



The Effect of a Proposed Instructional Program Based on the Multiple Intelligences Theory on EFL Jordanian Ninth-Grade Students' Achievement in English

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Abstract

Objectives: This study aimed to investigate the effect of a proposed instructional program based on Multiple Intelligences Theory (MIT) on ninth grade students' achievement in English.

Methods: The participants of the study consisted of 40 students in two sections who were randomly assigned to a control group (20 students) and to an experimental group (20 students). One research instrument was used to collect the data of the study; a comprehensive English achievement test of reading, writing, listening and speaking. Data were analysed using means, standard deviations, ANCOVA and MANCOVA.

Results: The findings of the study indicated that there was a statistically significant difference ($\alpha=0.05$) between the mean score of the students of the experimental group who were taught according to the (MIT) program and that the mean score of the control group who were taught based on the conventional method. This difference was in favour of the experimental group students since the adjusted mean score was (55.20), which was higher than the adjusted mean score of the control group (46.45).

Conclusions: The proposed instructional program based on (MIT) was significantly more effective than the conventional method in developing students' English language skills. The study recommends that (MIT) should be incorporated in English as a foreign language (EFL) curricula in Jordan to improve students' English language skills.

Keywords: EFL; English Language Achievement; Instructional Program; Jordan; Multiple Intelligences; Ninth Grade.

فاعلية برنامج تعليمي مقترح قائم على نظرية الذكاءات المتعددة في التحصيل في اللغة الإنجليزية لدى الطلبة الأردنيين في الصف التاسع الأساسي

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ملخص

الأهداف: الكشف عن فاعلية برنامج تعليمي مقترح قائم على نظرية الذكاءات المتعددة في تحصيل طلبة أردنيين في الصف التاسع في اللغة الإنجليزية.

المنهجية: تكونت عينة الدراسة من 40 طالبة في شعبتين، تم توزيعهم عشوائيًا بحيث اعتبرت إحداهما مجموعة ضابطة (20) طالبة، والأخرى المجموعة تجريبية (20 طالبة). تم استخدام أداة بحثية واحدة لجمع بيانات الدراسة: اختبار تحصيل شامل القراءة والكتابة والاستماع والمحادثة في اللغة الإنجليزية. تم تحليل البيانات باستخدام المتوسطات الحسابية، والانحرافات المعيارية إضافة إلى تحليل التباين المصاحب ANCOVA and MANCOVA.

النتائج: أشارت نتائج الدراسة إلى وجود فروق ذات دلالة إحصائية عند ($\alpha=0.05$) بين متوسط علامات طلبة المجموعة التجريبية الذين تم تدريبهم وفقًا للبرنامج القائم على الذكاءات المتعددة ومتوسط علامات المجموعة الضابطة الذين تم تدريبهم على الطريقة الاعتيادية. وكان هذا الاختلاف في صالح المجموعة التجريبية لأن متوسط العلامات المعدلة كان (55.20)، وهو أعلى من متوسط العلامات المعدلة للمجموعة الضابطة (46.45).

الخلاصة: إن البرنامج التعليمي المقترح القائم على نظرية الذكاءات المتعددة أكثر فاعلية من الطريقة التقليدية في تطوير مهارات اللغة الإنجليزية لدى الطالبات. توصي الدراسة بتضمين مبادئ نظرية الذكاءات المتعددة في مناهج اللغة الإنجليزية كلفة أجنبية لتحسين تحصيل الطالبات في اللغة الإنجليزية في الأردن.

الكلمات الدالة: الأردن، التحصيل في اللغة الإنجليزية، الصف التاسع، اللغة الإنجليزية كلفة أجنبية، برنامج تعليمي، نظرية الذكاءات المتعددة..



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1. Introduction

“Learning styles, thinking skills and multiple intelligences” can consolidate the teaching learning process. They are interchangeable concepts in some educational contexts. However, they have independent definitions that can be distinguished from each other. For instance, learning styles are the different methods in which a learner perceives information. Thinking skills are the various processes in which a learner manipulates thinking. Multiple intelligences are different capabilities a learner operate to develop acquisition. Learning styles go forward the 'front end' of learning; thinking skills towards “the middle”; and multiple intelligences “the back end”. Therefore, although they could be interdependent in some cases, those concepts are not identical (Fleetham, 2006,p:11-12)

The theory of multiple intelligences was first proposed by Howard Gardner in his book “Frames of Mind” in 1983, where he expanded the concept of intelligence and suggested several distinct types of intellectual competencies (Gardner, 2011). Gardner’s definition of intelligence is “biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture” (Gardner, 2000, p.33). Furthermore, Gardner introduced seven kinds of intelligences in 1983: linguistic, logical-mathematical, visual spatial, bodily kinesthetic, musical, interpersonal; and intrapersonal. Then, he added an eighth naturalistic intelligence which revolves around the elements of nature. He also added a ninth sort of intelligence called existential which means people’s desire to perceive meanings and ask questions about life. With MI, teachers can acknowledge new bright in their students’ proficiency. For both teachers and students, MI can also create an enjoyable sociocultural environment (Campbell & Campbell, 1999). Other two kinds of intelligences were added to MI Theory. First, Gardner (2016) emphasized in an interview with “Big Think” that he was considering adding the “teaching-pedagogical intelligence” which permitted people to teach others effectively and collaborate with other peers as well. Second, Adams (2004) confirmed that based on Gardner's concept of multiple intelligences, “digital intelligence” arises from the interactive work with information and communication technology (ICT).

Gardner explored the eight sorts of multiple intelligences. First, linguistic intelligence is the ability to manipulate the syntax, phonology, semantics and pragmatics of language. Second, logical-mathematical identifies the capacity to use numbers efficiently and to provide reasons effectively. Such intelligence includes categorization, classification and generalization. Third, spatial intelligence comprises knowledge of colour, line, shape, and the bonds between them. Fourth, bodily-kinaesthetic is concerned with certain physical skills such as strength, flexibility and speed. Fifth, musical intelligence involves passion towards the rhythm, pitch or melody. Sixth, interpersonal intelligence is the ability to understand and realize moods, motivations, and emotions of other people. Seventh, intrapersonal intelligence includes consciousness of inner moods, intentions, motivations, temperaments, and desires. Eighth, natural intelligence also includes sensitivity to other natural phenomena (e.g., rains, earthquakes, plants, etc.). (Armstrong, 2009). Other two kinds of intelligences were added to MI Theory. First, Gardner (2016) emphasized in an interview with “Big Think” that he was exploring the teaching-pedagogical intelligence which permits people to teach effectively and collaborate with other peers. Second, Adams (2004) confirmed that based on Gardner's concept of multiple intelligences, digital intelligence arises from the interactive work with information and communication technology (ICT).

Internationally speaking, several researchers from different countries such as Kırkgöz (2010) & Taase (2012) evaluated the inclusion of multiple intelligences in EFL teaching. For example, Kırkgöz (2010) analyzed five English textbooks in relation to different intelligences. The findings of this study suggested that the intelligence profile for English textbooks is basically verbal/linguistic and visual/spatial. Existential intelligence is not well-considered in EFL textbooks in Turkey. Taase (2012) asserted that students have different learning styles and individual differences and it is essential to consider these differences in designing the textbooks. It is important for ELT teachers to have a basic knowledge of MI theory and implement it in the classroom.

Furthermore, Al-Omari, Bataneh & Smadi (2015) used content analysis to examine the potential inclusion of Gardner’s verbal/linguistic, logical/mathematical, spatial/visual, bodily/kinesthetic, musical/rhythmic, interpersonal, intrapersonal, naturalist, moral, spiritual, and existential intelligences in the activities of the Action Pack textbooks for the

first-, fourth-, eighth- and eleventh-grades. The findings revealed that the incorporation of multiple intelligences is unbalanced among the four levels of the textbook. As a result, it was recommended that more empirical studies should be conducted not only on the relationships among the multiple intelligences but also on the pedagogical implications for these possible relationships and their effect on English language acquisition

To enhance the study of MI theory and English teaching, more studies can be conducted to investigate either the relations between multiple intelligences and language achievement, or how certain intelligences can contribute to acquiring English language skills (reading, writing, listening and speaking) among students of different characteristics in various situations and circumstances. In order to sustain language acquisition, results of empirical studies in these fields are needed. Furthermore, researchers can design MI- based activities and effective assessment tools. Individualized education is recommended with innovative teaching methods to achieve educational goals (Luo, 2018). Therefore, this study is intended to shed light on the effectiveness of a proposed instructional program based on Multiple Intelligences Theory on the achievement of the ninth grade EFL students in Jordan.

1.2. Statement of the problem.

This study emanates from the recommendations of some studies which refer to the importance of investigating further studies on the inclusion of MI in English language teaching. For example, the findings of international studies (Alilath & Widyanoro (2019), Estaji & Nafisi (2014), Kırkgöz (2010) and Taase (2012) hold the implication that curriculum designers should consider the importance of including all intelligence sorts in designing English language textbooks. Furthermore, local studies (Al-Omari, Bataineh & Smadi, 2015) and (Al Maharma, 2021) also indicated that multiple intelligences are not properly addressed in Action Pack textbook. The incorporation of multiple intelligences is unbalanced among Action Pack textbooks.

On the other hand, the researchers, as EFL instructors for more than ten years, have realized that some EFL ninth grade students are unable to use English communicatively. For example, they find it difficult to understand English conversation or pronounce certain utterances. Serious problems in writing (structure, mechanics and organization (coherence and cohesion) can be noticed in EFL writing tests. Even when they speak or write in English, student commit mistakes in grammar, vocabulary, punctuation and pronunciation. Therefore, the researchers thought that a proposed instructional program based on Multiple Intelligences Theory may consolidate ninth grade students' achievement in English.

1.3. Purpose and Questions of the Study

This study aimed to investigate the effect of a proposed instructional program based on Multiple Intelligences Theory on ninth grade students' achievement in English in Amman during the academic year 2021-2022.

This study aims to answer the following question:

1- Are there any statistically significant differences ($\alpha = 0.05$) between the mean scores of ninth grade students in Jordan regarding their achievement in English, which can be attributed to a program based on Multiple Intelligences Theory and the conventional method of teaching?

1.4. Significance of the Study

This study concentrates on the obvious effect of implementing a program based on MI Theory to develop EFL ninth graders' achievement in Amman. Thus, it may derive its importance from holding the implications of the incorporation of MI Theory into English instruction for curriculum developers, teachers and students. This incorporation will improve students' English language skills. It is hoped that the paper can inspire other international and local researchers to conduct more studies on the effect of MI Theory on psychological issues such as anxiety or motivation.

1.5. Definition of Terms

This section provides theoretical and operational definitions of some terms in the title.

The instructional program: Fleetham (2006) defined it as "Your potential to think, act, solve problems and create valuable things in eight and a half (nine) different, equally valuable ways. It's to do with your range of skills and talents, driven by the activity of different sets of brain regions. It's your ability or opportunity to think about how you are clever rather than how clever you are". (p.35).

In this study, this is an instructional program that was developed by the researchers based on a set of principles that underlie Multiple Intelligences Theory to sustain ninth graders' English language and their motivation to learn it. Multiple Intelligences include: Verbal/Linguistic Intelligence involves the ability to learn written and spoken languages, and the capacity to use language to accomplish certain goals. Logical/Mathematical Intelligence is the capacity to solve problems and think critically. Visual/Spatial Intelligence encompasses the capability to visualize and remember images and details. Bodily/Kinesthetic Intelligence involves the ability of using one's whole body or parts of the body to solve problems. Musical/Rhythmic Intelligence involves the capacity to realize musical pitches, tones, and rhythms. Interpersonal Intelligence is the capacity to socialize with other people and to work efficiently with them. Intrapersonal Intelligence entails the capacity to realize oneself, to estimate one's emotions, fears and desires. Naturalist Intelligence enables learners to understand, categorize and draw upon specific characteristics of nature and environment (Gardner, 1999). Other two kinds of intelligences were added to MI Theory. First, Gardner (2016) emphasized in an interview with "Big Think" that he was considering adding the "teaching-pedagogical intelligence" which permitted people to teach others effectively and collaborate with other peers as well. Second, Adams (2004) confirmed that based on Gardner's concept of multiple intelligences, "digital intelligence" arises from the interactive work with information and communication technology (ICT).

The conventional method: is the method of teaching which a teacher uses to teach school subjects based on the instruction of the teacher's book. In this study, this refers to the teaching method that is described in the Teachers' Book of Action pack 9. This method is based on the assumptions of the communicative approach. These assumptions mainly encompass the importance of teaching English in context and engagement of students in collaborative work. These assumptions and others can be found in Teacher's Book of Action Pack 9, for instance: "Action Pack 9 teaches grammar in context and encourages students to work out the grammar rules individually.". "promoting solidarity and a healthy group work atmosphere is no less important" (Paris, 2013, 7).

This method basically deals with all language skills as an integral whole as indicated by the communicative approach. Although the role of the language learner is central according to this approach, very few instances were noticed in the ninth grade Action pack teacher's book which cater for students' multiple intelligences. To this end, analysis of the instructions in this teacher's book revealed that multiple intelligences are not properly addressed. For example, Al Maharma (2021) analyzed the activities used in grades nine, ten and twelve in Action Pack textbooks in Jordan. The results indicated that the linguistic and spatial intelligences were the most dominant in the three textbooks. Also, it was revealed that the sorts of intelligences were not found similarly in the targeted textbooks.

1.6. Limitations of the Study

There are several limitations which this study has: First, the school where the study was conducted "Princess Rahmeh School" was purposefully selected because the school allowed the researchers to apply the instructional program. A second limitation was the participants of the study where only 40 ninth –grade students distributed to two sections (20 students in each). A third limitation was that the participants of the study were female students. A fourth limitation was that the study was conducted over a period of only six weeks during the second semester of the academic year 2021 – 2022. Finally, only one instrument (one achievement test) was developed by the researchers. Therefore, the validity of the obtained results depends on the reliability and the validity of the instrument.

2. Previous related Studies

Al-Ghazu, Baniabdelrahman & Sadi (2022) investigated the effect of an instructional program based on Multiple Intelligences on Jordanian EFL students' speaking skills. The participants were two sections of students in the seventh grade in Success Story School in Irbid in Jordan, who were distributed into two groups; control and experimental. The experimental group was taught the speaking skills through a Multiple Intelligences-Based instructional program while the control group was taught through the conventional method. A pre-post-test was developed by the researchers. The results showed that there are statistically significant differences at ($\alpha= 0.05$) in the post speaking skills test scores due to the

teaching method in favour of the experimental group (Multiple Intelligences). This study recommends that Multiple Intelligences be integrated into the EFL classroom to improve students' speaking skills.

Al Maharma (2021) analyzed the activities used in the English series of Action Pack textbooks for grades nine, ten and twelve in Jordan regarding the multiple intelligences theory. The researcher studied 608 activities to decide which kind of multiple intelligences is more common in the targeted activities. The results showed that the linguistic and spatial intelligences were the most prevalent in the three textbooks. Also, it was revealed that the types of intelligences were not found similar in the targeted textbooks. This study recommended that the authors of the textbooks should present different activities and exercises that include all eight types of multiple intelligences to meet students' learning interests.

Alilateh & Widyantoro (2019) examined the effectiveness of using multiple intelligence activities in listening comprehension and improving students' interest. The design of this research was quasi experimental. There are two groups of this study, one for the experimental group and one for the control group. The experimental group learnt English by doing MI tasks. On the other hand, the control group learnt using the conventional method. The participants were 78 students of English liberal art at Yala Rajabhat University. A listening comprehension test and a questionnaire are used for data collection. MANOVA was used to analyze the collected data. The results indicated that MI activities seem more effective than the conventional ones. Also, students in the experimental group seem more interested than those in the control group.

Rizqiningsih & Hadi (2019) examined the effects of multiple- intelligences activities on developing speaking skills of the students of English. A quasi experimental design was used to conduct this research. The instrument of this research was a post-test. The writer used an oral test to collect the data. The sample consisted of a control group (36 students), and an experimental group (36 students). There is significant difference between the students' speaking scores before and after being taught using approach Multiple Intelligences. The findings indicated that Multiple Intelligences-(MI) based instruction improved the speaking Skills of 9th grade students' of MTs Al-Ihsan Jakarta Barat.

Abu Minshar (2016) studied the effect of an instructional program based on multiple intelligences theory (MIT) on the primary students' achievement in English. The study was conducted in the academic year 2011 – 2012 in Al-Mafraq District. The participants of the study were Eighth grade students. Eight sections were divided into two sections as an experimental group and a control group. To answer the questions of the study, the researcher founded a training program based on MIT for training eighth grade teachers and an achievement test. The results of the research indicated that there was a statistically significant difference between the achievement scores of the experimental group and the control group in favor of the students in the experimental group. Based on the results above, the study recommended planning MI training program for pre-service teachers in public or private schools and exploring the effect of using MIT in a variety of settings from basic to secondary stages.

Gündüz & Ünal (2016) examined effects of multiple intelligences activities on writing skill development in an EFL Context in. The sample was 50 sixth grade students at a state school in Ardahan in Turkey. Experimental group was taught using multiple intelligences activities while the control group was taught using the conventional method. The results revealed that the experimental group performed better than the control group who was taught using the conventional method. Students in the experimental group presented good feedback on the multiple intelligences activities.

Estaji & Nafisi (2014) studied multiple Intelligences and their representation in the EFL young learners' textbooks. In fact, this study considered how many times each sort of intelligences was presented in young learners' textbooks at four different levels. A multiple intelligences checklist was developed to investigate multiple intelligences in the chosen textbook in its various exercises, tasks and activities. Deep analysis of the chosen textbooks asserted that the intelligence profile of these textbooks is mainly verbal/ linguistic. The results of the study indicated that curriculum developers should incorporate all intelligences in EFL learners' textbooks.

Jallad & Abdelrahman (2008) explored the effect of multiple intelligences strategies on ninth grade students' reading comprehension achievement in an EFL context. The population of the study included all ninth grade students in public

schools in Jordan in the second semester of the academic year (2005-2006). The participants of the study comprised four ninth grade sections, which were chosen purposefully (two male sections and two female sections). To achieve the purpose of the study, the researchers used one instrument which is a reading comprehension test. Means, standard deviations and two-way ANOVA analysis were used in the study. The results of the study indicated that there was a significant difference in the students' reading comprehension ($\alpha = 0.05$) due to the teaching strategies in favor of the experimental group. * There was no significant difference in the students' reading comprehension ($\alpha = 0.05$) due to the students' gender.

3. Method and Procedures

This section of the study includes the study design, a description of its participants, the research instruments, their validity and reliability measures, and data analysis measures.

3.1. Design of the Study

To collect the data of this study, the researchers used a quasi-experimental design. There was one independent variable (MIT). Furthermore, there was also one dependent variable which is students' achievement in English.

To conduct this study, two ninth- grade sections at Princess Rahmeh School were selected. One section was randomly assigned to be the control group while the other section represented the experimental group. Students of the experimental group were taught by using the Multiple Intelligence Based Program (MIBP) while students of the control group were taught by using the conventional program described in the ninth-grade teachers' book. It is worth mentioning that the content (Action Pack 9 Module 6 lessons 1-8), technological facilities, assessment instruments, number of lessons, amount of activities, time assigned to each lesson were the same for both control and experimental groups. The treatment lasted six week during the second semester 2021-2022.

This design of the study is graphically represented as follows:

EG: O1	X	O2
CG: O1	---	O2

EG: stands for the experimental group, CG: stands for the control group, X: stands for the treatment, O1: stands for pre-test and O2 for post-test.

3.2. Instruments of the Study: *The research instrument used to collect data of this study was an achievement test.* The English achievement test covered the four skills of English language (reading, writing, listening and speaking).

The students took the achievement test over three sessions on three consecutive days. First, Listening and reading tests included ten multiple-choice questions (out of ten marks) for each skill. The duration of both tests was 1 hour. Second, the fifty-minute writing test encompassed two questions for the pre- test (interesting places & special moment) and two questions for the post test (describe either yourself to include in an application form for your dream job or a book you have recently read.). Third, the speaking test lasted for three hours during which the two raters interviewed students individually in the computer lab for about five minutes for each student. There were two questions for the pre-test (famous person & future career) and two questions for the post test (describe either a hobby or a useful website). Both groups were asked four questions about the topic they chose. In both writing and speaking tests, students chose only one topic to write or speak about. The reading and listening parts were based on the distribution of the Bloom's' cognitive levels to the intended learning outcomes of the selected module as indicated by Paris (2013). Both the reading passage and the audio script were adopted from the tests in Action Pack 9 Teacher's Book (Paris, 2013:120,123).

Two scales were used to grade the writing and the speaking parts of the achievement test. The speaking scale (Salih, 2015, IELTS) consisted of six criteria of the speaking skills: pronunciation, grammar, vocabulary, fluency, content and non- verbal communication. Each criterion included five indicators where 5 points were allotted for each. The total score of the speaking test was 30. The writing scale (Dastgeer & Afzal, 2015, Rakedzon, Baram-Tsabari, 2017, IELTS) comprised five criteria: content, vocabulary, grammar, mechanics and organization (coherence and cohesion). Each

criterion included five indicators and they were given 4 points for each. The total score of the writing test was 20. Two experienced raters independently graded students' speaking and writing based on the speaking and writing scales. Therefore, the total score of the achievement test was seventy.

The Instructional Program

The two researchers developed an instructional program based on a set of principles that underlie Multiple Intelligences Theory. The main purpose of this program is to investigate the effect of Multiple Intelligences-based activities on the Ninth graders' achievement to learn English in Jordan. The MI-based program is based on the Intended Learning Outcomes (ILOs) of Action Pack 9 (The Teacher's Book of Action Pack 9, p. 84, 86, 90, 92, 94, 96).

The MI based program was exclusively introduced to the experimental group of ninth grade at Princess Rahmeh Bent Al-Hassan School in Qasabet Amman over a period of 6 weeks during the second semester of the academic year 2021 – 2022. Simultaneously, the content (Action Pack 9 Module 6: 8 lessons), technology tools such as PowerPoint program, assessment instruments, number of lessons, amount of activities, time assigned to each lesson and the teacher were the same for both the control and experimental groups.

The teacher planned MI lessons in which outcomes, procedures, content, tasks and time were clearly stated. Firstly, the teacher asked students to take notes, read articles, tell stories and expressed opinions (linguistic intelligence). Secondly, ninth graders answered puzzles and analysed grammar rules logically (mathematical intelligence). Thirdly, students were involved in describing pictures and drawing nature (visual and natural intelligence). The teacher also asked the students to roleplay, act, mime words and play games (kinaesthetic Intelligence). Fifthly, the teacher introduced poems and songs (musical intelligence). Sixthly, the teacher engaged students in collaborative linguistic tasks (linguistic, interpersonal and pedagogical intelligence). Seventhly, students self-evaluated their written and oral performance (intrapersonal intelligence). Finally, the teacher encouraged students to design power point presentations about the present perfect tense. (digital intelligence).

Students participated in various interactive MI-based activities such as expressing their opinions using "the six thinking hats strategy", reciting poems, using songs to understand present perfect tense, playing "snowball reflection games", drawing countries, creating posters, jotting down feelings and attitudes, using slides to present a topic, miming and guessing words, accomplishing "Self-Awareness Activity", playing in an "Inner and Outer Circles", "Thinking, pairing, drawing and sharing", doing "a running dictation", and other integrative interactive MI tasks. Such activities were adopted from MI educational websites and a Table added by Brandy Bellamy and Camille Baker, (2005) as cited in (Ahmed & Gasem, 2017).

The conventional program

This refers to the teaching method that was described in the Teachers' Book of Action pack 9. It was presented to the control group. This method was based on the principles of the communicative approach which implies the importance of teaching English in context and the engagement of students in group work. All curriculum components, (The aim, the Intended Learning outcomes (ILOs), activities, content, procedures, teaching strategies and assessment strategies and tools), were drawn from the General Guidelines and General and Specific Outcomes for the English Language: Basic and Secondary Stages in Jordan, the Student's Book and the Teacher's Book of Action Pack 9.

The outcomes of module 6 are like those of the instructional program. For example, to use context to guess the meaning of new words, listen to taped native speakers of English to improve pronunciation of figures, skim a reading text to answer questions, demonstrate understanding of an authentic reading text about an experience of a lifetime, engage in a discussion to exchange ideas about one's feelings throughout a journey, use the Present Perfect Simple with for, since and time expressions, identify the difference between the Present Perfect Simple and the Past Simple, and write a short, informal letter with a specific function. (Paris, 2013, p.86).

The teacher planned English lessons according to the instructions in the Teacher's book. Students were given opportunities to "use pictures and context, guess the meaning of new words" and "develop listening strategies to improve pronunciation of figures by listening to taped native speakers of English". Furthermore, they "participated in a peer

discussion about important discoveries from the past", found a location on a map and engage in a discussion to exchange ideas about one's feelings throughout a journey." (Paris, 2013, p.84). Moreover, the teacher allowed students to "use dictionaries and glossaries to confirm and clarify word meaning, skim a reading text to answer questions, demonstrate understanding of a magazine article about an experience of a lifetime, engage in a discussion to exchange ideas about one's feelings throughout a journey, and use pictures to demonstrate understanding of new words." (Paris, 2013, p.90).

The same assessment strategies and tools were used, in both instructional and conventional programs, to collect data about the learning process. Those Strategies were implemented in English classes such as communication, observation, performance-based assessment and reflection. Furthermore, assessment tools were utilized such as peer review from TB p.119, agreeing & disagreeing rating scale in the Activity Book p.76, assessment tool 5 (listening rating scale) in the activity book p.75, speaking assessment checklist (assessment tool 9) in the Activity Book p.77, portfolio p.119 in the TB p.119, peer review form TB p.119, assessment tool 8 rating scale in the Activity Book p.76, and assessment tool 5 (listening rating scale) in the activity book p.75.

3.4. Validity and Reliability of the Instruments

Validity

To establish the content validity of the research instruments, a jury of twelve experts were consulted (i.e. three TEFL professors, three professors of linguistics, two professors of curriculum and instruction, one professor of educational psychology, two professors of educational research, and two experienced English teachers. The experts were kindly requested to check the appropriateness of the test items and the two scales in terms of accuracy, comprehensiveness, clarity, length, language, etc. Some suggestions included revising coherence, re-organization of the items, adding a domain on nonverbal communication, modifying the writing and speaking topics, and giving students the chance to choose their topics on the writing and speaking tests. They also recommended using "vocabulary" instead of "lexical resource" and "grammar" instead of "grammatical range" to make them clearer to the two raters. Another suggestion was to shorten the items of the multiple-choice questions in both reading and listening tests.

Reliability

To establish the reliability of the achievement test, it was administered to 20 EFL students from the population of the study as a pilot group. To ensure the inter-reliability of raters, the researchers and another collaborative English teacher discussed both speaking and writing scales. Each rater independently graded students' written pieces and speech acts of the sample of the study based on the writing scale and speaking scale respectively.

As for the speaking and writing scales, the researchers clarified to the EFL collaborative teacher the purpose of using both scales. Then, both the researchers and the collaborative teacher administered the speaking and writing exams to a pilot group of students to establish inter-rater reliability. Both of them used the same scales independently to assess each of the writing and speaking skills. Using Holsti equation (1964) for intercoder reliability assessment ($C.R. = \frac{2M}{N1 + N2}$, where "M is the number of coding decisions on which the two raters were in agreement, and N1 and N2 referred to the number of coding decisions made by raters 1 and 2, respectively) (Omari, 2018), the percentages of consensus between the two ratings were for 91% for speaking and 97% for writing.

Moreover, Cronbach Alpha of the listening and reading tests were .78 and .76 respectively. All the obtained values of reliability were considered acceptable to use the research instruments to collect the data of the study.

3.5. Statistical Analysis

To analyze the data of the study, the Statistical Package for the Social Science (SPSS) was used. This included calculating the means and standard deviations for both groups (i.e., experimental and control). One-way ANCOVA and MANCOVA tests were also used to test the statistical differences between the mean scores of the two groups.

4. Findings

6.1. Results Related to the Question of the Study Are there any significant differences ($\alpha=0.05$) between the achievement mean scores of ninth grade students which can be attributed to the program of teaching EFL?

To answer this question, means and standard deviations of students' achievement total mean scores were calculated. Results are shown in Table 1.

Table 1. Means and standard deviations of ninth grade students with regard to their English achievement mean scores due to the teaching methods (conventional vs. MI -based Program)

Group	N	Pre test		Post test	
		Mean	Std. Deviation	Mean	Std. Deviation
experimental	20	36.90	11.57	55.45	8.29
Control	20	36.25	12.15	46.20	12.19
Total	40	36.58	11.71	50.83	11.31

Mean scores are out of 70

Table 1 reveals that there were differences in the mean scores of both groups (experimental and control). The mean score of the experimental group on the post- test was (55.45) while the mean score of the control group was (46.20) .To test if those observed differences were statistically significant ($\alpha=0.05$), one-way Analysis of Covariance (ANCOVA) test was applied. Results are presented in Table 2.

Table 2. One-way analysis of covariance (ANCOVA) of the achievement mean score of students due to teaching method (conventional method vs. MI-based program)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre	3100.55	1	3100.55	111.21	.000	.750
Group	765.91	1	765.91	27.47	.000*	.426
Error	1031.60	37	27.88			
Total	4987.78	39				

Table 2 reveals that there were statistically significant differences in the mean scores of students of both groups regarding their achievement due to the teaching method. The " F" value (27.47) is statistically significant ($\alpha=0.05$). The adjusted mean scores and standard errors were also calculated. Results are shown in Table 3.

Table 3. Adjusted mean scores and standard errors of students of both groups (experimental vs. control) of the achievement test due to the teaching method

	Group	Mean	Std. Error
Achievement in English	Experimental	55.20	1.181
	Control	46.45	1.181

Table 3 shows that the adjusted mean of the experimental group (55.20) was higher than the adjusted mean score of the control group (46.45). This indicates that the differences were in favor of the students who were taught using the MI-based program. To know the effect size, Eta square was also obtained. As shown in Table 2, the effect size was (.426), which means that (43%) of the variance in the total scores of students' achievement was attributed to applying the MI-based program.

On the other hand, the means and standard deviations of students with regard to the dimensions of the achievement were calculated. Results are shown in Table 4:

Table 4. Mean and standard deviations of ninth grade students with regard to their achievement on different dimensions due to the teaching method (conventional vs. MI-based program)

Dimensions	Group	N	Pre test		Post test	
			Mean	Std. Deviation	Mean	Std. Deviation
Listening	experimental	20	7.75	2.22	8.90	1.37
	Control	20	7.75	1.89	7.75	2.07
Reading	experimental	20	6.45	2.21	7.30	1.34
	Control	20	5.55	1.76	6.30	1.72
Writing	experimental	20	10.00	4.08	13.40	3.78
	Control	20	11.65	5.26	12.90	4.33
Speaking	experimental	20	12.70	5.60	25.85	3.28
	Control	20	11.30	5.03	19.25	5.83

Mean score of listening is out of 10; of reading out of 10; of writing out of 20; and of speaking out of 30.

Table 4 reveals that there were differences in the mean scores of the students of both groups (experimental and control) with regard to their achievement of the four language skills. With regard to the listening skill, the mean score of the experimental group students on the post-test was (8.90), while it was (7.75) for the control group. Moreover, with regard to the reading skill, the mean score of the experimental group students on the post-test was (7.30), while it was (6.30) for the control group. In addition, with regard to the writing skill, the mean score of the experimental group students on the post-test was (13.40), while it was (12.90) for the control group. Finally, with regard to the speaking skill, the mean score of the experimental group students on the post-test was (25.85), while it was (19.25) for the control group.

To see if those differences were statistically significant ($\alpha=0.05$), multivariate analysis of covariance (MANCOVA) test was applied. Table 5 shows these results:

Table 5. Multivariate Analysis of Covariance (MANCOVA) regarding the difference in the mean scores of each of the four dimensions of achievement due to the teaching method

Source	Dimensions	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Listening	Listening	8.88	1	8.88	3.99	.054	.105
Reading	Reading	1.09	1	1.09	.74	.396	.021
Writing	Writing	247.66	1	247.66	67.09	.000	.664
Speaking	Speaking	11.20	1	11.20	1.44	.238	.041
Group Hotelling's Trace=1.587 Sig =0.000	Listening	12.30	1	12.30	5.52	.025*	.140
	Reading	8.16	1	8.16	5.53	.025*	.140
	Writing	19.65	1	19.65	5.32	.027*	.135
	Speaking	388.04	1	388.04	50.06	.000*	.596
Error	Listening	75.67	34	2.23			
	Reading	50.20	34	1.48			
	Writing	125.51	34	3.70			
	Speaking	263.57	34	7.75			
Total	Listening	130.78	39				
	Reading	100.40	39				
	Writing	629.10	39				
	Speaking	1285.90	39				

* Statistically significance at level ($\alpha = 0.05$).

Table 5 shows that (F) values for the dimensions “Listening”, “reading”, “writing” and “speaking” were respectively (5.52), (5.53), (5.32) and (50.06). All of these differences were in favor of students of the experimental group as shown in Table 6.

Table 6. The adjusted mean scores and standard errors regarding each of the four dimensions of achievement (listening, reading, writing and speaking) due to the teaching method.

Dimensions	Group	Mean	Std. Error
Listening	Experimental	8.92	.346
	Control	7.73	.346
Reading	Experimental	7.29	.282
	Control	6.31	.282
Writing	Experimental	13.90	.446
	Control	12.40	.446
Speaking	Experimental	25.90	.647
	Control	19.20	.647

Table 6 reveals that the adjusted mean scores of the experimental group students regarding the four language skills were higher than those of the control group. To know the size effect, the Eta-square was calculated. As shown in Table 5, the effect size regarding the listening skill was (0.140) which means that 14% of the covariance in the listening dimension was due to using the “MI-based program”. Second, the effect size of the reading dimension reached (0.140) which means that 14% of the covariance in the reading dimension was in favor of the teaching method the "MI-based program". Third, the effect size of the writing dimension was (0.135) which means that 13.5%, of the covariance in writing was in favor of the teaching method "MI-based program". Finally, the effect size of the speaking dimension was (0.596) which means that 59.6% of the covariance in speaking was due to using the MI-based program.

5. Discussion

The findings of the study indicated that there was a statistically significant difference at $\alpha=0.05$ between the mean score of the students of the experimental group who were taught according to the MI-based Program and that of the control group who were taught based on the conventional method. This difference was in favour of the experimental group since the adjusted mean score was (55.20), which was higher than the adjusted mean score of the control group (46.45). This indicates that that the MI based program had a remarkable effect on developing English language achievement of the participants in the experimental group in the four language skills (i.e., in reading, listening, speaking and writing skills).

This improvement in students’ language skills may be due to the incorporation of linguistic, logical-mathematical, visual spatial, bodily kinaesthetic, musical, natural interpersonal, intrapersonal, pedagogical and digital intelligence-based activities in English lessons. Students seemed to be motivated to accomplish MI interactive collaborative tasks when they worked in groups to read, write, listen and speak. In each English class, students were involved in authentic tasks in which all the four English skills were integrated. These results of the study are consistent with those of Abu Minshar (2016) which showed that using MI-based English classroom activities significantly developed students’ English achievement.

On the other hand, implementing MI-based program seems to have a positive effect on developing each of the four language skills. For example, the mean score of the experimental group regarding the reading skills was (7.30), while it was (6.30) for the control group. This implies that MI reading activities, such as reading articles, six thinking hats, collaborative linguistic tasks, enhanced students’ reading skills. These results are consistent with those of Jallad & Abdelrahman (2008) which also indicated that MI based activities can enhance students' reading comprehension skills.

Concerning the listening skills, the mean score of the experimental group students was (8.90), while it was (7.75) for the control group. It is apparent that the result was in favor of the experimental group. Such a development in listening could be due to the incorporation of MI activities in English classes such as taking notes, describing pictures, listening to

poems and songs, doing "a running dictation", and evaluating each other in oral performance. These results are congruent with those of Alilatah & Widyantoro (2019) which concluded that EFL students got high grades in listening tests when they are fully involved in MI activities.

Furthermore, the mean score of the experimental group regarding the writing skills was (13.40), while it was (12.90) for the control group. The experimental group presented well-developed answers to the writing question with relevant, clear and supported ideas. Therefore, they committed fewer errors in vocabulary, grammar and writing mechanics. They presented their ideas logically by using cohesive devices more efficiently than the students of the control group. Integrating the MI tasks, such as expressing opinions, creating posters, jotting down feelings and attitudes, drawing countries and writing about them, accomplishing "Self-Awareness Activity" and designing power point presentations might have reduced anxiety and assisted students in the experimental group to write more interactively. Exposing learners to a positive learning environment might have improved their writing mechanics such as punctuation, spelling ...etc. According to Gündüz & Ünal (2016), multiple-intelligence instruction can improve the writing ability of EFL students.

Regarding the speaking skills, the mean score of the experimental group was (25.85), while it was (19.25) for the control group. It seems that students, who were taught using the MI, demonstrated body language such as gestures, facial expressions or eye contact when they responded to the speaking questions. They might have used many structures with few grammatical or lexical errors. A possible explanation of this result could be due to implementing MI activities in speaking classes. When students in the experimental group were engaged in several MI speaking activities such as "snowball reflection games", miming and guessing words,, playing in an "Inner and Outer Circles", "Thinking, pairing, drawing and sharing" and other integrative interactive MI tasks, they were able to negotiate ideas and express opinions before the class. This result is in agreement with the result of a study conducted by Rizqiningsih & Hadi (2019), which revealed that pupils were confident to produce suitable utterances when they participated in MI- based activities,

6. Conclusion:

In conclusion, using an instructional program based on MI-based program to teach English language skills for EFL students developed students' EFL achievement in reading, listening, writing and speaking. This development in students' English language skills may be due to the inclusion of linguistic, logical-mathematical, visual spatial, bodily kinaesthetic, musical, natural interpersonal, intrapersonal, pedagogical and digital intelligence-based activities in English classes. In fact, implementing an instructional program based on MI Theory in EFL classes may consolidate receptive and productive knowledge of students. They can read, write, speak and listen to English language proficiently when they gradually build up speed, accuracy, fluency, competence and performance. On the other hand, the MI-based program can fuel students' interests and efforts in well-orchestrated set of MI tasks. Students can be long-life learner when they are engaged in MI activities. Moreover, using an instructional program based on MI Theory to teach English skills for EFL students can assist the students to be eclectic, autonomous, ambiguity tolerant, emotionally positive and academically productive.

7. Recommendations

1. English language teachers should be trained how to observe their students' multiple intelligences when they are introduced to reading, listening, writing and speaking lessons.
2. Teachers should use a myriad of judicious techniques in response to students' multiple intelligences in order to help them improve their English language skills.
3. More poems, songs and linguistic games should be incorporated in EFL textbooks to help them interact orally.
4. Curricula developers and textbook authors should incorporate more MI based activities in EFL curriculum.

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