degrees.

He also presupposes that intelligences are interrelated and interact permanently (Uysal ,2004; Meyer, 1997).

Gardener (1993) shows that man evolves to be able to perform seven distinguished types of intelligences; each of which has its own features and characteristics (Table 1 shows these features and teaching strategies suitable for each type). (Hussein, 2003; Nofal, 2007; Savitz, 2010; and Bilgin, 2006).

Table (1) Types of Multiple Intelligences with their Features and the Teaching Strategies Suitable for Each Type

Type	Features	Teaching Strategy
1.linguistic oral Intelligence	Individuals ability to express their ideas orally and they have the ability to persuade others	*Brain storming: A strategy through which students introduce a lot of words and ideas orally all of which are discussed in the classroom *Students daily writing about their learning process. *oral recordings : through which students express their oral abilities
2.Logical And Mathematical Intelligence	Using logical thinking through testing hypotheses and exploring mathematical modes and relations and using numbers efficiently	*Inductive thinking. *Deductive thinking *strategies of solving the mathematical problem
3.Visual special Intelligence	The individual's ability to understand his surrounding visually and specify distances and distinguish forms and places and comprehend them	*Visual Imagination: contemplation and transforming the idea into mental images *conceptual drawing: expressing their ideas through drawing * colors and forms stimulations
4. Body and motor Intelligence	The individual's ability to have control over his body movement and have harmony between the mental processes and body movements	*Class theater : activities and teaching tasks which require students to perform movement acts. *Manual thinking: Learning through making and producing teaching materials manually.
5.External personal Intelligence	The ability to establish successful social relations which accept, pluralism and diversity in the points of view and flexibility in thinking	*Cooperative groups *Participation with peers *Imitation
6. Internal personal Intelligence	The ability to understanding the self and using contemplation and mediation to issue judgments and take decisions	*Contemplation for one minute: the teacher grants the students time to think in the teaching tasks where they get used to deliberation before taking any decision.
7. Musical Intelligence	The individual's ability to recognize the different surrounding sounds; their listening to music during the teaching process contributes in stimulating them and motivating them toward the learning process.	*songs and chanting; the teaching content is designed in according with an interesting and enjoyable rhythm..

Using the seven intelligences shown in the table above fulfills various advantages where Armstrong (1994) believes that the Multiple Intelligence Theory could greatly influence the student's behavior inside the classroom through creating a learning / teaching environment which considers student's needs and reduces the teaching problems and difficulties for them ; it also helps the teacher to expand the teaching strategy to embrace the maximum number of children of different levels of abilities and intelligences.

It is seen from the above that the multiple intelligence theory confirms that every individual has various types of intelligence and that they need different methods to develop these intelligences. Through the intelligences theory was viewed right from its beginning as a purely psychological theory, this view soon has been changed to become the core of educators and researchers attention all over the world. Bilgin (2006) indicated in a study of hers that the multiple intelligence theory is an effective method in teaching normal students as well as those with difficulties in learning different learning subjects since it centers around the student and his activities and contributes in activating the cooperative learning methodology. Within the same context, Gardener believes that the students of a class are not of the same levels, and it is supposed that they should not be treated the same. Teachers should use various methods that considers the diversity of the students and their intelligences and which fulfill their wishes and interests, Here, Gardener says that" The challenge before teachers is to explore the genius in each student" (Sweet,1998).

Since the issue of provoking the eagerness and increasing the efficiency of the students who suffer from learning disabilities in mathematics classes is a debatable issue, this requires from us to look for unfamiliar creative ideas that contribute in supporting the process of learning mathematics through making students participate in exciting learning opportunities which go along with their preferable and self desires, perhaps the flexibility and diversity characterizing the teaching strategies based on multiple Intelligence Theory (MIT) has drawn the attention of the researchers and these, has become a point of focus and attention (Stanford, 2003).

In this case, using these strategies in teaching mathematics is viewed as one of the logical and acceptable solutions for the treatment of a lot of problems faced by students of mathematics learning difficulties. Students in such an environment are less exposed to negligence or frustration which spread in the traditional learning environments where students negatively view themselves as well as their academic capabilities (Brown and Quinn, 2006). This negligence may deprive students from looking forward to better learn mathematics and lead them to think that learning mathematics suit other students, but does not suit them where they live on the learning margin of the school learning process which is a very dangerous issue.

Consequently, this study is an attempt to improve the achievement of students of learning disabilities in mathematics, mainly in the concepts of addition, subtraction and multiplication, as well as to improve the academic – self for them.

The Problem and Questions of the Study

Understanding how students of mathematics learning disabilities should learn this subject is considered a basic pillar in the process of selecting the teaching strategies which are more appropriate to this group of learners.

For this, the need to discover and reveal the characteristics and distinctive ways suitable for each student increases to give the opportunity for all the students to fulfill their learning needs, taking into consideration their psychological moods. From this point, the two researchers and through their readings and field visits, notices that there is some vagueness ahead of the teachers about the problems which are suffered by their students in learning mathematics, thus, teachers may adopt methods and strategies that are not suitable for those students which necessarily will lead to increasing and repeating the mistakes committed by their students where by this in turn. Will contribute in the emergence of more and more difficulties for the students in learning mathematics.

This study has come to present a new method in teaching students of mathematics learning disabilities by using teaching strategies that stem from MIT; these strategies takes into consideration the differences between students and give them self- confidence and eagerness toward learning mathematics away from the traditional teaching methods which view students as if they were of the same level and they have the same learning methods.

In addition, such traditional methods do not suit the modern trends in teaching mathematics, and therefore, this study aims at employing the teaching Strategies which are based on the MIT to improve the achievement of students of mathematics learning disabilities in the concepts of addition, subtraction and multiplication and in improving the academic – self for them and particularly, this study also aims at answering the following two questions:

1. What is the impact of using MIT on the achievement of the students of mathematics learning disabilities?
2. What is the impact of using MIT in improving the concept of the academic – self for the students of mathematics learning disabilities?

The Hypothesis of the Study

1. There is no difference of a statistical indication ($0,05 \geq \alpha$) in the achievement of students of mathematics learning disabilities for the concept of " addition, subtraction and multiplication " to be ascribed to the teaching method (MIT, the traditional method).
2. There in no difference of a satirical indication ($0,05 \geq \alpha$) in the achievement of students of mathematics learning difficulties on "the academic – self scale" to be ascribed to the teaching methods (MIT, the traditional methods).

The Significance of the Study

The significance of this study lies in the significance of using the MIT in education. Looking for efficient methods in teaching mathematics occupies the thinking of the researchers at a time the MIT is in its first time of emergence was viewed purely psychological theory, but this view soon has changed and become a point of attention for teachers, researchers and educators worldwide.

Except for what, research in adopting the MIT in teaching mathematics for students of learning disabilities in particular is a very important matter due to the peculiarity of this group of students and their urgent need for teaching strategies and methods which consider the problem and difficulties the suffer form during their learning of mathematics.

Throughout reviewing literatures of learning disabilities, it is noticed that where a relatively good percentage of the elementary stage students who suffer from difficulties in learning mathematics. Despite this fact, the studies which took up this subject are still very few. Perhaps this study presents a theoretical envision and practical model which helps solve various problems from which students of mathematics learning disabilities suffer. This study also takes its significance from taking up two important aspects related to learning disabilities: the first is an academic difficulties and the second is psychological where the extent to which student's achievement improvement in addition, subtraction and multiplication skills has been researched on the one hand, and the extent to which their self – view improved through being subjected to the "academic – self concept" scale on the other. This matter has rarely been dealt with in both Jordan and the Arab world. Finally, the important feature of this study is that it has been carried out by two researchers one of them is specialized in psychology and the other is specialized in mathematics curricula and their teaching methodology thus, the study fulfills the modern trends which call for activating the participation between researchers in different fields a specialization which enriches the research process and improve the performance of the educational institution.

Terms of the Study

Difficulties in learning mathematics: this is a medically include term which describe chronic problems in learning mathematics and applications in this study, the term refers to specific disorders in acquiring the basic arithmetic concepts as addition, subtraction and multiplication and which appear in the early elementary stage and continue until the secondary stage and can be noticed in student's daily situations (Lerner,2000).

Multiple Intelligence Theory (MIT)

It is a teaching method which is activated through using the teaching strategies which are related to all of the seven kinds of the multiple intelligence explained in detail in table (NO.1)

Traditional Teaching Strategy

A common teaching method where the role of the teacher is basic on the expense of the student's roles; the teacher talks and explains all the time while the students keep listening and committing themselves to what the teacher says or writes on the board. This method does not consider the difference diversity of the students where the material is displayed in accordance with the lecture's style only.

Students of mathematics learning disabilities; they are students of the Fourth Grade in the two school what have been chosen for this study; they suffer from mathematics learning difficulties and they were transferred to the learning source room after they were subjected to diagnostic tests prepared by the Jordanian Ministry of Education.

The Academic – Self Concept

The student self – evaluation to himself, his abilities and capabilities and the extent to which he desires to learn mathematics. This is measured by the total score that he achieves on the academic – self scale prepared for the purposes of this study.

Limitations of the Study

This study has been restricted to include students of mathematics learning disabilities in the Fourth Grade for the second semester of the academic year 2013/ 2014 in the two school selected for this study .The study is also confined to take up the student's difficulties in learning the concepts of addition, subtraction and multiplication only.

The achievement test and measurement of the academic –self concept have been used in this study. Therefore, explaining or explicating the results depends on the extent to which such tools are credible and accurate.

Study Procedures

Study sample Individuals:

The sample individuals of this study are students of mathematics learning difficulties attending In two educational resources classrooms assigned for them two schools of Amman First Education Directorate. The two school have been deliberately selected due to the desire and eagerness expressed by the two schools headmistresses to carry out this study and benefits from its results in the future. This made it easy for the researchers to perform the study where each school included one section of the Fourth Grade in the educational resources classrooms. Thus, one of the two sections has been randomly selected as the experimental group and the other has been the control group. The sample of the study is made up of 38 students. Table (2) shows their destruction as to the experimental group and the control group

Table (2)

Group	Number
Experimental	18
Control	20
Total	38

Tools of the study:

First: The Teaching Material Based on the MIT

1. The teaching material has been designed after reviewing research and studies that took up the teaching strategies pertaining to MIT in teaching in general and in teaching mathematics in particular (Temur,2007; Bilgin, 2006; Ramazan, 2011; Nimrawi, 2013 and sawalha,2011)
2. The concepts of addition, subtraction and multiplication assigned to the fourth grade have been reformulated in forms of activities that are suitable in the teaching strategies specified for each type of the seven types of intelligence.
3. The teaching material includes eight teaching publication that include:
 - addition of two digits within the number 9999 without carrying
 - addition of two digits within the number 9999 with carrying
 - subtraction of two digits within the number 9999 without borrowing
 - subtracting of two digits within the number 9999 with borrowing

- multiplying a two – digits a one –digit number without carrying
 - multiplying a two – digit number with a one – digit number with carrying
4. Each publication includes a lesson – plan divided into three phases (preparation phases; presenting the mathematical concept and the application phase) where one activity or more comes under each phase; each activity centers around one type of intelligence named the targeted intelligence and other types of intelligence are simultaneously considered where are named supporting types of intelligence.

The credibility of the learning material has been confirmed when presented to eight specialized refers: three with a Ph .D in the special Education, three with a Ph .D in Mathematics curricula and their teaching methodology; all of them work at the Education Faculties in Jordanian universities in addition to two female long- experienced teachers in the field of mathematic learning disabilities. They all have been asked to judge and access the teaching activates to show the extent to which they consider types of the multiple intelligence with the students and to judge their appropriateness to the student's levels in addition to their formulation accuracy and clarity of language. Some necessary amendments have been made in accordance with that the referees recommended which helped in the logical and formal credibility of the contents of the learning material.

Second: The Achievement Test

An achievement test in the concepts addition, subtraction and multiplication was prepared where the test was made of 30 clauses of the multiple choke kind the test was built in accordance with the features based on Bloom. To confirm the credibility of the test, it was presented to six reference in its first draft: two of them are specialized in mathematics teaching methodology and two specialized in special education and two long – experienced mathematic learning disabilities teachers.

They all were asked to judge the test clauses in terms of specific criteria (linguistic formulation and clarity of the clauses, the extent to which they cover the learning material, correctness and accuracy of the clauses) .

In light of the referees directions, 5 clauses were deleted where by the referees believe that 30 clauses might be exhausting to the sample members to leave the test with 25 clauses in its final version. The consistency of the test has been ascertained by applying it on an exploring sample made up of 20 students of learning disabilities out of the sample of the study. The internal harmony of the test clauses been measures in accordance with Kronbach Alpha constant factor where the value of the consistency factor reached (0,81) which is acceptable for the present study, the maximum mark of the test was (25).

Third: the Academic – Self Concept

The measurement has been built through making use of known measurements like Tennessee concept and piers Harris children self – concept scale; the measurement is made to include (25) clauses in its first version. The measurement is validity has been tested by four staff members some Faculties of Education at some Jordanian universities; they were asked to judge the validity and appropriateness of each clause of the academic – self concept measurement and the linguistic accuracy; 75% of the clauses which have been approved were maintained while some other clauses have been amended as recommended. The measurement in its final version is made up of (20) clauses which go along with what the referees approved.

Results of test (T) of the Discrepancy between the means of the two groups on the prior Pre/Application of the achievement test and on the Academic – self concept measurement

Table (3)

Measurement	Group	Number	Arithmetic mean	Standard deviation	T Value	Significance level
Achievement test	Experimental	18	7.74	2.47	1.45	0.075
	Control	20	7.82	3.2		
Academic – self concept measurement	Experimental	18	1.98	0.78	0.285	0.352
	control	20	1.94	0.67		

It is Noticed from their table (3) look of differences of statistical significance at the level of (0,05Z a) between the two group which means that the two groups are proportionate

Result of the Study and Discussion

Results related to the first question: what is the impact of using the MIT on the achievement of students of mathematics learning disabilities in the concepts of addition, subtraction and multiplication?

To answer this question, the arithmetic means and the standard deviations of the student's marks of the after achievement test in the two group have been reduced then T values have been calculated for the independent samples to reveal the significance of the differences between the mean Table (4) shows these results

Results of test (T) of the significance of the differences between the means of the two groups. The post application achievement test.

Table (4)

Group	Number of students	Arithmetic mean	Standard deviation	(T) value	Significance level
Experimental	18	17.83	2.92		
Control	20	12.72	3.20	3.18	0.00

It is noticed from Table (4) that there is a significant difference of statistical significance at level ($0,05=\alpha$) between the means of the after achievement on the achievement test between the experimental and control groups. This difference has been in favor of the experimental group students (The group who learned through using teaching strategies based on the MIT). According to this, the zero hypothesis is refused to accept the alternative hypothesis which indicates to the efficiency of MIT in improving the learning achievement for the students of mathematics learning disabilities. This result can be ascribed to the fact that teaching in accordance with MIT has helped students to get involved in the teaching tasks activity and efficiently rather than listening and passively receiving information. They have become more able to raise questions and practically cooperate which contributed in reducing the problems and difficulties in their learning mathematics which in turn, positively reflects on the level of achievement for them. This also goes along with what (Hussein,2003, Nofal,2007, Bilgin, 2006 , Pociask,2007 and Savitz, 2010) confirmed in their studies. This result can also be explained in light of the fact that the MIT reject teaching mathematics through direct speaking and writing on the board only, but it emphasizes the necessity of activating different types which include images and places models, body movement features, dialogue and negotiation processes and applying music chants and songs. Perhaps these types and models provided students with a multi – various lists of options to choose from what is appropriate for them in accordance with the capabilities of each of them and the degree to which she likes a certain learning type; thus, it made it easier for the students to learn mathematics and reduced their mistakes in addition, subtraction and multiplication Termur, 2007 has referred to this saying that MIT is about various teaching methods and it responds to diversity and differences holding between students; it also provides an exciting and active learning environment for the student which in turn, contributes in improving student's capabilities in learning mathematics.

The result of this study can also be explicated in terms of the fact that MIT presents a different picture from that of the traditional classroom when it focuses on comprehensiveness of learning aspects and considers the learner an integrated whole that should be improved in all aspects, whether from the knowledge, emotional aspects or kinematic and functional aspect. That can be achieved through the interaction between the teacher and students which can be termed as true partnership between them.

This goes along with what (Armstrong,2000) referred to and that students, in the MI environment learn better since this will present a contradictory type to that of the traditional teaching in which the teacher focuses on the student's memorizing and remembering mathematical rules through explaining and dictating them.

Result Related to the Second Question

What is the impact of using MIT in improving the academic – self concept on students of mathematics learning difficulties?

To answer this question, the arithmetic means and the standard deviations have been educed for student's assessments in the experimental and control groups on the post measurement of the academic – self concept, them (T) value of the independent samples was calculated to reveal the differentials between the means. Table (5) shows these results.

Result of (T) test for the significance of the Differential between the Means of the Two Groups on the Post Application Measurement of the Academic – self concept.

Table (5)

Group	Student's Number	Arithmetic Mean	Standard deviation	(T) Values	Significance level
Experimental	18	4.11	0.71		
Control	20	2.3	0.64	2.29	0.02

It is noticed from the table above that there is a difference of statistical significance between the two means of student's performance in the two groups on the academic – self concept measurement ascribed to using the MIT where the value of (T) is (2.29) which is of statistical significance at the level of significance ($0,05=\alpha$); it is also noticed that the differences are in favor of the experimental group students (that who learned by using strategies based on MIT). This leads to refusing the zero hypothesis and accepting the alternative hypothesis and accepting the alternative hypothesis which indicates the efficiency of the teaching strategies based on MIT in improving the academic – self concept for students of the experimental group in comparison with students of the control group who learned through the traditional method.

This result may be ascribed to the fact that teaching strategies based on MIT have changed that role of the teacher in teaching the experimental group students which helped her expand her teaching strategies where she could reach more students who have different capabilities and levels of intelligence. Students in such an environment are less exposed to negligence and frustration that are wide spread in traditional teaching methods. This also has contributed in increasing self – confidence in the students of this group through this participation in the learning process, while this did not happen with the students of the control group.

This also goes along with that (Uysal, 2004) has reached to when he says that negligence and frustration negatively affects student's self – esteem view together with their view towards this academic capabilities which may cause them to believe that learning mathematics suits other students but not when and th, they live at the margin of learning which is very dangerous issue.

This result might also be ascribed to the fact that teaching which is based on MIT takes into consideration the major factors of mathematic learning disabilities where attention is simultaneously paid to the knowledge and psycho – kintic aspects during the learning process. This goes along with what (Reismad and Kanffman, 1980) indicated and that mathematic learning disabilities are due to two main factors: the first is related to knowledge aspects and the second is related to the psycho – kinetic aspects. Perhaps, the student's of the experimental group indulging in activities and valuable tasks covered both knowledge and psycho – Kinetic aspects which made them possess positive views toward themselves and their capabilities in learning mathematics unlike what happened with the control group students. This result is also confirmed by (Fleschner and Garnett,1999) where they say that traditional teaching methods often care about the knowledge aspect and neglect the passionate aspects related to desires, feeling and motivation which, in turn, will have a great impact in aggravating student's mathematics learning disabilities and in minimizing their self – confidence in this ability to learn it.

Finally, this result can be explicated by linking it to the result of the first question which shows that teaching strategies what have been adopted in this study and that which included various activities as team work, sensuous and visual devices, oral expressions, kenitic activities and other activities have taken into consideration various difficulties suffered by students and also their abilities, desires and learning needs as well .

This encouraged the students to participate in the learning process with eagerness and great desire; they started to take the initiative in presenting solutions efficiently unlike students of the other groups who have been learning in the traditional way.

This also goes along with what (Ramazan, 2011) has reached to and that mathematics curriculum which is based on the MIT makes it easier for the students to learn mathematics and stimulates their motivation to learn it which will make its learning interesting and exciting.

Recommendations

Upon the results of the study, it is possible to recommend the following:

- stressing the necessity of using strategies based on the MIT in teaching students of mathematics learning disabilities and other subjects a well.
- carrying out training programs for the teachers to acquire the skills of planning and implementing teaching situations by using teaching strategies based on MIT.
- providing a supportive and stimulating environment for the teachers to activate teaching strategies based on MIT.
- carrying out further studies on other subjects and different grades to trace the issue more profoundly.

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