

## **INTELLIGENCE DIFFERENCES AND MEDIATION FACTORS: A SEQUENTIAL EXPLANATORY STUDY OF IMPROVEMENT OF EFL UNDERGRADUATE STUDENTS' READING COMPREHENSION SKILLS**

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### **Abstract**

In this quasi-experimental study, quantitative findings were examined in terms of how grouping students based on their dominant type of Multiple intelligence and providing different Multiple Intelligence activities that correspond to their intelligence type effect the development of their reading skills. A control group and an experimental group were designed to compare the effectiveness of the Multiple Intelligence teaching activities and tasks on the development of reading skills. A questionnaire was administrated to the 95 undergraduate EFL junior students to identify their dominant type of intelligence at a private university in Iraq. Based on their dominant type of intelligence, different learning centers were established with different activities for each one. After a 16-week experiment period the effects of Multiple Intelligence teaching activities were measured by using pretest, progress tests, achievement exams and a posttest. The results of this study indicated that the experimental group has significantly developed their reading comprehension skills in terms of understanding and visualizing the meaning in the mind. In addition, there were considerable association between Multiple Intelligence teaching activities and students' motivation to the classes that reinforces classroom management as well.

**Keywords:** Improvement, motivation, multiple Intelligence, reading comprehension, sequential explanatory, Undergraduate EFL students

### **INTRODUCTION**

L2 Reading has always been recognized as one of the most substantial and difficult skills for achieving the Foreign Language Learning (Ediger, 2006). Improving reading skill plays an important role to enable the students to use English Language effectively in academic fields and in daily life situations (Anderson, 2008). Many researchers figured out that good L2 readers are more successful and remarkable in terms of achieving their future educational and professional careers (Weaver 1998; Anderson 2003; Koda 2005). According to Carrell & Eisterhold, (2006) reading should be taught precisely so that students show a positive feeling which results a positive effect on their foreign language learning and academic skills. Yet, the related research studies have investigated the factors influencing the successful reading and they found that reading strategies &

activities, motivational factors, and background information play important roles on the development of reading skill (Baker & Boonkit, 2004; E. Block, 2006; E. L. Block, 2006; S. Brown, 2002). A good L2 reader is considered as better language learning strategy users in terms of using the learning techniques more flexible and awareness (Karolidis, 1992; Pinnell, 1989). Therefore, Dörnyei, (2005) claimed that learning strategies should help individuals to help their own language learning and academic improvement. In addition to the importance of the language learning strategies for the improvement, learner diversity should be accounted for developing the reading skills as well (Dörnyei 2014).

It has been well documented that exploring the various types of intelligence and learning styles of the learners' and teaching them accordingly is required as one

of the most important contributors of successful teaching both L1 and L2 learners in order to learn to read, and comprehend texts. (Field, 2006a; Grabe, 2006; Koda & Zehler, 2008; Tankersley, 2009) Many researchers (Grabe 2006; Koda 2005; Ediger 2006; Field 2006a; Baker & Boonkit, 2004) have also suggested that using types of comprehension practices and reading strategies, and classification of these strategies are quintessence in order to gain successful comprehension, along with greater self-confidence. The cognitive relation between reading and multiple intelligence concept led the researchers to focus on the fact that comprehending the reading texts requires different tasks in order for students to become competent readers in English Language learning. Christison, (1996) mentions that multiple intelligence learning and teaching activities and tasks provide more effective opportunities for different learners in respect to their dominant intelligence. Thus, many of the multiple intelligence researchers suggest that teachers should use multiple intelligence tasks and activities to master the L2, especially reading skills (Thomas Armstrong, 2003; Chen, 2005; Christison, 1995; Cluck & Hess, n.d.; Cristison, 2005; Day, 2002). In their qualitative research conducted among the undergraduate university students, Hajhashemi et al. (2013) indicated that there were close relationships between reading skills and the concept of Multiple Intelligences in Iranian environment.

During the mid 20<sup>th</sup> century, with the development of the industry and humanism, the conservative teacher-centered education paradigm shifted to individual based education. Educators started to consider the learners as a whole concept with their affective domains such as feelings, emotions, anxiety and others that may affect the learning process. This development opened doors to new ELT approaches during the 70's (Larsen-Freeman, 2000). In parallel to these developments in ELT, new techniques and methods have started to emerge in reading skill as well. Those strategy trainings vary

from limiting the design, through to being able to measure the effects of reading on L2 learners. Although, the results and outcomes of the reading differs according to many components of reading, it can be safely claimed that certain kinds of practices and teaching/learning strategies, as far as learning and motivational backgrounds of the learners, are intuitively plausible and help the learners to master the reading skills more effectively (Baker & Boonkit, 2004; E. L. Block, 2006; Brantmeier, 2002; S. Brown, 2002). Besides, Gardner (Gardner, 2006b, 2006a) claimed that different educational methods ought to be generated for different types of intelligences so that they could engage the education process. Thus, all these different learning strategies, motivational background, learner diversity and strategic reading require the application of multiple intelligence learning strategies and activities to increase comprehending reading in English language (Bell, Adam, Bell 2003; Weber 2003; Reidel, Tomaszewski, and Weaver 2003; Arnold and Fonseca 2004; Bakić-Mirić 2010).

## **LITERATURE REVIEW**

Gardner (1983) challenged the narrowly defined intelligence, which was measured through linguistic and logical-mathematical methods only. In his study Gardner, (Gardner 1983, 1999; 2006b, 1991, 2007) claimed that we all have different compounds of intelligence, which work together as a whole and therefore result in individuals having different intelligence capabilities, which could not be measured in a one subsided way, called as 'Multiple intelligence (MI). He stated that intelligence is 'the ability to solve problems or fashion products that are valued in in one or more cultural settings,' (Gardner, 1993. p.87). These intelligences may define human species (Armstrong 2009). Gardner's (1983) Multiple Intelligence theory is also considered as potentially a kind of teaching approaches as well. He (1991) also mentioned that our schools focused on linguistics and logical mathematical intelligences and overlooked other

intelligences, which required attention similarly. Moreover, Gardner (1999) had identified other intelligence capacities and broadened the restrictive measure which was being used in schools. He added that the MI could be assessed through Verbal- linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalist intelligence (Gardner 1993). Since the spiritual intelligence does not meet the criteria of an intelligence and needs more empirical evidence, Gardner consider it as morality rather than an intelligence.

In this respect, the theoretical background of this study was grounded on the idea of Armstrong's (2009) view of using a broad range of multiple intelligence teaching strategies effectively in the classroom setting to enable all individual differences to develop their language ability, specifically reading skills and Gardner's (1983) Multiple Intelligence theory, which offers a pluralistic view of intelligence rather than a unitary concept of intelligence.

### **Association Between Reading Strategies & Activities and MI Research in EFL**

Numerous studies have been carried out to determine the probable variations how learners can comprehend a text successfully. They also checked out different types of reading activities which helped them to be more active (Anderson 2003; Baker and Boonkit 2004; Haley 2009; Carrel and Grabe 2002). The researchers also concluded that successful readers often use metacognitive and cognitive strategies that approach the text as a problem ((Fleetham, 2006). Also, Moreillon (2007) and Smigiel et al. (2004) stated that with the emerge of the multiple intelligence theory, discerning a relationship between intelligence and L2 learning became easier. The findings of these research show that there is a close relation between intelligence differences and teaching activities and strategies.

Since the teacher-centered education shifted its place to individualized learning in the education settings and 'one size does not

fit all', many researchers and educators have tried to find out the role of multiple intelligence theory, which suggests different types of activities for each type of intelligences, in language learning with the four skills, reading, writing, listening and speaking. Although many studies have been carried out in support of the multiple intelligence theory for L2 English learners, Sewell (2003) claimed that there hasn't been enough information regarding the successes of L2 learners and their use of learning strategies and activities. In addition, there has never been a study conducted in Iraq on the association between multiple intelligence teaching strategies and EFL reading. The most relevant investigation was carried out in Turkey (Iyitoglu & Aydin, 2015; Saricaoğlu & Arikan, 2009) and in Iran as the Middle East countries (Hajhashemi et al., 2013)

Some Multiple Intelligence and EFL related researches focused on to find out the relationships between MI and learning styles, or comprehensive performance of EFL and its sub skills. For example, a considerable number of researches have been administered in Iran to figure out the language learning performance and learning strategies (Abdulkader, Gundogdu, and Eissa 2009; Rahimi, Mirzaei, and Heidari 2012; Razmjoo 2008). The researchers found out that linguistics, interpersonal and logical mathematical intelligences had positive relationship with the learning strategies. On contrary to those researches, who targeted to find out the relationships between MI and reading strategies, the researcher in this study focused on to improve the reading skills of whole students who are different from each other in terms of dominant intelligence. Richards and Rodgers (2001) claimed that language has a broader spectrum that covers all views of communication, rather than a 'linguistic' outlook. The theory of Multiple Intelligence instructional perspective suggests that language learning can be enriched by conducting a plenty of different tasks which meet the needs of diverse individuals.

Also, Armstrong (2009) asserted that applying the Multiple Intelligence teaching activities in language learning provides students a broader chance of achievement in their preferred way. Moreover, using different types of teaching activities help students to sharpen their other intelligences. Nolen (2003) supported the idea of integrating the concept of multiple intelligence and using certain types of teaching strategies such as direct and indirect (Oxford, 1990) top-down and bottom up (Brantmeier, 2002) pre-reading, while reading and post-reading strategies (E. Block, 2006; E. L. Block, 2006) related to each dominant intelligence to improve the reading comprehension skills of diverse learners. Consequently, Armstrong (2009) claimed that multiple intelligence teaching activities and approaches for L2 learners opened doors whether in reading or writing for improvement.

From this point of view, this quasi-experimental investigation is different from the existing studies. Many of the previous research investigations focused on the relationships between the dominant intelligence types and reading achievements (Abdallah, 2008; Akbari & Hosseini, 2008; Cristison, 2005; Hajhashemi, Akef, & Anderson, 2012; Hajhashemi et al., 2013; Sheorey & Mokhtari, 2002; Tahiri & Yamini, 2010; Visser, Ashton, & Vernon, 2006). Some of the studies tried to find out the association between reading competency and reading strategies (Baker and Boonkit 2004; Bell, Adam, Bell 2003; Berardo 2006; E. Block 2006; E. L. Block 2006; Brantmeier 2002; H. D. Brown, n.d.; Chen 2005; Cluck and Hess, n.d.; Manday Germer, Jeniffer Getz, Terry Pochert 2000; Moran, Kornhaber, and Gardner 2006n). Some other studies investigated the learning strategies and multiple intelligence. (Hajhashemi et al., 2012, 2013). Yet, there is still a lack in the literature in terms of using different types of teaching tasks and activities to grab the attention of the relevant intelligences. Therefore, this study focuses on the association between using certain types of

teaching activities that are consistent with their intelligence type among the undergraduate junior students who are highly demotivated for learning a foreign language.

The aim of this unique quasi-experiment study, which lasted 16 weeks, to reveal whether teaching reading to different intelligence types with compatible activities have a positive effect on developing their reading comprehension. Following research question are compatible with the main purpose of this study.

1. Do different reading activities and strategies significantly affect the undergraduate EFL learner's performance in reading comprehension skills?
2. What types of reading activities can act as the best practices of reading comprehension for relevant intelligences?
3. Which MI profiles showed a rapid progress and were successful in reading skill at the end of the experiment among the undergraduate EFL learners?

## **METHODOLOGY**

### **Study Design**

In this study a quantitative quasi-experiment investigation was designed to study how Multiple Intelligence based reading activities engage the undergraduate students to the reading classes and how those activities develop the understanding of reading comprehension in an EFL undergraduate setting. 95 EFL junior undergraduate students participated in this experiment and they were randomly assigned to the treatment or control group. 48 participants were assigned to the treatment group; the researcher provided a 16-week reading program that included specially designed Multiple Intelligence teaching activities in a specially designed environment in experimental group. 47 students were in the control group and traditional teaching methods were provided to the individuals in the control group during the study. The

researcher assessed the participants' reading comprehension level by applying an Oxford online proficiency test at the beginning of the study and after the 16-week program the same online test was conducted as post-test to see the development of the participants in reading classes. Also, during the 16-week program fourteen-progress tests and three achievement tests were administrated to see the participants' progress in reading comprehension. At the end of the study, the researcher statistically compared the scores for the two groups, and found that the treatment group's scores for reading comprehension improved more than those from the control group.

### **Participants**

In this mixed method study, 95 undergraduate EFL junior students, who were ranged in age from 19 to 23, involved in this study at a private university in Iraq. The researcher needed to use existing A2 CEFR level classes as the experimental group and control group in order to figure out the reliability of the study and to compare the results in two the same level classes. The control group was consisted of 48 students of which 25 were female and 23 were male. The control group was consisted of 47 students. Of those 47 participants, 24 were female and 23 were male learners. Since the group members cannot be artificially created for the experiment, the researcher did not randomly assign the individuals in the groups. However, the groups were randomly assigned as treatment and control group.

### **Procedure**

After establishing the treatment and control groups a Multiple Intelligence survey and checklist theorized by Armstrong (2009) was translated from English to Kurdish, Turkish and Arabic language by a bilingual lecturer of translations. Since it was a translation, a back translation was done and piloted to the 50 university students in different levels to test the consistency of the language and level of internal consistency reliability. Based on the feedback from the

pilot study, the questionnaire tailored again in terms of the language consistency and administrated another 50 university students who were not included in the study.

Later on, eight different learning centers, which each of represents different intelligence domain, were established in the classroom. In each learning center different types of activities and strategies, which were consistent with the dominant intelligence types, were applied to find out the effectiveness of those activities in developing the reading comprehension. Since all the learners are different from each other, providing many different types of activities could possibly gained those different learners' attention. At the beginning of the study each group members stayed and studied in their dominant intelligence group with center-related activities. Later on, they moved the other groups in a clockwise manner and within 8 weeks each group visited all the centers with different learning activities. Thus, each student obtained experiences in all different learning centers to sharpen their all intelligences and to improve their reading skills. For the control group, the students were taught in a traditional way without providing not as many different activities as provided for the experimental group. They weren't divided into the groups neither.

### **Instrumentation**

The MI inventory checklist theorized by Armstrong (2209) used in this study to determine the students' dominant intelligence for grouping them accordingly. Before starting the experiment an Oxford Online proficiency test was administrated to the students both in experimental and control groups as a pre-test to find out their level of reading comprehension. Also, it was aimed to figure out the types of reading texts, which a student will find readable. During the experiment, a progress test was held every week to understand whether a student has learnt what was aimed before the new chapters started. By holding progress tests every week, it was aimed to improve learners

reading speed and to develop guessing the unknown words from the context. On the other hand, progress tests were relatively informal and short in length and time. On such kinds of tests, the students were getting high scores and those high scores were more motivating and encouraging them in the progress of reading comprehension. In addition to the progress tests a more formal achievement tests were done monthly to the all participants. Those achievement tests were used both formatively and summative fashion. After each achievement tests, based on the results, the researcher adapted his teaching pace accordingly and also changed some reading texts as well. The formative use of those achievement tests provided opportunities to tailor the courses with different types of Multiple Intelligence teaching activities. On the other hand, these tests were mainly used in a summative way, that is, to deliver to contribute to judgments on students, on the basis of achievement test results, whether the learners have learnt or haven't learnt.

In both control and experimental groups, "PASSWORD 1" a reading comprehension

course book published by Longman Press was used as a course material and "FACTS & FIGURES" written by Patricia Ackert was used as a self-study document.

### Data analysis

Gardner (1983) declared that all individuals have all types of intelligences with different ration. According to the MI survey results, in Iraqi Kurdistan setting, Intrapersonal intelligence was the most prominent one among the female students. Male students were also intrapersonally dominant but not as much as the females. The distribution of multiple intelligence of the experimental group participants is as follows:

As it is seen in Table 3, Intrapersonal intelligence (29.2%) and Logical Mathematical intelligence (18.8%) were the most two dominant intelligences. Naturalistic and Interpersonal intelligence were the least dominant. Every individual has Intrapersonal Intelligence at a certain point and it is not surprising because the Middle East societies are culturally not very sociable and they are introverted learners

Table 1. Frequencies of Dominant intelligence of the experimental group

		Frequency	Percent	Valid Percent	Cum Percent
Valid	Verbal	8	16.7	16.7	16.7
	Logical	9	18.8	18.8	35.4
	Visual	6	12.5	12.5	47.9
	Musical	3	6.3	6.3	54.2
	Kinesthetic	5	10.4	10.4	64.6
	Interpersonal	2	4.2	4.2	68.8
	Intrapersonal	14	29.2	29.2	97.9
	Naturalistic	1	2.1	2.1	100.0
	Total	48	100.0	100.0	

During the experiment in order to get a valid and reliable result in terms of how the students developed their reading comprehension, more than one examination such as one pre-test, fourteen progress tests, three achievement examinations and a post-test were administrated to the treatment and control groups. In addition, those examinations enabled the researcher how MI

teaching activities effected the students' progress in reading courses. Based on the aim of this research, and for each of the research questions respectively the results of the examinations in these two groups were analyzed in SPSS 23.0. The results of the statistics are presented in the tables accordingly. The first table, a parametric independent Sample T-Test, was presented to

determine whether there is a statistical evidence that the means of all exam types both in control and treatment group are significantly different each other.

1. Do different reading activities and strategies significantly affect the undergraduate EFL learner's performance in reading comprehension skills

Table 2. Independent Samples Test between experimental and control group

		Levene's Test for Equality of Variances								
		t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
pretest	Equal variances assumed	.035	.852	-.098	93	.922	-.010	.104	-.216	.196
	Equal variances not assumed			-.098	92.954	.922	-.010	.104	-.216	.196
progress	Equal variances assumed	3.634	.060	-.697	93	.488	2.69770	3.87299	10.38868	4.99328
	Equal variances not assumed			-.698	90.833	.487	2.69770	3.86577	10.37676	4.98137
achievement	Equal variances assumed	.859	.356	4.289	93	.000	14.74113	3.43721	7.91552	21.56675
	Equal variances not assumed			4.294	92.290	.000	14.74113	3.43323	7.92273	21.55954
posttest	Equal variances assumed	4.555	.035	2.928	93	.000	9.53812	3.25746	3.06945	16.00679
	Equal variances not assumed			2.936	88.713	.000	9.53812	3.24914	3.08187	15.99437
posttest	Equal variances assumed	.212	.646	5.688	93	.000	18.46764	3.24674	12.0205	24.91503

Equal	5.69	92.	.00	18.46	3.245	12.0	24.
variances not assumed	1	931	0	764	07	235	911
						1	77

As shown in the table 2, the distribution of gender is not very different in those groups ( $t = .852$  and  $p = .922$  which is bigger than  $p$  value  $= .005$ ). Thus, it can be concluded that in terms of gender, the participants were distributed equally. Moreover, it is worth noting that at the beginning of the study, the reading comprehension level of the two groups was nearly the same according to the proficiency test. The mean scores of the pretest in these two groups did not show a significant difference ( $t = -.697$  and  $p = .488$  that is bigger than the  $p < 0.005$ ). This result gives an important information about those two groups because when these two groups started the experiment at the beginning of the academic year based on their pretest scores they were nearly at the same level and the differences at the end of the experiment would give us an idea about how Multiple Intelligence teaching activities affected their understanding reading. In the progress of the experiment, fourteen progress tests held to measure the students' development in reading comprehension. The mean of those progress test scores showed that experimental group significantly increased their grades than did control group ( $t = 4.289$  and  $p = .000$  which rejects the null hypothesis) Additionally, the means of the achievement tests of the groups were compared to explore the differences in terms of scores between these participants. As a result, it seems that there was a meaningful difference between those groups but not as significant as it happened in the progress tests ( $t = 2.928$  and  $p = .004$ ). According to this result, the control group also increased their scores abut not as much as the experiment

group. Regarding the posttest, which is the final examination and a clear data tool for the researcher to come to a conclusion whether the MI teaching activities worked as hypothesized, the experimental group did a significant difference than the control group. There was a huge improvement in experimental group scores compared to the control one ( $t = 5.688$  and  $p = .000$ ). Based on this statistical data, in regards to the first research question of this study, it can be inferred that there was a significant difference between treatment group and control group in terms of development in reading comprehension based on the Multiple Intelligence teaching strategies and activities. Applying different reading activities and strategies corresponding to the relevant dominant intelligence can significantly affect the undergraduate EFL learner's performance positively in EFL reading classes.

2. What types of reading activities can act as the best practices of reading comprehension for relevant intelligences?

In order to retest the validity and reliability of the results gained from the independent sample t test, and to find an answer for the second research question, a different statistical technique as called Analysis of variance (ANOVA) was used. By using Anova, it was also aimed to check the influence of multiple intelligence teaching activities by means of the control group and experimental group.

Table 3. One-way ANOVA test

		Sum of Squares	df	Mean Square	F	Sig.
Pretest	Between Groups	172.823	1	172.823	.485	.488
	Within Groups	33127.661	94	356.211		

	Total	33300.484	95			
Progress	Between Groups	5160.328	1	5160.328	18.393	.000
	Within Groups	26092.156	94	280.561		
	Total	31252.484	95			
Achievement	Between Groups	2160.435	1	2160.435	8.574	.004
	Within Groups	23434.555	94	251.984		
	Total	25594.989	95			
Posttest	Between Groups	8099.130	1	8099.130	32.354	.000
	Within Groups	23280.596	94	250.329		
	Total	31379.726	95			

As it is seen in the one-way ANOVA statistical table, in the mean of pretest of reading examination there was not a significant difference between the groups ( $F=.485$  and  $p=.488$  which is bigger than  $p=.05$ ) this is important to know that there is not a significant difference between these two groups. Starting at the same Reading comprehension level would provide a reliable result at the end of the experiment in terms of testing the hypothesis. In contrast to the pretest, the students in the experimental group increased their grades more than the control group. In the mean of the progress test the  $F=18.393$  and  $p=.000$  which shows that there is a huge difference. In addition, the experimental group students also demonstrated a success in the achievement tests however, it was not as much as in the progress test. While the  $p=.000$  in the progress test, in the achievement test  $p=.004$  and  $F= 8.574$

The ANOVA test results suggest that there is a significant difference between the

control group and experimental group in terms of the scores that the students received in different examinations. As a result, different reading activities, mentioned in the methodology part, acted as the best predictor of reading comprehension for congruent intelligences among the successful EFL readers. Pearson product moment correlations were analyzed to find out the relations between Multiple Intelligence teaching activities in the experimental group and the exam scores. Table 6 shows a significant correlation between Multiple intelligence activities used in the experimental group and the learner’s success in reading skill in EFL setting. When the  $p<0.0$ , then the correlation between the variables are significantly positive and the correlation between pretest, progress test, achievement examination and posttest is  $p<0.00$  which means the activities in the experimental class developed the learners reading skill.

Table 4. different activities congruent with different intelligences

Intelligence/ Activities	Verbal Linguistics	Logical Mathematical	Spatial	Bodily/ Kinesthetic	Musical	Interpersonal	Intrapersonal	Natural
Storytelling	x		x			x		
Brainstorming	x	x				x		
Tape recording	x	x				x		

Journal writing	x	x				x
Publishing	x	x				x
Classification and categorization	x	x				x
Socratic questioning	x	x			x	
Heuristics	x	x				x
Jigsaw	x	x			x	x
Visualizing	x		x			
Color cues	x		x			
Graphic symbols	x	x	x			
Idea sketching	x		x			
Role play	x			x		x
Miming	x			x		
Moving while reading	x			x		
Rhythms, songs, raps and chants	x			x	x	
Musical background	x			x	x	
Sharing the content	x				x	x
Projects	x			x		x
One-time reflection	x					x
Personal connections	x					x
Choice time	x					x

3. Which MI profiles showed a rapid progress and were successful in reading skill at the end of the experiment among the undergraduate EFL learners?

group and experimental group in terms of their different types of exam scores. When the table is examined carefully, it would be recognized that all the intelligent type in the experimental group increased their exam scores from the very beginning of the experiment.

To answer the last question of this study, a comparison was made between the control

Table 5. comparisons of variables in control and experimental group

Intelligence type	N	Mean	Gen der	pretest	progres s	achieve ment	posttest
Verbal	8	Mean	1.50	65.2500	80.1250	76.1250	80.1250
Verbalc	8	Mean	1.50	64.3750	55.6250	58.3750	59.1250
Logical	9	Mean	2.00	56.1111	72.0000	66.1111	73.7778
Logicalc	11	Mean	1.55	68.8182	65.0909	69.3636	60.6364
Visual	6	Mean	1.50	64.5000	85.1667	83.8333	87.3333
Visualc	7	Mean	1.57	60.5714	62.1429	54.1429	55.2857
Musical	3	Mean	1.33	39.3333	56.3333	51.6667	65.0000
Musicalc	1	Mean	1.00	74.0000	92.0000	87.0000	90.0000
Kinesthetic	5	Mean	1.00	66.0000	78.8000	73.6000	77.8000
Kinestheticc	5	Mean	1.40	66.8000	62.8000	65.4000	59.2000

Interpersonal	2	Mean	1.50	69.0000	87.0000	89.0000	90.0000
Intrapersonal	14	Mean	1.50	68.5000	69.0714	65.7143	65.2143
Intrapersonal	14	Mean	1.29	71.9286	85.3571	76.2857	84.1429
Naturalistic	1	Mean	2.00	55.0000	68.0000	62.0000	70.0000
Naturalistic	1	Mean	1.00	62.0000	59.0000	73.0000	67.0000
Total		Mean	1.48	65.1263	71.8737	68.9895	70.8842
		N	95	95	95	95	95
		Std.	.502	18.82181	18.2338	16.5011	18.2709
		Devia tion			5	2	3

The results above indicate that there was a quite significant positive relationship between the successful Kurdish L2 readers' use of Multiple intelligence reading activities in undergraduate EFL reading classes. Among those different dominant intelligence, Visual intelligence (m=87.33), Musial Intelligence (m=65) and Interpersonal intelligence (m=90) demonstrated a very significant progress in improving the reading skills. It was thought that verbal-linguistic intelligence (m=80.125), would be one of the most performed intelligence yet, it hasn't showed a very rapid progress. Logical-Mathematical (m=73.77), Kinesthetic (m=77.8), intrapersonal(m=84.14) and Naturalistic (m=70) intelligences demonstrated a meaningful improvement in reading achievement.

## DISCUSSION

Based on the statistical analysis, the experimental group developed their reading skills much more than the controlling group. One of the reasons of that development is that, the experimental group was provided many different types of activities congruent not only with their dominant intelligences, but also with the other intelligences as well in an organized way. All those activities engaged and motivated the students to the reading classes. The learners felt more relaxed and more enjoyable during the class hours and it helped them to internalize and visualize the reading in their minds. Studying at the different learning centers promoted the students to complete their tasks and assignments as they wished, which means that there was no pressure but flexibility in

the centers.

All these activities and flexibility in the experimental group fostered the learners a self-confidence, more motivation and an interest towards reading comprehension. This motivation and enthusiasm initiated an achievement and development of reading comprehension in the treatment group. Consequently, with the help of the multiple intelligence teaching activities, participants in the experimental group developed their reading skills in terms of comprehending and visualizing the text in their minds, more than the students in the control group.

Regarding to the first research question of this study; the effect of using different activities relevant to the dominant intelligence are more certain (Chamot, 2004; Thomas Armstrong, 2003). Consistent with many research studies, improving not only reading skills and getting high scores in reading comprehension, also in EFL learning is correlated to meeting the students' needs by providing attractive activities. (Chamot, 2004; Block, 2006; Sheorey & Mokhtari, 2002). Such kinds of learners and readers are meta cognitively strong and aware of self-control which they use as a monitoring and enhancing comprehension tool (Sheorey & Mokhtari, 2002). Besides, Intrapersonal, interpersonally and visually dominant intelligence were found out to be better L2 readers than the other intelligence types.

As opposed to Razmjoo, (2008) who proposed that none of the intelligences are effective in language learning as a whole, the results of this study show similarity with the conclusions of Akbari & Hosseini, (2008) and Hajhashemi et al.,( 2013) who figured

out that the verbal linguistic intelligence is the key processor of reading skills. The results in this study is coinciding with some other studies which follow similar classification of language tasks relevant to certain intelligence types (Arnold & Fonseca, 2004; Fenner, Mansour, & Sydor, 2010; Lazarus, 2000; Moreillon, 2007; Rahimi et al., 2012).

In addition, the current study figured out that there is a strong association between language learning activities, which are congruent with the certain types of intelligences and developing reading skills. For example, it was observed that the students who were asked to write the lyrics of a song improved their linguistics and musical intelligence together. In the role play activities, the learners demonstrated their linguistics, intrapersonal and interpersonal skills all together. Also, they showed their bodily-kinesthetic and interpersonal abilities while playing miming and imitating. All those multiple intelligence teaching activities led the teacher to plan different ways of engaging and improving the reading skills in the experimental group. These activities also provide opportunities for the learners to improve their reading skills as they preferred and those activities also helped the participants to sharpen their other intelligences.

Musically inclined students focused the reading texts more than the others. It is because, while they were listening to music during the reading classes, the rhythm of the music relaxed and focused the learners to the inner side. It was also observed that music helped the musical intelligence to withdraw the barriers in front of the reading texts.

The visual spatial intelligence learners were more successful in terms of visualizing the reading texts in their minds. This visualizing improved their cognitive process of reading comprehension in their minds. It was easy for them to transform the reading texts in to the mental imagery than that images to mental activity. Thus, the ability to produce graphics in their minds helped them to understand the reading comprehension

effectively.

The logical-mathematical Intelligence learners were keen on asking many questions before, during and after the reading texts to find out the ways of understanding a reading text. They were also looking for the details and logical order of the texts, tasks and activities.

The Kinesthetically dominant students were enthusiastic for using role-plays, drama, games, project work, and shadow puppets. These activities attracted the kinesthetic students directly in the reading classes.

The Interpersonal learners were good at to understand others and they were very sensitive to other people's feelings, humors, motives, and behaviors (Cristison, 2005). Besides, the findings of this research were coinciding with Lazear's (1999) proposal that interpersonal intelligence can work collaboratively with other people. Cooperating with different learners is one of the most critical key points in language learning. As Arnold & Fonseca, (2004) pointed out interacting with different people created a more positive interdependence among the students and this helped them to comprehend the reading tasks deeply.

Learners who had Interpersonal Intelligence developed different verbal negotiation strategies to persuade others or to understand the other's attitudes. Such kinds of activities supported females specifically to be more social and released their shyness. These interpersonal activities were very useful in Iraqi Kurdistan setting where the traditional education has still been continuing and it also fostered the development of social skills which is necessary to build up an interaction with different individuals. (Campbell, 1997). The Iraqi Kurdistan is still in the authoritarian traditional custom and majority of the learners were Interpersonally dominant students. These types of students demonstrated the same behaviors as Fenner et al., (2010) stated in their research. These learners were more aware of their metacognitive knowledge, about themselves and the bridge between the metacognitive knowledge and the procedures or strategies

to be used for certain tasks. This awareness of capacities and limitations helped those students to understand their learning styles helped them to process reading texts. (Christison,1998)

The Verbal- Linguistic Intelligence students used the mastery of phonology, syntax, semantics and pragmatics in the reading texts very well. Naturalist Intelligence learners created a semantic map to develop their lexical knowledge. This semantic map helped those learners to describe the scene in the reading texts with the natural images in their minds.

As a result, in L2 reading classes it is obvious that there are many motivational teaching activities related to different types of intelligences. These different types of multiple intelligence activities engage the diverse learners to the sustainable learning (Schumann, 1999). It is impossible to address all the multiple intelligence profiles in every lesson, but providing a neutral approach would open different windows on the same concept for different learners. These learning activities and strategies promote stimulus appraisals and motivations that cope with different potentials.

The multiple intelligence teaching activities and strategies allowed the students to communicate with each other effectively and to improve their less strong intelligences (Moran et al., 2006).

## **CONCLUSION AND RECOMMENDATION**

This study was conducted to find out the correlations between multiple intelligence teaching activities and students' reading performance and accomplishment of L2 reading skill. Besides, types of reading activities and teaching strategies which acted as the best predictor of reading comprehension for congruent intelligences among the successful undergraduate EFL readers were investigated. Another aim of this study was to figure out the relationship between reading activities and learner's dominant intelligence in the undergraduate EFL setting. The researcher also focused on

the MI profiles which showed a rapid progress in reading skill at the end of the experiment among the undergraduate EFL learners.

The results of this quasi experimental study showed that there has been a strong association between not only the dominant intelligence but also with the other intelligences and teaching activities congruent with different intelligences. For example, while storytelling was very effective for the verbal-linguistic intelligence at the peak point, it also helped the intrapersonal students to create a visual map inside. Apart from the linguistic intelligence, brainstorming was very effective for the visual students because they improved their dominant intelligence by visualizing the reading and brain storming in their minds.

Klapwijk (2016) has stated that effective teachers who wants to develop a sustainable change in their instructional methods and principals, they have to find out new implementations to trigger the student's attention to engage them all to the lessons. Therefore, the L2 reading teachers should develop their reading materials and activities consistent with the relevant intelligences to include every learner and to trigger enjoyment of the activities in L2 reading classes. This inclusive education will positively effect their reading skills and performance. Furthermore, the curriculum designers and policy makers should improve a reading comprehension tasks that conveys an analysis of triumphant reading activities that are empirically validated into the reading curriculum of L2

This study also demonstrated that not only one certain type of intelligence has an impact on reading, but as long as the right activities are provided to the relevant intelligence, all the profiles has shown a very rapid progress in improving reading skill. Since it is tough for teachers to design a syllabus for all types of intelligences, they can prepare a balanced unit plan which covers all the different intelligences in once. Teachers should also sue authentic materials

to assess the students so as to reach as many numbers of students as he can.

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