THE EFFECT OF AN INSTRUCTIONAL PROGRAM BASED ON MULTIPLE INTELLIGENCES ON JORDANIAN EFL STUDENTS' SPEAKING SKILLS

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ABSTRACT

Purpose: This study investigates the effect of an instructional program based on Multiple Intelligences on Jordanian EFL students' speaking skills.

Methods: The participants were two classroom sections of seven grade students in Success Story School in Irbid, 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 though the conventional method.

Findings: A pre-post-test was developed by the researchers and was distributed to the participants of the experimental group to find out the the effect and the academic significance of the Multiple Intelligences instructional program on their speaking skills. The results showed that there are statistically significant differences at (α= 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.

Practical Implications: The results of the study would be of assistance to school teachers. The positive effect of an instructional program paves the way for more incorporation of technology-based teaching.

Originality/Value: This study is different from previous studies in the sense that it investigates the effect of three intelligences; verbal, interpersonal, and intrapersonal intelligences, on three speaking subskills; vocabulary, grammar, and pronunciation, in contrast to other studies which investigate the effect of multiple intelligences on speaking skill in general.

INTRODUCTION

English language proficiency is nowadays a desirable goal among the majority, if not all people, since it is now used by millions of speakers all over the world. Now, it is the language of globalization, trade and international communication, as well as the preferred language in a large number of ambits which, in turn, gives it more significance.

In order to be able to communicate using any language and to attain competency, one should be able to express him/herself both in spoken and written forms of it. Language teaching should be based on the basis that the four language skills should be integrated for one to be proficient in this language. Integration of skills proved to be successful when it comes to urging the students to use the four skills in real contexts (Finocchiaro and Bonomo, 1973;

Hersan, 1998; Hobson and Schuman, 1990; Omaggio, 2001). Students should be aware that words are powerful; they should be encouraged to listen carefully to words, absorb the variety of vocabulary and use them wisely to express their feelings, defend a point of view, develop an argument, or even communicate with people and discuss certain points with them.

Speaking is considered as the most important and the most difficult of the four skills when it comes to acquiring any foreign language for it includes different processes that work together (Rao, 2019). Its undenied difficulty is noticed even among the learners who have learned the language for many years; they would still hesitate and find it difficult to use the language and speak in real life situations (Rao, 2019). Since it is a productive skill; it involves producing language after receiving and processing it. English learners usually evaluate their competency in the language according to their proficiency and development in the spoken language. Brown (2001) defined speaking as an interactive process of constructing meaning that involves producing, receiving and processing information.

Multiple Intelligences Theory is considered one of the successful teaching strategies among many others that help students improve their levels and achievement (Alqatanani, 2017). Using varied teaching methods and activities in order to address student's strengths is recommended by Gardener (1993). Most people display more than one intelligence, Gardner states "all humans possess certain core abilities in each of the intelligences" (1993, p.25). He introduced eight intelligences: logical-mathematical, verbal-linguistic, special, musical, bodily-kinesthetic, interpersonal, and intrapersonal, and he was open to the idea that other intelligences exist (Armstrong, 2000).

This study aims at investigating the effect of an instructional program based on Multiple Intelligences on students' speaking skills. It addresses the following question: Are there any statistically significant differences (at $\alpha = 0.05$) in the participants' speaking skills, which may be attributed to the teaching method (Multiple Intelligences, verbal-linguistic, interpersonal, and intrapersonal vs. Conventional)?

This study derives its significance from the fact that implementing an instructional program that is based on MIT on private school students might help improve students' speaking skills. After reviewing the literature, the researcher has noticed that many studies, both locally and internationally, conducted to establish the effectiveness of MIT but studies that prioritize students' speaking skills are scarce. Henceforth, this study could be significant since it investigates the effect of MIT on speaking skills of private school students.

Theoretical Background

Gardner (1983) proposed seven different capacities in his book "Frames of Mind". One of his definitions of intelligences was that it is not a single but rather multiple abilities achieved and identified and then expanded to their maximum. He also noted that intelligence is more than IQ tests. He stated, "I believe that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills, which I call intelligences" (Gardner, 1984, p.134). Moreover, he believed that these intelligences could be developed with practice.

Gardner (1983) introduced seven intelligences, at first, which are, linguistic intelligence, logical-mathematical intelligence, interpersonal intelligence, intrapersonal intelligence, bodily-kinesthetic intelligence, spatial intelligence, musical intelligence, after a few years he added the natural intelligence and then came the existential intelligence, mental-search intelligence, and laser intelligence (2003).

Armstrong (2009) identified linguistic intelligence as using the words effectively both in the written and oral forms, mathematical as using numbers and logic properly, patterns and logical sequence, and problem solving, interpersonal as the ability to comprehend and differentiate the moods, feelings, and intentions of other people. While identified intrapersonal as the ability to

understand oneself and recognize one's strengths, weaknesses, and emotions and act effectively according to this knowledge. Bodily-kinesthetic refers to the ability to use one's body and hands and moving products to express oneself or solve a problem.

Spatial intelligence refers to the ability to perceive visuals, charts, and diagrams accurately. It also includes the sensitivity to color, shape, line, form, space, and the relationship between them. Musical intelligence is the capacity to perceive, transform, discriminate, and express musical forms, and it involves sensitivity to rhythm, pitch, and timber. The naturalist intelligence is the ability to recognize, experience, and classify the numerous species of an individual's environment (Armstrong, 2009).

According to Gardner (1983, 2008) where he mentions that each person possesses all intelligences since birth; some might have one type of intelligences stronger than the other types and training could develop them. These intelligences interact with each other and there are no specific standards for a person to be considered intelligent (Armstrong, 2009).

Gardner (1993) believes that good teachers realize that different approaches are effective with different types of students. In English language teaching, many attempts have been taken to implement MIT for students will benefit more if they are allowed to choose the activities that meet their strengths.

Dickinson (1998) proposed different types of activities to be implemented in the classroom for teachers to benefit from the MIT such as storytelling, tape recording, and using maps. Therefore, teachers should be involved in designing the activities that contain different intelligences since they are aware of their students and their interests and abilities (Haboush, 2010). Teachers should know the theory to be able to use properly (Armstrong 2009).

Florez (1999) defined speaking as a two-way process involving a true communication of ideas, information, or feelings. According to Bygate (1998) speaking is based on the interaction that involves making decisions about communication. Whereas, Chaney (1998) defines speaking skill as the process of making and sharing meaning in different contexts using verbal and non-verbal symbols.

Moreover, Burns & Joyce (1997) defined speaking as an interactive process of constructing meaning that involves producing, receiving, and processing information. However, Bygate (1987) points out that speaking is considered as combining sounds in a systematic way, according to language specific principles to form meaningful utterances.

According to Harmer (2001) speaking skill includes two major subskills; accuracy and fluency, which in turn have many various aspects. The use of vocabulary, grammar, and pronunciation are considered to be practiced using guided activities under the 'accuracy' category; whereas, measuring one's ability to speak continuously and spontaneously is considered 'fluency'.

Speaking is defined as a way to communicate verbally for interpersonal and transactional purposes (Nunan, 1999). Moreover, speaking is defined by Brown (1994), as an interactive process of making meaning that includes producing, receiving, and processing information.

Empirical Research

Jallad and Abdelrahman (2008) examined the effect of multiple intelligences strategies on ninth grade students' reading comprehension achievement in an EFL setting. The sample of the study consisted of four ninth grade sections; a reading comprehension test was constructed and administered to the participants of the study, which consisted of four ninth grade sections. It concluded that there was a significant difference in the students' reading comprehension due to the teaching strategies in favor of the experimental group.

Haboush (2010), investigated the effectiveness of a suggested program based on Multiple Intelligences (MI) theory on eighth graders' English reading comprehension skills. An achievement test and weekly quizzes were administered to the participants, 65 EFL male students divided into experimental and control groups. The findings showed that there were statistically significant differences between both groups, favouring the experimental one, due to the programme implemented.

Pour-Mohammadi, Abidin, and Ahmad (2011) examined the relationship between students' strengths in multiple intelligences and achievement in learning English. A multiple intelligences test and an English achievement test were used to determine the students' strength in their multiple intelligences. It concluded that in an environment where multiple intelligences may not have a strong presence in the classroom practice, both learners and practitioners may be unable to gain the best results. It could help teachers to consider how best to teach English language with multiple intelligences in mind.

Safein (2012), examined the effect of implementing a program based on the theory of Multiple Intelligences on developing listening and speaking skills of prospective teachers of English in Qena faculty of Education. a pre-post-test of listening and speaking skills was administered to a sample of sixty prospective teachers of English in Qena faculty of Education. The Findings showed that the Multiple Intelligences based program had significant effect on improving the participants' listening and speaking skills.

Salem (2013) investigated the effect of multiple intelligences-based instruction on developing speaking skills of the pre-service teachers of English. Sixty fourth-year prospective English teachers participated. The quasi-experimental research design was used; the one group pre-posttest was used to assess the usefulness of using this approach. Findings proved the effectiveness of multiple-intelligences based instruction on developing speaking skills of the pre-service teachers of English.

Fauziah (2015) examined the effect of using multiple intelligences on improving students' speaking skills. A test, questionnaire, documentation, and observation were used to collect the data. It concluded that there was significant improvement of students' speaking skills due to the implementation of multiple intelligences.

Gul and Rafique (2017) investigated the preferred approaches of male and female secondary school teachers towards multiple intelligence teaching. A total of 708 secondary school teachers were included in the study and were divided into subgroups; Male and female. A questionnaire of 36 teaching strategies was used in data collection and a standardized questionnaire was consulted. The results indicated no significant gender differences in the multiple intelligence teaching strategies except in the existentialistic teaching strategies which were highly preferred in the male community as compared to the female. Moreover, the results showed a positive significant correlation between professional education and the teaching strategies of secondary school teachers.

Kemala (2018) examined the effect of multiple intelligences-based instructions on students' speaking performance. Speaking tests, questionnaires, and observations were used to collect data from 30 students. The results showed a statistically significant effect of the designed multiple intelligences-based instruction on students' speaking performance.

Rizqiningsih and Hadi (2019) investigated the effect of multiple intelligences-based instructions on developing English students' speaking skills. Sixty fourth-year perspective English students participated. The quasi-experimental design of one group post-test was used to assess the usefulness of the approach. The findings of the study showed that there was an effect of multiple intelligences on the 9th grade students' speaking skills.

Van Don (No Year) examined the effect of using multiple intelligences training program on developing speaking skills for 60 second-year English major students. a multiple intelligences based training program, a questionnaire, a checklist, and speaking pre-posttests were used to measure the effectiveness of the multiple intelligences training program. Results revealed that the program had a great effect on improving students' English speaking skills. Furthermore, students expressed their opinions that the program brought them chances to develop their English speaking skills.

XU (2020) examined the self-perceived multiple intelligences preferences of Chinese students at Heilongjiang International University, China and the differences between male and female students' self-perceived intelligences. 359 first and second year Chinese undergraduate students of different majors participated in the study. A 35-item multiple intelligences questionnaire was adopted to be used in the data collection. The findings indicated that both male and female students are relatively higher in musical, linguistic, interpersonal, and interpersonal intelligences, than visual spatial, bodily-kinesthetic and logical intelligences. Moreover, there were differences in the sequence of their self-perceived multiple intelligence preferences.

Ibrahim, Qoura, and Hassan (2020) investigated the effect of using multiple intelligences-based activities in developing EFL second year preparatory stage students' speaking skills and their self-efficacy. A quasi-experimental design was used in the research. Two second year classes at Nawsa ELBahr preparatory school for girls, Mansura were selected randomly; 42 students for the experimental group and 48 students for the control group. A speaking skills checklist, a pre-post speaking skills test, and an EFL self-efficacy scale were used in data collection. It was concluded that multiple intelligences-based activities were effective in developing the students speaking skills and self-efficacy.

XU (2021) investigated the effect of a task-based teaching approach with multiple intelligences in developing Chinese students' speaking competency. A total of 60 students were divided into two equal groups; experimental and control. A questionnaire survey, a pre-post-test, and final tests were used to collect the data. The results indicated significant improvement after the experiment with regard to complexity, accuracy and fluency.

Concluding Remarks

Previous research investigated a wide variety of issues with regard to multiple intelligences and speaking skills. There is a plethora of studies that aimed to investigate the effectiveness of a proposed program based on multiple intelligences on students' speaking skills and all four language skills as well (for instance, Jallad, & Baniabdelrahman, 2008; Van Don, No Year; Rizqiningsih and Hadi, 2019; Sumarta, 2016; Fauziah, 2015).

Based on the findings, it is evident that multiple intelligences theory when implemented in a good manner holds a unique potential as an effective instrument of language instruction that affects students' speaking skills positively (for example, Ibrahim, Qoura, and Hassan, 2020; XU, 2021). However, there are a number of studies that have been done on the effect of multiple intelligences on reading, writing, and listening skills and show that multiple intelligences have a positive impact on students' reading, writing, and listening (for example, Suwarni, Rahman, and Iswara, 2019; Haboush, 2010; Jallad, & Baniabdelrahman, 2008).

This study may enrich the related literature and spread awareness among other researchers of this approach and provide Jordanian EFL teachers with a new approach to teach speaking effectively. This study is different from previous studies in the sense that it investigates the effect of three intelligences; verbal, interpersonal, and intrapersonal intelligences, on three speaking subskills; vocabulary, grammar, and pronunciation, in contrast to other studies which investigate the effect of multiple intelligences on speaking skill in general.

Design and Variables of the Study

The current study followed the quasi-experimental design in terms of using one experimental group and one control group in order to fit the purpose of the study. Specifically, the study included two variables: the independent variable which is the multiple intelligences strategy with its three levels; verbal-linguistic, interpersonal, and intrapersonal, and the conventional method of teaching. The dependent variable, which is the students' attitudes.

Participants of the Study

The participants of the study were conveniently chosen during the first semester of the academic year 2021/2022 as the researcher works as a supervisor at Success Story School. Two classroom sections of forty-three seven grade students were involved in the study who were randomly assigned into two groups for the purpose of this study (viz. experimental and control). Two groups participated in this study: Experimental group, which consisted of 21 seventh graders, was taught by multiple intelligences. The control group, which consisted of 22 seventh graders, was taught conventionally. Both groups sat for the pre-test to assess their speaking skills before starting the training. All participants were studying the textbook English World.

Instruments of the Study

In order to achieve the purposes of the study, the following instruments were developed and employed:

Speaking Test

The test was constructed by the researcher herself in light of the General Guidelines and the Specific outcomes of the Secondary Stage (2006). In order to conduct the test, the researcher examined the speaking activities in English World 7 in the six units of the first semester to find out the way in which these speaking activities are presented, arranged, and taught in order to ensure that the content of test included would be within the participants' level and would include the speaking skill components (vocabulary, grammar, and pronunciation).

The same test was used as pre-posttest. The pre-test aimed at detecting the participants' speaking ability before treatment, while the post-test aimed at evaluating the effect of using multiple intelligences strategies on the speaking ability of the same participants in terms of its three components. The speaking test consisted of six questions with a total mark of 20. The questions needed open and personal answers based on the students' knowledge, real life situations, reasoning, and imagination. Each student was given 2-3 minutes to brainstorm and think about the answer and the time allotted to each question was 4-5 minutes.

Validity of the Instruments of the Study

The validity of the instruments was established by an expert jury of ten EFL university professors, supervisors, experiences English Language teachers, and PhD students in education and curriculum and instruction in Jordan. The jury's comments and feedback for the instruments were taken into account.

Reliability of the Test of the Study

In order to obtain the reliability of the test, a pilot study was conducted on 15 students excluded from the study's sample to check the reliability of the test. The researcher had to form the speaking section in a written form for it is difficult for students to commit to speaking sessions for testing since they are not obliged to.

Eventually, Pearson correlation coefficient was 0.93, which is a strong relation since it represents a positive correlation. By and large, the correlation is presumed to be positive if it is close to 1 (Hall, 2015) as shown in table 1:

Table 1. Pearson's Value for the Pre-Post Test:

	Pearson Correlation	Sig. (2-tailed)
Grammar	0.87**	.000
Vocabulary	0.91**	.000
Pronunciation	0.90**	.000
Speaking skills test	0.89**	.000

*** Correlation is significant at the 0.01 level (2-tailed).*

Discrimination and difficulty values of the test items were also calculated. As shown in table 3, difficulty values ranged between 0.2 and 0.8, which are acceptable values. The same can be said about discrimination value which is acceptable as long as it is not minus and ranges between (0.20-1), (Metsämuuronen, 2018). The next page displays difficulty and discrimination index of 15 students resembling the pilot sample.

Table 2. Pre-Posttest Questions' Difficulty and Discrimination Values:

Item	Difficulty	Discrimination
1	.77	.55(*)
2	.57	.54(*)
3	.53	.86(**)
4	.56	.66(**)
5	.46	.58(*)
6	.65	.71(**)

 ** Correlation is significant at the 0.05 level (2-tailed).*
 *** Correlation is significant at the 0.01 level (2-tailed).*

To elicit the Experimental group's attitudes towards learning through Multiple Intelligences strategies, a close-end questionnaire was conducted. Considering the reliability of the questionnaire, Cronbach's Alpha statistical test was conducted to measure it, which was (0.81), It has been a tradition to consider the value of Cronbach's Alpha acceptable if it is higher than 0.70. However, Taber (2017) stated that an extremely high value of alpha, above 0.90, for instance, indicates redundancy in items. Thusly, the value above is considered to be satisfactory.

RESULTS AND DISCUSSION

The research question of the study was: Are there any statistically significant differences (at α = 0.05) in the participants' speaking skills, which may be attributed to the teaching method (Multiple Intelligences vs. Conventional)?

In order to answer the first question of the study, the researcher run ANCOVA test, to implement ANCOVA test, multiple assumptions need to be checked including linearity. In fact, there is a linear relationship between the outcome (post test results) and the covariate (pre-test results). The researcher conducted a test of normality and the table below shows significant value of normality in Kolmogorov-Smirnov normality test.

Table 3. Normality Test for the Pre and Post Test

	Experimental*		Control*	
	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
Grammar pre	.173	.120	.163	.172
Vocabulary pre	.178	.095	.179	.093
Pronunciation pre	.173	.120	.171	.126
speaking skills (pre)	.162	.177	.162	.182

Grammar post	.170	.134	.170	.130
Vocabulary post	.165	.156	.168	.142
Pronunciation post	.170	.134	.171	.127
speaking skills (post)	.165	.156	.169	.139

* Test distribution is Normal.

A final assumption which needs to be checked before conducting ANCOVA was the assumption of homogeneity of variance. Hartley F max equation was used to calculate the value of homogeneity (Wallnau and Gravetter, 2008). The researcher calculated the variances of the means of both groups' results in the pre-posttest through the following equation: F max = Larger Variance/Smaller Variance. If the resulting ratio is close to 1, then the data shows homogeneity of variance (Glenn, 2016). Based on the variance in the table below, the ratio is 1.22, which is close to 1, hence the assumption of homogeneity has not been violated.

Table 4. Homogeneity Test

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre	40	7	16	11.96	2.302	5.300
Post	40	11	20	17.10	2.085	4.349

As the assumptions of ANCOVA were met, the researcher conducted the test and concluded the following results. Means and standard deviations and estimated marginal means of participants' speaking skills, which may be attributed to the teaching method (Multiple Intelligences vs. Conventional) are shown in table below.

Table 5. Means, standard deviations and estimated marginal means of participants' speaking skills, which may be attributed to the teaching method (Multiple Intelligences vs. Conventional).

Method	Mean	Std. Deviation	Estimated Marginal Means	N
Experimental (Multiple Intelligences)	18.40	1.353	18.340	20
Control (conventional)	15.80	1.881	15.860	20
Total	17.10	2.085		40

Table 5 shows a slight variance in the means of the post speaking skills test scores attributed to the teaching method (Multiple Intelligences) vs. (the conventional), to find out whether there are statistically significant differences in these means, one-way ANCOVA was conducted and the results are shown in table 6.

Table 6. One-way ANOCVA results of post speaking skills test scores related to teaching tool.

Source	Sum of Squares	df	Mean Square	F	Sig.
Pre-test (covariate)	6.447	1	6.447	2.496	.123
Method	60.122	1	60.122	23.280	.000
Error	95.553	37	2.583		
Corrected Total	169.600	39			

Table 6 shows there are statistically significant differences at (α = 0.05) in the post speaking skills test scores due to the teaching method in favour of Experimental group (Multiple Intelligences).

Means and standard deviations and estimated marginal means of (sub scales) in speaking that are attributed to the teaching method (Multiple Intelligences vs. the conventional) are shown in table below.

Table 7. Means, standard deviations and estimated marginal means of (subscales) attributed to Teaching Method (Multiple Intelligences vs. the conventional).

	GROUP	Mean	Std. Deviation	Estimated Marginal Means	N
Grammar post	Experimental	8.70	1.105	8.740	20
	Control	7.88	1.122	7.835	20
	Total	8.29	1.176	8.288	40
Vocabulary post	Experimental	4.70	.410	4.662	20
	Control	3.45	.605	3.488	20
	Total	4.08	.813	4.075	40
Pronunciation post	Experimental	5.00	.000	4.943	20
	Control	4.47	.850	4.532	20
	Total	4.74	.650	4.738	40

Table 7 shows a slight variance in the means of (subskills) attributed to teaching method (Multiple Intelligences vs. the conventional), to find out whether there are statistically significant differences in these means, one-way MANCOVA was conducted and the results are shown in tables 8 .

Table 8. One-way MANOCVA results of (sub scales) scores related to Teaching Method

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PRE-Grammar (COVARIATE)	Grammar post	8.098	1	8.098	7.497	.010
PRE-Vocabulary (COVARIATE)	Vocabulary post	.547	1	.547	2.133	.153
PRE-Pronunciation (COVARIATE)	Pronunciation post	.034	1	.034	.105	.747
GROUP	Grammar post	7.680	1	7.680	7.110	.012
Hotelling's Trace=	Vocabulary post	12.938	1	12.938	50.419	.000
1.542	Pronunciation post	1.582	1	1.582	4.939	.033
P=.000						
Error	Grammar post	37.806	35	1.080		
	Vocabulary post	8.981	35	.257		
	Pronunciation post	11.208	35	.320		
Corrected Total	Grammar post	53.944	39			
	Vocabulary post	25.775	39			
	Pronunciation post	16.494	39			

Table 8 shows there are statistically significant differences at (α= 0.05) in the subskills (Grammar, Vocabulary, Pronunciation) due to teaching tool in favour of Experimental group (Multiple Intelligences).

The question of the study investigates students' attitudes towards learning through multiple intelligences, for the sake of this purpose the researcher included a questionnaire of 11 items administered to the experimental group. The researcher determined the rank and the level for each item in the instrument. As indicated by the analysis of the questionnaire, ten items out of eleven in the questionnaire ranked as High; and only one item "In multiple intelligences, I ask and answer authentic questions" ranked Moderate. The item "In multiple intelligences, I express my opinion freely" got the first rank; most students stressed this point as they feel that multiple intelligences allowed them to speak and express themselves freely without being concerned about giving accurate sentences, they were simply able to share their opinions and speak them out freely. This indicates that the well-planned and clear material made learning more fun and enjoyable. The choice of learning activities was effective and adequate. The fact that students were able to connect with themselves and others granted them the opportunity to express their thoughts and opinions and speak confidently. In general, the

results showed that the students' attitudes were positive as the Program was reported to have a noticeable effect on improving their speaking skills.

CONCLUSION AND SUGGESTION

The results of the questionnaire revealed that the majority of the students appreciated the implementation of the Multiple Intelligences instructional program with an agreement with the statements that aimed at investigating their attitudes towards the effect of teaching using Multiple Intelligences in improving their speaking skills. Teachers should encourage their students to change their passive roles and attitudes into active ones and work collaboratively by practicing the speaking activities which are based on the principles and rules of implementing the multiple intelligences in their classes.

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