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Impact of multiple intelligences on teaching reading to preparatory program students (Iraqi case).

ABSTRACT OF DISSERTATION

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The last two decades have brought tremendous changes in literacy education. There have been many debates about teaching reading and how we as educators can reach all our students. Some educators believe the problem is an emphasis on phonics versus no phonics, basal readers versus literature-based instruction, homogeneous grouping versus heterogeneous grouping, early intervention versus wait-and-see, accepting approximations versus expecting correctness and direct (explicit) instruction versus discovery (Fountas & Pinnel, 1996). Today the most important variable in teaching reading is the individual differences in the classroom.

With the advent of “humanism” in the 1960s, the conventional authoritative teacher-centered instruction has given way to the learner-centered mode of education. Educators started paying attention to the impact that learners’ affective factors (their feelings, emotions, tension, anxiety, frustration etc.) may bring in the process of learning. Then we have witnessed the birth and maturing of some innovative ELT approaches, methods and techniques during the 70s to 80s, such as The Silent Way, Total Physical Response (TPR), Suggestopedia, The Natural Approach, Communicative Approach, cooperative learning, interactive learning, whole language learning, task based learning (Freeman). In addition to those mentioned teaching approaches, Gardner’s multiple intelligence theory is potentially one of those teaching approaches as well. Gardner claimed that educational methods should be created and adjusted to be more flexible for students who have different intellectual capacities, and should be re-designed and rearranged to use the multiple intelligence effectively so that those changes would benefit students, teachers and society.

Multiple intelligence theory suggests that there is not just one concrete measure of intelligence and by implication a single way of teaching. Hence, Gardner suggests that learning and teaching can be understood and practiced through many avenues. According to his theory there are eight types of intelligences namely linguistic-verbal, mathematical-logical, spatial, interpersonal, intrapersonal, musical, kinesthetic and naturalistic intelligence. And all these types of intelligences learn better in different ways from each other.

Since all intelligences are needed in the teaching and learning process, teachers should think of all intelligences as potentially equally important across the group of students they are teaching. Within a group, some students will have a preference for using some intelligence but others will

wish to use different ones. This approach is in contrast to traditional teacher-centered education which allows development only for verbal and mathematical intelligences. Therefore, the theory of multiple intelligence implies that educators should recognize and teach to a broader range of talents and skills that depend on variety of intelligences.

In the classroom, Gardner recommended that integrated education would use students' natural talents successfully. Integrated education is the system that used different educational approaches such as games, music, stories, images etc. if materials are taught and assessed in only one way, we will only reach a certain type of student. Armstrong (1999) and Le (2001) recommend allowing students to help design and choose the learning strategies that will work best for them.

Based upon the notion to help all students succeed forces teachers to explore nontraditional methods of instruction. Multiple Intelligence is a theory that makes it possible for more children to achieve in schools. Gardner (1999) stated that using the multiple intelligence approach in the classroom can be extremely beneficial. Teachers can address topics in different ways to stimulate the eight intelligences. Chapman (1993) reported the multiple intelligences approach gives teachers the ability to individualize learner outcomes. Teachers can individualize learning plans which support intelligences students can develop. She also suggested the multiple intelligences approach allows teachers to differentiate instruction for special needs students.

Due to the fact that reading process is a difficult one and that all learners are different from each other, I tried to find out what kind of impact has taken into consideration students' Multiple Intelligences in the process of teaching reading as well as to check our hypothesis. This is why our research is an experimental one (a quantitative study, as skill measurements are applied).

The **aims** of the experiment included:

- raising the motivation of students in experimental group by offering them activities which are in congruence with their intelligence type
- thus, making the process of reading easier and more pleasant
- to provide the individual approach to each student
- to let students use those learning strategies which are more available for them

-finally, improving their reading skills

The problems that I tried to solve in my dissertation are:

- Though reading is not the most difficult among the foreign language skills, it is difficult enough for students both psychologically and linguistically, especially for those whose native reading skills are not quite adequate. If not taught/learning adequately, students may develop a negative attitude towards it which, consequently, will have a negative impact on learning and the quality of skills.
- With all the beautiful mottoes of student-centered teaching in reality we still are not always able to provide really individual approach to all students which may cause a decrease in motivation of some students as well as an insufficient level of their language (including reading) skills
- As every individual to some degree has eight types of intelligences, teachers also have those intelligences. Those types of intelligences have a significant role not only while learning but also while teaching a subject as a teacher (especially if the teacher is unaware of the fact). Teacher's dominant intelligence may have a negative effect on teaching, if s/he applies only activities that appeal to him/her.

The hypothesis of my dissertation is:

Grouping students according to their dominant intelligence type and organizing for them the respective type of activities mainly can really have a positive impact on teaching reading.

Methods of the research

To solve the above-discussed problems, I applied the following **methods of research**:

- review and analysis of existing literature on the topic
- observation
- questionnaires
- experiment
- statistical analysis of obtained through questionnaires and experiment data

Research questions are specifically concerned with the students' reading comprehension performance and the contribution of the different teaching techniques was based on Multiple Intelligence Theory. This leads itself to initially an experimental research (a quantitative and qualitative study, as skill measurements are applied).

Before I started the experiment I had identified the students' dominant intelligences by using:

- two different multiple intelligence surveys
- observations
- talk with the teachers
- talk with the parents

In the process of the experiment, in order to see the students' progress in reading skills I applied:

- pretests, posttests and three progress tests
- interview
- pre-reading and post-reading surveys

Novelty

The theory of Multiple Intelligences emerged in the 1980s by Howard Gardner's great work entitled *Frames of Mind* (1983). Since then, all over the world a great importance has been given to this theory in psychology field. Soon after it was emerged, this theory started to be used in the educational area and now it is being used in more than 60 countries all over the world. Nevertheless, using the theory of Multiple Intelligences applied to teaching foreign languages, in particular to teaching reading is still quite fresh. A study of an Iraqi case has not been done before at this angle, as long as my investigation has shown me. This makes my dissertation innovative, especially in this country.

Theoretical value

The theoretical basis of my research is the Multiple Intelligence theory (Gardner, 1983, 1993, 1999, 1999a, 1999b, 2003, 2006). I tried to make my modest contribution to widening its application (studying the effects of its application on the formation of reading skills and the motivation to read).

The dissertation systematically analyzes:

- the history of views on intelligence,
- reading from psychological and linguistic view
- relationships between mastering reading skills and student's intelligence
- activities to teach reading effectively (emphasizing the student's dominant intelligence type)

Practical importance of the study

The recommendations given in the dissertation will help foreign/second language teachers improve their practices of teaching reading, it will help them to provide really student-centered education.

Structure of dissertation

The dissertation involves the following parts: Introduction, 3 chapters, conclusion, and appendix. There are 13 tables in it.

A Brief content of the dissertation

The First Chapter: Multiple Intelligences – Literature Review

In the first chapter the definition of intelligence and factors influencing it are dealt with. Since the very beginning of the 20th century intelligence has been a very tough concept among the psychologists and still there is not a common definition of intelligence. Although there is not a definite definition of intelligence psychologists have agreed that intelligence is the capacity to learn from experience, using metacognitive processes to enhance learning, and the ability to adapt to the surrounding environment. It may require different adaptations within different social and cultural contexts. Also it has commonsense notions such as thinking and problem solving, learning and memory, Language, Intuition and Creativity, Consciousness, Emotions, Perceptual

and motor abilities. Given the variety of approaches to the components of intelligence, it is not surprising that measuring intelligence has proved challenging. Psychologists who study intelligence have focused much of their attention on the development of intelligence tests and have relied on such tests to quantify a person's level of intelligence. The first intelligence tests were developed by Alfred Binet and his colleague Theodor Simon.

Some scientists claim that nurture (environmental factor) is the major factor influencing intelligence, while the others support that intelligence is nature (genetic factor).

After Charles Spearman concluded that intelligence is a unitary or general concept in 1904, different theories of intelligence emerged within this century such as Lous Lean Thurstone's (1938) Theory of Primary Mental Abilities, Cattell's (1950) theory of fluid and crystallized intelligence, Sternberg's Triarchic Theory of Human Intelligence (1986, 1997, 2007) and Howard Gardner's (Gardner, 1983) theory of multiple intelligence. Those late coming theories focused on the pluralistic intelligence rather than the unitary concept of intelligence. Among those latest theories Howard Gardner's multiple intelligence theory was my concern in this dissertation. Gardner concluded that there were at least seven different types of intelligences that everyone seems to possess to a greater or lesser degree. As the theory evolved, he added an eighth intelligence to this list (Gardner, 1993). Those eight intelligences are: verbal-linguistic, logical-mathematical, visual-spatial, musical, interpersonal, intrapersonal, bodily-kinesthetic and naturalistic intelligences. Gardner's theory (1993) proposes different and autonomous intelligence capacities that result in many different ways of knowing, understanding, and learning about the world to have a better understanding of it. This has particularly strong ramifications in the classroom, because if we can identify learners' different strengths concerning these intelligences, it is possible accommodate different learners' capabilities more successfully based on their orientation to learning.

On the other hand, age peculiarities of the learners have a great effect in the teaching and learning process. The subjects in my experiment were late adolescents or early adults. Students of prep department have their cognitive development is on high enough level (formal operation stage) to become university students. Their dominant intelligence as part of their identity has mostly been clarified which permits to join them in groups according to it in class and even

homework. Collectivism of Iraqi students has a positive impact on working in groups. The level of their knowledge and skills normally permits them to be good readers; however, prep department students in my research may have some difficulties:

- lack of motivation in reading
- uneven mental development, with ups and downs
- no clear interest
- personal problems distracting from learning
- scientific reasoning that characterizes formal operations is not equally valued
- lack of background knowledge and often negative attitude towards it, especially concerning the western culture
- lack of initiative

Chapter 2. Intelligence and Teaching Reading – Discussion

This chapter deals with how the theory of Multiple Intelligence has evolved in response to the need to reach of a better understanding how cognitive individual differences can be addressed and developed in the classroom. Different types of intelligences have a great importance to develop language learning tasks. For example, such an activity as singing a song implies the use of linguistic and musical intelligences. In a role play, where learners express their feelings, linguistic, intrapersonal, and interpersonal intelligences are needed. In a task where learners need to imitate or mime for others to guess, the bodily kinesthetic and interpersonal abilities are brought into play. Multiple intelligences are, then, important and excellent tools for the teachers to plan different and attractive ways of the language learning process.

The theory of Multiple Intelligences offers teachers an opportunity to develop innovative teaching strategies that are relatively new to the educational scene. Multiple Intelligence theory suggests that no one set of teaching strategies will work best for all students at all times. All learners have different proclivities in the eight intelligences, so any particular strategy is likely to be highly successful with one group of students and less successful with other groups (Armstrong, 2009).

Because of these individual differences among the groups, I used a broad range of teaching strategies and activities with his students. I took into consideration the students' different intelligences and emphasized different activities in different sub-groups. By using different activities, I tried to engage my students in the lessons actively and to make learning enjoyable for them. In 2.2.1-2.2.8 some teaching strategies and reading (or reading-based) activities for each of the intelligences in reading classes are presented.

To sum up for the second chapter, it is necessary to note that reading is influenced by students' intelligences, their knowledge and interests (also linked with intelligence). This is why what I am planning to show in chapter 3 dealing with experiment (as I found it plausible based on literature review and discussion sections of the dissertation) is that grouping students according to their dominant intelligence types and offering them corresponding activities would, hopefully, improve students' reading skills

Chapter 3. Research on application of mi in the process of teaching reading

My research is not psychological and I am not testing Gardner's MI theory. Neither am I testing all possible pedagogical applications of MI. The **goal of this research** was just to find out what kind of impact has taking into consideration students' MI in the process of teaching reading in EFL as well as to check our hypothesis – whether grouping students according to their dominant intelligence type and organizing for them the respective type of activities mainly can really have a positive impact on teaching reading. This is why my research is an experimental one (a quantitative study, as skill measurements are applied).

The **aims** of the experiment included:

- raising the motivation of students in the experimental group by offering them activities which are in congruence with their intelligence type
- thus, making the process of reading easier and more pleasant
- to provide the individual approach to each student
- to let students use those learning strategies which are more available for them
- finally, improving their reading skills

In order to assess the hypothesis two intermediate and two pre intermediate classes were chosen for the study, as we needed to compare the results in two same-level classes. The study was carried out over a six month period. The participants were placed randomly to the control and experimental group from the population because it was supposed to provide a maximum assurance that a systematic bias did not exist in the selection process and that the selected participants were representative of the population. The students in this study were English preparatory school students whose majors were different. Totally there were 95 subjects in this study.

The independent variable was the type of treatment. The students in the two control groups received no special treatment from the viewpoint of MI, while the students of two experimental groups were grouped together according to the dominant intelligence type and treated correspondingly.

To define the student intelligence type in my research I used two different types of paper-pencil based MI survey to find out the students' dominant intelligences. One survey - MI Inventory - was copyrighted by Walter McKenzie and gained from the internet web site: [//surfaquarium.com/MI/inventory.htm](http://surfaquarium.com/MI/inventory.htm). The other survey was MI Checklist provided by Thomas Armstrong, the writer of many books dealing with MI Theory.

As much as possible in the circumstances all other variables (students' age, textbook used, time dedicated to reading classes, task types and difficulty level in testing, etc.) were controlled. All four groups were taught by the researcher. A pretest and posttest were used to monitor students' development with reading comprehension skills. There were differences in the way each group developed their reading skills. The experimental classes were given projects, assignments and homework corresponding to their dominant intelligence. This experiment focused on seeking how Multiple-Intelligence-focused teaching program influenced the students' attitudes, motivation and improvement of their reading comprehension skills. Different teaching techniques and methods were adopted based on their different intelligences. In contrast, for the control group, the traditional method (without any emphasis on MI dominant type) was used. The students of the control group just continued to precede ordinary studying methods: reading

the texts, trying to find out the unknown vocabulary and doing the comprehension questions. Same tasks were fulfilled by all students, notwithstanding their dominant intelligence type.

After having decided on the students' dominant intelligence types and holding the reading pretest I created for experimental groups eight different learning centers (sections in the room) which each of them to represent one type of intelligence in the classroom. This kind of classroom arrangement still permitted the students to take part in all kind of activities, but created a special "climate" for holding the activities according to their type of intelligence. I hoped that restructuring the classroom to create "intelligence-friendly" activity centers could greatly expand students' reading comprehension as well as develop the parameters for student exploration in each center.

Experiment procedure

-At the beginning of the study a **proficiency pretest** was administrated to all groups to see the level of their reading skills. After finishing the experiment, the post-test (also a proficiency one) was administrated. Their outcomes were compared. But even more importantly, to see students' progress in reading skills, three **achievement tests** were done to all participants to see the progress of the study. The results were an important measure of how MI teaching activities affected the students' reading proficiency. They are shown in table 1.

Table 1. Experiment results

	N	Minimum	Maximum	Mean	Std. Deviation
PRETEST (experimental)	23	42	84	68.48	14.145
PRETEST (control)	25	32	77	58.72	15.238
ACHIEVEMENT1 (experimental)	23	34	77	60.87	13.616
ACHIEVEMENT1 (control)	25	20	96	58.88	27.24
ACHIEVEMENT2 (experimental)	23	34	88	67.61	12.862
ACHIEVEMENT2 (control)	25	24	84	59.88	17.548
ACHIEVEMENT3 (experimental)	23	40	100	76.96	19.641
ACHIEVEMENT3 (control)	25	29	72	57.36	11.489

POSTTEST (experimental)	23	52	100	88.96	16.772
POSTTEST (control)	25	38	94	74.8	15.168

The same procedure was carried out for the intermediate level group students and it was resulted in supportive way of my hypothesis. The results were like this:

- the comparison of proficiency pre-test and post-test in experimental group shows that the skills level in the experimental group (66.44 → 86.80 – a growth of 20.36 points) increased to a greater degree than in the control group (61.09 → 72.55 – a growth of 11.46 points). As for achievement test results, the experimental group was finally more successful (52.64 → 70.80 → 86.76) than the control group (54.09 → 64.27 → 64.32).

- a pre-survey was administrated to the whole participants to see their attitudes toward reading in English and its results. This pre survey of the intermediate control group reveals that students' attitudes toward reading were not very positive. After implementing the multiple intelligence teaching approach it was seen that there was a significant improvement in the experimental groups.

- an interview conducted at the end of the study to explore the reasons behind the significant gain in the reading courses within the whole year. There were about 35 volunteer students from both intermediate and pre intermediate level of experimental groups. All participants appreciated the more dynamic atmosphere inside the classroom in the reading classes. The use of the MI teaching activities seems to be important. Besides, many students recognized that using different teaching strategies to different learners with individual work has an important role to improve the understanding of reading. It is very valuable. Students' comments to those interview questions support the results of the questionnaire findings.

CONCLUSION

With the advent of “humanism” in the 1960s, the conventional authoritative teacher-centered instruction has given way to the learner-centered mode of education. Thus, by today the most important variable in teaching a language (including reading) is the individual differences in the classroom.

Multiple Intelligence (MI) theory introduced by Howard Gardner in the 1990s suggests that there is not just one concrete measure of intelligence and by implication a single way of teaching, but several: mathematical-logical, linguistic-verbal, musical, spatial, interpersonal, intrapersonal, bodily-kinesthetic and naturalistic (more intelligences are still under discussion).

The rationale of my research was to apply the findings of this theory to teaching reading in order to increase the quality of reading skills. An experiment (accompanied by questionnaires and interviews) was held, with 2 control groups taught without an MI treatment and 2 experimental groups with an MI treatment was held. The dominant intelligences of the students in the experimental groups were diagnosed; the students were grouped according to them and offered corresponding classroom tasks and homework.

The findings presented below are based on interviews with the students, the surveys, and the results of pretests, posttests and progress achievement test scores of the reading skills and correspond to the research hypothesis.

1- Some of the major problems concerning understanding reading skills in the English Language were students' negative attitudes and lack of motivation. This study suggests that the adoption of notions from the theory of Multiple Intelligence with the Language Learning Centers could help increase students' motivation and attitudes toward reading skills.

2- The results from this study suggest that the use of group work can lead to the feelings of comfort, less pressure, and higher motivation. Many students in the experimental groups expressed pleasure, enjoyment and liking that they attributed to the teaching approaches that were used. While students felt uncomfortable to express their ideas in front of the whole class, work in a group with similar to them dominant MI lowered their anxiety. The students' interviews supported this idea. The students in this study also stated that their classroom was like a family, because they could talk about everything and did not feel shy in the progress of the study. In addition, in the group work, when students were sharing learning tasks and everyone was assigned a role, this led to the feeling of less pressure and liking to do their best to complete the assignment and duty.

3- In the interview and reading survey, some students said that they had seldom had the chance to speak and read English and felt nervous when they needed to do. Most students had hesitated to speak and read English in class; this was not surprising because their English reading proficiency was limited. They had tended to read only easy reading tasks without understanding the meaning of the context. However, they felt much more comfortable in reading English with their peers with the same dominant MI during the group work; they could read and tried to understand the written texts without hesitation. In the Reading pre survey of the intermediate group half of the attendants agreed that they were not good readers which meant that they had a negative idea about reading. This ratio after the experiment shifted to 72% of the students who happily agreed that they have become competent readers. This result shows that using the Multiple Intelligence approach has a great positive impact on teaching reading.

4- Based on the presentation and analysis of the data on the effects of Multiple Intelligence on reading skills, the targeted students showed a significant increase in the quality of reading comprehension. This increase was proven when comparing the pretest, posttest and achievement test scores.

5- Recognizing the various intelligences of each student created a higher level of self-awareness for each individual. By teaching according to and modeling the Multiple Intelligences, students could recognize their own strengths and those of others.

6- I found that the Multiple Intelligence intervention fostered a higher level thinking which is very important according to Bloom's taxonomy. One way this was done was through the use of graphic organizers. These organizers structured the direction of student thinking by interconnecting several intelligences. For example, the fishbone organizer uses the mathematical-logical, visual-spatial, verbal-linguistic, and intrapersonal intelligences to organize the thinking process and actualize the learning.

7- A significant portion of the Multiple Intelligence intervention occurred in cooperative group settings. As a result of this structure, interpersonal social skills were constantly taught, modeled and utilized within each experiment group. Student behavior generally concentrated on the task because learners had a wide variety of appropriate behaviors from which to choose for problem solving. This brought about group and individual success and the classroom bonded together.

Depending on which intelligence was being addressed, every individual had the opportunity to be an emergent leader.

8- The cooperative Multiple Intelligence learning classrooms were not a quite traditional workplace. They were focused on verbal experience of interaction, exploring, understanding, creating and questioning. The use of Multiple Intelligences made my teaching so exciting, gave me a variety of teaching ways for my repertoire and solved many challenges in the classroom among the students.

9- Throughout the process students showed more interest in handing in their homework when it took into consideration their dominant intelligence. The quality of the homework also improved. This is probably a result of student interest in the lesson when homework assignments (based on their dominant intelligence) also tended to be more interesting to students in contrast of the traditional uniform assignments for everybody.

On the other hand, based on the findings and limitations of the study, several recommendations for further research can be made. First, the scope of this study was limited to the school in Arbil Ishik University Preparatory School of English. The samples of the participants were limited to only two experimental and two control groups with a pre-intermediate and intermediate level of the English Language skills. For future studies, the research should be expanded to include more undergraduate, vocational and technological colleges EFL programs in various areas to generate more evidence regarding the effects of Multiple Intelligence on teaching any skills in English.

All researchers have their own points of view and these affect both the process and the results of the research. In addition, one possible difficulty with a researcher being actually involved as the teacher in a research project is that his involvement might lead a loss of objectivity. It is difficult to separate this personal involvement from the results. For this reason, I strongly recommend to the future researchers to collect a great deal of data to try to ensure that findings were authentic and real for the group of students.

To design successful Multiple Intelligence activities much time is required. Multiple Intelligence-based teaching requires more creativity, materials, patience to noise and added instruction time to teach the essential concepts. Preparing an action plan would allow the

researchers to focus stronger and to go into depth, perhaps demonstrating a more significant growth in achievement during Multiple Intelligence treatment.

Another thing I noticed in the middle of the experiment was the need for a checklist that identified teacher observations such as time on task, frequency of participation, or cooperation skills. A major part of achievement and success in school is the desire to attend to lessons, actively participate, and transfer knowledge. If these are not achieved, no matter what the approach is, the academic assessment will be lower than expected.

The contents and main ideas of the dissertation are expressed in the following publications:

1. Suleyman Çelik. (2011). An Overview of Different Types of Intelligences: Raymond Cattell's Theory of Crystallized and Fluid Intelligence, Robert Sternberg's Triarchic Theory of Intelligence, and Howard Gardner's Theory of Multiple Intelligences. The First International Research Conference at the Faculty of Education on Education, English Language Teaching, and Literatures in English. IBSU, Tbilisi, p. 30-38
2. Suleyman Çelik. (2011). An Overview of Case Studies about the Influence of Multiple Intelligences on Teaching Language. In A.Akbarov (ed.). *Languages for Specific Purposes in Theory and Practice*. Newcastle, UK. Cambridge Scholars Publishing. p.147-158
3. Suleyman Çelik. (2012). The Influence of Multiple Intelligences on Teaching Reading in a Foreign Language. *IBSU Journal of Education*, 1(1), p. 5-9
4. Suleyman Çelik. An Investigation on the Application of Multiple Intelligence-Based Teaching in the Process of Teaching Reading to EFL Students. *IBSU Journal of Education*, 1(2), p.5-20