



The Effect of an Instructional Program Based on Multiple Intelligences Theory on the Basic Stage Students' Achievement in English

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ABSTRACT:

The aim of this study was to investigate the effect of an instructional program based on multiple intelligences theory (MIT) on the basic stage students' achievement in English. The study was carried out in the academic year 2011 – 2012 in Al-Mafraq District. The participants of the study were Eighth grade students. Eight sections were selected. four sections as an experimental group , and the other four sections as a control group. To answer the questions of the study, the researcher designed a training program based on MIT for training eighth grade teachers and an achievement test in order to measure the development of the students' achievement in English. These tools were validated and their inter -scorer reliability was ensured. The results of the research showed a statistically significant difference at ($\alpha 0.05$) between the achievement scores of the experimental group and the control group in favor of the students in the experimental group who were taught using the MIT. Based on the above results, the study offered many recommendations that might be useful for developing student's achievement in English ,such as the need for designing other training program for pre-service teachers whether employed at public or private schools. The need to measure the effect of using MIT in variety of settings from elementary through secondary schools .

Key Words: Multiple Intelligences ,Students achievement ,Training program

الملخص:

هدفت هذه الدراسة الى الكشف عن أثر برنامج تعليمي قائم على نظرية الذكاءات المتعددة في تحصيل طلبة المرحلة الأساسية في اللغة الانجليزية. وقد تم إجراء هذه الدراسة في الفصل الدراسي الثاني للعام-2011 2012 في قسبة المفرق . تكونت العينة من طالبات الصف الثامن الاساسي في ثمانية شعب . المجموعة الأولى من الطالبات هي

المجموعة التجريبية التي تم تطبيق البرنامج عليها و تتكون من أربعة شعب . المجموعة الثانية من الطالبات هي المجموعة الضابطة وتتكون أيضا من أربعة شعب . .
 للإجابة عن سؤال الدراسة ,قامت الباحثة بتصميم برنامج تدريبي لمعلمات الصف الثامن في قسبة المفرق لتدريبهم على كيفية استخدام نظرية الذكاءات المتعددة داخل الغرفة الصفية ,كما تم تصميم امتحان تحصيلي لقياس أثر البرنامج على تحصيل طالبات الصف الثامن في اللغة الانجليزية .
 أظهرت الدراسة وجود فروق ذات دلالة إحصائية لصالح المجموعة التجريبية التي تم تدريسها باستخدام نظرية الذكاءات المتعددة حيث أن البرنامج كان له تأثير ايجابي على تحصيل الطالبات بمقدار 35.99 .
 وقد اوصت الدراسة بعدة توصيات منها ضرورة تصميم برامج تدريبية لمعلمي ما قبل الخدمة لتطوير معلوماتهم عن النظريات الحديثة ,كما اوصت بضرورة تطبيق نظرية الذكاءات في مجالات اخرى ومراسلة اخرى
 الكلمات المفتاحية: الذكاءات المتعددة, البرنامج التدريبي, تحصيل الطلبة.

BACKGROUND OF THE STUDY

It is important to keep up with the developments in the educational field and try to benefit from the current educational views and psychological theories. The educational system is in need of re-examining its aims, content, methods and curriculum in order to become an instrument for development. This system needs to be changed in order for it to meet the challenges of modern society. In recent years, research has focused on the learners' mental and cognitive abilities. This concern is the base of the multiple intelligences theory (MIT) which is one of the most permanent theories in the field of education (Denig, 2004).

The MIT was developed by Gardner and articulated in his eminent work, *Frames of Mind* (1983). Gardner advocates a move away from evaluative tests and correlation of tests to look at more natural sources of information relating to how people develop skills that are important to their culture and way

of life. Multiple intelligences (MIT) was defined as "the ability to solve problems or to create fashion products that are valued within one or more cultural settings" Gardner (1983,p,43). This definition challenged the traditional psychological view of intelligence as a single capacity that drives logical and mathematical thought. Gardner's theory encourages a shift from the more traditional understanding of intelligence to a more holistic perspective that validates and fosters each and every part of a person's mind. In the same direction, Gardner (1993) describes intelligences as a bio-psychological potential that could be influenced by experience, culture, and motivational factors.

This theory that Gardner came up with means there are differences between people in their mental and cognitive abilities, which means they have different types of intelligences. For example, a person could have excellent verbal intelligence but finds it difficult to learn

music. This means that a person may possess all the Intelligences or some of them. For instance, if a student does not participate in a classroom, that does not mean that the student is weak, the student might have other intelligences that enable him to be creative in other areas (Eid, Alizh & Sheare, 2004).

Armstrong (1994) argues that the teacher who uses (MIT) can present the information for the students in nine different ways, and this can help teachers to reach as many numbers of students as possible going beyond the verbal and logical views that are used in a classroom environment. Teachers can use MIT to train their students to be more conscious and reflective in their thinking abilities. It also helps teachers to understand the differences which they realize among their students and choose the suitable teaching methods in light of the individual differences between them.

MIT asks the question, in what ways students are smart, rather than, are they smart. Teachers generally hold the view that all students are capable of achieving; MIT considers this and indicates the teaching strategies that will bring forth such success (Denig, 2004).

STATEMENT OF THE PROBLEM

Since research studies examining the link between training programs and students' achievement in English are rare, further research in this area is in great need, particularly in response to the current reform efforts and the ever changing needs of students (Hijazi,2010).

Because Teachers should know how to cater optimally to learners with different intelligences, teachers should have a training program based on MIT . Applying the MIT inside the classroom may help in creating a learning environment in which learners feel secure and relaxed, and this may provide more opportunities for authentic learning based on students' needs, interests and talents. . It is hoped that such program will foster and promote a sustainable spirit of development for teachers to apply this theory in the classroom in order to change teachers' practices inside the classroom and to determine the effect of the program on students' achievement.

QUESTION OF THE STUDY

1-Are there any statistically significant differences at ($\alpha 0.05$) in the students ' achievement in English before and after the MI training program?

OPERATIONAL DEFINITION OF TERMS

-MIT Training Program: It is a well-prepared plan based on MIT, and designed by the researcher to train eighth grade female teachers in specific skills to equip MIT in their classrooms.

-Multiple Intelligences (MIT): Different types of intelligences that show the learners' ability, and that includes indications of the kinds of students' capacity .

-Students' Achievement: It is determined by students' grades on classroom scores on an English test that includes

vocabulary, grammar, writing, reading, speaking.

SIGNIFICANCE OF THE STUDY

To the best of the researchers' knowledge, the MIT program in this study is the first to be conducted in the Jordanian context. The researcher believes that it may be necessary to design an instructional program based on MIT. Implementing such program can be significant for the following parties:

- This study trained EFL teachers to develop a multiple intelligences way of teaching since they can be reminded of the fact that students usually vary in their intelligences profiles and need to have different activities and tasks for learning to occur. Teachers may become increasingly aware of their individual preferred methods and will be able to recognize factors which either facilitated or inhibit students' learning.
- The students, since this study may guide them to notice their areas of interest and their strengths and weaknesses so that they can take more responsibility for their own learning; this is a key factor in raising the self-esteem of many students, particularly those who regard themselves as failures.

- Researchers, since they may derive insights for different research studies stemming from the MIT principles. Also, the significance of this study may stem from the recommendations of many researchers (e.g. Al-Omari, 2011; Eun and Boynton, 2007; Guskey, Loucks and Melle, 1982; Hijazi, 2010; and Sparks, 1991) who recommend conducting further researches to inves-

tigate the effect of training programs on students' achievement.

- The significance of the study also appears through the possibility to over-generalize it to other contexts.

METHODOLOGY

This section describes the participants in the study as well as the validity and reliability of the instruments used for the experimentation.

LIMITATIONS OF THE STUDY

1-This study is limited to the eighth grade female students in Al-Mafraq District during the academic year 2011-2012.

2-The MI program is designed for the eighth grade English female teachers in Mafraq District.

3-The developed units are limited to the fifth module (units 7 and 8) of eighth grade English book (Action Pack), which is taught in public schools in Jordan for the academic year 2011-2012.

PARTICIPANTS OF THE STUDY

Participants of the Study

Due to the purpose of this study, there were two groups of participants the teachers and the students.

Teachers' sample: The participants were selected purposefully from Al-Mafraq District. The researcher selected eighth grade female teachers, four

of them were assigned to the experimental group and the other four were for the control group. Those teachers who were assigned to the experimental group were trained with the MIT program which was prepared by the researcher.

Students' sample: Eight students sections were selected from those which were taught by the same teachers. The experimental teachers' group taught four sections which constituted the experimental group, while the control group teachers taught the other four sections which constituted the control group.

STATISTICAL ANALYSIS

With regard to the first question concerning the effect of using MIT training program on improving students' achievement in English, the t-test was used. In order to answer the second question which aims to investigate the effect of using the MIT training program on improving students' intelligences, the t-test was used. Concerning the teachers' practices, means and standard deviations were used.

REVIEW OF RELATED LITERATURE MULTIPLE INTELLIGENCES THEORY AND EDUCATION

One of the most important messages of Gardner's MIT is this: if education is to work as effectively as possible, students' multiple intelligences profiles should be taken into account rather than being ignored (Palmberg, 2002, p. 89). According to Gardner (1991) the tenet

of MIT is that students learn and utilize knowledge in many different ways. These differences challenge an educational system which assumes that everyone can learn the same materials in the same way. Students who cannot master the competence of the language reveal significant mastery and understanding when the lesson is conducted using MIT. If MIT is implemented in regular education, it is likely to strengthen students' learning and build their self-esteem.

A study by Eksi (2009) believed that teachers are responsible for implementing the activities call up on all intelligences in order to reach every students in the classroom, and to create equal opportunities for all learners to learn. Also Fink (1991) emphasized that teachers have to discover and nurture intelligences for a variety of students and to take a tremendous amount of energy and collaborations in order to reach the excitement, creativity and learning outcomes.

Teachers should show students how to understand a subject which indeed addresses and applies one or more of their intelligences' domain. For instance; a student who has a highly-developed musical intelligence can be asked to learn about a war and what happened during that war by making up a song about it (Brualdi, 1996). Some teachers feel that they need to create activities that draw on all intelligences, not only to facilitate language acquisition amongst diverse students, but also to help them realize their full potential with all intelligences. One way of doing so is to think about the activities that are

frequently used in the classroom and to categorize them according to intelligences types (Larsen- Freeman, 2000). As we can notice there is a growing recognition that teachers are the most important factor in students' achievement . It is believed that professional development is the most effective way for changing teachers' practices (Carey, 2004).

Cohen and Hill (1998) stated that there was a strong relationship between training programs, teachers' learning opportunities, and students' achievement. There is a link between students' achievement and teachers' attendance at workshops and other experiences that engaged them in learning about the specific topics of the student curriculum in conjunction with new curriculum frameworks. When teachers receive comprehensible training, students are offered a variety of learning experiences, so they become actively engaged in their individual learning process. Furthermore, students will participate more frequently and retain more knowledge because they understand the material in a more effective way (Emig, 1997). MIT has the potential to empower students to become motivated, successful learners. There are many positive points related to MIT including improving behavior, increasing student confidence and the intrinsic motivation, engagement, and performance on standardized tests. As Barrington (2004) suggested, encouraging students to use their MI, helps create "personal meaning" and enhances learning and achievement. For example, students who have strength in

Linguistic intelligence should appropriately be assigned a written research report as a class assignment (Pacek, 1996). For The future use of MIT in education holds much promises because it provides a differentiated instruction to meet the individual needs to ensure their success. Furthermore, it provides alternative means for instructor assessment of students' performance based on the strengths of students rather than relying on a traditional IQ test. However the success of differentiated instruction will depend on the level of commitment and training for teachers to implement MIT.

PART TWO :REVIEW OF EMPIRICAL STUDIES

A study of Temur (2007) conducted to detect the effects of the training activities developed according to MIT on students' achievement. This research has been carried out on the fourth graders at Gazi University Foundation Private Primary school. Among all the classes, two of them were selected, 4-A was selected as an experimental group and 4-B as a control group considering their pre-test points. An experimental pattern has been used in the study as the research design and T-test has been applied in data analysis to reveal any differences between the group averages. The results show that MIT activities have positively affected the achievement scores of the students in the experimental group and it has been observed during the teaching activities performed that students actively participate in lessons; their interest level

rise with the rich activities performed; and they become more aware of their abilities.

To identify the effect of training programs on students achievement, Chauhan (2009) selected the parallel design or equivalent group for conducting the experiment. The investigator randomly selected 60 students from a primary school at Ahmedabad in Gujarat. These students were grouped into two equivalent groups on the basis of their achievement in English, which is obtained from the school records. The 't' test result reveals that the experimental group students are better than the control group students in their gain scores. This was due to the fact that the MI based teaching of English is more effective than the traditional method of teaching English. MI based teaching helps the students to improve their achievement in learning English.

Naoe(2010) conducted a study primarily to identify the MIT of the Grade Five pupils of David Elementary School and their achievement through a designed MIT learning package. It aimed at helping the client school develop its own prototype activities inspired by the MIT which was used as the basis for this research. The sets of questionnaire were provided and used by the researcher to gather the needed information from the respondents. The results of the study showed that every child can be considered to possess the eight multiple intelligences in varying degrees and their achievement while using MIT activities will increase. These intelligences can be enhanced through creative strategies, appropriate

instructional materials, and a stimulating and nurturing environment.

Ahmad .et al (2014) This study aimed at investigating the enhancement of motivation among low achievement students, after the multiple intelligence theory was integrated in teachers' teaching practices. The sample consisted of 68 low achievement students, who were then divided into two groups: 34 students were treated in the treatment group, while another 34 students were put in the control group. It was determined that integrating the lesson with MIT had increased the level of motivation among students in the treatment group. This shows that diversity of methods and activities undertaken were able to change students' perception and had increased their interests in learning .

Al-Rowais(2015) The present study employed the quasi- experimental method to measure the effectiveness of the independent variable (MIT) on the dependent variable (achievement). Sixty students who represent Salman bin Abdul-Aziz University in Saudi Arabia were selected randomly. For this purpose, Achievement test was used to gather the data. The study showed that there were positive effects of MIT on the student's achievement.

DESIGN OF THE STUDY

This study is a quasi-experimental one since the participants are purposefully chosen. An important consideration for this study was to gain both a holistic perspective as well as an in-depth view

of the MIT training program and the effect it has on students' achievement.

PARTICIPANTS OF THE STUDY

Due to the purpose of this study, there were two groups of participants the teachers and the students.

Teachers' sample: The participants were selected purposefully from Al-Mafraq District. The researcher selected eighth grade female teachers, four of them were assigned to the experimental group and the other four were for the control group. Those teachers who were assigned to the experimental group were trained with the MIT program which was prepared by the researcher.

Students' sample: Eight students sections were selected from those which were taught by the same teachers. The experimental teachers' group taught four sections which constituted the experimental group, while the control group teachers taught the other four sections which constituted the control group.

RESEARCH INSTRUMENTS AND THEIR VALIDITY AND RELIABILITY

For the purpose of soliciting information needed to achieve the objectives of the study, the researcher developed the following instruments:

1-The MI Training Program:

The researcher designed a program to train teachers how to implement the MIT in the classroom. The MIT training program aims to help teachers car-

ry out successful teaching by incorporating the MIT in the classroom.

2-The developed units

The researcher redesigned two units (7 and 8) from Action Pack 8 students' book- which is the English book that is used to teach English for eighth grade students in governmental schools in Jordan.

3--The Achievement Test :

The researcher constructed a pre and post achievement test to measure the impact of the MIT training program on the students' achievement.

FINDINGS

The purpose of the current study was to investigate the impact of the MIT training program on eighth grade students' achievement in English. The results of the study are presented according to the research.

FINDINGS OF THE QUESTION:

The question asks if there are any statistically significant differences in the students achievement in English before and after the MI training program?

This can be seen in Table 1.

In Table 1, the pre-test achievement scores of the students in the experimental group and the control group have been compared. The average score of the students in the experimental group has been found as $= 15.54 \pm 6.779$; and the average pre-test score of the students in the control group has been found as $= 15.21 \pm 6.471$. The difference between the students of these two groups has been analyzed through inde-

pendent samples t-test.

The accounted t-value is $t = .416$. According to these results, there is no statistically significant difference between the pre-test scores of the students of these two groups at (0.05)level (sig = .678, $p > .05$). Prior to the study's experimental process, it can be said that both groups' pre-learning levels in English course are equal to one another.

In Table 1 above, a comparison of a post –test achievement scores of the students in the experimental and control groups are presented.

The post-test achievement scores of the students in the experimental and the control groups have been compared in Table 1 below. The average post-test score of the students in the experimental group has been found as $=35.99 \pm 10.179$; and the average post-test score of the students in the control group has been found as $=18.95 \pm 6.718$. The difference between the two groups has been analyzed through independent samples t-test. The accounted t-value is $t(263) = 16.051$. The students in the experiment group ($=35.99$) showed significant achievement compared to the students in the control group ($=18.95$). So according to these results, it can possibly be said that there is a statistically significant difference between the post-test scores of the two groups at ($=0.05$) level (sig=.000; $p < .05$). The experimental method, which is based on MIT has been more effective than the traditional language teaching methods in the control group. So the statistical analysis and findings of this study have justified the effectiveness of teaching which is based on MIT.

DISCUSSION OF THE RESULTS RELATED TO THE QUESTION OF THE STUDY

The question asked about the impact of MI program on students' achievement in English

Concerning the impact of the training programs on the students' achievement, Table 1 shows that there is a significant difference at (0.05) between the achievement levels of the experimental students' group whose teachers have participated in the MI training program and have taught them by MIT instruction program and the students who have been taught by the conventional method in favor of the experimental group.

According to the researcher, one potential explanation for this result is that the control group's teachers did not participate in the program and they did not know about the theory of MIT.

Other reasons could be attributed to the developed units, which delivers a variety of learning experiences and helps educators teach 'holistically' by presenting content through a variety of activities and tasks.

This result was in line with Gardner (1991,p.54) who said that if MIT is implemented in regular education, it is likely to strengthen students' learning and build their self-esteem .Gardner (1997,p.40) praises MIT as a catalyst for school improvement and goes a step further by providing three benefits of using MI in schools. "MI can be an extremely useful tool – or better, partner – in the process of creating excellent schools. It can aid in a variety of missions from engaging more children to encouraging deeper understanding to

preparing students for work”.

Some researchers and some practitioners also acknowledge the value of MIT. Gardner (1991) argued that the value of MIT has been clearly established by its many successful applications in the field. The literature reveals this result about MIT and reveals that the increasing of students' achievement in core curriculum including an increasing in standardized test scores and increasing in students' participation and engagement. In science education, for example, MI-based curriculum helps students build fundamental understanding of science concepts. MI helps educators teach in a way that helps students question, explore, reason, collaborate, and communicate their knowledge rather than just follow directions and memorize an existing body of information. MI instructional program made students happy during the learning process by providing them with rich learning experiences. In the end of the study, it can be said that MI instruction strategy not only has more positive effects on students' academic achievement levels and attitudes towards the lesson, but also has more positive effects on students' motivation. By this way, students not only had high achievement levels in English, but also they had chance to practice their different skills such as drawing, writing, thinking and composing (Bas, 2010). Furthermore, it was found out that there was a significant difference in the achievement level between the experimental group, which has been taught by MIT instruction and the control group for which the traditional lan-

guage teaching method control group was used. These results resemble the result of the study. It can be said, based on the findings, that MIT instruction was more effective in developing of students' achievement levels than the traditional language teaching methods (Mayer, 1997) and) Gultekin, 2005).

The application of the theory gives the student the ability to depend on himself more and provides him with the ability to apply new skills and improve group learning and also improve their academic achievement (Thabet, 2005).

The current study is similar to the previous studies in that it focuses on MIT and its effect on developing students' achievement. The difference between this study and previous studies is that it provides English teachers with a practical MIT training program. Additionally, it measures the effect of using MI program on eighth grade female students' achievement in English. Moreover, the method followed to collect data in the present study is different. The present study used a training program which was designed and implemented by the researcher. A pre-test and a post-test were administered to find the difference in the students' achievement. Finally, the researcher believes that there is a need for studies that serve EFL teachers' needs by developing in-service training programs meant to develop EFL teachers' competencies, which in turn contributes to upgrading and developing students' learning abilities.

TABLE 1
ACHIEVEMENT TEST SCORES OF THE STUDENTS IN THE
EXPERIMENTAL AND THE CONTROL GROUPS

	Group	N	Mean	Std. De- viation	t	df	Sig. (2-tailed)
PRE	Experi- mental	134	15.54	6.779	.416	263	.678
	Control	131	15.21	6.471			
	Experi- mental	134	35.99	10.179			
POST	Control	131	18.95	6.718	16.051	263	0.00

PEDAGOGICAL RECOMMENDATIONS:

Since research studies examining the link between training programs and students' achievement in English are rare, further research in this area is in great need, particularly in response to the current reform efforts and the ever changing needs of students .

1-Teachers should be provided with appropriate facilities and resources to participate effectively in the training programs and to transfer whatever they are trained on into their classrooms.

3-To gain a deeper understanding of the impact of the training programs on teachers' classroom practices and on students' learning; more comprehensive studies must be conducted. A variety of settings from elementary through secondary schools should also be considered.

4-Pre-service training programs should be a requirement for newly hired teachers whether employed at public or private schools.

5-Opportunities should be provided

for teachers to observe and work with colleagues who have been identified as professional teachers.

SPECIFIC RECOMMENDATIONS:

1-Other researches can be done to measure the effect of MIT program on male students .

2-Other researches can be done to measure the effect of MIT program in other context.

CONCLUSIONS:

1-There are statistically significant differences between the means of the experimental group intelligences before and after implementing the MI program.

2-The students in the experimental group showed significant achievement compared to the students in the control group.

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