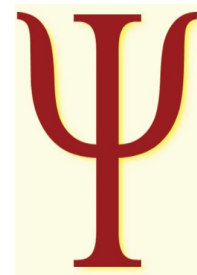**UNIVERSITATEA BABEŞ-BOLYAI CLUJ-NAPOCA**

FACULTATEA DE PSIHOLOGIE SI STIINTE ALE EDUCATIEI

ŞCOALA DOCTORALĂ "EDUCAŢIE, REFLECŢIE, DEZVOLTARE"

The Relevance of Gardner's Theory in Elementary School- Using Multiple Intelligence Theory to Help pupils in Third Grade in Arabic Reading Comprehension

TEZĂ DE DOCTORAT
Abstract

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Table of Contents

Keywords:

- Intelligence
- Multiple intelligences
- Mental abilities
- Cognitive abilities
- Class Activities
- English Instruction
- Intelligence Differences
- Language Arts
- Learning Activities
- Secondary Education
- Student Participation
- Theory Practice Relationship

Introduction

This paper will discuss Gardner's theory, then it will describe *how the theory can help us (teachers, educators) develop our students' reading and writing by using Gardner's theory.*

Based upon my personal experience, I can tell that teachers can make a big difference in a student's life. Especially when it related to help to practice reading and writing. Teachers can make a positive difference also in building confidence in students by using Gardner's theory.

For example according to a 2004 research in "News-Medical", it was found that children studying in a college which focus on Sports, developed significantly higher self esteem compared to those in traditional state schools.

We conclude that intelligence is not only verbal and analytical but also include other areas, for example emotional, social, and other.

I want to conduct research in order to check the positive effect of Gardner's theory on learning writing and reading.

Most teachers who deal with students use numerous methods during teaching explaining and evaluation in spite. The fact that students are multi-intelligence that means they can learn in many different, ways. So that if the teacher used several teaching methods he would be able to reach the biggest number of students and would be aquatinted to the deeply and thoroughly.

CHAPTER I: THEORETICAL FUNDAMENTALS OF THE RESEARCH

I.1 Gardner's Theory: Multiple Intelligences

Arguing that "reason, intelligence, logic, knowledge are not synonymous...," Howard Gardner (1983) proposed a new view of intelligence that is rapidly being incorporated in school curricula.

In his Theory of Multiple Intelligences, Gardner expanded the concept of intelligence to also include such areas as music, special relations, and interpersonal knowledge in addition to math Multiple Intelligences (Gardner, 2009).

The theory of multiple intelligences suggests that there are a number of distinct forms of intelligence that each individual possesses in varying degrees. Gardner proposes seven primary forms: linguistic, musical, logical-mathematical, spatial, body-kinesthetic, intrapersonal (e.g., insight, metacognition) and interpersonal (e.g., social skills).

According to Gardner, the implication of the theory is that learning/teaching should focus on the particular intelligences of each person. For example, if an individual has strong spatial or musical intelligences, they should be encouraged to develop these abilities.

Gardner points out that the different intelligences represent not only different content domains but also learning modalities. A further implication of the theory is that assessment of abilities should measure all forms of intelligence, not just linguistic and logical-mathematical.

Gardner also emphasizes the cultural context of multiple intelligences. Each culture tends to emphasize particular intelligences.

The theory of Multiple Intelligences has been focused mostly on child development although it applies to all ages. While there is no direct empirical support for the theory, Gardner (1983) presents evidence from many domains including biology, anthropology, and the creative arts and Gardner (1993) discusses application of the theory to school programs. Gardner (1982, 1993) explores the implications of the framework for creativity (see also Marks-Tarlow, 1995).

Gardner (1983, p 390) describes how learning to program a computer might involve multiple intelligences:

"Logical-mathematical intelligence seems central, because programming depends upon the deployment of strict procedures to solve a problem or attain a goal in a finite number of steps. Linguistic intelligence is also relevant, at least as long as manual and computer languages make use of ordinary language... an individual with a strong musical bent might

best be introduced to programming by attempting to program a simple musical piece (or to master a program that composes). An individual with strong spatial abilities might be initiated through some form of computer graphics and might be aided in the task of programming through the use of a flowchart or some other spatial diagram. Personal intelligences can play important roles. The extensive planning of steps and goals carried out by the individual engaged in programming relies on intrapersonal forms of thinking, even as the cooperation needed for carrying a complex task or for learning new computational skills may rely on an individual's ability to work with a team. Kinesthetic intelligence may play a role in working with the computer itself, by facilitating skill at the terminal..."

Principles:

1. Individuals should be encouraged to use their preferred intelligences in learning.
2. Instructional activities should appeal to different forms of intelligence.
3. Assessment of learning should measure multiple forms of intelligence.

(Marks-Tarlow, 1995, Gardner, 1993)

I.2 Basis for Intelligence

Gardner argues that there is both a biological and cultural basis for the multiple intelligences. Neurobiological research indicates that learning is an outcome of the modifications in the synaptic connections between cells. Primary elements of different types of learning are found in particular areas of the brain where corresponding transformations have occurred. Thus, various types of learning results in synaptic connections in different areas of the brain. For example, injury to the Broca's area of the brain will result in the loss of one's ability to verbally communicate using proper syntax. Nevertheless, this injury will not remove the patient's understanding of correct grammar and word usage.

In addition to biology, Gardner (1983) argues that culture also plays a large role in the development of the intelligences. All societies value different types of intelligences. The cultural value placed upon the ability to perform certain tasks provides the motivation to become skilled in those areas. Thus, while particular intelligences might be highly evolved in many people of one culture, those same intelligences might not be as developed in the individuals of another.

I.3. Using Gardner's Theory at education

Accepting Gardner's Theory of Multiple Intelligences has several implications for teachers in terms of classroom instruction. The theory states that all nine intelligences are needed to productively function in society. Teachers, therefore, should think of all intelligences as equally important. This is in great contrast to traditional education systems which typically place a strong emphasis on the development and use of verbal and mathematical intelligences. Thus, the Theory of Multiple Intelligences implies that educators should recognize and teach to a broader range of talents and skills.

Another implication is that teachers should structure the presentation of material in a style which engages most or all of the intelligences. For example, when teaching about the revolutionary war, a teacher can show students battle maps, play revolutionary war songs, organize a role play of the signing of the Declaration of Independence, and have the students read a novel about life during that period.

Everyone is born possessing the seven intelligences. Nevertheless, *all students will come into the classroom with different sets of developed intelligences.* This means that **each child will have his own unique set of intellectual strengths and weaknesses**. These sets determine how easy (or difficult) it is for a student to learn information when it is presented in a particular manner. This is commonly referred to as a learning style**. Many learning styles can be found within one classroom.** Therefore, it is impossible, as well as impractical, for a teacher to accommodate every lesson to all of the learning styles found within the classroom. Nevertheless the teacher can show students how to use their more developed intelligences to assist in the understanding of a subject which normally employs their weaker intelligences (Lazear, 1992). For example, the teacher can suggest that an especially musically intelligent child learn about the revolutionary war by making up a song about what happened.

As the education system has stressed the importance of developing mathematical and linguistic intelligences, it often bases student success only on the measured skills in those two intelligences. Supporters of Gardner's Theory of Multiple Intelligences believe that this emphasis is unfair. Children whose musical intelligences are highly developed, for example, may be overlooked for gifted programs or may be placed in a special education class because they do not have the required math or language scores. *Teachers must seek to assess their students' learning in ways which will give an accurate overview of their strengths and weaknesses* (Gardner, 1991).

As children do not learn in the same way, they cannot be assessed in a uniform fashion. Therefore, it is important that a teacher create an "intelligence profiles" for each student. Knowing how each student learns will allow the teacher to properly assess the child's

6

progress (Lazear, 1992). This individualized evaluation practice will allow a teacher to make more informed decisions on what to teach and how to present information. Traditional tests (e.g., multiple choice, short answer, essay...) require students to show their knowledge in a predetermined manner. Supporters of Gardner's theory claim that a better approach to assessment is to allow students to explain the material in their own ways using the different intelligences. Preferred assessment methods include student portfolios, independent projects, student journals, and assigning creative tasks. An excellent source for a more in-depth discussion on these different evaluation practices is Lazear (1992). So we conclude schools have often sought to help students develop a sense of accomplishment and self-confidence. Gardner's Theory of Multiple Intelligences provides a theoretical foundation for recognizing the different abilities and talents of students. This theory acknowledges that while all students may not be verbally or mathematically gifted, children may have an expertise in other areas, such as music, spatial relations, or interpersonal knowledge. Approaching and assessing learning in this manner allows a wider range of students to successfully participate in classroom learning.

Table 1.1: Examples of the M.I. education

Intelligence	Definition
Linguistic	sensitivity to the meaning and order of words
Logical-mathematical	the ability to handle chains of reasoning and to recognize patterns and order
Musical	sensitivity to pitch, melody, rhythm and tone
Bodily-kinesthetic	the ability to use the body skillfully and handle objects adroitly
Spatial	the ability to perceive the world accurately and to recreate or transform aspects of that world
Naturalist	the ability to recognize and classify the numerous species, the flora and fauna, of an environment
Interpersonal	the ability to understand people and relationships
Intrapersonal	access to one's emotional life as a means to understand oneself and others
Existential	is the ability to understand religious and spiritual ideals. They have a strong

	understanding of things that are not visual to the eye but through faith and belief

This keynote shows how Howard Gardner's theory of multiple intelligences provides a powerful tool through which all students' abilities can be highlighted and worked with to improve student motivation, self-esteem, and academic achievement. The presentation includes interactive experiences, a PowerPoint presentation connecting theory to practice, a hands-on demonstration, and a practical lesson planning tool educators can use to tailor instructional strategies linked to specific academic outcomes (Bellanca, 1997).

Dunn and Dunn (1992) revealed the benefits of a comprehensive model of learning styles because not only are many individuals affected by different elements of a learning style, but so many of the learning elements are capable of increasing academic achievement.

Dunn and Griggs (1995) conceived a Learning Style Model revealing that students are affected by five main factors:

1. Their immediate environment (sound, light, temperature, and furniture setting design).
2. Their own (motivation, persistence, responsibility, or the opportunity to do things in their own way)**.**
3. Their sociological (learning alone or in different-sized groups)**.**
4. Their physiological (perceptual strengths represented by auditory, visual, actual, kinesthetic, and sequenced characteristics).
5. Their processing (global/analytical, right/left, impulsive/ reflective).

Further explanation shows how student learning may be affected by these five factors and their subcategories. Concerning their immediate environment, although many students require quiet while concentrating on difficult information, others literally learn better with sound than without (Pizzo, as cited in Dunn, & Dunn, 1992). In addition, while many people concentrate better in brightly illuminated rooms, others think better in soft light rather than in bright light. Fluorescent lighting over stimulates certain learners and causes hyperactivity and restlessness (Dunn, Dunn, & Price, 1989).

Other environmental factors that may affect learning include temperature and furniture/design. Some students achieve better in warm environments and others in cool environments (Hart, 1981). Some people prefer studying in a wooden, plastic, or steel chair,

but others become so uncomfortable in conventional classroom seats that they are prevented from learning.

Students' own emotionality may also affect their ability to learn. Their inner motivation, persistence to complete assignments, ability to take responsibility for their own behavior and work, or the opportunity to do things in their own way may all play a role in how a student best learns (Dunn, & Dunn, 1992).

Sociological factors may also affect learning. Teachers need to be aware of the students' learning styles under various conditions. Variations that enhance, or inhibit, learning may include learning alone, in pairs, in small groups, as part of a team, with either an authoritative or a collegial adult, and wanting variety as opposed to patterns and routines (Dunn, & Dunn, 1992).

The way student's process information can also affect learning abilities. Some students are more analytical processors who tend to be persistent. They may not always start an assignment immediately, but once they do begin, they have a strong emotional urge to continue until the task is done or until they come to a place where they feel they can stop. Global learners, on the other hand, tend to prefer learning with what conventional teachers think of as distractions–sound (music, tapping, or conversation), an informal design (lounging comfortably), soft illumination (covering their eyes or wearing sunglasses indoors), peer orientation (wanting to work with a friend), and a need for food (snacks) while studying (Dunn, & Dunn, 1992).

Two other processing inclinations may affect students' learning abilities: right/left and impulsive/reflective. Some students process information sequentially, analytically, or in a "left-brain mode" rather than in a holistic, simultaneous, global, "right-brain" fashion. And some students will rush into learning and sometimes work too fast, and their grades may reflect this. The impulsive students will not spend much time in learning. A reflective student will spend time thinking about the information, understanding the content being taught (Dunn, & Dunn, 1992).

I.4. 9 Kinds of Intelligence.

Gardner defines intelligence as "the capacity to solve problems or to fashion products that are valued in one or more cultural setting" (Gardner & Hatch, 1989). Using biological as well as cultural research, he formulated a list of seven intelligences. This new outlook on

intelligence differs greatly from the traditional view which usually recognizes only two intelligences, verbal and computational. The seven intelligences Gardner defines are:

1. *Logical-Mathematical Intelligence* consists of the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.

2. *Linguistic Intelligence* involves having a mastery of language. This intelligence includes the ability to effectively manipulate language to express oneself rhetorically or poetically. It also allows one to use language as a means to remember information.

3. *Spatial Intelligence* gives one the ability to manipulate and create mental images in order to solve problems.

This intelligence is not limited to visual domains--Gardner notes that spatial intelligence is also formed in blind children.

4. *Musical Intelligence* encompasses the capability to recognize and compose musical pitches, tones, and rhythms. (Auditory functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm).

5. *Bodily-Kinesthetic Intelligence* is the ability to use one's mental abilities to coordinate one's own bodily movements. This intelligence challenges the popular belief that mental and physical activity are unrelated.

6. *The Personal Intelligences* includes interpersonal feelings and intentions of others and intrapersonal intelligence--the ability to understand one's own feelings and motivations.

These two intelligences are separate from each other. Nevertheless, because of their close association in most cultures, they are often linked together (Gardner & Hatch, 1989).

Although the intelligences are anatomically separated from each other, Gardner claims that the seven intelligences very rarely operate independently. Rather, the intelligences are used concurrently and typically complement each other as individuals develop skills or solve problems. For example, a dancer can excel in his art only if he has strong musical intelligence to understand the rhythm and variations of the music.

7. *Interpersonal intelligence* to understand how he can inspire or emotionally move his audience through his movements, as well as bodily-kinesthetic intelligence to provide him with the agility and coordination to complete the movements successfully (Gardner, 1993).

8. *Naturalistic Intelligence* According to Gardner, individuals who are high in this type of intelligence are more in tune with nature and are often interested in nurturing, exploring the environment and learning about other species. These individuals are said to be highly aware of even subtle changes to their environments.

Characteristics of Naturalistic Intelligence:

- Interested in subjects such as botany, biology and zoology;
- Good at categorizing and cataloging information easily;
- May enjoy camping, gardening, hiking and exploring the outdoors (Gardner, 1999).

9. *Existential intelligence* it involves an individual's ability to use collective values and intuition to understand others and the world around them. Individuals who excel in this intelligence typically are able to see the big picture. Philosophers, theologians, and life coaches are among those that Howard Gardner sees as having high existential intelligence. (Gardner, 1999).

Figure 1: MI theory

Gardner argues that there is both a biological and cultural basis for the multiple intelligences. Neurobiological research indicates that learning is an outcome of the modifications in the synaptic connections between cells. Primary elements of different types of learning are found in particular areas of the brain Existential corresponding transformations have occurred. Thus, various types of learning results in synaptic connections in different areas of the brain. For example, injury to the Broca's area of the brain will result in the loss of

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I.5 Multiple Intelligences in the Classroom

Accepting Gardner's Theory of Multiple Intelligences has several implications for teachers in terms of classroom instruction. The theory states that all seven intelligences are needed to productively function in society. Teachers, therefore, should think of all intelligences as equally important. This is in great contrast to traditional education systems which typically place a strong emphasis on the development and use of verbal and mathematical intelligences. Thus, the Theory of Multiple Intelligences implies that educators should recognize and teach to a broader range of talents and skills.

Another implication is that teachers should structure the presentation of material in a style which engages most or all of the intelligences. For example, when teaching about the revolutionary war, a teacher can show students battle maps, play revolutionary war songs, organize a role play of the signing of the Declaration of Independence, and have the students read a novel about life during that period. This kind of presentation not only excites students about learning, but it also allows a teacher to reinforce the same material in a variety of ways. By activating a wide assortment of intelligences, teaching in this manner can facilitate a deeper understanding of the subject material.

Everyone is born possessing the seven intelligences. Nevertheless, all students will come into the classroom with different sets of developed intelligences. This means that each child will have his own unique set of intellectual strengths and weaknesses. These sets determine how easy (or difficult) it is for a student to learn information when it is presented in a particular manner. This is commonly referred to as a learning style. **Many learning styles can be found within one classroom**. Therefore, it is impossible, as well as impractical, for a teacher to accommodate every lesson to all of the learning styles found within the classroom. Nevertheless the teacher can show students how to use their more developed intelligences to

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As children do not learn in the same way, they cannot be assessed in a uniform fashion. Therefore, it is important that a teacher create an "intelligence profiles" for each student. Knowing how each student learns will allow the teacher to properly assess the child's progress (Lazear, 1992). This individualized evaluation practice will allow a teacher to make more informed decisions on what to teach and how to present information.

Traditional tests (e.g. multiple choice, short answer, essay...) require students to show their knowledge in a predetermined manner. Supporters of Gardner's theory claim that a better approach to assessment is to allow students to explain the material in their own ways using the different intelligences. Preferred assessment methods include student portfolios, independent projects, student journals, and assigning creative tasks.

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CHAPTER II: THE DISCRIPTION OF THE RESEARCH

II.1 Research Hypotheses

1. Using the multiple intelligence education in the lessons of reading and writing (Arabic) in the elementary Arab schools would make learning much more interesting and meaningful.

2. Teachers who would use M.I. education at reading and writing would make their teaching methods more efficient and fun for the pupils.

3. M.I. education in reading and writing at the Arabs elementary schools a powerful will produce a positive change as a school tool through which students abilities can be enhanced to improve student motivation, self-esteem and academic achievement.

4. Developing the awareness of pupils teachers and principals in Arab society of M.I. education give the teachers the opportunity to find more ways of helping all pupils in their classes, and allow pupils to explore and learn in their own ways.

II.2 Research Goals

1. To investigate whether the M.I. education program will generate a change in self-esteem and achievements of the pupils

2. To examine if pupils develop beliefs about their abilities based on the M.I. education program

II.3 Research Methodology

Scientific research is divided into two main types: qualitative research and quantitative research. Quantitative research is based on facts and on combining understandings between the research population and the researchers: a concept must be defined and a theoretical definition must be given. The researcher faces the problem of validity: can he succeed in conveying his intentions using the research tool in the world of the research subject? In other words, if we have defined the research questions, we must determine if the research population indeed understands them as the researcher had intended, and how the researcher was able to measure his intentions using the research tools. Since the quantitative model has limitations, a qualitative research must be carried out on the one hand, a researcher carrying out a qualitative research using the inductive process does not seek to prove or disprove hypotheses from an earlier study, but rather develops a perception based on aggregate data when the theory is based on evidence. Qualitative research is a circular process; it teaches us to examine new concepts and aspects that are derived from new observations and examinations.

On the other hand, a researcher carrying out a quantitative research using the deductive process, in which the theory states the problems, will deduct hypotheses from the general theory; the discovery of empirical uniformity will bring directs results to the theoretical system.

Combining the two types of research methods could lead to an understanding of a new amalgamation of empirical findings.

Since this study was based on M.I. education program that intends to generate an educational change, the study was carried out as an action research and be a mixed research: the combined use of qualitative and quantitative research methods (Goetz and le Compte, 1984; Scriven, 1972; Bryman, 2008). The action research is a practical approach to professional inquiry in any social situation. In education to teachers or lecturers engaged in their daily contact with children or students. It can be a class in school, an educational system, or any other entity, having limits of time, place and participants (Zabar, 1995). Action research is done simply by action, hence the name. Action research can also be undertaken by larger organizations or institutions, assisted or guided by professional researchers, with the aim of improving their strategies, practices, and knowledge of the environments within which they practice. Action research systematically examines the area in which he works and tries to build a new space and processes of change. The main characteristics of action research are: derives the data from the natural system, emphasizes the research process, relative to the importance of the implications in the eyes of the participants (Creswell, 1998; Bryman, 2008). It is an area of society or an education research involving closed questionnaires on the one hand, and open interviews, test scores, the researcher's diary, etc. on the other hand.

II.4 Research Topic and Purpose

Being intelligent does not always mean that someone tests well, a problem with which teachers and school administrators have struggled since the earliest days of organized education. Howard Gardner's theory of multiple intelligences helps educators think differently about "IQ," and about what being "smart" means. The theory is changing the way some teachers teach.

When Howard Gardner's book, Frames *of Mind: The Theory of Multiple Intelligences* (Basic Books, 1983) burst on the scene, it seemed to answer many questions for experienced teachers. We all had students who didn't fit the mold; we knew the students were bright, but they didn't excel on tests. Gardner's claim that there are several different kinds of intelligence gave us and others involved with teaching and learning a way of beginning to understand those students. We would look at what they could do well, instead of what they could not do.

Later Gardner, helped us understand how multiple intelligences could help us teach and evaluate our students in new and better ways.

II.5 Research Limitations

The research sample is a sample of a limited population that was chosen in order to enable carrying out an in-depth study according to the research objectives to help gain a better understanding.

II.6 Study Background

I chose this subject for several reasons:

I think Gardner's theory is very interesting and meaningful and used it with many students and the results were positive, and was fun for both teacher and students.

We noticed that many students have a low self-esteem so while teaching them we can (depending on Gardner's theory) in addition to developing their learning ability we would be able to increase their self esteem.

The purpose of this research is **to give the teachers a chance to review their teaching methods and comparing it with ones that are more efficient.**

This session provides a new perspective on diversity by showing how pupils, can be looked upon in a more positive way by seeing each person in terms of their strengths rather than their weaknesses Engaging reading and writing Learners: An Alternative Approach for the Teaching of Arabic in the Primary School.

II.7 Significance of the Research

The M.I. education program is based on Gardner theory, and offers a pupil plenty of means to promote his learning, identify learning blocks, and release them through activities that connect between his own strong intelligence and the reading and writing in the class. The pupil learns to balance himself through the activity, and thus improves his own strength in order to learn in an effective way, reading and writing.

The purpose of the program is to improve the pupil's reading and writing for developing special skills to provide him with experiences of success. The mediator will help the pupil recognize his positive attributes and new strengths he had not been aware of.

Table 2.1 The quantitative and qualitative research tools

Qualitative Research Tools	Quantitative Research Tools
Researcher diary (tool which is used in the context of participant observation method). Grid interview – tool used in the context of semi-structured personal interview, conducted at the end of the year with Six pupils - to deepen the knowledge from the perspective of pupils who participated in the M.I. education program.	Closed questionnaire – for the pupils to examine how self-image, and which kind of intelligence everyone has and their achievements changed following the M.I. education program. Scholar documents – for study grades during the year, grades which were obtained within the educational program M.I. and within the modification of teachers' perspective about the pupils.

Data collection techniques: **Qualitative Techniques for Data Collection:**

Each of the research methods discussed above uses one or more techniques for collecting empirical data (many qualitative researchers prefer the term "empirical materials" to the word "data" since most qualitative data is non-numeric). These techniques range from interviews, observational techniques such as participant observation and fieldwork, through to archival research. Written data sources can include published and unpublished documents, company reports, memos, letters, reports, email messages, faxes, newspaper articles and so forth.

In anthropology and sociology it is a common practice to distinguish between primary and secondary sources of data. Generally speaking, primary sources are those data which are unpublished and which the researcher has gathered from the people or organization directly. Secondary sources refers to any materials (books, articles etc.) which have been previously published.

Typically, a case study researcher uses interviews and documentary materials first and foremost, without using participant observation. The distinguishing feature of ethnography, however, is that the researcher spends a significant amount of time in the field.

Data collection techniques include:

- **Interviews:** Interviews enable face to face discussion with human subjects. If you are going to use interviews you will have to decide whether you will take notes (distracting), tape the interview (accurate but time consuming) rely on your memory or write in their answers (can lead to closed questioning for time's sake). If you decide to interview you will need to draw up an interview schedule of questions which can be either *closed* or *open* questions, or a mixture of these. Closed questions tend to be used for asking for and receiving answers about fixed facts such as name, numbers, and so on. They do not require speculation and they tend to produce short answers. With closed questions you could even give your interviewees a small selection of possible answers from which to choose. If you do this you will be able to manage the data and quantify the responses quite easily. The Household Survey and Census ask closed questions, and often market researchers who stop you in the street do too. The problem with closed questions is that they limit the response the interviewee can give and do not enable them to think deeply or test their real feelings or values (Fontana et al. 2003).

- **Questionnaires:** Questionnaires often seem a logical and easy option as a way of collecting information from people. They are actually rather difficult to design and because of the frequency of their use in all contexts in the modern world, the response rate is nearly always going to be a problem (low) unless you have ways of making people complete them and hand them in on the spot (and this of course limits your sample, how long the questionnaire can be and the kinds of questions asked). As with interviews, you can decide to use closed or open questions, and can also offer respondents multiple choice questions from which to choose the statement which most nearly describes their response to a statement or item. Their layout is an art form in itself because in poorly laid out questionnaires respondents tend you need to take expert advice in setting up a questionnaire, ensure that all the information about the respondents which you need is included and filled in, and ensure that you actually get them returned. Expecting people to pay to return postal questionnaires is sheer folly, and drawing up a really lengthy questionnaire will also inhibit response rates. You will need to ensure that questions are clear, and that you have reliable ways of collecting and managing the data. Setting up a questionnaire that can be read by an optical mark reader is an excellent idea if you

wish to collect large numbers of responses and analyze them statistically rather than reading each questionnaire and entering data manually (Stake, 1995).

- **Observation:** It's a fundamental way to collect information on qualitative research. It has a great importance in educational research in particular. In many of the educational positions, the researcher needs to base his observations in their natural lives and recording what he sees and hears. In this method the researcher does not interfere in the group affairs which is being to be examined, but takes the observations in their real situation. Observation is used extensively in studies by psychologists, anthropologists, sociologists, and program evaluators. Direct observation reduces distortion between the observer and what is observed that can be produced by an instrument (e.g., questionnaire). It occurs in a natural setting, not a laboratory or controlled experiment. The context or background of behavior is included in observations of both people and their environment. And it can be used with inarticulate subjects, such as children or others unwilling to express themselves.

The observation may be quantitative (Organized) and may be qualitative (not organized). In the quantitative one, the researcher seeks to collect digital information (quantity) through an instrument prepared in advance. For example, the registration number of questions given by the teacher, and the number of students participating in the chapter, or the expense of time spent in the teacher talk, and so on.

Qualitative observations are less structured. The researcher does not use predetermined categories or patterns, but recorded his observations normally and open. He records the reality as it happens. The basic idea here is that the classification and labeling information resulting from the observation that will appear after collecting and analyzing information, rather than be imposed arbitrarily on the information in the process of observation (Stake, 1995).

Chapter III: FINDINGS

III.1 Applying the Case Study Method to our study:

"Developing Reading comprehension at Pupils in Elementary School by Gardner's Theory"

Howard Gardner's theory of multiple intelligences makes people think differently about "I.Q." and being "smart". We have met people who seem to be good at only one type of thinking like verbal or analytical. We know that they are "smart", but see them fail in areas that are outside of their realm of "intelligence".

This paper will discuss Gardner's theory, then it will describe how the theory can help us (teachers, educators) develop **Reading comprehension** in our students.

We want to conduct research in order to check the positive effect of Gardner's theory. To do that I'm planning to teach a group of pupils depending on Gardner's theory and as soon as we accomplish this acquaintance, I want to find whether they have changed.

Most teachers who deal with students that have learning disabilities they use numerous methods during teaching explaining and evaluation in spite. The fact that students are multi-intelligence that means they can learn in many different, ways. So that if the teacher used several teaching methods he would be able to reach the biggest number of students and would be aquatinted to them deeply and thoroughly.

So the purpose of this research is:

1. Giving the teachers ideas and propositions for making their teaching methods more efficient and fun for the students at Reading, Writing.
2. A chance for the teacher to develop the students at Reading, Writing.

I chose this subject for several reasons:

We found Gardner's theory very interesting and meaningful and used it with many students and the results were pretty positive, and was fun for both the teacher and the students.

We noticed in many students who have learning disabilities a low self-esteem so while teaching them we can (depending on Gardner's theory) in addition to developing their learning ability we would be able to increase their self-esteem.

The purpose of this research is to give the teachers a chance to review their teaching methods and comparing it with ones that are more efficient.

III.2 Study Variables

Independent variable – M.I. education program applied at pupils in Third Grade from Arabic primary school

The dependent variables are:

- the level of attractivity of the lessons
- the level of meningfulless
- the level of methods efficiency
- the level of students' motivation
- the weight of the differentiate instruction

The dependent variables were measured using observational indicators/ descriptors for each of them.

E.g.: In the table 2.3. we offer observational indicators/ descriptors for the variable „the level of meningfulless".

Table 2.3: Observational indicators/ descriptors for the variable „the level of meningfulless"

1. The pupil recognize the main characters in the text
2. The pupil mark each statement true or false according to the text.
3. The pupil number the sentences(facts) from 1-5 in the order they occurred according to the text.
4. The pupil summaries the main idea from the text

III.3 Research Tools

In a mixed research, the researcher collects data from observations, lists, diaries, personal interviews, personal conversations, closed questionnaires, and more.

Observations: The observation is the main way of collecting data. The researcher observes the object he is interested in studying and documents every detail of the research subject's behavior that pertains to the research (Yisraeli, 1999). The observation could be an

open observation, from which the researcher gets impressions about most of the factors comprising the research study's environment and records this information. It could be a focused observation whereby it was decided in advance to focus on certain areas. The researcher's involvement is expressed in the type of observation. In a participant observation.

The researcher is part of the research population and records his impressions and comments instantaneously. The researcher's response is affected by the task he has taken upon himself and by the environment's response to him. In a non-participant observation, the researcher has minimal, if any, contact with the research population, and carries out an overview of the events that is as objective as possible. There are several problems involved in a participant observation: as a group member, the researcher cannot free himself temporarily from his task, he must devote considerable time to the task even if it is not directly related to the research, and there is danger of his involvement due to his position as part of the team and as a researcher.

In this study, the researcher was a participating researcher and teaches the M.I. program in the third class. On the one hand, there was the desire to succeed and encourage the program to succeed according to expectations; on the other hand, various factors were involved in the field, such as pupils' behavior, the environment, interactions between the pupils themselves, and interactions between the pupils and the teacher/researcher. The essence of the study was the M.I. program as spiral format (an Alternative Assessment) according to the pupil's development. Therefore it could not be done according to expectations, rather according to the existing situation. In addition, in parallel to the program, ongoing reporting was done in the researcher's diary.

Formal documentation was existing in the school includes reports and documents that serve as the research data. These data are collected three times a year according to the school's trimesters, upon the authorization of the school's management. The documents collected were not confidential and were not taken from the pupils' personal files.

Questionnaires help in acquiring basic information about the experiences and opinions of others in an organized and systematic fashion. Through questionnaires, findings are received, the analysis of which helps to provide suitable answers to the research questions. In a closed questionnaire, the research subjects answer questions having predetermined answers. In an open questionnaire, the research subject expresses his opinion about the research subject according to written structured questions prepared in advance. The advantage of the questionnaire is that it is focused and the answers are based only on options chosen from a variety of choices. The disadvantage is that the research subject can't express his opinion freely.

Two examples of a questionnaire were distributed during the M.I. program. The closed questionnaire was distributed to the teachers about their opinion about M.I. education and to the pupils' regarding their attitudes of self-esteem, self-image, and kinds of intelligences in class.

Personal interviews were conducted at the end of the year for six pupils from the class. They were semi-structured interviews, and were recorded in a closed room separately for each pupil.

III.4 The Nine Types of Intelligence

1. Naturalist Intelligence ("Nature Smart")

Designates the human ability to discriminate among living things (plants, animals) as well as sensitivity to other features of the natural world (clouds, rock configurations). This ability was clearly of value in our evolutionary past as hunters, gatherers, and farmers; it continues to be central in such roles as botanist or chef. It is also speculated that much of our consumer society exploits the naturalist intelligences, which can be mobilized in the discrimination among cars, sneakers, kinds of makeup, and the like.

2. Musical Intelligence ("Musical Smart")

Musical intelligence is the capacity to discern pitch, rhythm, timbre, and tone. This intelligence enables us to recognize, create, reproduce, and reflect on music, as demonstrated by composers, conductors, musicians, vocalist, and sensitive listeners. Interestingly, there is often an affective connection between music and the emotions; and mathematical and musical intelligences may share common thinking processes. Young adults with this kind of intelligence are usually singing or drumming to themselves. They are usually quite aware of sounds others may miss.

3. Logical-Mathematical Intelligence (Number/Reasoning Smart)

Logical-mathematical intelligence is the ability to calculate, quantify, consider propositions and hypotheses, and carry out complete mathematical operations. It enables us to perceive relationships and connections and to use abstract, symbolic thought; sequential reasoning skills; and inductive and deductive thinking patterns. Logical intelligence is usually well developed in mathematicians, scientists, and detectives. Young adults with lots of logical intelligence are interested in patterns, categories, and relationships. They are drawn to arithmetic problems, strategy games and experiments.

4. Existential Intelligence:

Sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here.

5. Interpersonal Intelligence (People Smart")

Interpersonal intelligence is the ability to understand and interact effectively with others. It involves effective verbal and nonverbal communication, the ability to note distinctions among others, sensitivity to the moods and temperaments of others, and the ability to entertain multiple perspectives. Teachers, social workers, actors, and politicians all exhibit interpersonal intelligence. Young adults with this kind of intelligence are leaders among their peers, are good at communicating, and seem to understand others' feelings and motives.

6. Bodily-Kinesthetic Intelligence ("Body Smart")

Bodily kinesthetic intelligence is the capacity to manipulate objects and use a variety of physical skills. This intelligence also involves a sense of timing and the perfection of skills through mind–body union. Athletes, dancers, surgeons, and craftspeople exhibit well-developed bodily kinesthetic intelligence.

7. Linguistic Intelligence (Word Smart)

Linguistic intelligence is the ability to think in words and to use language to express and appreciate complex meanings. Linguistic intelligence allows us to understand the order and meaning of words and to apply meta-linguistic skills to reflect on our use of language. Linguistic intelligence is the most widely shared human competence and is evident in poets, novelists, journalists, and effective public speakers. Young adults with this kind of intelligence enjoy writing, reading, telling stories or doing crossword puzzles.

8. Intra-personal Intelligence (Self Smart")

Intra-personal intelligence is the capacity to understand oneself and one's thoughts and feelings, and to use such knowledge in planning and directioning one's life. Intra-personal intelligence involves not only an appreciation of the self, but also of the human condition. It is evident in psychologist, spiritual leaders, and philosophers. These young adults may be shy. They are very aware of their own feelings and are self-motivated.

9. Spatial Intelligence ("Picture Smart")

Spatial intelligence is the ability to think in three dimensions. Core capacities include mental imagery, spatial reasoning, image manipulation, graphic and artistic skills, and an active imagination. Sailors, pilots, sculptors, painters, and architects all exhibit spatial intelligence. Young adults with this kind of intelligence may be fascinated with mazes or jigsaw puzzles, or spend free time drawing or daydreaming.
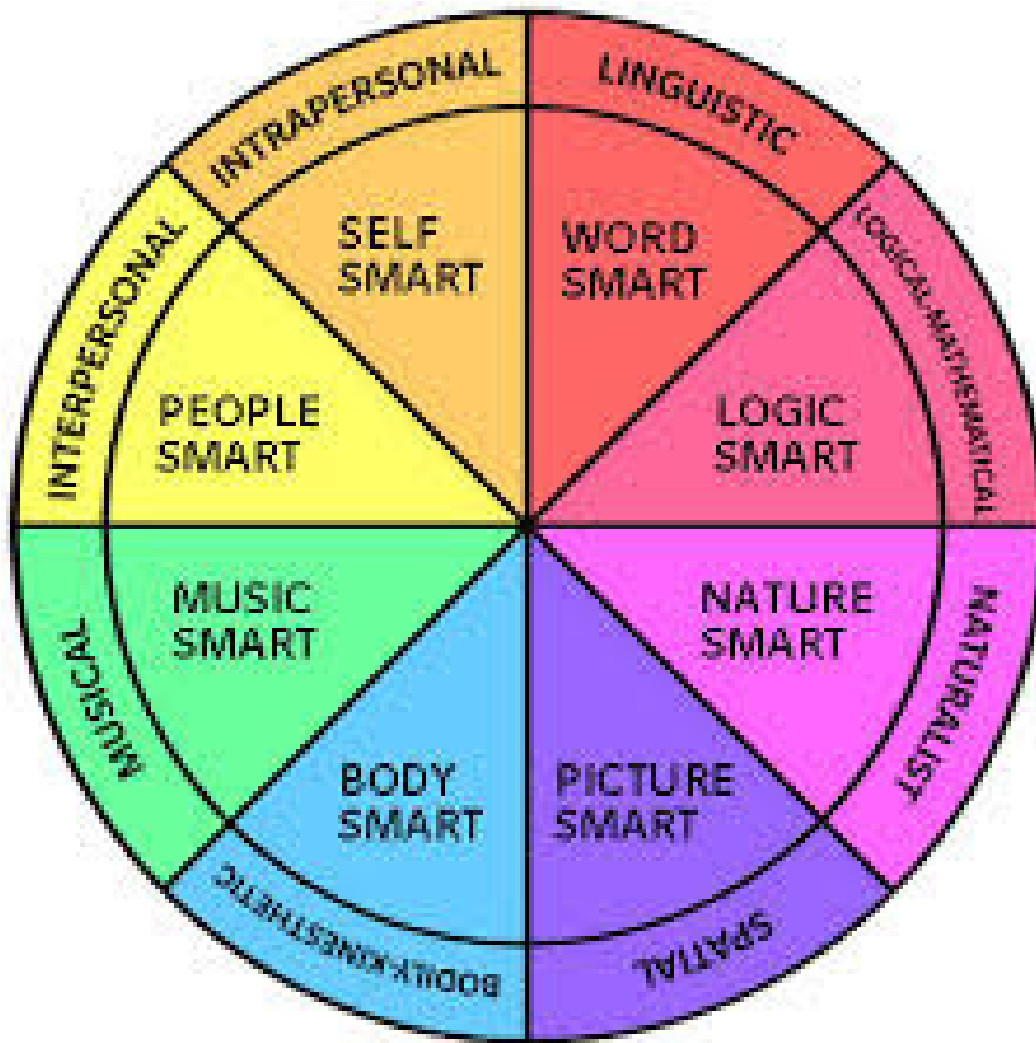
Figure 2: The nine intelligences

Table 2.4 : The 9 Intelligences of MI Theory

	Intelligence	Skills and Career Preferences
1.	**Verbal-Linguistic Intelligence** Well-developed verbal skills and sensitivity to the sounds, meanings and rhythms of words	**Skills** - Listening, speaking, writing, teaching. **Careers** - Poet, journalist, writer, teacher, lawyer, politician, translator
2.	**Mathematical-Logical Intelligence** Ability to think conceptually and abstractly, and capacity to discern logical or numerical patterns	**Skills** - Problem solving (logical & math), performing experiments **Careers** - Scientists, engineers, accountants, mathematicians
3.	**Musical Intelligence**	**Skills** - Singing, playing instruments, composing

	Ability to produce and appreciate rhythm, pitch and timber	music **Careers** - Musician, disc jockey, singer, composer
4.	**Visual-Spatial Intelligence** Capacity to think in images and pictures, to visualize accurately and abstractly	**Skills** - puzzle building, painting, constructing, fixing, designing objects **Careers** - Sculptor, artist, inventor, architect, mechanic, engineer
5.	**Bodily-Kinesthetic Intelligence** Ability to control one's body movements and to handle objects skillfully	**Skills** - Dancing, sports, hands on experiments, acting **Careers** - Athlete, PE teacher, dancer, actor, firefighter
6.	**Interpersonal Intelligence** Capacity to detect and respond appropriately to the moods, motivations and desires of others	**Skills** - Seeing from other perspectives, empathy, counseling, co-operating **Careers** - Counselor, salesperson, politician, business person, minister
7.	**Intrapersonal Intelligence** Capacity to be self-aware and in tune with inner feelings, values, beliefs and thinking processes	**Skills** - Recognize one's S/W, reflective, aware of inner feelings **Careers** - Researchers, theorists, philosophers
8.	**Naturalist Intelligence** Ability to recognize and categorize plants, animals and other objects in nature	**Skills** - Recognize one's connection to nature, apply science theory to life **Careers** – Scientist, naturalist, landscape architect
9.	**Existential Intelligence** Sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here	**Skills** – Reflective and deep thinking, design abstract theories **Careers** – Scientist, philosopher, theologian

Findings from the Quantitative Research

Data analysis

An analysis of the questionnaires was conducted in two stages. First, internal consistencies were examined for the self-image questionnaire, and the mean scale scores were calculated. Inter-rater reliabilities were examined with Kendall's W between the two raters of pupils' school functioning and behavior.

An analysis of the data in the research examined if it is possible to divide the items collected from the questionnaires into general categories, which would represent combined content. Data analysis was made for two different questionnaires, the self-image questionnaire and the M.I. questionnaire. The results showed that from the questions, categories were formed as was expected.

Self Esteem Questionnaire:

In summary, this research deals with the belief that an individual in general and a pupil in particular are affected by different genetic, cultural and personal factors. An individual develops his self-image and self-esteem from emotional, intellectual and movement patterns. These patterns serve the pupil in various frameworks in his life – his studies, with his friends – but they could be very limiting and prevent the individual from fully tapping his potential. the researcher believe that through M.I. education exercises and listening to ourselves while performing these actions, experience and self-reflection are ways that lead to a broader knowledge about the self, resulting in the development of better self-image and self-esteem that enables more effective organization in all areas of life. Beckman, M. "Collaborative Learning: Preparation for the Workplace and Democracy" *College Teaching,* 1990, *38(4),* 128-133.

Issues emerging from the self-image questionnaire

Pre-study differences in self-image were examined with a series of univariate analyses of variance. Generally, no significant differences were found. The two groups started out with similar scores

CHAPTER IV: CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study portrays a M.I. Program, which combines a cognitive and a behavioral view, a neurophysiologic vision, involving creative activities, consisting of elements of multiple intelligences and positive thinking.

We can see that there is a connection between the independent variable and the dependent variables.

The "M.I. education" program focuses upon the prospective ways to enhance these pupils' realization of their ability, and that receiving help for the sake of a change should not be perceived as a declaration of weakness, but rather as strength, a call for new courses of choice toward initiating a change. Recognizing the prospect of change is one of the most fundamental elements of change activities, hence being one of the M.I. program's fundamental principles.

At the context of learning, the M.I. education program may assist in fostering positive motivational processes, such as the feeling of capability, pursuing challenges, and confidence of succeeding. Focusing on the strength of the pupils may enhance performance in various cognitive tasks and behavior patterns.

The mediator's role is to convey the pupil a message of availability as long as needed. The role of the M.I. program is to arouse the pupil's desire within to change, as well as curiosity to seek a different meaning, an ability to change, and belief in that ability.

The connection of the M.I. program and education is based upon a theoretical rationale, which was presented in the first chapters, and upon a practical analysis presented in the last chapters. A similar process may also be implemented in other content areas at school.

The following conclusions were drawn in several important aspects from implementing the M.I. program at the elementary school.

1. An analysis of the data prior to the beginning of the M.I. program and during the program allowed the adaptation of the activity to the pupils while maintaining the fixed structure of the activity.
2. A homogeneous group learning structure for the pupils enhanced their willingness to participate and learn. Coping with contents with an increasing level of difficulty without the presence of other pupils facilitated them in developing self-confidence and self-control during Arabic education classes, as well as in other school subjects.

3. In addition to allowing monitoring of task performance, learning reading comprehension in Arabic lessons using activities proved the pupils that they have the ability to improve their achievements by investing efforts and complying with rules and requirements. The M.I. program created diverse situations of success through the tasks, new experiences within the regular curriculum, and through them learning and the practice of behavior patterns and a change in internal motivations.

The conclusions following the M.I. program are as follows:

1. Prior to the beginning of the M.I. program, a positive self-image was generally found in all of the research groups; compared to the other group. Yet they displayed a positive self-image. In other words belonging to a special class did not affect their self-image negatively.

Hence, it may be concluded that belonging to third class bears a positive effect upon self-image, both in the personal and social aspects.

2. Prior to the beginning of the M.I. program, the behavior patterns within the group were found to be lower than within the other research group, and the control group. this finding constitutes a justification of the fact that these pupils display difficulty in adapting to educational structure at school namely, to expected behavioral norms and proper work practices, resulting in poor academic achievements.

3. The M.I. program that was implemented within a group of the third grade pupils resulted in the pupils' improved physical self-image. Thus, physical-motor intelligence was enhanced, according to Gardner (1996). On the one hand, the ability to see the body as a socially non-threatening object was achieved. On the other hand, the pupils acquired a decent ability to control the body thus allowing them to perform different activities.

It may be stated that the improved physical-motor intelligence resulted in a more active participation in physical education classes, while the reduced social threat led to a more active participation in other classes.

4. The M.I. program that was implemented within a group of pupils improves the behavior patterns, because clear behavior patterns rules in the learning environment were established, while a personal learning process through positive reinforcements was maintained.

The M.I. program to be implemented within Arabic reading comprehension class may result in improved behavior patterns in other school-related aspects.

5. The M.I. program is a significant model for enhancing pupils' sense of accomplishment and success, through positive thinking and physical activity.

6. This M.I. program may be of great contribution to enhanced self- esteem and change behavior pattern.

7. This program may constitute a resource for teachers and schools in coping with pupils, as well as for empowering other pupils.

Table 4.1: Conclusion in numbers (number of pupils):

Dependent variables	M.I. group (30 pupils)	Control group (30 pupils)
1. The pupils who recognized the main characters in the text	27	18
2. The pupil who marked each statement true or false according to the text.	22	16
3. The pupil who numbered the sentences (facts) from 1-5 in the order they occurred according to the text.	24	16
4. The pupil who summaries the main idea from the text.	26	19

Table 4.2: Conclusion in percentages %

Dependent variables	M.I. group (30 pupils)	Control group (30 pupils)
1. The pupils who recognized the main characters in the text	90%	60%
2. The pupil who marked each statement true or false according to the text.	73.33%	53.33%
3. The pupil who numbered the sentences (facts) from 1-5 in the order they occurred according to the	80%	53.33%

text.		
4. The pupil who summaries the main idea from the text.	86.66%	63.33%

Research Contribution

Through self-image, an individual constructs the knowledge of himself regarding his emotions, values, capabilities and self-esteem in general. Self-esteem is an individual's positive and negative opinion of himself, a combination of our opinions of and the opinions of others of us. An individual perceives himself in a unique way, while the environment views an individual by observing his behavior patterns, but it often seems that one's expressed self-confidence disguises a low self-image. Therefore, self-image is perceived by the individual only, and does not necessarily indicate his behavior patterns. Many pupils refer to the significance of self-image's role in academic achievements, in social connections, in ways of coping, and in behavior patterns.

When an individual serenely accepts all aspects of his self-image, with its positive and negative aspects. Consequently he is able to display the good and the bad, as well as to connect himself. Yet when an individual may not accept all the aspects of his self-image, he attempts to connect with the good aspect only, while ignoring the negative aspects, his aggressiveness is indirectly expressed through cynicism and sarcasm, or directly through verbal or physical violence. When an individual channels the majority of his energy for the sake of camouflage, it prevents him from successfully fulfilling his potential. None of these extremes is ideal, thus balance must be sought.

In the group prior to the beginning of the M.I. program, the pupils created a positive self-image for themselves. Viewing their poor behavioral pattern found in the study probably were not able to serenely accept all aspects of their self-image resulting in the inability to fulfill their academic potential.

The M.I. program in the group caused an enhancement of both physical self-image and self-esteem, thus resulting in the pupils' attaining serene acceptance of all, or most aspects of their self-image. These factors resulted in the pupils' feeling capable of succeeding, expressing self-control, and being confident that they may transform their behavior patterns in the behavior parameters such as: arriving on time to class, talking less during class, concentrating more in class, participating in class, and being motivated to learn.

The academic framework of the junior high school is designed for adolescent-aged pupils. The period of adolescence in an individual's life is an interim stage between childhood

and adulthood. During this period, pupils acquire independence and learn skills required for their adult life.

The physiological, emotional, and social changes that adolescents undergo affect the development of their personal identity. Adolescence is characterized by a decline in the level of identification with parents, embarking at the commencement of identifying with other figures commences: peer group, or other key figures in the individual's life, such as teachers, athletes, singers, film stars, etc. This process of emotional separation results in alienation, rebellion and hostility towards the parent and towards other social authorities, such as school. The group of peers provides support and a feeling of security which has previously been provide by the family. The group of peers becomes very significant, bearing great influence upon behavior patterns. Prior to the beginning of the intervention program, it was found that the pupils in the underachievers group displayed a high social self-image. Hence, it may be concluded that the group of peers fulfilled an important role for the pupils, in association with behavior patterns, both in the behavior parameter and the functioning parameter.

The conclusions following the M.I. program are as follows:

1. Prior to the beginning of the M.I. program, a positive self-image was generally found in all of the research groups; compared to the other group. Yet they displayed a positive self-image. In other words belonging to a special class did not affect their self-image negatively. Hence, it may be concluded that belonging to third class bears a positive effect upon self-image, both in the personal and social aspects.

2. Prior to the beginning of the M.I. program, the behavior patterns within the group were found to be lower than within the other research group, and the control group. this finding constitutes a justification of the fact that these pupils display difficulty in adapting to educational structure at school namely, to expected behavioral norms and proper work practices, resulting in poor academic achievements.

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33

classes, while the reduced social threat led to a more active participation in other classes.

4. The M.I. program that was implemented within a group of pupils improves the behavior patterns, because clear behavior patterns rules in the learning environment were established, while a personal learning process through positive reinforcements was maintained. The M.I. program to be implemented within Arabic reading comprehension class may result in improved behavior patterns in other school-related aspects.

5. The M.I. program is a significant model for enhancing pupils' sense of accomplishment and success, through positive thinking and physical activity.

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Dependent variables	M.I. group (30 pupils)	Control group (30 pupils)
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recognized the main characters in the text		
2. The pupil who marked each statement true or false according to the text.	73.33%	53.33%
3. The pupil who numbered the sentences (facts) from 1-5 in the order they occurred according to the text.	80%	53.33%
4. The pupil who summaries the main idea from the text	86.66%	63.33%

Originality and innovation of the research

The M.I. program is a model of an educational program which was conducted in Arabic reading comprehension lessons and may be implemented for other school subjects. The originality of the program lies within its combination of several approaches: the cognitive approach, the behavioral approach, the neuropsychological approach, the movement approach, and the multiple intelligences approach. This combination allowed obtaining an overall view of the pupils and resulted in a combined activity, which led to changes in the group.

The innovation of the program is its prospect of conducting movement-related activities, singing, drawing, role plays, within the school framework at the beginning of each lesson thereby granting positive energy to every pupil as well as to the teacher to guarantee more effective teaching and opening one's mind to absorb the material learned. Additionally, a pupil who feels confident of his ability will have the power to put forth efforts and obtain better academic achievements.

The M.I. program established clear goals for each lesson as well as clear parameters of success for each lesson, thus providing the pupils with clear requirements and indicators of success in fulfilling the task. **In order for the goal to be effective and to encourage the pupil's strengths, a goal expressing a pupil's potential will guarantee that the pupil who applies reasonable efforts will succeed in fulfilling it.** Coping with successful tasks during each lesson arose satisfaction among the pupils in coping with the effort and enhanced their self-confidence, while expanding the prospect of success in other school subjects.

The M.I. program, with the assistance of the diverse tool box of guided imagery, value cards, hand crafts etc. succeeded in recruiting hidden inner strengths of memories of past situations in which the pupil had memories of being successful, memories of being in safe places, memories of being in places where he was calm, and belief in his abilities. Thus, the individual believes in his inner resources and he realizes his ability to evolve.

This program which implements the creative kinesiology approach employed mediation in meetings of the mediator with one individual. In this study, the researcher has introduced the work method by a mediator with a group of pupils. That type of group work required considerable effort of spreading attention to several pupils simultaneously, but with the researcher teaching experience and specifically in working with this method, the task was fulfilled despite its difficulty.

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