The Influence of Multiple Intelligences on Teaching Reading in a Foreign Language

მრავალმხრივი ინტელექტის გავლენა უცხო ენაზე კითხვის სწავლებაზე

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Abstract

This paper describes a project to see the influence of Multiple Intelligences founded by Howard Gardner (1983) on Reading instruction. The quantitative experimental research took place from September 2011 to January 2012. The targeted learners consisted of 59 freshman students whose levels were nearly the same at the pre-intermediate level, in Education Faculty at Ishik University, Arbil (Iraq). Students of control group received traditional treatment while reading was taught to them, while students of experimental group were treated according to their intelligence during class and home work. Two MI questionnaires were conducted and three main Multiple Intelligences (Intrapersonal, Logical-mathematical and Bodily kinesthetic) were found among the students of experimental group. The findings showed that directing the learners according to their intelligences bring many benefits not only in improving their reading skills, but also in reducing the class discipline problems and in developing awareness of their weaknesses and strengths.

Keywords: Multiple Intelligence, reading, undergraduate students

რეზიუმე

სტატია ეხება პროექტს, რომლის მიზანია, შევისწავლოთ ჰოვარდ გარდნერის (1983) მიერ შემუშავებული მრავალმხრივი ინტელექტის როლი კითხვის სწავლებისას. რაოდენობრივი ექსპერიმენტული კვლევა ჩატარდა იშიქ უნივერსიტეტში ერაყის ქალაქ აბრილში 2011 წ. სექტემბრიდან 2012 წ. იანვრამდე. შემსწავლელთა ჯგუფში შედიოდა 59 პირველკურსელი სტუდენტი, რომლებიც ინგლისური ენის ცოდნის დაახლოებით ერთნაირ - წინა-საშუალო -დონეს ფლობდნენ. საკონტროლო ჯგუფის სტუდენტები ტრადიციულად შეისწავლიდნენ კითხვას, ექსპერიმენტული ჯგუფის სტუდენტები კი ეუფლებოდნენ მას როგორც აუდიტორიაში, ისე სახლში ინტელექტის დომინანტური სახეობის გათვალისწინებით. სტუდენტებმა შეავსეს ორი კითხვარი და აღმოჩნდა, რომ მათ შორის დომინირებდა ინტელექტის სამი სახეობა (პიროვნებათშორისი, ლოგიკურ-მათემატიკური და კინესტეტურ-მოძრაობითი). ექსპერიმენტმა გვიჩვენა, რომ ინტელექტის სახეობის გათვალისწინება დადებით გავლენას ახდენს არა მარტო კითხვის უნარ-ჩვევების ჩამოყალიბებაზე, არამედ საბუდიტორიო დისციპლინაზე და სტუდენტების მიერ საკუთარი სისუსტეებისა და სიძლიერეების გათვითცნობიერებაზე.

საკვანძო სიტყვები: მრავალმხრივი ინტელექტი, კითხვა, უნივერსიტეტის სტუდენტები

Introduction

The concept of general intelligence which dealt with the ability to memorize what was being told, speak and answer questions on what had been told as well as demonstrate logical thinking was later replaced by multiple intelligences theory formulated by Howard Gardner (1983). Gardner defines intelligence as "the ability to solve problems or to create fashion products that are valued within one or more cultural settings'' (Gardner, 1983:81). His view of intelligence shifted the conventional view of intelligence which as a single capacity to various capacities. Gardner described intelligence as a bio-psychological potential that could be influenced by experience, culture, and motivational factors. Gardner's theory (1993) suggests different and independent intelligence capacities that result in many different ways of knowing, understanding, and learning about the world to have a better understanding of it.

Gardner argues that we have minimum eight different forms of intelligence, each relatively independent of the others: musical, bodily kinesthetic, logical-mathematical, verbal-linguistic, spatial, interpersonal, intrapersonal and

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naturalist. According to Gardner, each of these multiple intelligences is linked to an independent system in the brain (Gardner, 1999).

According to Gardner (1999), all human beings possess different intelligences in varying degrees and each individual manifests varying levels of these different intelligences and thus each person has a unique "cognitive profile"; that is, a) all human possess all different intelligences in varying amounts; b) each individual has a different composition of intelligences; c) different intelligences are located in different areas of the brain; d) by applying Multiple Intelligences we can improve education; and e) these intelligences may define human species. Moreover, although the eight basic types of intelligence are presented individually, Gardner suggests that these separate intelligences do not operate in isolation. Normally, any activity encompasses several kinds of intelligence together.

A summary of Gardner's eight intelligences is as follows:

Linguistic/ verbal Intelligence: Gardner has described Linguistic intelligence as sensitivity to spoken and written language and the ability to use language to accomplish goals, as well as the ability to learn new languages. According to Gardner (1993), lawyers, public speakers, writers, and poets all possess high levels of linguistic intelligence.

Verbal comprehension involves the ability to understand the meanings both of individual words and of passages of written or spoken texts. Word fluency, in contrast, involves the ability to generate rapidly many examples of words that meet some specification (e.g., words beginning with a given letter, words rhyming with a target word, words naming objects that have some property, etc.).

Logical/Mathematical Intelligence: Gardner (1995) described logical/mathematical intelligence as the ability to study problems, to carry out mathematical operations logically and analytically, and to conduct scientific investigations. Gardner identified mathematicians, logicians, and scientists as persons who would possess high levels of this hypothesized intelligence.

Spatial/Visual Intelligence: Gardner defined spatial intelligence as the ability to recognize both large and small visual patterns. He suggested that navigators and pilots would possess high levels of spatial intelligence, as would sculptors, surgeons, chess players, and architects.

Musical Intelligence: Gardner (1999) suggests that musical is reflected in the performance, composition, and appreciation of musical patterns. With regard to the underlying abilities involved in musical intelligence, Gardner has claimed that the two most central constituent elements of music are rhythm and pitch (or melody), followed in importance by timbre (which Gardner, 1983:105, describes as the characteristic qualities of a tone).

Bodily-Kinesthetic Intelligence: Gardner (1999) described this intelligence as the potential of using the whole body or parts of the body in problem-solving or the creation of products. Gardner identified not only dancers, actors, and athletes as those who excel in bodily-kinesthetic intelligence, but also craftspeople, surgeons, mechanics, and other technicians. Thus, Gardner does not appear to differentiate between gross motor skills (i.e., involving the whole body or the larger muscle groups) and fine motor skills (i.e., involving smaller muscle groups, especially those controlling the hands and fingers) in describing bodily-kinesthetic intelligence.

Interpersonal Intelligence: According to Gardner (1983), an individual who is high in interpersonal intelligence understands the intentions, motivations, needs, and desires of others, and is capable of working effectively with them. Gardner stated that teachers, clinicians, salespeople, politicians, and religious leaders all use interpersonal intelligence.

Intrapersonal Intelligence: Gardner (1999) described intrapersonal intelligence as the ability to understand and to have an effective working model of oneself. Intrapersonal intelligence, as conceptualized by Gardner, includes the awareness of one's own desires, fears, and abilities, and also using this information to make sound life decisions.

Naturalistic Intelligence: Gardner (1999) described a naturalist as one who is able to recognize and classify objects. According to Gardner, hunters, farmers, and gardeners would have high levels of naturalistic intelligence, as would artists, poets, and social scientists, who are also adept at pattern-recognition.

Undoubtedly this new perception of notion of intelligence has shifted the traditional, authoritative teacher-centered instruction methods to the learner- centered mode of instruction in ELT classes. Educators started paying attention to the impact of learners' diversity in their learning style on their classrooms (Larsen-Freeman, 2000).

The multiple intelligence theory opens the doors to a variety of teaching strategies which can easily be applied in the language classroom. It gives teachers opportunities to widen modern teaching strategies by using various assignments and activities (Armstrong, 2009: 51).

The theory can be used in many different ways and works well in the entire school system. It offers opportunities for students to use and develop all the different intelligences, not just the ones that they excel in. It also offers different learning styles and methods as well as various activities. Each of the intelligence is prospective in every learner and it is part of the teacher's job to look after and help children to develop their own intelligences (Bakic-Miric, 2010).

It is interesting to see that acknowledgement of the theory exist within many different language teaching methods. For example, The Silent Way emphasizes the development of student's inner thinking (Interpersonal

İntelligence). Total Physical Response emphasizes language learning through physical action(bodily-kinesthetic Intelligence), while Suggestopedia emphasizes the use of music (Musical Intelligence) to deepen understanding of learning.

The Communicative Approach as well as Cooperative Learning stress the importance of interpersonal relationships (Interpersonal Intelligence) (Christison, 1996; Arnold &Fonseca, 2004).

According to Christison (1996), the Multiple Intelligence Based Teaching is more effective than the conventional method, so we decided to see whether it can be really so for teaching reading in a foreign language.

Method

The purpose of this study was to investigate the implementation of Multiple Intelligences Theory in an educational setting by doing an experimental research. The experimental study was chosen in order to compare the efficiency of splitting the class into small groups according to students' MI and holding activities in these groups which corresponded to their type of intelligence (experimental group) to traditional teaching where all kinds of students received all kind of treatments. The study was conducted in quantitative research approach, which has been done in two undergraduate EFL classes at Ishik University in Arbil, Iraq. The duration of research was months.

The participants were between 19-21 years old and their English level was at the pre- intermediate level based on the placement tests which were held by the head department. In the experimental group were 29 participants and in the control group were 30 students. In the experimental group there were 19 female and 10 male students. It was found that, in the experimental group, the intrapersonal intelligence, bodily kinesthetic intelligence and logical/mathematical intelligence were dominant from the other intelligences among the students. Thus, in the experimental group the students were split into three main subgroups as mentioned above. Majority of the students were in the intrapersonal intelligence subgroup (13); of those 13 students 2 were males and the 11 were females, in the bodily-kinesthetic intelligence subgroup there were 2 females and 5 males, totally 7 participants, and in the logical-mathematical subgroup the number of the female students was 6 and that of the male students was 3. The research started in September 2011 and finished in January 2012. It took nearly four months. During this four-month-long teaching process, two different reading text books, namely ***Thoughts and Notions*** by Patricia Acert and ***Reader at Work -a compilation''*** were studied. These two books involved selected reading texts which many of them were interesting to the students.

To find out students' type of intelligence in the experi-mental group, two different - McKenzy's (2012) and Armstrong's (2009) - Multiple Intelligence questionnaires were applied to the students. It was found that majority of students had the following dominating intelligences: intrapersonal, kinesthetic and logical/mathematical. The students in experimental group were split into three subgroups, according to these intelligences. The majority of the students were in the intrapersonal intelligence subgroup with the number of 13 students, in the bodily-kinesthetic intelligence subgroup there were 7 and in the logical-mathematical subgroup the number of the students was 9. Thus, there were 29 students in the experimental group and 30 – in the control group.

What Kinds of Learning Activities Took Place

In both classes, the climate was welcoming and the students were eager to attend to the lessons. Majority of students attended the classes and were regularly involved in the lessons. The same course book was used in both groups, however, some tasks had to be changed for the experimental group. In the control group they did the regular classroom and home tasks just from the book in contrast to the experimental group. In the experimental group the students did some more specific examples of activities as classroom and home tasks and projects for each intelligence as follows:

Three learning centers were created in the experimental group: independent (intrapersonal), logical (Logical-Mathematical) and Action (Bodily-Kinesthetic) ones. In those learning centers, students with the relevant type of intelligence studied together. For example, in logical learning center, students with the mathematical intelligence worked together. The independent learning center was divided into two subgroups because there were too many students for one group.

Text presentation happened the same way in the control and experimental group. After warming up, the teacher had his students to focus on the reading passage. The teacher displayed the text on the smart board paragraph by paragraph. He sometimes started to read himself and asked randomly any student to continue suddenly. While reading the paragraph, the teacher asked some questions to make the paragraph clearer. Also teacher gave the definitions of the vocabulary or asked the students to find the meaning of the vocabulary by guessing from the context. Sometimes the students read the texts silently by themselves.

After reading the texts, the comprehension questions provided by the reading text were done one by one. Generally the questions were in different formats such as: vocabulary questions, using the target vocabularies in the new contexts, finding the opposites or synonyms of the vocabularies, comprehension questions, true-false questions, multiple choice questions, reference questions, and finding

the main idea. Those exercises were done in the classroom after the reading session in both two classes.

The difference between the experimental and control group is that in experimental group drills and activities fulfilled by students differed according to the subgroup they belonged to. Both groups had 4 hours reading classes per week.

Students with Intrapersonal Intelligence, explored the present area of study through research, reflection, or individual project work, independent study, individual instruction, writing, monitoring of own skills, researching and online activities, essay writing, reflective learning activity, personal goal setting, pole-bridging activity. Because they like working alone, they read their texts silently and individually. And after they finished reading they were asked to write a summary of the text, expressing their attitudes towards the topic, situation or characters. They prepared some individual projects concerning the read text by searching the library or internet. And they were asked to bring their projects to the classroom to display on their quarter. They kept personal diaries just about the reading classes. In their diaries they wrote their feelings, understandings, assumptions and anything about reading courses, they were asked to build up their self-assessment rubrics in reading. Students were asked to describe their reading strategies.

Students with Kinesthetic Intelligence built models; dramatized events, performed pantomime, used flashcards, hand-on activities and competitive games.

Students with Logical/Mathematical Intelligence used math games, made up diagrams, used deductive reasoning and problem solving to speak/write about the text, fulfilled matching and gap-filling tasks dealing with concepts discussed in the text, carried out data analysis, comparison & contrast, reconstructed a scrambled story.

Results of experimental study and discussion

Students' reading skills were assessed once a month in both groups, using the same tests in both groups. The tests were prepared in accordance with goals of teaching reading. To test the students' improvements in reading skills, a test was held by the teacher once a month. The test consisted of cloze tests, gap filling, multiple choice questions, comprehension questions and the C-test, as exemplified below:

It is normal to leave the first sentence intact. Thereafter t….second ha…of ev……second wo……..is del and t……. reader's ta…… is t…..restore t…….missing le…….

Table 1: Experiment results (in a 100-point scale)

	September	October	November	December
Group A (experimental)	58,5	60,3	68,3	75,7
Group B (control)	58,1	53,7	60,2	68,7

We can see from the table that the starting level of both groups was practically equal. Later, the control group demonstrated a changeable pattern, finally with reasonable improvement, while the experimental group revealed stable and more obvious improvement.

Observation also revealed the following in the experimental group as opposed to control group:

- The students develop increased responsibility, self-direction, and independence over the course of the term. The students became skilled at developing their own projects, gathering the necessary resources and materials, and making well-planned presentations of all kinds.

- Discipline problems were significantly reduced. Students previously identified as having serious behavior problems showed rapid improvement during the first six weeks of classes. By mid-year, they were making important contributions to their groups.

- Cooperative learning skills improved in all students. Since collaboration in the subgroups was facilitated by having the same intelligence and similar strategies, students effectively helped each other, sharing leadership in different activities, and accommodating group changes. They learned not only to respect each other, but also to appreciate and call upon the unique gifts and abilities of their classmates.

- Students' motivation increased, they really enjoyed taking part in activities which corresponded to their inclinations.

The results of the study indicate that students who were grouped in the process of activities by the type intelligence benefitted from the learning process more than did the students who did all kind of activities, independent of their intelligence type. We can see that Multiple Intelligence based teaching helps the students not only to improve the academic achievement in reading but also provides opportunity to develop their multiple capabilities of learning. Implementing the Multiple Intelligence Theory in the classroom develops the readiness of the students to gain the knowledge of English. Besides, it motivates the students to understand the concepts involved in the process of reading easier than the traditional way. On the other hand, by the awareness of their learners' diversity in the classroom, teachers develop new ways and activities related to the MIT in the process of their courses. Using innovated ways of teaching helps the teachers to solve the teaching difficulties.

Conclusions and Recommendations

The MI theory offers a richly diversified way of understanding and categorizing human cognitive abilities, and combinations of abilities, heightening awareness of what makes learning possible and effective for individual students. Moreover, teaching strategies grounded by the MI theory offers students choices in the ways they will learn and demonstrate their learning (Arnold &Fonseca, 2004). By focusing on problem-solving activities that draw on multiple intelligences, these teaching strategies encourage learners to build on existing strengths and knowledge to learn new content and skills. To this end, the implementation of the MI theory in the English language teaching offers a better understanding of students' learning preferences and a greater appreciation of their strengths. Students are likely to become more engaged in learning as they use learning modules that match their intelligence strengths that, in addition, increase students' engagement and success in learning. Generally speaking, implementation of the MI theory into the English language course provides numerous opportunities for students to use and develop all eight intelligences not just the few they excel in prior to matriculation.

Our experiment supported the theoretical data obtained from literature analysis and showed that students in experimental group who fulfilled reading activities in sub-groups relevant to their MI type according to this type developed better reading skills than the students from the control group where no such differentiation during practice was done.

English language teachers should be aware of different learners having different intelligences and treat every student as much as possible taking into account this fact. The Multiple Intelligence Theory offers language teachers different ways of teaching to different learners and it also inspires teachers to use innovative teaching techniques.

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