People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

University of Kasdi Merbah - Ouargla

Faculty of Letters and Languages

Department of Literature and English Language

Thesis submitted in fulfillment of the requirements of the degree of doctorate in English language and literature

Discipline: Didactics

Title

The Incorporation of Multiple Intelligences Theory in Algerian EFL Classes: A Case Study of 2nd Year Secondary School EFL Classes

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Title

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Submitted by:

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Abstract

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The present study investigates the incorporation of Multiple Intelligences (MI) Theory in Algerian EFL classes. The purpose of this study was to examine secondary school EFL teachers' perceptions about the incorporation of MI theory in their classes and in the textbooks they use. The study also aimed at investigating the incorporation of MI theory in 2nd year secondary school EFL textbook "Getting Through". One of the aims of the study was also to examine the incorporation of MI theory in 2nd year secondary school EFL official exams. The sample of the study was composed of 36 2nd year secondary school EFL teachers affiliated to the Ghardaia directorate of education. As for the content analysis, the sample included 2nd year secondary school EFL textbook "Getting Through", and 50 samples of 2nd year secondary school official EFL exams. The research design followed a mixed method composed of a questionnaire for teachers, and a content analysis of textbook and official exams. Results of the study revealed that teachers' knowledge about MI theory was limited; yet, their affirmations about classroom practices indicated an unconscious incorporation of MI theory principles. Moreover, Teachers' perceptions indicated confusion between learning styles and MI theory. The content analysis of the textbook revealed a heavy focus on Verbal/Linguistic (VL) intelligence (100%) over other intelligences. The content analysis of official exam samples revealed also a heavy reliance on VL intelligence (100%). After comparing the textbook activities and the official exams activities, results indicated a lack of congruence between the two components. It was recommended that MI theory should be adopted by institutions so that different educational components are incorporated, including: teachers, students, parents, administrators, and policy makers.

Keywords: Multiple Intelligences Theory, EFL Textbook, Official EFL Exams, Content Analysis.

Statement of Authorship

Title: The Incorporation of Multiple Intelligences Theory in Algerian EFL Classes: A Case Study of 2nd Year Secondary School EFL Classes

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Acknowledgements

First and foremost, I would like to express my sincere and deepest feelings of gratitude to my supervisor, Professor Djamel Goui, for his unconditional support, firm dedication, sense of professionalism, and the sustainable encouragement he has kindly provided during the long journey in preparing this work.

I would like also to express my sincere thanks to the board of examiners for accepting to read this work, and to refine it with their valuable remarks.

I am very grateful for “Dar El Imam” institution for offering the needed conditions through the process of finishing this work.

I am also highly appreciative to Pr. Hammoudi Abdelhak, Dr. Boulmaiz Djallel, and Mme. Tairi Nora for the unconditional help they have provided.

Last but not least, I thank my family, my friends, my colleagues for their continuous encouragement.

Dedication

I dedicate this work to my parents, my wife, and my son

List of Abbreviations

BK	Bodily Kinesthetic
EFL	English as a Foreign Language
ELT	English Language Teaching
GTM	Grammar Translation Method
IA	Intrapersonal
IELTS	International English Language Testing System
IQ	Intelligence Quotient
IR	Interpersonal
IT	Information Thechnology
LM	Logical Mathematical
LS	Learning Styles
LT	Language Teaching
M	Musical
MoNE	Ministry of National Education
N	Natural
TEFL	Teaching English as a Foreign Language
TESOL	Test of English for Speakers of Other Languages
TOEFL	Test of English as a Foreign Language
VL	Verbal Linguistic
VS	Visual Spatial

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General Introduction

Background of The Study

Intelligence has been a debatable topic for a long period of time. A large amount of literature has been written in this issue. Similarly, different approaches have investigated human intelligence from different perspectives. The theory of intelligence can be traced back to the French psychologist, Alfred Binet (1911), who was the first to design an Intelligence Quotient (IQ) test with Theodore Simon. This perception of human intelligence lasted for a long period of time resulting in the fact that many educators and institutions applied it when testing students' performance in language or mathematics. Though, Binet's view of intelligence has been severely criticized for being purely psychometric and focusing mainly only on linguistic and logical/mathematical intelligence.

Furthermore, the unique perception of intelligence was criticized by Gardner claiming that this fact means either Binet and his colleague were right about their theory, or their successors' assumptions were myopic. In this regard, recent years witnessed tremendous shifts in the concept of intellectual capacities, cognitive science, and artificial intelligence, etc. Based on Gardner's idea, two approaches can be discussed when perceiving human intelligence. Two schools marked thoughts on the nature of human intelligence. The first group argued that intelligence is genetic, i.e. we are born with it. Contrarily, the second group asserted that there exist different types of intelligence. As an example, it is stated that the mind is composed of 120 independent factors, with three dimensions for each factor, namely: content, process, and product.

Howard Gardner's Frames of Mind (1983) was considered as a quantum leap in research about intelligence. The book called for new vision of human intelligence and

criticized the old-fashioned view of intelligence that is restricted only to the IQ test scores. The idea behind Gardner's book was that the human mind possesses more than one type of intelligence. Multiple Intelligences (MI) theory, introduced by Howard Gardner, symbolizes the multi-faceted view of human intelligence. According to the theory, cognitive competence comprises having more than one dimension, including talents, abilities, mental skills. Thus, it challenged the myopic perspective on intelligence, and suggested eight intelligences, which are: logical/mathematical, linguistic, visual/spatial, interpersonal, intrapersonal, musical, and bodily-kinesthetic intelligences. The naturalistic has been added later in 1997; he has thought of adding a ninth intelligence which is the existential intelligence. In addition to that, the moral and the spiritual intelligences were also thought about but the issue is still debatable for many researchers.

MI theory was not designed for the educational context. Gardner, actually, claimed that the theory was mainly considered as a theory of mind. Yet, the impact of this theory can be extended to the field of education due to two reasons. First, the theory has to do with the variety of strengths and profiles of an individual. Second, students can better learn in different ways. Along the same vein, some researchers went further stating that it can even be considered as an instructional approach. Saban (2009) suggested three reasons why MI theory should be considered as an instructional approach. Firstly, MI theory perceives the child as an individual with his/her distinctive potentials. Secondly, MI theory principles propose new pedagogical assumptions for teachers. Thirdly, the theory argues for cooperation between teachers. Fourthly, the MI theory introduces students to know their own learning styles. As for the incorporations of MI theory in education, the theory can be incorporated in a way that educators recognize and teach to a broader range of skills and talents; teachers present and assess through implicating almost

all the intelligences. In the same concern, the incorporations of this theory allowed researchers to ask: “in what ways is this person smart?” instead of asking: “is this person smart?”

One of the objectives of teaching is to facilitate the learning process. Educationists claim that teachers’ duty is to provide learners with better learning opportunities. Accordingly, teachers state that learners have different needs, interests, and learning styles. This means that teachers should adjust their teaching strategies and materials in order to meet their students’ needs. The application of MI theory at schools was introduced in 1993 by Armstrong who called for more attention to the other neglected intelligences. Accordingly, the purpose of schools was to help pupils reach goals that are appropriate to their spectrum of intelligences. Schools have to maximize each person’s intellectual potential since learners differ in terms of interests and abilities. Similarly, what is considered as a weak intelligence can be turned out into a strong intelligence if the learner is given a chance to develop it. As a result, various kinds of learners require various ways of teaching, and sensitiveness to individual differences among learners.

The incorporation of MI theory in EFL classes was widely studied by several researchers, like: Puchta (2005); Dolati and Tahriri (2017); Ibnian and Hadban (2013); Altan (2012), etc. Christison and Kennedy (1999) defined four ways through which MI theory can be helpful in EFL classes: first, it helps students to better understand and appreciate their strengths and their preferred ways of learning. Second, it helps developing a better understanding of students’ intelligences. Third, it can be used as a guide for a wider range of learning ways. Four, it can also be a guide for various lesson plans that cover all learners’ needs. Accordingly, a number of studies conducted in the field of ELT recommended the following:

- Implicating senses, movements, and colors especially with young learners.
- Making their students play with the language through making up rhymes, singing, telling stories, etc.
- encouraging a cooperative rather than a competitive learning.
- Using storybooks, storytelling, and games.
- Implicating Drama.
- Using vocabulary activities as a way to enrich students' own dictionary.

As one of the main elements in any educational system, curriculum is automatically included in implicating MI theory principles within its whole structure. Relatively, learners' strong intelligences should be stressed during the process of the curriculum. He added seven key elements that can be used in lesson planning and curriculum development, namely: concentrate on one objective for a topic, choose one intelligence, take any possibility into consideration, vary the resources, choose the convenient activity, design the plan, and execute the plan. Along the same vein, teachers can improve the learning environment and increase innovation in the curriculum through the integration of MI theory in the teaching strategies.

Concerning assessing students' multiple intelligences profiles, students should therefore be assessed in the classroom environment with engaging materials, exercises and games on both academic and real world skills. The assessment should also be done in numerous ways so that students can demonstrate their competences through multiple intelligences. Supportively, means like: portfolios, observation checklists, score sheets, and tape recordings serve for evaluating students' growth and emphasizing their strengths, whether formally or informally. Students should be trained to actively assess

their learning. Accordingly, assessing students' intelligence profiles provide teachers with a holistic picture about students' likes and dislikes, strengths and weaknesses. As a result, procedures for individualized, appropriate, and efficient learning can be designed.

Rationale of The Study

According to Gardner (1993), all human beings have the eight intelligences, but, they differ in their intelligence profiles they have by birth and those they end up with. Gardner's theory offers a wide variety of practical incorporations to organize and to present materials for engaging and developing students' intelligences. Thus, EFL teachers should bear in mind their students' intelligence profiles, so that they can work on the less developed intelligences. It was further stated that MI theory provides a variety of practical incorporations that engage and implicate students in the learning process, and develop their different intelligences. Hence, teachers should be keen on students' different intelligences to recognize the strong ones and to strengthen the weak ones.

Christison (1996) highlighted the activities mostly used in the classroom and categorized them according to the different intelligences profiles. Therefore, this process serves for creating an individualistic learning environment, in addition to developing students' cognitive profile. Yet, it is generally believed that education systems commonly work on the linguistic and mathematical intelligence, neglecting other intelligences.

Based on the following observations, first, EFL learners have different learning needs and styles. Second, many EFL teachers face difficulties to reach all of their students' needs and interests. Third, addressing students' different intelligence profiles might be a practical solution for the suggested problematic. Fourth, assessment in Algerian EFL classes does not work in harmony with recent teaching methods, (Boulmaiz, 2017). Thus, the researcher is keen to determine whether the classroom practices and the materials

provided in addition to the assessment system are addressing the main different intelligences introduced by Gardner. The present study basically investigates the application of MI theory in Algerian EFL classes by analyzing the EFL textbook, EFL teachers' perceptions about the topic, and also the inclusion of the MI theory principles in the assessment system.

Statement of The Problem

Over the last decades, the Algerian education system has witnessed major changes. As one of the education system components, the English language curriculum taught at the Algerian public schools has been a subject to several changes in order to reflect the principles and values stated by the Algerian Ministry of National Education (MoNE).

The present study is intended to investigate the incorporation of MI theory in Algerian EFL classes. The investigation of the topic will be carried through three main branches: first, the incorporation of MI theory in Algerian EFL textbook, in order to reveal the occurrence frequency of different intelligences in textbook activities. Second, the incorporation of MI theory in Algerian EFL classes through grasping Algerian EFL secondary school teachers' perceptions about the incorporation of the MI theory in their sessions; as well as to raise teachers' awareness about the theory and its potential uses in classes. Third, the incorporations of MI theory in assessment process; i.e. to investigate if the assessment system is really and truly reflecting our students' different intelligences, in addition to find whether our students are assessed in the same way they are taught.

Research Question:

How is MI theory incorporated in 2nd year secondary school Algerian EFL classes?

Based on the main research question, four Sub-questions are to be answered:

1- How is the MI theory incorporated in 2nd year secondary school Algerian EFL textbook "Getting Through"?

2- How do secondary school EFL teachers implicate MI theory in their classes?

3- How is the MI theory incorporated in the assessment of 2nd year secondary school EFL students' learning?

4- Is there congruence between 2nd year secondary school EFL textbook objectives, teachers' perceptions about classroom practices, and the applied assessment system?

Purpose of the Study

The present study aims at attending the following purposes:

1- Investigating the incorporations of MI theory in the Algerian EFL textbook. Through content-analyzing the material, an adapted checklist is used to examine whether the activities in students' book vary in terms of intelligences or not, and to discover if there are some dominant intelligences. Moreover, the study aims at suggesting other types of activities that address students' multiple intelligences.

2- Investigating the incorporations of MI theory in EFL classes through grasping teachers' perceptions. In order to reach this aim, a survey is conducted to the population of the study to check their perceptions toward MI theory and their awareness about its benefits. The survey checks also if teachers implicate MI theory principles in their

sessions, and elaborate whether EFL teachers use extra materials in order to support the skills and the intelligences targeted in students' textbook.

3- Content-analyzing a sample of official exams activities. The same checklist used for analyzing the textbook activities is used to analyze exams activities in order to shape a general idea about the intelligence profile of our exams. The purpose is to find out whether exams are assessing through different intelligences, and if the exam activities reflect the same variety of activities in normal sessions. The idea behind this purpose is to suggest other ways of assessing our students' learning. Many researchers suggested alternative assessment ways to provide credible information about students' competence. Thus, this study attempts to explore alternative and more efficient ways to evaluate students' learning.

Methodology

Hypotheses: In an attempt to treat this problematic and after reviewing the literature, it is hypothesized that:

1- The MI theory is incorporated to a certain extent in Algerian EFL classes.

Null Hypothesis: the MI theory is not incorporated in Algerian EFL classes.

2- Algerian EFL teachers implicate, to a certain extent, the MI theory principles in their classes; whether intentionally or unintentionally.

Null Hypothesis: Algerian EFL teachers do not implicate the MI theory principles in their classes; whether intentionally or unintentionally.

3- The assessment system neglects most of the intelligences, and focuses mainly on two of them, namely: logical/mathematical intelligence, and linguistic intelligence

Null Hypothesis: the assessment system does not neglect most of the intelligences, and does not focus mainly on two of them, namely: logical/mathematical intelligence, and linguistic intelligence

4- There is a gap between the EFL textbook objectives, the classroom practices, and the way how students are assessed.

Null Hypothesis: there is no gap between the EFL textbook objectives, the classroom practices, and the way how students are assessed.

Instruments

To test the aforementioned hypotheses, the researcher has used three instruments:

1- A questionnaire delivered to secondary school EFL teachers in order to grasp their perceptions and knowledge about the incorporation of MI theory principles in EFL classes. The questionnaire is composed of 18 items, divided into two sections. The questionnaire has been adopted from a study conducted by Al-Omari (2010), and adapted according to the purposes of the current study.

2- A content analysis grid adopted from the study of Al-Omari (2010). The content analysis grid is designed especially to uncover the inclusion of MI theory in EFL textbook activities. It describes each of the eight intelligences, and it suggests a list for different activities engaging each of the eight intelligences. Furthermore, it states the different instructions serving each of the eight intelligences.

3- A content analysis grid adopted from the study of Al-Omari (2010). The content analysis grid is designed especially to uncover the inclusion of MI theory in second year secondary school official EFL exams. It describes each of the eight intelligences, and it

suggests a list for different activities engaging each of the eight intelligences. Furthermore, it states the different instructions serving each of the eight intelligences.

Participants

The participants in this study are composed of 36 secondary school EFL teachers in Ghardaia. The sample was selected randomly through an electronic questionnaire delivered through Google Forms. According to the statistics of Algerian Ministry of National Education (MoNE), 131 secondary school EFL teachers work in Ghardaia. As there exists three levels (first, second, and third year secondary school level), one 131 was divided into three because we are working only with second year level. As a result, we will have a sample of 43 of second year EFL teachers. 36 of second year EFL teachers only responded to the questionnaire. The study is mainly based on the textbook content analysis, and the content analysis of official exam activities; that is why the researcher considered 36 participants as a representative sample.

Structure of The Study

The present study is organized as follows: it is divided into two parts, the theoretical and the practical part. The theoretical part comprises three chapters, and the practical one includes three chapters.

The general introduction to the topic contains the background of the study in which the research is rightly contextualized. Then, a statement of the problem is introduced for that it serves to reveal what makes the topic worth investigating. After that, the researcher stated the purposes of the study according to the questions and the hypotheses. Then, a brief description of the methodology followed in the topic under study. Structure of the

study, significance of the study, limitations of the study, and definition of terms are respectively introduced in this section.

The first chapter contains a theoretical review of the related literature. This chapter is comprised of: the notion of intelligence, intelligence paradigms, intelligence theories, including psychometric, cognitive, cognitive contextual, and biological theories. Then, the researcher included an overview about measuring intelligence. The chapter is ended with a conclusion to review the mentioned items.

The second chapter includes the following items: the foundation of the multiple intelligences theory, Gardner's intelligences, criticisms of the multiple intelligences theory, the integration of multiple intelligences theory in education.

The third chapter comprises the implementation of multiple intelligences theory in the classroom, the relation between learning styles and multiple intelligences theory, textbooks and multiple intelligences theory, in addition to the common points between MI theory and some Language Teaching (LT) methods. This chapter states also some experimental studies about multiple intelligences theory, and some of the researcher's concluding remarks.

The fourth chapter is dedicated to assessment as an important component of any educational process. This chapter includes, first, a definition of some terms related to assessment, namely: measurement, tests, and evaluation. The researcher, then, mentions the purposes of assessment (diagnostic, formative, and summative assessment). Types of assessment are also included within the third chapter. Types of assessment comprise quantitative assessment, qualitative assessment, and high stakes assessment. A brief comparison between standardized tests and authentic assessments is given. It was a must to add an overview on assessment and MI theory.

The second part is the practical one; It contains two chapters. The fifth chapter is devoted to methodology. The researcher stated in details: the population of the study, the sample of the study, the instruments of the study, the criteria of analysis, unit and category of the analysis, reliability of content analysis, procedures of the study, and statistical analysis. The fourth chapter includes also the results and the findings. It is organized according to the instruments of the study; i.e. results and discussion of the first research instrument, results and discussion of the second instrument, results and discussion of the third instrument.

The sixth chapter contains the pedagogical incorporations of the findings, in addition to some suggestions. Furthermore, the researcher redesigned some activities from the textbook under study, so that they serve MI theory principles.

In the general conclusion, the researcher tried to broaden the perspective of this work through illustrating the domains related to the findings, in addition to including some recommendations for policy makers in order to ensure a successful application of the findings.

Significance of The Study

The importance of this study lies in the great changes that MI theory has brought to education in terms of practical incorporations. Thus, the present study is supposed to be significant for the following parties:

- The Algerian Ministry of Education: because it may schedule training sessions to introduce the MI theory principles and some instructional practices for teachers of different fields.

- Curriculum designers: since they may suggest any improvement in order to include the MI theory principles in the Algerian EFL textbooks being used.

- Algerian EFL teachers: because they are supposed to be reminded of varying tasks and activities in order to serve learners' differences and to cater for their intelligences profile as well.

- Researchers also are included because the study may introduce them to new insights and invite them for further studies about the issue.

Delimitations of The Study

The findings of the present study are restricted to the following points:

- The study is limited to Algerian EFL teachers who teach 2nd year secondary school level in Ghardaia.

- The study is limited to 2nd year secondary school level, including all the streams.

- The content analysis is limited to 2nd year secondary school EFL textbook "Getting Through."

- The exams content analysis is limited to 2nd year secondary level.

- The key terms used in this study are restricted in terms of meaning to their definitions mentioned in the general introduction.

Limitations of The Study: inevitably, this study went through some limitations:

- The researcher intended to include among the instruments "classroom observations" in order to observe the real incorporation of MI theory in EFL classes and

to compare teachers' claims with their actual practices; yet, this procedure was not realized due to sanitary circumstances related to the global pandemic Covid-19.

- The reliability coefficient of the questionnaire could not be calculated because items of the questionnaire comprised a mixture of structured, semi-structures, and open-ended questions.
- The degree to which an intelligence is engaged in one activity was not possible to investigate, because no reliable tools could measure this aspect.
- Results of the questionnaire might be affected by some contradictions that were tracked among teachers' perceptions. The researcher tried to identify those contradictions so that to draw results on reliable data.

Definition of Relevant Terms

In this study, the researcher adopted the definitions of the following terms:

- Intelligence: Cornoldi (2006) defined intelligence as: "the capability of adaptively/efficiently solving problematic situation working from a mental representation of the problem. Intelligence is all the different aspects of cognitive functioning, such as perception, attention, language, memory, reasoning, and so on"

- Multiple Intelligences Theory: Gardner's MI Theory states that human beings have many different ways to learn and process information. According to him, intelligence is located in different areas of the brain. Intelligences are inter-connected and depend on each other, but they can work independently whenever needed. The eight different intelligences stated by Gardner are:

1- Verbal Linguistic Intelligence (VL): The ability to understand and use spoken and written communication.

2- Logical Mathematical Intelligence (LM): The ability to understand and use logic and numerical symbols and operations.

3- Musical Rhythmic Intelligence (M): The ability to understand and use such concepts as rhythm, pitch, melody, and harmony.

4- Visual Spatial Intelligence (VS): The ability to orient and manipulate three dimensional spaces.

5- Bodily-Kinesthetic Intelligence BK): The ability to coordinate physical movement.

6- Naturalistic Intelligence (N): The ability to distinguish and categorize objects or phenomena in nature.

7- Interpersonal Intelligence (IR): The ability to understand and interact well with other people.

8- Intrapersonal Intelligence (IA): The ability to understand and use one‘s thoughts, feelings, preferences, and interests.

- EFL textbook: it is meant, by this term, the official EFL textbook designed to Algerian 2nd year secondary school level entitled “Getting Through.”

- Assessment System: the system and the principles used to evaluate EFL students’ learning. This includes all types of assessment.

- Content analysis: it is a research method that is used to analyze different texts in several areas, like: economy, education, law, etc.

- Occurrence Frequency: it is the percentages of occurrence of different intelligences within the textbook under study. The occurrence frequency gives the exact proportion of each intelligence, in a unit or in the whole book.

- Balanced distribution: it judges the distribution of different intelligences among the activities. It investigates whether there is a balance in the engagement of intelligences within different activities.

- EFL: it refers to the teaching of English as a foreign language. English in Algeria is taught as a foreign language.

- Incorporation: it is the extent to which multiple intelligences theory is incorporated in 2nd year secondary school EFL classes.

- Intelligence profile: each human being has his/her a different combination of intelligences. The intelligence profile can be identified through answering a survey designed for the purpose.

- Textbook evaluation: Igbaria (2009, p.44) defined textbook evaluation as “the process of collecting information about the material being assessed in terms of its strong and weak points”

Part One:

Theoretical Part

Chapter One:

The Notion of Intelligence

Introduction

Intelligence was widely debated as one of the main human traits that distinguishes individuals. Researchers devoted remarkable efforts to define intelligence, its theories, the way how to measure it, and how it affects individuals' academic achievement, etc. This chapter is devoted to provide a general overview about different definitions of intelligence, different theories of intelligence, different way to measure human intelligence, in addition to a critical analysis of different intelligence theories.

1.1 Definitions of intelligence

Wechsler (1950) claimed that no definition can totally cover the concept of intelligence. Supportively, Sternberg (1990) also said: "there may be as many definitions of intelligence as there are people who are asked to define it, (p.33)". Defining the concept of intelligence is one of the most debatable issues in the field of psychology. Wechsler (1950), for example, stated that intelligence in general is a kind of power which is neither definable nor measurable. This controversy might be due to the complexity of the concept. Indeed, the best IQ tests have covered some aspects of intelligence. Sternberg, Grigorenko and Kidd (2005) admitted that they perceived a large gap existing between the conceptualization and operationalization of intelligence. Mason and Wilox (2009) affirmed that the intelligent performance can be recognized by anyone, but the concept becomes illusive when we try to define it.

Through the following section, the researcher contextualizes the issue of intelligence by reviewing philosophers' and psychologists' main definitions of intelligence over the years. The different definitions are going to be chronologically ordered from the ancient Greek philosophers' definitions to the most recent works. The end of the section is dedicated to discussing the main contemporary theories of intelligence.

Sternberg (1990) reported that Plato suggested an important metaphor of a block of wax in a man's mind so that to illustrate his perception of intelligence. Plato, according to Sternberg (1990), talked about a block of wax that exists in all men's minds in different shapes and sizes. This block of wax may be hard, moisty and pure according to the man's capacities. For example, if the wax is sufficiently deep, clear and pure, the mind is expected to be easy learning and far from confusion issues; However, if the wax is impure, very soft, very hard, or muddy, then the learner will show defects of the intellect. People with soft wax are expected to be fast learners but apt to forget. Contrarily, people with hard wax are slow learners but they retain what is learnt. By this metaphorical perception, Plato believed that a person's intelligence is mainly determined by nature; i.e. he did not mention if the block of wax is to be changed or not.

Controversially, St. Augustine (354-430) –the early Christian philosopher and theologian- believed that intelligence might have a bad effect on the human's spiritual nature. In his *confessions* (as cited in Sternberg 1990), St. Augustine questioned the value of intelligence by saying: "whether those who are less intelligent might not be better off, in that they would be less susceptible to departing from the will of God and the "nest" of the church" (p.25). Unlike most scholars and psychologists who considered intelligence as a wanted quality, St. Augustine perceived that intelligence might deviate the person from the path of rectitude.

In his *Leviathan* (1651), Thomas Hobbes (1588-1679) - as cited in Mackintosh (2011) - defined intelligence as having a quick wit and ability to perceive differences between similar things and similarities between different things. Furthermore, Hobbes distinguished between two sorts of intelligence, natural and acquired intelligence. The natural intelligence, according to him, is a set of intellectual skills that a human being

accumulates through life experience, while the acquired intelligence is settled through direct instruction.

Immanuel Kant (1724-1804), named intelligence as "higher faculties of cognition." As cited in Sternberg (1990), Kant affirmed that intelligence includes three parts: understanding, judgment and reason. In addition to that, he differentiated between two types of intelligences: *Genius* vs. *spirit of imitation*. *Genius* is tightly related to creativity. Otherly, it is the capacity to create and present new ideas when facing unexpected situations. While, *Spirit of imitation*, or imitative intelligence, is the capacity to learn from others.

By the end of the nineteenth century, more studies of intelligent behaviors started emerging. Brody (2000) stated that Gatlon was the first who started investigating the psychometric intelligence. Gatlon administered a set of tests to the visitors of London South Kensington Museum. Visitors of the museum were measured in terms of psychological abilities, namely: auditory and visual sensory discrimination abilities as well as reaction times to stimuli and the ability to exert hand-squeeze pressure on dynamometer. Mackintosh (2011) declared that Gatlon identified two aspects that influenced the intellectual ability of a human being: *energy* and *sensitivity*. Energy in a variety of fields is a common quality that characterizes all intellectually gifted individuals. He also observed that intelligent people showed a sharp sensitivity to external stimuli. Affected by the British empiricist philosophy, Gatlon argued that people interacted with the environment through the five senses; as a result, a more intelligent mind is the one capable to discriminate between these senses, to store and act upon more sensory information.

Gatlon's perceptions about intelligence received heavy criticism, despite his valuable contributions. According to Konold and Canivez (2009), Gatlon did not actually

understand and define the construct he was trying to measure. They added that Gatlon over focused on measuring physical and sensory aspects, but denied the mental and cognitive ones.

According to Mackintosh (2011), Alfred Binet presented his first test of general mental ability in 1905. Among those who criticized Gatlon's theory of intelligence, Binet questioned the usefulness of measuring intelligence through focusing only on ordinary cognitive operations. Binet further stated that intelligence tests should encompass higher levels of psychological functions, namely: common sense, memory, abstraction, judgment, imagination, and attention. As cited in Sternberg (1990), Binet considered intelligence as unitary capacity that equates judgment. On another vein, Gatlon's view that intelligence is a structural feature of the mind was also rejected by Binet. This latter rather believed that an intelligent behavior depends on the context and susceptible to development. Yun Dai (2008) stated that Binet defined intelligence as human aspect that is to be developed through education and social interventions.

According to Sternberg (1990), Spearman introduced a totally different view to intelligence in comparison with his predecessors. He regularly criticized the experimental psychology, and considered it trivial and insignificant. Spearman strongly believed that intelligence can be accurately measured and defined. Thus, he suggested the term *correlational psychology* which, according to him, would better clear the ambiguity of human behavior. Spearman developed a statistical method known as factor analysis, which agreed with Gatlon's hypothesis of intelligence. The theory of Spearman (1904) hypothesized a positive correlation between tests of sensory discrimination and measures of academic performance. Accordingly, Pelligrino (2002) affirmed that Spearman discovered a significant relationship among the different psychometric tests. This

observation led him to suggest a new term he named: *general factor* "G" or the broad mental capacity, which affects the *specific factors* "S" or the subsequent mental abilities.

More refined models were invented after reviewing Spearman's model. In addition to Spearman's batteries, Thurstone determined seven primary mental capacities, namely: verbal fluency, spatial visualization, memory, verbal comprehension, number, inductive reasoning, and perceptual speed. On another hand, Guilford differentiated between five mental operations through his renovated model, namely: cognition (knowing), divergent production (generation of alternatives), evaluation, memory, and convergent production. Theses batteries, according to Guilford, are organized around three dimensions: content, operation, and production. There exist four types of contents (figural, behavioral, semantic, and symbolic) that could be applied to each of the aforementioned operations. The different contents also can be reflected in terms of six outcomes: units, relations, incorporations, classes, systems, and transformations. By combining all these elements, they came up with 120 different abilities, (Brody, 2000).

Raymond Catell (1960) suggested some adjustments to Spearman's general factor "G" hypothesis. He proposed that general factor "G" could better be split into two correlated factors: fluid intelligence (Gf) and crystallized intelligence (Gc). The first one (Gf) is a biological innate form of intelligence that influences all types of problem solving, and how fast new information are being processed. According to studies, the (Gf) reaches its climax in late adolescence and starts declining with age. The (Gc) is mainly related to education and experience. It is also the person's capacity to use his/her previously accumulated knowledge and skill. More than that, (Gc) increases as the person grows older and faces more life challenges.

As cited in Sternberg (1990), Earl Hunt (1978) stated that intelligence is demonstrated within individual differences in mental competence. He basically focused

on determining how information processing occurs within intelligent thought. Hunt's predecessors focused mainly on identifying the structure of intelligence. However, he paved the way for the creation of cognitive theoretical standards that can be utilized to investigate individual differences. Hunt aimed to find a correlation between conventional psychometric test scores and the participants' individual differences. This correlation process was used by experimental psychologists in order to track the basic characteristics of cognition.

In 1983, a new invention has been introduced to the field of psychology. Howard Gardner introduced his theory of multiple intelligences to the world. Accordingly, new theoretical perspectives were proposed since Gardner's theory showed new research evidence. Gardner criticized the old aspects used to define and measure intelligence stating that they were not sufficient. Relatively, he declared that intelligence is manifold. As its name tells, the MI theory urges psychologists to study intelligence through the primitive occurrence of cognition in daily situations (Sternberg, 1990).

Years later, Robert Sternberg introduced his new theory of triarchic intelligence. He proposed that a person's self-governance is what to be called intelligence. According to Davidson and Downing (2000), Sternberg stated it as follow:

> There are three impacting aspects of intelligence. The first, which is internal to the individual, consists of information processing skills that guide intelligent behavior. The second aspect involves the ability to create an optimal match between one's skills and one's external environment. The third involves the ability to capitalize on one's experiences to process both novel and unfamiliar information successfully (p.42).

The analytical intelligence is what reflects the first aspect mentioned in the quote. It is about the person's ability to analyze and deal with familiar situations where decisions need to be taken. This ability represents the academic view of intelligence. The practical intelligence reflects the second aspect; it is of crucial importance to succeed in everyday

life. The third aspect is what Sternberg called “creative intelligence.” It covers the person’s ability to react to unfamiliar situations and to create unfamiliar solutions.

According to Nettelbeck (2011), Eysenck (1987) was among the psychologists who attempted to elaborate on the concept by referring to biological aspects that govern intelligent behavior. He perceived intelligence as a process of transmitting information via the cortex. He further concluded that reaction-time and IQ correlate positively and highly. Eysenck hypothesized that intelligent brains consume less energy by transmitting neural messages faster and more accurately.

1.2 Intelligence Paradigms

Researchers differed in the angle from which they examined the concept of intelligence. Boulmaiz (2020) declared that consideration of the basic mental capacities that comprise intelligence, and how they are organized are also an important source of diversity in the theory of intelligence. Consequently, researchers’ investigation of the topic from different perspectives resulted in this wide variety of theories. Based on the previous literature, theories can be categorized into four main paradigms:

1.2.1 Psychometric theories

The structure of intelligence was the prime concern of psychometric theories. These theories considered psychometric tests as the main source to discover the form of intelligent behavior in order to come to a successful operationalization of intelligence. The psychometric models are applied by: a) testing the cognitive ability (e.g., vocabulary, perceptual speed, analogies, number series, and general knowledge, etc.) of huge number of participants; b) scoring the tests; c) obtaining the factors of intelligence through a matrix of intercorrelations between tests scores and the individual’s ability.

Psychometric theories differed in the number of factors they focused on. Some theories emphasized on one factor, others on few, and some others on many factors. For example, Spearman perceived intelligence as one structure that is symbolized by the "G" factor, dominating either the single aspect of mental faculty of intelligence, or a core governing a set of specific cognitive skills. However, Cattell (1997) identified two aspects of general cognitive ability (fluid and crystalized). On another hand, Thurstone (1947) - as cited in Al-Omari (2010)- believed that intelligence is composed of seven several mental capacities: verbal fluency, spatial visualization, reasoning, verbal comprehension, number, memory, and perceptual speed. Guilford, in his turn, further suggested 120 factors constructing the intelligent behavior.

The psychometric theories valuably contributed to the empirical studies investigating the issue of intelligence. In addition to that, its findings about the structure of intelligence were well-specified and structured. Yet, these theories were heavily criticized for its being focus on a very narrow part of human cognition. Sternberg (1996) criticized psychometric test in the fact that it emphasized on a narrow marginalized slice of a large and complicated intellectual spectrum (cited in Hunt, 2011). The moment of taking a psychometric test, according to Boulmaiz (2020), represents a null portion of the participant's real life, and his daily problem solving capacities.

1.2.2 Cognitive Theories

The cognitive perspective appeared out of disagreement with psychometric perspectives. Psychometricians' limited focus on the structure of intelligence was considered as a major shortcoming. Unlike the psychometric theories, the cognitive theories called to investigate what happens in the human mind, and to describe in detail the cognitive process comprised in human intelligence. Among the well-known

researchers worked on the cognitive paradigm this study identifies: Pellegrino and Goldman 1987, Hunt 1978, and Baddeley and Hitch 1974.

1.2.3 Cognitive-contextual Theories

The cognitive-contextual theories are perfectly reflected in the MI theory of Howard Gardner and the triarchic theory of Sternberg. The main principle of these theories is that there exists a deep interaction between the development of intelligence and people's social environment. The cognitive-contextual paradigm takes into account differences among individuals, mental operations occurring in an individual's mind, and the contextual features. Experience is of high effect in evolving a person's capacities. Furthermore, environment and culture plays a significant role in defining intelligence.

1.2.4 Biological Theories

From a different perspective, a group of researchers attempted to perceive intelligence. Biological theorists view intelligence as directly related to its biological bases. They further claimed, according to Pandey (2005), that mental processing is far from being interpreted as an aspect of intelligence. Biological researchers, or the so-called *reductionists*, tried to elaborate on intelligence by tracking the issue through anatomy and physiology of the brain and the central nervous system. According to Davidson and Downing (2000), the scope of study of this paradigm was developed and broadened by researchers like: Eysenck 1987, Ceci 1996, and Haier et al 1988.

1.3 Measuring intelligence

Human capabilities have been a topic for debate for a long period of time. Huge efforts have been made to measure intelligence because it would be very useful to predict one's intelligence. Many psychologists have attempted to define and measure human

capacities. Accordingly, both Galton and Binet can be considered as the forefathers of the most contemporary research on intelligence. Relatively, Francis Galton stated that intelligence is inherited and that it can be measured; thus, he designed a series of IQ tests in the late nineteenth century, (Gardner, 1999, p.2).

The French psychologist Alfred Binet was the first who designed the well-known IQ test in 1906. Gardner (2006) stated that French fathers, whose children were having trouble with school assignment, requested Binet to design a kind of measurement so that to predict success or failure of their kids in primary grades of Paris schools. Binet's IQ test was to predict children's academic potentials and to distinguish children with learning disabilities. It was believed that this way helped children to succeed in their academic career. Accordingly, this test measured mainly the linguistic, mathematical and logical abilities. Since then, it became a common fact that an intelligent person is the one who masters these three psychometrically measured capabilities.

Binet IQ test was also known as the Stanford- Binet IQ test. In the 1920s and 1930s, the test was modified according to the American context. According to Gardner (2006), the test became well known in America just like other Parisian fashion. Since then, the new invention was considered as a valid scientific tool and that it was psychology's biggest success. The research of Binet had a long-term effect on the concept of intelligence and many other relative issues. Yet, Gardner (2006) questioned Binet's efforts by stating that Binet himself did not believe that intelligence can be measured. He added that practical remedial procedures would serve students' learning better than an intelligence test to predict students' performance.

Other types of tests have been created like the Scholastic Aptitude Test (SAT). It was designed to measure human abilities. It can be considered as a more sophisticated version

of IQ tests. As a reaction to the new trend of intelligence tests, Gardner (2006) denounced that phenomenon by stating that intelligence seems to be quantifiable, and measurable just in the same way as someone's height and weight are measured. He further stated that, unfortunately, raters array everyone's abilities through only one dimension of human ability. Accordingly, IQ tests succeeded only at measuring academic achievement, decisions about educational opportunities and jobs. Though, it failed to exactly determine what intelligence is, and to predict out of school success. Along the same vein, students' potentials cannot be predicted through IQ tests when external social and economic factors intervene, (Gardner, 2004).

Traditional schools, according to Schwert (2004), rely heavily on IQ tests to predict students' performance, while the real-world challenges require another set of skills, namely: the capacity to work among a group with other abilities, the ability to give and receive a feedback, writing reports, thinking critically, visualizing images and using one's imagination. Relatively, Berman (2005) made it clear by stating that all IQ tests engage only verbal/linguistic and logical/mathematical intelligences.

Numerous theories questioned the validity of the traditional versions IQ and SAT tests. Most of the new theories claimed that several interfering abilities shape what is called the human performance. Accordingly, Hatch and Gardner (1996) affirmed that evolution of MI theory principles are built on the idea that standardized traditional tests relied almost exclusively on verbal/linguistic and logical abilities. In the same context, Botelho (2003) declared that many psychologists started questioning the validity of IQ tests after its being, for almost a century, out of debate. As a result, the instrument that once considered a complete measurement tool became vulnerable to scrutiny.

The old fashioned definition of intelligence as a static, singular and inherited characteristic received severe criticisms. Supportively, Berman (2005) declared that IQ tests began losing its good reputation. Furthermore, Thompson (2009, p.1) stated clearly that "in recent years, however, the validity of these types of standardized tests has been challenged on the basis that they do not cater to all types of people of different races, ethnicities, and classes. Rather, they seem to be greatly based on exposure and knowledge of ideas taught in formal schools." Supportively, Gardner (2004) affirmed that scholars from different fields found out that it was hectic to remain enthusiastic to intelligence tests. More than that, they identified numerous drawbacks in the instruments and the way how they were used.

Conclusion

Alfred Binet and Theodore Simone IQ tests enjoyed a wide popularity for a long period of time despite their incomplete and one-sided view to intelligence. The MI theory, then, introduced a broader view to intelligence through a dynamic perception claiming that intelligence comprises a combination of capabilities, and that every single human being possesses different degrees of mastery in different intelligences. Gardner's informative and synthetic understanding of intelligence was because of his inclusion of developmental psychology, biology, neuropsychology, and cross cultural anthropology. The aim of Gardner was to replace the standardized tests with more accurate and informative ways to assess human intelligence.

The current chapter included a detailed elaboration of the notion of intelligence, and its different definitions. Then, the researcher gave an extensive illustration of intelligence paradigms, including biological, cognitive, cognitive contextual, and psychometric

theories of intelligence. The chapter was ended with an overview on intelligence measurement.

Chapter Two:

Multiple Intelligences Theory

Introduction: the wide debate carried about intelligence, its effect on individuals, and its incorporations opened the horizon for researchers to investigate the topic from different perspectives. MI theory was among the theories that questioned the reliability of numerical theories of intelligences. In this chapter, the researcher will elaborate on the definition of MI theory, its incorporation in the field of education, its incorporation in EFL classes, its relation with Learning Styles, and its relation with different Language Teaching methods and approaches.

2.1 The rationale behind MI Theory: After years of research, the American psychologist Howard Gardner introduced to the world his theory of Multiple Intelligences. The Harvard University professor (Howard Gardner) wrote his book *Frames of Mind: the theory of multiple intelligence* in 1983, through which he presented his views about intelligences. Gardner's book was awarded several times, received a huge media propaganda, and was considered by *Education Week* as one of the 100 most influential education books of the 20th century (Armstrong, 2003). Although, Gardner had published several books by the 1983, but Gardner (2003) himself considered *Frames of Mind* different from other books. The genuine "Buzz," the copious reviews, and the monumental sales ranked that book on the top of most influential education books of that era.

On another hand, Gardner (2003) stated that he was pleased and surprised, at the same time, about the fact that the transition to the 1990s was accompanied by the MI theory, so that people could hear about it and showed eagerness to learn more about it. More than that, Gardner (2004) declared that he did not expect that wide popularity of his book in almost all countries. Though Gardner has realized many projects in his professional career, he admitted that the MI theory made him labeled as "the Godfather of multiple intelligences," or "the MI guru."

According to Gardner (2004), the appearance of MI theory came as a result of an assignment given to Gardner. The Dutch Bernard Van Leer Foundation assignment was to write a book about the latest discoveries about human in behavioral and biological sciences. As a result, a research program was born that led to the MI theory. Gardner further stated that the use of the term "intelligences" was totally intentional, instead of using the terms "talents or gifts." He believed that his *Frames of Mind* would not have enjoyed that wide popularity.

Before the introduction of MI theory, intelligence was considered as a single and static construct. This view, according to Berman (2005), is considered as trivial and too superficial nowadays. Relatively, questioning the traditional definition of intelligence is the key concept to well understanding the MI theory principles. Thus, Gardner tried to provide another perspective about intelligence, and to question the credibility of methods claiming the measurement of human intelligence. According to Gilman (2007), Gardner aimed to answer the following question: "is intelligence a single thing or various independent intellectual faculties?" Accordingly, Gardner mainly considers creativity and problem solving as the main aspects of human intelligence. He added that IQ score does not necessarily reflect the real intelligence and that intelligence without productivity means nothing.

Along the same vein, Gardner regarded intelligence as multi-faceted issue, instead of its being a single entity represented psychometrically with an IQ score. Broadly, Gardner defined intelligence as "the ability to solve problems, or to create products that are valued within one or more cultural settings" (Gardner, 2004). As reported by O'Shea (2009), Gardner recently accepted to add terms from biology and psychology in his definition. Hence, intelligence is defined as "a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products

that are of value in a culture." Supportively, it is believed that MI theory provided a wider view to the variety of human abilities.

In his theory, Gardner challenged the preceding theories that considered intelligence as a general intelligence "G" He differently viewed intelligence and introduced an alternative vision to the human mind. Thus, he claimed that "MI theory is a pluralistic view of mind, recognizing many different and discrete facets of cognition, acknowledging that people have different cognitive and contrasting strengths and contrasting cognitive styles" (Gardner, 2006, p.5).

On another vein, Gardner (2004) admitted that intelligences could be located in specific areas of the brain. Yet, he always attempted to widen the scope of defining intelligence so that to include not only the psychometric test scores, but also the knowledge of the brain and awareness about the human cultures variety. Accordingly, he proposed that people hold several intelligences that are reflected through different capacities and abilities. Otherly, Gardner perceived intelligence as multi-faceted rather than one entity, and views MI as a set of abilities that enable people to solve unexpected problems.

The growing interest in studying the MI principles made an end to the claims defending the single general intelligence. Plucker (2007) asserted that the rationale behind Gardner's theory about intelligence was his daily work with patients. He discovered that some individuals showed a remarkable presence of some cognitive abilities, and the absolute absence of some other abilities. As Gardner (2006) exemplified, some autistic savants showed extraordinary musical and mathematical talents though their linguistic and social skills were considered catastrophic. Similarly, some individuals with localized brain damage showed impairments at some cognitive domains. Gilman (2007) affirmed

that Garner's work with two distinct population was the inspiration to introduce the MI theory. He added: "early in his career, he began studying stroke victims suffering from aphasia…and working with children at Harvard's Project Zero… to study the cognitive development of children and its associated educational incorporations." Accordingly, he witnessed that Gardner worked the mornings with stroke patients and afternoons with normal and gifted children.

Gardner, thus, concluded that successful performance in one area did not mean the same result in another area. Hence, he relied on this first hypothesis, and started investigating intelligence scientifically, systematically, and within multi-disciplinary. He gathered data from arts and humanities, sociology, biology, anthropology, neurology, and psychology to insure a panoramic taxonomy about human abilities. Unlike the other theories of intelligence, the MI theory is not based on predictions and correlations; rather it is built on multi-disciplinary scientific research.

To better understand the Gardner's claims about the inclusion of located brain damage in the issue of intelligence and human abilities, this figure illustrates the brain anatomy and its functions. According to this figure, there is a kind of congruence between located brain damages and intelligence. The conclusions of Gardner went in harmony with the content of the figure.

Source: (retrieved from: https://anatomyinfo.com/parts-of-the-brain/)

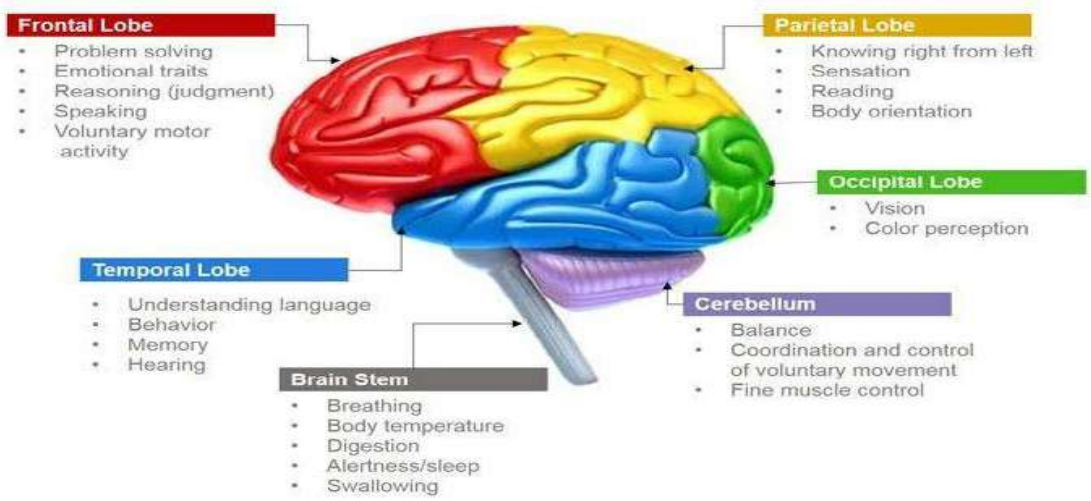


Figure 2.1: Brain Anatomy and Functions

The main challenge for Gardner was to find a synthetic definition of intelligence, and to identify criteria that distinguish between what is, and what is not intelligence. Otherly, each of the human capacities were studied from different perspectives by applying it to eight criteria that are taken from biological sciences, developmental psychology, psychometrics, observation of unusual human beings, logical analysis, experimental psychology, and anthropology. In addition to that, he gathered ethnographic records of how different cultures and cultural studies perceive (develop, prize, ignore) different human capacities.

Relatively, Gardner (1999, p.36) provided eight criteria to study the individual's intelligences, namely:

1. Isolation by brain damage: brain damage caused deficiency in some mental abilities that are associated to the damaged part. Yet, it was observed that other mental abilities were not affected. The fact proved that one intelligence could be separated from others.

2. An evolutionary history: by observing the evolution of our species, an identification of the roots of intelligence could be made.
3. Identifiable core operations: each of the intelligences is distinguished by its related mental operation or operations.
4. Encoding in a symbol design: symbols are intrinsic to all human cultures and there is a universal human tendency to use symbols.
5. A distinct developmental history: each of the intelligences has its own developmental process. But, these intelligences are developed through the same path among all human beings.
6. The existence of idiot savants, prodigies and outstanding people: some people show exceptional skills in one field and average skills in another field. Other people perform extraordinarily in a given field, but they are considered stunt in other ones.
7. Experimental verification: some activities can be performed simultaneously, like walking and singing, indicates that they manifest two separated intelligences. While, if two activities cannot be done at the same time, like reading and speaking, means that they both reflect the same intelligence.
8. Support from psychometric findings: tests indicated no correlation between performances in different intelligences (Gilman, 2007; Jallad, 2006).

On another hand, Gardner (2003, p.8) declared that the use of the term "intelligence" can be reflected in three different spheres:

- All human beings hold the 8 intelligences.
- A manifestation of human differences (there never exists two identical persons in terms of intelligence profile)

- The person does the task according to his/her own goals (a person's interpretation of a musical piece may be considered as not reflecting his musical intelligence)

Gardner (2004) ascertained that the MI theory highlights a small portion of human intellectual capabilities, on comparison to what individuals can actually perform. Accordingly, he asserted that people possess a number of different intelligences that can be perceived through several abilities and skills. These intelligences are daily used to create things, solve problems, and to invent processes. Armstrong (2009) added that an intelligent person, according to MI theory, means to perform one or several intelligences in ways that are recognized within a community. Supportively, Thompson (2009) declared that the multi-varieties of intelligences indicate the variety of talents and knowledge displayed by doctors, poets, dancers, sportsmen, etc.

As Gardner (2004) stated, all human beings possess eight different intelligences that shape their personal intelligence profile. The intelligence profiles vary to different degrees from a person to another, and it is believed that we can never find a person with one dominating intelligence. Relatively, he asserted that people's cognitive competence should better be elaborated in terms of talents, abilities, and mental skills; rather than gathering them all under one general intelligence "G" Armstrong (2009) claimed that all human beings possess these intelligences to a certain degree, but the combination of skills and the degree of skill is different from a person to another.

Along the same vein, Gardner (2003) affirmed that human brains are highly differentiated bodies. He added that thinking of one mind, one intelligence, and one problem-solving ability is horribly deluding. He also claimed that the mind is composed of different modules/organs/intelligences that operate separately according to their own rules.

2.1 Gardner's Theory of Multiple intelligences

Howard Gardner revolutionized the perception of intelligence through the publication of his book *Frames of Mind: The theory of Multiple Intelligences* in 1983. As previously stated, the researcher questioned the traditional view of intelligence and disagreed with the claim that intelligence can be measured only by IQ tests. Gardner (1999, pp. 33-34) defined intelligence as follows: "it is a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture." Relatively, Gardner claimed that each individual possesses seven intelligences (verbal/linguistic, logical/mathematical, visual/spatial, interpersonal, intrapersonal, musical, and bodily/kinesthetic intelligences). In 1997, Gardner added the naturalistic intelligence, and the existential and the moral intelligences later in 1999.

The multiple intelligences are correlated in every single person in a given way to shape his/her intelligence profile. As for the degree of intelligences, each individual has some well-developed intelligences (strengths), and other less-developed intelligences (weaknesses). Yet, the degree of intelligences can be changed and developed through education and training (Gardner, 1993). Accordingly, Gardner (1999, p.34) asserted that the development or the activation of each intelligence depends on certain factors, namely: values of a particular culture, the opportunities available in that culture, and the personal decisions made by individuals and/or their families, schoolteachers, and others.

Gardner's *Frames of Mind* provided a detailed explanation of each of the seven intelligences, and examples of celebrities who considered intelligence in each intelligence. As an example, a musician like Wolfgang Amadeus Mozart possessed high musical intelligence, while Diego Armando Maradona displayed a high bodily/kinesthetic

intelligence. Mozart and Maradona surely possessed other intelligences in addition to the one mentioned, and their intelligence profiles are different since they developed their intelligences differently. As follows, a description of each intelligence as they were defined and described in different resources like: Gardner, 1999; Christison, 1996; Lazear, 1993; Snider, 2001; Christison and Kennedy, 1999; and Stefanakis, 2002.

2.1.1 Verbal/Linguistic Intelligence (VL):

It comprises the ability to fulfill certain objectives with language; it is also the sensitivity to spoken and written language. Those who learn languages easily are believed to be verbally/linguistically intelligent, (Gardner, 1999). Linguistically gifted people enjoy making puns, analogies, tongue twisters, and jokes. More than that, they always try new forms and structures. It is worth mentioning that VL intelligence is highly affected by environmental factors, though intelligence is a product of nature. In other words, VL intelligence -according to McKay (2008, p.713) - is one of the late developing intelligences because it is a result of a real-life experiences. Writers, poets, public speakers, interpreters, lawyers demonstrate a high level of VL intelligence.

2.1.2 Logical/Mathematical Intelligence (LM):

It involves, according to Armstrong (2009, p.7), the ability to use numbers effectively, to analyze problems, and to investigate issues scientifically. Those who possess a high LM intelligence are more tended to use deduction and linear sequential reasoning. In addition to that, they are quick problem solvers (Mc Kay, 2008, p.712). Boulmaiz (2017, p.20), asserted that VL and LM intelligences enjoyed much more care and attention in academic settings, precisely conventional schools. However, Gardner (1999) questioned this issue by stating that those dominating test intelligences would not be the same if the test developers were politicians, business people, or even architectures.

Those gifted at LM intelligence would be mathematicians, accountants, statisticians, physicists, philosophers, chemists, engineers, computer programmers, etc. Albert Einstein, Isaac Newton, and Bill Gates are believed to possess high LM intelligence.

2.1.3 Visual/Spatial Intelligence (VS):

Armstrong (2009, p.7) defined it as the ability to perceive the visual-spatial world accurately. This intelligence comprises sensitivity to shape, form, space, color, line, and the relationship that exists between those elements. Spatially intelligent people often see things that other people miss and apply their VS capacities to arts such as sculpture, invention, architecture, painting, interior design, and photography (Boulmaiz, 2017, p.22). McKay (2008, p.714) asserted that VS processing occurs in the posterior region of the right cerebral cortex in the human brain. Leonardo De Vinci, Pablo Picasso, Temple Grandin, and Frieda Kahlo are examples of persons who show outstanding VS intelligence.

2.1.4 Interpersonal Intelligence (IR):

It is the ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people. It means consequently knowing how to work effectively with others (Armstrong, 2009). Thanks to IR intelligence elements like facial expressions, gestures, and other body language cues can be understood, (Boulmaiz, 2017). Research asserted that the frontal lobe is the area of the brain involved with IR intelligence.

People who demonstrate high IR intelligence should be counselors, religious leaders, political leaders, educators, business people, and actors. We can mention, as

examples, Martin Luther King, Dr. Philip, Oprah Winfrey, Less Brown, Steve Harvey, Ibrahim Elfiky, etc.

2.1.5 Intrapersonal Intelligence (IA):

Gardner (1999, p.43) said that "it involves the capacity to understand oneself, to have an effective working model of oneself – including one's own desires, fears, and capacities – and to use such information effectively regulating one's own life." Boulmaiz (2017, p.22) stated that to have a strong IA intelligence means to successfully control one's own emotions, construct self-concept and to understand how he fits in relation to other people. McKay (2008, p.714) asserted that the frontal lobe of the human brain is associated with IA intelligence.

Spiritual leaders, psychologists, psychotherapists, teachers, and political leaders are believed to possess high IA intelligence. Mahathir Bin Mohammed, Mahatma Ghandi, Confucius, should show an end-state IA intelligence.

2.1.6 Bodily/kinesthetic Intelligence (BK):

It is the person's capacity to use his body or parts of his body in order to express ideas, to solve a problem (Gardner, 1999, p.42). As responsible for the control of bodily movement, the motor cortex is situated in the right hemisphere for left-handed people, while it is located in the left hemisphere for right-handed people (McKay, 2008, p.713).

Actors, figure skaters, dancers, athletes, surgeons, mechanics, sculptors, craftspersons are ideal examples of BK intelligence. As for names, the following can be mentioned: Diego Armando Maradona, Charlie Chaplin, Michael Angelo, Robert Deniero, Othmane Ariouat, Martha Graham, etc.

2.1.7 Musical Intelligence (M):

Gardner (1999) defined M intelligence as the ability to identify sound patterns, create, communicate, and understand meanings made out of sound. He added that it involves auditory imagery and therefore entails skill in the performance, composition, and appreciation of musical patterns. This kind of intelligence includes also the sensitivity to the rhythm, pitch, melody, timbre or tone color of a musical piece (Armstrong, 2009, p.7).

According to McKay (2008, p.713), neuropsychologists affirmed that musical perceptions and productions are associated with the right hemisphere of the brain. Relatively, Gardner (1999) expressed his wonder about the underestimation of this intelligence by saying that it is neither scientific nor logical to segregate between two structurally parallel intelligences (M and VL).

Band directors, disc jockeys, musicians, composers, and singers are generally believed to be gifted at M intelligence. Among those possess a high M intelligence the following names appear: Van Beethoven, Wolfgang Amadeus Mozart, Yanni, etc.

2.1.8 Naturalistic Intelligence (N):

It includes the ability to recognize and classify the several species –flora and fauna- within a person's environment. It involves also the one's capacity to situate himself in the natural environment (Armstrong, 2009, p.7). More than that, N intelligence comprises sensitivity to natural phenomena like cloud mountains, cloud formations. For those living in urban cities, it involves the ability to differentiate between inanimate objects like cars, phones, sneakers, etc.

Biologists, agriculturers, ornithologists, should be naturalistically intelligent. Among naturalistically intelligent persons: Jane Goodall, John James Audobon, and E.O. Wilson.

2.1.9 Existential Intelligence (E):

This intelligence was not confirmed as the ninth one of Gardner's intelligences, though it was described in detail through his book *Intelligence Reframed* (1999). Gardner (1999, p.64) defined the existential intelligence as:

> The capacity to locate oneself with respect to the furthest reaches of the cosmos – the infinite and the infinitesimal- and the related capacity to locate oneself with respect to such existential features of the human condition as the significance of life, the meaning of death, the ultimate fate of the physical and the psychological worlds \, and such profound experience as love of another person or total immersion in a work art".

Cultures differently value existential issues like religion, mysteries, metaphysics, etc. According to Gardner (1999), the existential is what distinguishes human beings from other species. However, he sealed his discussion of the intelligence by stating:

> Despite the attractiveness of a ninth intelligence, however, I am not adding existential intelligence to the list. I find the phenomenon perplexing enough and the distance from the other intelligences vast enough to dictate prudence – at least for now (p.66).

Armstrong (2009, p.p 10-11) provided a clear summarized illustration of the aspects of Gardner's eight intelligences theory, in addition to the brain operations each of the intelligences included. **(see Appendix 01)**

2.2 Criticisms of MI theory

Despite the wide popularity the MI theory has enjoyed, some researchers raised many questions and issues about the principles and the procedures of the theory. Gilman

(2007), for example, stated that some scholars considered each of the seven intelligences as a cognitive style more than a separated structure. Accordingly, Gardner's conceptualization of intelligence has provoked a lot of criticisms and problems, (Smith, 2008). Among the various issues raised about the theory, Smith (2008) considered the three following issues as the most important ones: 1- there is no sufficient supportive experimental evidence to Howard Gardner's conceptualization of intelligence, 2- the logical coherence of Gardner's conceptualization of intelligence is questionable, 3- the criteria employed by Gardner seems inadequate. Despite its wide acceptance in Australia and the United States, the MI theory has faced some resistance in other schools, (O'Shea, 2009).

Gardner expected the fact that his theory will provoke a lot of reactions and questions. As cited in Armstrong (2000), Gardner stated the following:

> I am deliberately being provocative. If I would said that there is seven kinds of competencies, people would yawn and say "Yeah, Yeah". But, by calling them intelligences, I am saying that we have tended to put on a pedestal on variety called intelligence, and there is actually a plurality of them, and some are things we have never thought about as being intelligence at all.

According to Gardner (2004), criticisms toward MI theory included issues like: *terminology, intelligence and style, the risks of repeating the fault of measuring intelligence, correlation among intelligences, and the processes of intelligences.*

2.2.1 Terminology:

Researchers believed in the existence of different abilities, yet they hesitate to use the term intelligence. Furthermore, they considered the term *Talent* as more suitable, but *Intelligence* can be used with more general kinds of abilities. As a response, Gardner

(2004) believed that one may define words in the way he/she wants. He added that a narrow definition of intelligence may result in derogating the capacities that are not included within the competence's definition. Gardener's use of the term intelligence was based on unified criteria, so that they should all be called either talents, intelligences, or whatever. In other words, Gardner had no problem with using the term *talent* as long as it is used with all other mental capacities like: spatial, musical, etc.

2.2.2 Intelligences and Styles:

Gardner's list of intelligences was criticized in its being resembled to lists of learning styles, personality styles, working styles, and human archetypes. Gardner (as cited in Al-Omari, 2010) admitted the resemblance between the lists, yet he insisted that his theory introduced a distinctive view through the following aspects: first, the invention of MI theory was a result of a combination of important bodies of scientific evidence about development, breakdown, brain organization, etc. However, other lists came up from correlational studies between test scores, or from experimental observations. Second, the MI theory is tightly related to the content being exposed in real life situations, like: spatial information, linguistic information, numerical information, etc. While, other stylistic lists emphasized more on the individual's performance; thus, an individual is described as introvert, impulsive, analytic, etc. Third, analytic categories and intelligences may share some common points. Furthermore, studies have proved that some working styles are also content-specific. For instance: a child may show an impulsive style with a given content, but a reflective engaged style with another type of content.

2.2.3 Correlation among intelligences:

This issue will remain always problematic for researchers, for they traditionally perceived intelligence as something measured by intelligence tests. Otherly said, they will

always explore a correlation between different abilities in order to account for the existence of a general intelligence factor. Though, Gardner believed that it is almost impossible to identify the extent to which intelligences are correlated. He added that every test of abilities correlates at least with other tests of abilities.

2.2.4 Processes of intelligences:

As for this issue, Gardner stated that the critics targeted the issue of being purely descriptive rather than the existence of several intelligences. Accordingly, scholars believed that it is for psychologists to describe the way how mental processes are working. Gardner clarified this issue by admitting that his *Frames of Mind* is purely descriptive; though he believed that such description can be considered as a starting point to account for the plurality of intelligences. He added that the book contained suggestions about the operations and processes entailed in each of the eight intelligences.

2.2.5 Repeating the sins of intelligence testing:

Critics pointed that MI theory made the task worse by introducing seven intelligences rather than one. Gardner (2004) replied by clearly stating that “the MI theory was devised as a scientific theory and not as an instrument of social policy…it can be put to different uses by different people.” He further stated that he did not agree with the misuses implied in the criticisms. He also believed that the traditional idea of testing intelligence should not be applied to MI theory. Supportively, he declared that the kind of assessment he considered suitable for MI theory is totally different from the one associated with IQ testing.

2.3 MI Theory and Education:

Educators widely embraced the principles of MI theory, though its creation was not meant for classroom use. In the same vein, Kallenbach and Viens (2002) affirmed that the educational community perceived a great opportunity through the creation of the MI theory. Similarly, there existed a considerable interest in the application of MI theory principles in several educational settings.

Surprisingly, Gardner in his *Frames of Mind* did not deeply elaborate on the pedagogical incorporations of his theory. He just briefly mentioned some ideas about the application of the MI theory in the classroom (NCSALL, 2006). Gardner (2003), himself, admitted that when discussing the pedagogical incorporations of MI theory in the closing chapters of his book, he was not targeting the classroom setting. Relatively, Gardner (2004) anticipated that his theory would enjoy a large audience in the field of psychology as intelligence is a central issue. More than psychologists, educators embraced the MI theory ideas and tried their best to shape it according to the educational settings.

Kallenbach and Viens (2002) asserted that the introduction of MI theory in 1983 stimulated a great interest in the educational community, and sparked the attention of many educators. The introduction of the theory related between educators' beliefs about learners' differences and the practical procedures to be followed. Relatively, educators were attracted to the theory since it clearly agrees with education and approaches like cooperative learning and whole language learning. Despite the questions and issues aroused about Gardner's perception of intelligence, the incorporations of MI theory in the field of education were largely investigated around the globe (Smith, 2008). In addition to that, he affirmed that MI theory enabled teachers to reconsider the traditional educational

components, namely: skills, curriculum, and testing. Consequently, the publication of *Frames of Mind* introduced a new era of research in education, specifically the theory and its pedagogical incorporations for teaching, curriculum development, and assessment.

On another hand, Gardner (2003) stated that all human beings possess the eight intelligences, yet they differ as individuals in their intelligence profiles. He added that genetic and experiential circumstances are the main causes of these differences among humans. Relatively, intelligences do not differ in their artistic nature, though individuals generally add this judgment by favoring an intelligence over another. Since individuals differ in their intellectual profiles, an educational system should be built on this fact. As mentioned by Weiss (1999), Gardner asserted that teachers should take into consideration individual differences among pupils. He added that it is of a huge importance to know that pupils and their minds are different from one another; thus a teacher should act upon this conviction, and even to help pupils use their minds. Supportively, teachers are not expected to design eight different lesson plans; yet, they can work on varying learning experiences in a way that they cater for pupils' intelligence profiles (Gardner, Kornhaber and Moran, 2006). Berman (2005) supported their claims, but he rather emphasized on the point that teachers should provide materials that cater for the different intelligences in each lesson.

Educators usually agree that they can easily know about their students' strengths and weaknesses during the learning process. Accordingly, the MI theory offered guidelines and practical procedures to strengthen students' intelligences. Gradually, educators started thinking about designing lesson plans that suit students' different needs and learning styles. Berman (2005) clearly stated that teachers should adopt lesson plans that work on all students' intelligences; otherwise, there will be always marginalized individuals within the whole group. Schools and educational groups started organizing

their curricula and educational practices upon the principles of MI theory. In the USA, for example, the Ross School in New York and the Key Learning Community in Indianapolis were the first to teach using the MI curriculum (Giles et al., 2009). The Key School in Indianapolis was the first school explicitly organized around the MI theory. These first initiatives encouraged other schools around the world to adjust their classes and curricula according to the principles of MI theory.

Among the features that attracted teachers to the MI theory is the fact that it provided them with eight different ways to learning. By diversifying the materials presented to students, teachers can facilitate the task for themselves, whether by working on linguistic, logical, musical or any other intelligence (Armstrong, 2000). The latter added that the same principle is applicable with all learning levels, like: kindergarten teacher, middle school instructor, or even an adult aiming to pursuit a life-long learning journey. Thanks to the MI theory, teachers can easily recognize their students' abilities, different learning styles, strengths and weaknesses, and intelligence profiles. In return, teachers are expected to imply various methods, activities, and exercises that cater for all the eight intelligences, not only the linguistic and logical intelligences. Schwert (2004) added that teachers favored MI theory because it provides equal chances for all students to discover their talents and to boost their energy. In addition, it tells students that they can succeed in different ways; the frustrating traditional learning context is reduced as a result. On another hand, the variety of intelligences is considered as a chance to assess students' competence, to raise teachers' expectations, and to increase students' awareness about their abilities.

On another vein, Gardner (2003) claimed that he received many questions about the best ways to apply the MI theory in school contexts and many other educational contexts. His response was that he was a psychologist more than an educator, so he did not know

how to practically use it for teaching in an elementary or a secondary school. Gardner (2004) expressed his amazement about the numerous educational experiments inspired by the MI theory, and the several attempts to imply it in specific educational contexts. Relatively, Smith (2008) affirmed that Gardner's MI theory was put into practice in different ways. Botelho (2003) witnessed that some teachers take the easy way by selecting one course book as the only source, and take their students through this book from the beginning to the end. She added that not all of teachers show efforts by selecting exercises and materials from various sources and adapt them according to their teaching context. Gardner (2004) asserted that each of the eight intelligences can be strengthened by education and training at early stages. Yet, it should be born in mind that there may exists a natural preference or bias toward one or two intelligences. Accordingly, a detailed summary of eight different ways of teaching through eight intelligences is provided in (**Appendix 02).**

2.4 Learning Styles and MI Theory

Attempts have been made to describe human characteristics of learning, like: "theories of learning, transfer processes, Gagne's types of learning, and intelligence models" (Brown, 1994). The descriptions aimed to report how an individual store, perceive, and recall information. Brown added that though there exists universal traits of learning, but every individual has his/her own way to approach a problem, to organize a set of feelings, and to perceive a combination of facts. Despite the existing confusion in the use of the terms *process, strategy, and style,* a clear distinction was drawn by Brown. *Process* is possessed by every human being. It is considered as the most general of the three concepts. There are universal learning processes that are followed by all human beings, like: transfer of knowledge. *Style* is shaped by individual preferences and consistent learning tendencies that a learner follows. For instance, tolerance of ambiguity,

visual learner, and reflective learner are different learning styles that differ from a learner to another. These styles generally shape a person's thinking or feeling. *Strategies* are previously planned procedures to approach a problem, a task. They may also be defined as "modes of operation for achieving a particular end, planned designs for controlling and manipulating certain information" (Brown, 1994, p.104). Strategies are differently used by individuals according to the nature of the problem, the previous experiences of the person concerned, the situation in which this problem occurs, and the other surrounding circumstances.

It is also reported that Learning Styles refer to the different ways individuals accumulate and assimilate information, (Community for Youth and Adults with Learning Disabilities Pride, 2008). In its simplest definition, learning styles are the person's methods that best enable him/her to gather and use information for specific situations. This issue is highly related to the fact that the same teacher may have students with high scores and others with low scores. Relatively, every student has a favorite learning style or a combination of several learning styles. The appearance of the individual's learning style can be noticed at a young age. Educators are always advised to understand the specific learning style and how to best meet the needs of that learning style within all the learning contexts. Accordingly, Brown (2001) stated: "recognizing and dealing with the wide variety of styles and strategies that learners successfully bring to the learning process and therefore, the need for attention to separate each individual in the classroom" (p.60). He added that understanding the way to process information more efficiently is beneficial for success in all educational levels, for improvement of self-confidence and self-esteem, and for being up to date on professional opportunities.

O'Shea (2009) asserted that every single learner has his/her own way of learning, and that two typically similar learners is hard to find. Researchers generally agreed that

three basic learning styles can be counted, namely: visual learners, auditory learners, and kinesthetic learners. Visual learners use mainly their eyes to learn. They generally prefer taking seats where they can enjoy the best view of the event, whether in theater, stadium, or classroom, etc. They generally respond by describing the appearance of things they are required to talk about. Visual learners admire diagrams, graphs, maps, photos, and visual aids in general. As they are good observers, they are frequently expected to be good writers and they perform well on written assignments. As for auditory learners, they are good listeners. They favor processing information through sounds, discussions, music, and teaching. As preferable learning strategies, auditory learners record lectures to listen to them later for learning purposes, they like audio books, and consider reading aloud helpful to retain knowledge. Auditory learners perform well on written reports, and oral presentations and reports.

Concerning kinesthetic learners, they are always perceived as tactile learners. In order to learn, they prefer to move, act, do, and touch. Kinesthetic learners generally prefer hands-on tasks where they can experience, perform, and explore. As a result, they feel bored when obliged to sit for a long period of time. As a concluding remark, it can be said that there is no one size that fits all learning styles. Each individual is unique in his/her own way of learning. Accordingly, each learner should recognize his/her learning style so that he/she can better perform.

Another important contribution to clarifying the concept of learning styles is that of Reid (1995). He stated that there exist three main categories of learning styles: *cognitive, sensory,* and *personality*. The *cognitive* includes the following traits: analytic/global, Kolb Experimental Learning Model, field dependent/field independent, and reflective/impulsive. The *sensory* comprises perceptual (auditory, visual, tactile and kinesthetic), environmental (physical and sociological learners). *Personality:*which is

composed of tolerance of ambiguity, right/left hemisphere dominance, and the Myers-Briggs Type Indicator. On another vein, Silver et al. (1997) asserted that all the learning style models share two common points, namely: the focus on process, and the emphasis on personality. Silver et al. (1997) introduced a model composed of four learning styles: first, the Mastery style; second, the Understanding style; three, the Self-Expressive style; four, the Interpersonal style.

One of the similarities between MI theory and Learning styles theory, as stated by Silver et al. (1997), is that they both develop as a person grows and learns, and that they are not fixed throughout life. Continuing with the similarities, Lawson (2001) declared that both Learning styles theory and MI theory research have been done in the field of brain-based research. The term brain-based learning is derived from the physiological studies of how the brain best learns. Lawson (2001) added that learning has to be relevant, meaningful, and connected to mental, affective, and psychological experiences. Accordingly, to activate the part of the brain responsible for long-term memory, the learner needs a safe and supportive environment because emotions play an important role in learning, (Violand-Sanchez, 1998). In a similar vein, Lawson (2001) believes that each brain is unique, and that genetic and environmental factors affect learning. He added that personal and unique experiences enable the creation of new connections between different cells of the brain.

MI theory, Learning Style, and brain-based education differ in terms of principles and conceptions, though they all have the same practical outcomes within the classroom, (Guild, 1997). As a practical phase of his study, Guild (1997) described three schools within which each of the three previously mentioned theories (brain-based learning, MI theory, learning style) was applied. He concluded that even though they applied different

theories, yet the learning environments in the three schools were, to a certain extent, the same

Guild (1997) identified six points in which the three theories interconnect: first, they are learner-centered; second, students reflect about their process of learning; three, teachers are invited to master the three theories and to adapt them to their contexts; four, curriculum and methodologies are flexible; five, learning is connected to students' real lives; six, learners are perceived and treated as individuals with unique profiles. When it comes to applying the three theories, Guild (1997) urged teachers not to consider them as ready-made recipes to be literally applied. Though, teachers should relate their experiences to research integrating practices when applying these learning theories.

Learning styles and MI theory should be integrated and used in harmony since they both have limitations. As a result, when used together, there will be a minimization of the weaknesses and an enhancement of strengths. In this concern, Silver et al. (1997) said:

> In conjunction, both multiple intelligences and learning styles can work together to form a powerful and integrated model of human intelligence and learning, a model that respects and celebrates diversity, and provides us with the tools to meet high standards (p. 27).

It is believed that "Learning Styles Theory" and MI theory are two different fields of research, though they are not opposing one another. More than that, they both share a lot of common points. The main differences between these two theories can be stated as follows: first, the main distinctive point between "Learning Styles Theories" and MI theory is that learning styles theories emphasize more on the process of learning, whereas the MI theory is more concerned with the content and the product of learning, (Finely, 1999). Second, Prashing (2005) claimed that learning styles theories reflect the way how human beings concentrate on, store, and remember new information; however, the MI

theory represents a theoretical account to define, understand, assess, and develop people's different intelligence factors.

Chapter Three: MI Theory and English Language Teaching

Introduction

As a continuum of the introduction of MI theory to the field of education, researchers started investigating the inclusion of the theory in the field of ELT. Assumptions have been made on the validity of incorporating MI in ELT classes, common points between MI theory and different LT methods and approaches, the practical techniques of incorporating the theory, etc. This chapter is devoted to providing an overview about the inclusion of MI in EFL classes, tracking the similarities of MI with different LT approaches, elaborating on the incorporation of MI theory in curricula and textbooks.

3.1 MI Theory in EFL Classes

Boulmaiz (2020) stated that Gardner always believed that the human brain is organized in terms of separated sections devoted to problem solving respective to specific domains. He added that Gardner believed that intelligence is a result of interaction between environmental and biological factors. It is worth mentioning that Gardner seriously opposed the "nature-nurture" dichotomy. Accordingly, he believed that the genetic aspect remains a base for human abilities as showed by the late discoveries and studies in the field of biology and neuropsychology. Yet, it still seems doubtful and implausible to exclude the influence of environmental factors. Gardner (1999) detailed the latter point by saying:

> Even people who seem gifted in a particular intelligence or domain will accomplish little if they are not exposed to materials that engage the intelligence… shrewd environmental interventions can convert ordinary people into highly proficient performers or experts. Indeed, the "smarter" the environment and the more powerful the interventions and the available resources, the more proficient people will become, and the less important will be their particular genetic inheritance (p.88).

As a result, it can be said that all intelligences are to be developed and educated. Teachers, hence, need to re-consider intelligence in terms of the two dimensions proposed by Gardner. Gardner (2006) suggested two dimensions, namely: distribution and contextualization. *Contextualization* is basically the influence of culture to which the person belongs and the experiences of this person within his/her culture on the genetic predisposition and the extent to which it is expressed. As for *Distribution,* it means that intelligence conceptualization is highly related to the various material and human resources to which the person had access to. Otherly, Boulmaiz (2020) stated that intelligent behavior is enhanced when appropriate tools are accessible within a context that is familiar and meaningful to the individual.

Christison (2003) affirmed that MI theory mainly introduces a different perception of intelligence so that EFL teachers can use it as a road map to design classroom tasks that engage different ways of learning and knowing. In addition, the MI theory initiates EFL teachers to focus more on a learner centered approach by offering students the opportunity to choose the ways they want to learn, to be assessed, and to demonstrate their learning. The MI theory focuses also on problem-solving tasks through which learners can acquire new skills and content by relying on the previously acquired knowledge.

Richards and Rodgers (2002) declared that Christison tried to set links between language teaching and MI theory. Christison wrote several articles about MI theory in EFL/ ESL classes, and trained teachers in MI theory, in many cities all over Brazil. She introduced her new book entitled: *Multiple Intelligences and Language Learning: A Guidebook of Theory, activities, inventories, and resources*. As a practical initiative, Christison (1998) urged EFL teachers to identify their own intelligence profiles before

applying the theory on their students. Second, EFL teacher can review the activities they use in classroom, and categorize them according to the intelligences they serve.

According to MI theory, learning foreign languages, as one of the intellectual abilities, is highly related to the sociocultural circumstances. The incorporation of MI theory in foreign language teaching enables students to experience learning in more authentic fashion outside the classroom setting. The MI theory was considered as one of the recent approaches in English Language Teaching (ELT). Along with the recent changes adapted to language teaching and EFL textbooks, Botelho (2003) asserted that MI theory should be taken into account also. Surprisingly, Richards and Rodgers (2001) stated that "MI theory lacks some of the basic elements that might link it more directly to language education" (p.117). To precise, they claimed that there is no syllabus prescribed specifically for MI-based language teaching. However, huge efforts were devoted to suggest logical and practical stages for the previously mentioned purpose. Lazear (1991) suggested four sequenced developmental stages to design an MI-based syllabus. The first stage should be an awakening of the targeted intelligence via multisensory experiences. In the second stage, the teacher expands and elaborates on the intelligence. The third stage, then, includes linking the intelligence to the language learning aspect; it means teaching for and with the intelligence. The fourth stage comprises transferring and relating the intelligence to real world.

On another hand, Plamberg (2002) declared that Berman is considered as the first who applied MI theory principles to EFL teaching. Berman (2005) provided a detailed description of the theory, and devoted a whole chapter to each of the intelligences. In every single chapter, Berman illustrated the activities/tasks/exercise that can be adopted to enhance the targeted intelligence. In addition, Berman added another collection of exercises that are believed to be stimulating and catering for all the intelligences.

Plamberg (2002) insisted that EFL teachers should provide access to different exercises that cater for various student intelligence profiles. However, it is important to know that EFL teachers are not supposed to prepare individual lesson plans for each of their students. Actually, many language exercises engage more than one intelligence at the same time. Moreover, Berman provided some guidelines for EFL teachers in order to successfully incorporate the MI theory in the EFL lesson.

The remarkable awareness of MI theory stimulated EFL teachers to try their best to satisfy all their students' needs within the same classroom. Some schools went further by re-designing their curricula, so that they go in harmony with the MI theory principles. Campbell (2004) provided five different approaches to curriculum change:

- Lesson Design: it refers to schools focusing on lesson design which may include: teachers emphasize on their own intelligence strengths, team teaching, the use of several intelligences in the lesson, grasping students' opinions about their preferred way to learn.
- Interdisciplinary Units: it is about designing units that comprise more than one field.
- Student Projects: it is advised to push students to realize their personal projects, and to manage complex issues and problematic in their projects.
- Assessments: one of the most recent hypotheses about assessment claims that students can be given the choice to choose the way they want to be assessed.
- Apprenticeships: it is a long process through which students can master a valued skill.

The awareness of MI theory enables teachers, parents, schools, and administrators to better understand students' in any given context. In addition, it is a chance to enable

students to discover and increase their potentials in different manners, to help students manage their own learning. Adults are also expected to help students recognize and value their own strengths, and find out authentic activities that will boost their learning. Relatively, Plamberg (2002) stated that the MI theory does not prescribe a particular approach or activities. However, NCSALL believed that the MI theory is a theory that describes the several intelligences students bring to the task of learning; so, it can be said that it is a theory, more than an approach or set of strategies. MI theory switches the focus of the question from "How smart are you?" to "How are you smart?"

It is worth mentioning that there exist no pre-determined goals or syllabus for using MI theory. Yet, many attempts were made to realize the theory in terms of practical procedures and strategies. Richards and Rodgers (2001) declared: "where MI is richest is in proposals for lesson organization, multisensory activity planning, and in using realia" (p.200). Several suggestions of activities and materials that can enhance each intelligence can be found within literature. Christison, for instance, introduced a list of activities that engage each of the eight intelligences.

3.1. MI Theory and English Language Teaching (ELT) approaches

The changes in LT methods and strategies can be clearly noticed in all over the world. Learners' styles and intelligence profiles become two major considerations to be born in mind in all LT programs. Accordingly, the shift from a teacher-centered approach to a learner-centered approach marked the contributions of more than one LT method. Among other methods and approaches, Suggestopedia, Silent Way, and Total Physical Response contributed to the immense changes in LT. Supportively, Snider (2001) added: "now more than ever, procedures and texts are open to the use of new theoretical models, such as that offered by MI theory." The relation between LT methods and MI theory can

be traced in the emphasis of some popular methods and approaches on some specific intelligences. In what follows, a description and a discussion of the method/approach and the changes it added to LT according to its relation with MI theory.

As the oldest LT method, Grammar Translation, focuses mainly on the teaching of grammar accompanied with translation into the native or the target language. The main focus is on two skills, namely: reading and writing. The vocabulary items are mainly restricted to the words appearing in the reading passages. According to Richards and Rodgers (2001), the GT is still used at Colleges and the elementary levels as a whole. As for its relation to the MI theory principles, the GT method caters mainly for the verbal/linguistic intelligence since it works on reading and writing skills, in addition to the memorization of grammar rules and vocabulary items.

The Audio lingual (AL) method was introduced to the world in the 1950s. Behaviorism marked the main principles of this method. This latter was based on habit formation, drilling, and memorization of dialogues. In Richards and Rogers' words (2001), the method focused basically on the spoken form of language, and learners were exposed most of the time to recorded passages in the target language. The teacher, in the AL method, is the main actor in the classroom. He/she produces sentences, and learners have to only repeat what is being said with no mistakes. Learners' role is passive; they have a marginalized control on the content, the pace, and the style of learning. The intelligence engaged in the AL method is the VL intelligence since the focus is on memorization of dialogues, and the skills targeted are listening, speaking, reading, and writing.

By the 1970s and 1980s grammar was no longer taught for its sake; alternatively communication became the main focus of Language teaching and learning. Methods like:

TPR, the Silent Way (SW), Community Language Learning, and Suggestopedia came to life during that period. These were developed upon a perception of learning and learners, rather than a theory of language (Richards and Rogers, 2001).

James Asher, through his TPR theory, related the stimuli to the body response. In other words, he believed that learners should first respond physically to instructions, then, they can orally produce the language being taught. The current theory aims to facilitate learning through a non-stressful environment. The teacher gives all the commands in the classroom, though he is considered as a facilitator and a provider of learning opportunities. On another hand, learners are expected to be active listeners and performers, and to monitor their own learning. Regarding the intelligences engaged in this method, it can be said that the TPR method promotes the VL and BK intelligences since it requires the use of the body to respond to language input.

As stated by Celce-Murcia, Brinton, and Goodwin (1996): “the Silent Way focuses on accuracy of production of both the sounds and structures of the target language from the very initial stage of instruction.” In addition to that, the theory relies on learners’ autonomy and independence, so that they can take the responsibility of their learning. Teachers, thus, use mainly the TL, and learners have to understand and draw conclusions about the material being presented. The intelligences enhanced through this method are as follow: the VL intelligence via the practice of listening and speaking activities; the IA intelligence since there exists a process of self-correctness and self-awareness; the VS intelligence through the use of colored cards and Cuisenaire rods; the BK intelligence through the manipulation of objects, body, pantomime, and gestures; the LM intelligence by problem solving and inductive learning; the IR intelligence via group work and cooperative learning.

In 1976, Charles A. Curran developed the Community Language Learning (CLL) as a second/foreign language teaching method. As mentioned by Celce-Murcia et al. (1996), Charles's method was based on the "humanistic client-centered learning." As the latter tells, the teacher acts as "a counselor," whereas the learner is considered as "a client." The communication flows in the native language; the teacher translates for the learner; and the learner has to repeat the sentences translated to the target language. The learner's well pronounced sentence is recorded for further practice until attaining a good level of pronunciation. The current theory caters for the VL intelligence through the practice of listening and speaking. The IR intelligence is also catered for because the theory requires interaction between teacher/student, student/student, and groups. In addition to that, the IA is promoted through enhancing self-esteem and reflection.

In addition to the aforementioned methods, Suggestopedia stresses the importance of music for language learning, (Richards and Rogers, 2001). According to Lazanov, this method accounts for an excellent learning environment through the incorporation of music in the learning process. The M intelligence is clearly engaged in this method. The IA intelligence is also served since the method attempts to develop self-esteem, to establish personal relations and self-satisfaction. In addition to the M and IA intelligences, the VS intelligence is also enhanced by insisting on a well-arranged and decorated classroom. Reading, writing, memorization, and listening activities promote the VL intelligence.

The most famous of the approaches is the Communicative Language Teaching (CLT). The approach asserts that communication is more important than mastering structures, (Richards and Rogers, 2001). Teachers using the CLT approach are expected to make use of authentic materials and realia, like: newspapers, photos, charts, maps, and ads). In addition to that, a huge number of EFL textbooks were designed according to the

principles of CLT approach. Along the same vein, the variety of materials is the main aspect encouraged in CLT. The VL intelligence is engaged through the use of the four skills for communication. The IR is also supported since learners need to use the TL to communicate among each other. On another hand, the use of Problem-solving strategies appears also to prove that this approach caters for the LM intelligence. All in all, the CLT approach is open to any helpful tool/technique/strategy that boosts the learning process. Thus, it can engage any of the eight intelligences.

In addition to the previously mentioned approaches and methods, the Cooperative Language Learning that enhances mainly IR, the VL, and LM intelligences through cooperation and problem solving activities can be mentioned. Natural Approach, Content-Based Instruction, and Task-Based Language Teaching have also contributed differently to foreign/second language teaching/learning industry.

3.2 MI Theory and curriculum Design

Dastgoshadeh and Jalilzadeh (2011) stated the following: “Curriculum theory is founded as a set body of knowledge students are expected to learn and a school system that structures and designs curriculum toward that end”. This old fashioned idea about learning and curriculum was always related to the state-mandated curriculum standards and assessment, (Rodgers, 2003). Critics have questioned the credibility of such one-sided system arguing that it, somehow, neglects students’ individual differences, learning styles, strategies, etc. Based on the fact that students show different strengths and weaknesses, the MI theory has become a widely recognized tool for differentiated learning. In addition to linguistic and logical/mathematical intelligences, the MI theory has introduced to the scene visual/spatial, bodily kinesthetic, interpersonal, intrapersonal, musical, and naturalistic intelligences.

According to Armstrong (2003), designing a MI-based curriculum should take into consideration these four points:

1- MI plays a supportive role for students' mental strengths.
2- The MI theory raises students' awareness about their learning strengths and weaknesses.
3- The theory invites students to respect one another's learning strengths.
4- MI theory main strong characteristic is that it urges teachers to include physical education, music, and culture in learning

As cited in Kelly (2006), Cuban (2004) has declared that the MI theory "had the greatest influence on educators' beliefs and talk about differences in children's intelligence, moderate to a higher influence on the formal curriculum and instructional materials, and least influence on mainstream teaching and assessment practices." In addition to that, the theory goes in harmony with changes in educators' beliefs, materials, inclusion process for students with special needs, and curriculum improvements. Relatively, it is concluded that materials prepared according to MI theory had a significant effect on students' learning process.

Empirical evidence has shown the importance of integrating MI theory into instruction. Warnod (2002), for example, insisted on the benefits of MI-based science curriculum. The integration of MI theory into teaching process enables teachers to enhance learning environments and to increase innovations across the curriculum. Campbell et al,. (2003) identified several teaching techniques to engage MI, namely: mind maps, individual and choral reading, brainstorming sessions, concept charts, and IT integration to the curriculum. According to Gardner (2006), the integration of MI in the

curriculum requires the development of multiple learning activities within lesson plans, in addition to rethinking the assessment policy.

The MI theory is believed to have an effect on teaching strategies. As mentioned by Armstrong (2000), adopting an eclectic teaching style to integrate curriculum, instruction, and assessment will have a positive impact on enhancing teaching strategies. Relatively, the process of curriculum integration might be executed through various models, namely: webbed, sequential, immersed, threaded, and connected models, (Forgaty and Pete, 2004). As an example, the webbed model emphasizes on maintaining a web relationship between curriculum and instruction. This kind of relationship starts by the curriculum introducing the objectives and the standards of the course; then comes ESL teachers' role to use the curriculum as a basic station for insuring the connection between MI instruction and the curriculum. Relatively, integrating curriculum and instruction enables teachers to work on several language skills so that students can improve their academic and social achievements.

As practical procedures, Campbell (1996) identified five formats that might be used by teachers in order to provide MI-based learning environments. First, *interdisciplinary curriculum*, which means integrating different courses/disciplines so that one exercise/activity engages naturalistic, linguistic, spatial, and interpersonal intelligences. Second, *MI-based lesson designs,* in which lessons, activities, techniques are all designed and implemented to serve different learning styles and intelligences. Third, *students' projects,* through which students will manifest their preferred intelligence through projects. Four, *appropriate assessments,* that serves to give students the opportunity to choose among a variety of options their favorite way of assessment. Five, *apprenticeship and mentorship,* this one relates learning to real world crafts. Automatically, students are orientated according to their interests, strengths, and talents.

Continuing with integrating MI theory into the curriculum, Armstrong (2000) suggested seven procedures to design MI-based curriculum units. First, focus on a specific objective/topic. Second, ask key MI questions. Third, consider the possibilities. Four, brainstorm. Five, select suitable activities. Six, design a sequential plan. Seven, execute the plan. Lazear (1991), in his turn, suggested a mental sequence to design a MI-based curriculum. 1- Stimulate the intelligence by exposing students to multisensory experiences. 2- Develop and expand intelligence through volunteering objects and chosen events. 3- "Teach with/for the intelligence" is the focus of teaching. 4- Transfer the intelligence, from classroom to real world situations.

Chen (2006), in the same way, suggested four requirements to better make use of the MI-based curriculum, namely:

- A MI-based program should be implemented by the school curriculum directors.
- The school directors should provide teachers/staff with adequate training on the use of MI technique.
- After extensive staff development training, teachers will start incorporating MI instruction in the curriculum.
- Teachers and parents should cooperate to ensure students productive growth and improvements. School is responsible for providing opportunities for teacher parent interactions.

Supportively, Gardner (1999) proposed four requisites for the right implementation of the MI-based curriculum: 1- teacher training, 2- community contribution, 3- assessment, 4- curriculum change.

There are several curricular models suggested by the MI perspective. The primary school level, for example, can easily organize learning around MI. Interdisciplinary

curriculum and theme-based teaching always integrate different intelligences along with subject matters like nature studies, mathematics, music, physical education, (Chan, 2000). Team teaching is also an interdisciplinary option among the curricular models that engage the MI. However, members of the same team are divided according to their intelligence expertise. In other words, each teacher takes responsibility of teaching around the intelligence he/she masters. Consequently, teachers within the same team serve as resources for one another.

At the secondary level, teachers can effectively cooperate to plan MI-based lessons, at the same time maintain the responsibility of their self-contained classes. The rationale behind this model is that every single teacher knows what his/her colleagues are going to teach, so that he/she can align topics that are mutually supportive, and plan to teach such topics concurrently. The project-based curriculum and the use of mentorship/apprenticeship are also tightly related to theme-based and interdisciplinary instruction. On another hand, Wolk (1994) claimed that classroom projects serve to develop content and process understanding in students, since human production appears in a sort of useful and complex projects. Rather than that, projects generally offer several solutions and relate learning to real life challenges.

It is proved that school trips, laboratory experiments, and community service programs have benefits for students' personal development and the community he/she lives within. On another vein, using apprenticeship and mentorship is also another curricular option. This model is about orientating students to work with adults who are experts and practitioners in their own disciplines. As a result, teachers and students will understand real world required skills through effort and discipline.

According to Dastgoshadeh and Jalilzadeh (2011), the MI-based curriculum, also, gives students the opportunity to choose among projects. This type of curriculum is to be modified at any time according to pupils input. As a result, this idea supports a "teacher-guided" rather than "teacher-driven" education. Along the same line, Gardner (1999) declared that the curriculum should incite students to well-understand the physical world, the biological world, the world of human beings, the world of human artifacts, and the world of the self. Accordingly, such type of curriculum emphasizes on studying fewer topics with remarkable depth through different ways or by engaging multiple intelligences.

3.3 MI Theory and Textbooks

One of the main aims of this study is to analyze the content of an EFL textbook in light of the MI theory. In this chapter, the researcher accounts for the importance of textbooks in EFL teaching/learning. There will be also a slight highlight on textbook selection and evaluation. In addition to that, the researcher mentions the advantages and disadvantages of using textbooks. Then, some literature about textbooks and MI theory, theoretical studies, and even the empirical studies that have dealt with textbooks and its relation to the MI theory is provided.

One can count a lot of studies that have accounted for the importance and the use of textbooks in language teaching (Sheldon, 1988; Brown, 1998; Richards, 2006; Plamberg, 2002). Even though textbooks are provided as supportive and guiding tools for EFL teachers, and that the learning process does not totally rely on textbooks, yet some teachers tend to depend heavily on the textbook, and to follow it from cover to cover. Relatively, Plamberg (2002) claimed that some teachers simply pick one EFL textbook as the only reference for a language course, and literally take their students through this textbook from the beginning to the end. Rather than that, some language courses do not

base their curriculum on clear standards which caused the fact that the textbook used reflects the whole curriculum of that language course.

Almost all research on textbooks and language teaching agreed that EFL teachers should be trained to choose texts carefully and efficiently according to their learners' needs and differences. Relatively, Garinger (2001) stated: "due to the growth of ESL publishing market, teachers need be increasingly knowledgeable and sophisticated concerning textbooks in order to sort through the masses of books available" (p.2). The skill of knowing how to use, drop/add some elements to the textbook is considered to be a crucial component of a teacher's academic knowledge, according to Richards (2006).

As for the advantages and disadvantages of using textbooks, Richards (2006) mentioned that textbooks serve to maintain the quality of teaching, to supply useful language models and input, and to train teachers. However, some negative aspects may accompany the use of textbooks. Among those, the inauthenticity of materials, distorted content, and high-cost prices can be included. In addition to that, Richards (2006) mentioned that textbooks may limit teachers' potentials of creativity by following strictly textbook instructions. More than that, the textbook may not reflect students' needs and differences. Consequently, it is advised that any given textbook should be adapted according to the requirements of the learning context.

There should be reasons why textbooks are used as the main tool for language teaching. Accordingly, researchers have identified several factors that contributed to that overreliance. Garinger (2001), for example, declared that EFL teachers generally prefer using the textbook for that it makes the organization of lessons easier, it maintains some stability to students, and it ensures comparable instruction. Sheldon (1988), in his turn, named some reasons for the constant use of textbooks: first, teachers consider it hard to

develop their own materials; second, because of time constraints, teachers cannot make new materials; third, sometimes teachers feel unsecure to create their own materials; four, for teachers, textbook is an efficient tool to reduce time preparation for the lesson.

Garinger (2001) concluded that using only textbooks in language teaching classes is not really a useful technique. Despite she recognized the importance of textbooks for teachers and students; she claimed that textbooks need to be modified as they cannot satisfy all students' needs. She added that textbooks must improve the communicative competence by exposing students to authentic and effective materials.

Concerning the benchmarks based on which a textbook is selected, researchers proposed the use of checklists, or evaluation systems to judge the efficiency of the targeted material. As an example, Sheldeon (1988) supported the use of checklists in order to evaluate aspects like: physical features, authenticity, graphics, and cultural bias. Brown (1998), in his turn, proposed an evaluation system accompanied with a score sheet and instructions on how to evaluate books. Brown (1998) stated that when evaluating a textbook considerations like: teacher's manual, testing suggestions, flexibility to adapt and/or skip exercises, appropriate proficiency level, and usefulness of activities should be taken into consideration.

The process of analyzing a textbook should be done very carefully in order to make a good choice of materials. There are many examples of checklists that used for textbook evaluation like: McDonough and Shaw; Sheldon (1988), etc. Checklists are perceived to be efficient tools as they consider very important features and details that should appear in a good text. Teachers in their turn should be well armed with the needed tools in order to make sure that the selected text is pushing students' learning to higher levels, and that the learning experience is improved by the textbook being used in the classroom.

Recently, a remarkable focus on the analysis of EFL textbooks in light of MI theory has been noticed. Researchers' methods of analysis varied according to the teaching/learning context, the population of the study, the materials under study, future intended objectives, etc. As reported by Plamberg (2001), a group of training teachers conducted a study at Abo Akademi University in Finland. This group sought to identify the intelligence profile of the current used textbook *Bricks 1* used for lower level. By analyzing the textbooks, researchers came out with the occurrence frequency of each of the nine intelligences within the textbook. Results have shown that 97% of the whole textbook exercises engaged the VL intelligence, 76% of the exercises were IA, 25% for IR, 8% for LM intelligence, 5% for BK and VS intelligences, 3% for the N intelligence, and 2% for Musical intelligence. However, the existential intelligence scored 0% as an occurrence frequency percentage.

The researchers reported that two main challenges faced them when analyzing the textbook "Bricks 1;" the first one was how to determine the predominant intelligence in any given exercise. The second one was about interpreting what the activity is in fact expecting from students and what decisions teachers could make. As a result, researchers mainly focused on the most obvious intelligence. According to Plamberg (2001), there was an expectation that a language textbook engage mainly the VL intelligence; yet, the high percentage of IA intelligence (76%) was a surprising finding. Researchers adopted a questionable categorization method. They considered, according to Plamberg (2001), every single exercise that is not demanding pair/group work as catering for IA intelligence. The researcher believes that there is a problem with this categorization method, since Gardner's definition of this intelligence was quite different from what was perceived or understood by training teachers.

As concluded by Plamberg (2001), the intelligence profile of any given textbook is a reflection of the writer's intelligence profile. He added that teachers tend (intentionally/unintentionally) to teach according to their personal learning styles, their preferences, and their predominant intelligences. On another hand, Plamberg (2001) recommended that teachers must have the skill to analyze and decide whether the chosen textbook goes in harmony with targeted students' intelligence profile or not. As a final recommendation, he added that teachers have to recognize that learners are different and learn differently.

Another study was conducted by Snider (2001) in which an analysis of ten first years German college textbooks was carried out. The aim of the study was to identify the types of activities and how did these activities engage the multiple intelligences. The results revealed that the range of activities presented in the targeted textbooks was quite limited. In addition to that, Snider declared that all of the 41 (100%) types of activities detected in textbooks engaged the VL intelligence. Yet, only 11 (27.5%) types of activities catered for other intelligences. Snider's study suggested some exemplar modifications on activities so that they can conform to learners' differences and intelligence profiles. To explain, he presented the original activity appearing in the used textbook, then proposed three different models of modifications. In each of the new suggested activities, Snider tried to engage, at least, three intelligences other than the VL intelligence.

Botelho (2003) content-analyzed six Brazilian EFL textbooks in order to identify the intelligence profiles of those textbook, and to examine how do textbooks activities help enhance EFL learners' intelligences. The results of the study revealed that Brazilian EFL textbooks engaged mainly four intelligences, namely: VL, IA, VS, and IR intelligences. Precisely, more than 75% of textbooks activities engaged the

aforementioned intelligences. As for LM, BK, M, and Existential intelligences, they were less engaged in the textbook. In numbers, these intelligences appeared in less than 40% of the textbooks activities. At the end of her study, Botelho included many suggestions to supplement and to modify Brazilian textbook activities so that they can cater for more intelligences.

Al-Omari (2010) carried out a study in which she content-analyzed the Jordanian EFL textbook *Action Pack* series. The aim of the study was to find out the extent to which the analyzed textbooks incorporated the principles of MI theory. It also aimed to provide guidelines for including the MI theory principles in textbooks by redesigning a number of randomly selected lessons. The sample of the study was composed of 1st, 4th, 8th, and 11th grades textbooks. The researcher concluded the following: first, Moral, Existential, and spiritual intelligences were totally absent in the textbooks activities. Second, unbalanced incorporation of intelligences in the textbooks was noticed. Third, a balanced incorporation of VL, VS, and IA intelligences was observed. At the end of her study, Al-Omari redesigned some lessons so that they can engage more intelligences and serve wider range of learners' differences.

Last but not least, Boulmaiz (2017) content-analyzed Algerian 1st secondary school EFL textbook "*At the Crossroads."* The aim of Boulmaiz's study was to investigate the incorporation of MI theory in the activities of the textbook under study. The results of the study revealed that the textbook activities basically catered only for VL and LM intelligences. Through a total number of 380 activities, 380 (100%) activities engaged the VL intelligence, and 164 (43.15%) activities engaged the LM intelligence. As for other intelligences, they were incorporated respectively as follows: 95 (25%) for IA intelligence, 75 (19.73%) for VS intelligence, 33 (8.68%) for N intelligence, 04 (1.05%) for M intelligence, and 00 (0%) for BK intelligence. At the end of the study, the

researcher recommended that Algerian EFL teachers should receive serious training on the application of MI theory in order to meet learners' different needs and to enrich their intelligence profiles.

Conclusion

At the end of this chapter, it can be concluded that views on MI theory, generally, can be divided into two main sections: first, the extensive illustrations provided by Gardner and other researchers; second, the application of the theory in the field of education. The two sections completed one another since Gardner first questioned the old fashioned view of intelligence; then, the educationists investigated the chances to translate Gardner's hypotheses into practical educational procedures.

More than one researcher (Botelho, 2003; Hammoudi, 2010; Boulmaiz, 2020) agreed on the point that teachers have to think about the specificities of their classes before putting the principles of MI theory into practice. Otherly, teachers should not consider the MI theory principles as a "magic formula" that solves all their classroom challenges. Instead, teachers can rely on their accumulated experiences and recent research suggestions all combined together in order to build convenient teaching practices.

Through an accurate study of the previous related literature, none of the previous studies has experimentally examined the issue of congruence between MI implementation in teaching and MI implementation in assessment. As stated by many researchers (Hammoudi, 2010; Botelho, 2003; Al-Omari, 2010), the implementation of MI theory in teaching practices should be accompanied with convenient assessment strategies. The Algerian context reveals a huge gap in such point. Thus, the current study attempts to

examine the implementation of MI theory in the Algerian EFL assessment policy and its congruence with EFL teachers' classroom practices.

The researcher included only 8 intelligences (VL, LM, VS, M, BK, IR, IA, and N intelligences) because: 1) The 8 mentioned intelligences are the most agreed on ones. 2) It was clear that the 9th, 10th, and 11th intelligences (respectively: Existential, Moral, Spiritual intelligences) were totally absent in the textbook under study, since they tackle philosophical issues. That is why the researcher preferred to leave the door open for unexpected results (credibility issues).

Chapter Four:

Assessment and

Foreign Language

Teaching

Introduction

Since assessment is a crucial component in the teaching/learning process, this chapter will include: an overview on assessment, purposes of assessment, diagnostic assessment, formative and summative assessment, types of assessment, then assessment and MI theory. Like other educational components, assessment today is witnessing a tremendous shift and remarkable adjustments. These experimentations are generally targeting authenticity of assessment, practical procedures for setting/scoring invented assessments, standards on which students will be assessed, and teachers' training on how to administer and score these new assessments. These alternative assessments enjoyed a worldwide popularity due to the critics and the concerns raised against the old fashioned assessment methods. Many arguments were introduced questioning the current forms of assessment. Relatively, Office of Bilingual Education and Minority Languages Affairs (OBEMLA) (1992) (as cited in Hammoudi, 2010, p.225) identified the following concerns:

1- The currently used standards do not reflect the requirements of the next century. In other words, students should be assessed on new criteria that will reflect their real needs.
2- Students cannot show their real potentials through current tests and measurement procedures.
3- There is no congruence between most of the curricula and the tests being administered; i.e. standardized test do not measure what is taught.
4- The skills needed for today's and tomorrow's world (higher order thinking skills) are not reflected in the current tests and assessment procedures.

5- It is believed that curriculum should be built on real life and authentic situations. Current tests and measurement procedures cannot validate the outcomes of such curriculum.
6- The educational progress of school systems, schools, and individual students should be compared nationally and internationally via new assessments.
7- Assessments should be criterion-referenced so that they can measure students' developments on skills and knowledge.

Before detailing this component, some basic terms that are related to assessment should be clear for the reader right from the beginning.

4.1 Terms Related to Assessment

- **Assessment:** As defined by Palozzi (2002), assessment is referred to as gathering information about learners' language capabilities and achievement through: quizzes, tests, student assignments, classroom observation, etc. Assessment as a term is broad enough to comprise more than one measurement instrument. In addition, some kinds of assessment are administered during the session time in order to gather information about students' learning and to add any required adjustments on instruction. However, other kinds of assessment occur at the end of any learning phase in order to draw conclusions about students' achievement.

- **Measurement:** McNamara (2000) defined it as the analysis (theoretical and empirical) of scores and their meaning. When measuring students' achievements, such questions are asked: "what do scores reveal teachers?, about what students have learned?", Or "is there a correlation between the test/assessment and the learning goal?"

- Test: it is simply the instrument through which a teacher measure students learning as a particular period of time. A test might be in form of quiz, multiple-choice tests, cloze test, etc.

- Evaluation: this term is more precisely used with the whole language program. Evaluation can be carried through interviews, examination of curriculum materials, observation checklists, etc. Evaluation generally aims at identifying how well the program is working, and which of its goals are being met, (Hammoudi, 2010).

4.2 Assessment Purposes

When thinking of assessment purposes, this question is always present: for what purpose do teachers assess? Assessment is generally divided into three purposes:

4.2.1 Diagnostic assessment

It is a type of assessment that teachers use for diagnosing and determining students' areas of strength and weakness, so that they can plan for any remedial procedures or personal assistance.

4.2.2 Formative assessment

This kind of assessment occurs generally during the teaching process. It aims at observing the progress of students' learning and providing teachers with useful information so that they can adjust the pre-designed program and plan for next teaching points.

4.2.3 Summative assessment

This type of assessment occurs at the end of a teaching phase (a semester, a school year, etc.). It aims at determining the whole school achievements of students. This kind of

assessment is generally built upon the objectives declared in the official syllabus. Critical decisions (changing the textbook, rethinking the educational objectives, etc.) might be taken according to the scores recorded in such kind of assessment.

4.3 Types of assessment

Among different types of assessment, the researcher has chosen the most common ones, namely: quantitative assessment, qualitative assessment, and high stake assessments.

4.3.1 Quantitative assessments

Quantitative tests are concerned with numerical scoring. They may be in a form of a teacher created test, a standardized test, and rating scales. The Algerian educational system is still using these kinds of assessment. Speaking about rating scales, Gredler (1999) divided them into two categories: norm-referenced scales and criterion-referenced scales. The norm-referenced scale focuses on comparing a student achievement in regard to other students who took the same test. In other words, there is a norm that a student is compared to. Even schools tend to compare their achievements to each other in large scale examinations, Baccalaureate exam as an example.

As for the criterion referenced scales, there are a set of performance criteria that should be met by the student. This kind of assessment provides the teacher or the administration with information about students' performance in regard to their previously decided criteria. The question to be answered here is: How competent is the student? Hammoudi (2010) asserted that in the Algerian context, the results of such assessment are considered to be misleading and incorrect because most of teachers are still unable to use these scales, and because there exist no specialized testing services. Yet, he admitted that

university teachers are devoting efforts to straighten the warp. Their efforts can be noticed in the recent changes added to middle school and secondary school EFL textbooks.

4.3.2 Qualitative assessment

Unlike quantitative assessments, this type does not include any numbers or rating scales. These assessments are built upon teachers' questions, teachers' observations, interviews, and students' reflections. Hammoudi (2010) asserted that to ensure the reliability of such type of assessment, these questions should be answered:

- Do Algerian teachers possess the academic ability to observe and evaluate their students?
- Do teachers possess the required experience that enables them to ask reliable questions in order to grasp valid and reliable information about students?
- Are teachers academically competent to build suitable interviews?
- Do teachers possess the skill to engage students in reflections, then, interpret their reflections correctly?

4.3.3 High Stakes Assessments

High stakes assessments are directly related to issues like: employment, graduation, university admission, access to further education, etc. These kinds of assessments are generally standardized and contain specific score rating. The mastery of English is a prerequisite for all academic fields in EFL/ ESL contexts. Even for speakers of other languages in an English speaking country, a particular level of English language proficiency is required. Regarding the crucial importance of such assessments, the teacher-learner interaction is affected as a result. This, according to Hammoudi (2010), is due to the huge presence of "Wash Back Effect" in this situation.

Speaking about the Algerian context, the "Wash Back Effect" is not strongly present in the instruction of English. This may be due to the following reasons: first: primary schools, middle schools, and secondary schools learner' needs are not analyzed. Second, an Algerian student cannot perceive the relation between studying English and its necessity in his/her real life, or even for study purposes; so he/she considers it as an optional discipline. He/she realizes that it is an international language but his/her country is still relying on French as a second official language. Continuing with the Algerian context, another phenomenon can also be perceived which is the instruction of English or other modules in the final stage of any educational level (4^{th} year for middle school level, or 3^{rd} year for secondary school level). Teachers totally agree on the fact that final exams have a massive and negative effect on instruction during the whole year.

Among the high stakes assessments, some international level standardized tests like: Test of English as a Foreign Language (TEOFL), Test of English for International Communication (TOEIC), International English Language Testing System (IELTS), Test of Spoken English (TSE), Certificate in English Language Skills (CELS), Stimulated Oral Performance Interview (SOPI), and Oral Performance Interview (OPI) can be mentioned.

4.3.3.1 Other uses of high stake assessments

Though these assessments are commonly used for admission purposes, yet some educators and institutions apply them for another purpose. Some educators apply these tests for placing ("placement test" or "*teste de niveau*") new students in their convenient level. Thanks to the results of such tests, teachers can decide precisely what kind of education a student first receives. As a supportive evidence, Johnstone and Wilhelm (1997) examined the issue of using TOEFL scores for placing students into different levels of reading courses in an English Intensive program. Results revealed a positive

correlation between TOEFL scores and Nilson-Denny Reading Test Scores. In other words, TOEFL scores could successfully predict what level of difficulty an international student can bear. Wilhelm, though, designed her English Intensive program according to her students' real English reading abilities.

The following table distinguishes between traditional testing and authentic assessment:

Standardized Testing - Reduces children's rich and complex lives to a collection of scores, percentiles, or grades - Creates stresses that negatively affect a child's performance - Creates a mythical standard or norm that requires that a certain percentage of children fail - Pressures teachers to narrow their curriculum to only what is tested on an exam - Emphasizes one-shot exams that assess knowledge residing in a single mind at a single moment in time - Tends to place the focus of interpretation on errors, mistakes, low scores, and other things that children - can't do - Focuses too much importance on single sets of data (i.e., test scores) in making educational decisions - Treats all students in a uniform way - Discriminates against some students because of cultural background and learning style - Judges the child without providing suggestions for improvement - Regards testing and instruction as separate activities
Authentic Assessment - Gives the teacher a "felt sense" of the child's unique experience as a learner - Provides interesting, active, lively, and exciting experiences - Establishes an environment where every child has the opportunity to succeed - Allows teachers to develop meaningful curricula and assess within the context of that program - Assesses on an ongoing basis in a way that provides a more accurate picture of a student's - achievement - Puts the emphasis on a student's strengths; tells what they can do and what they're trying to do - Provides multiple sources of evaluation that give a more accurate view of a student's progress

- Treats each student as a unique human being - Provides a culture-fair assessment of a student's performance; gives everyone an equal chance to - succeed - Provides information that is useful to the learning process - Regards assessment and teaching as two sides of the same coin

Table 4.1: Standardized Testing VS Authentic Assessment; Armstrong (2009, p. 132)

4.4 Assessment and MI theory

The MI theory suggested rethinking the way teachers assess their students' progress. Assessment, according to MI theory, should go in harmony with the way students have been taught. As learners' needs and learning styles are taken into consideration during the learning process, the same principle applies for the assessment process. Relatively, Hammoudi (2010; p. 236) declared: "It would doubtlessly be plain hypocrisy to apply this new theory and set pupils to participate in a wide multispectral experiences in the nine intelligences then assess them through standardized tests which focus on verbal or logical domains." Accordingly, MI theory drops norm-referenced tests as an assessment tool, and stressed the use of criterion-referenced and authentic assessments.

In his words, Gardner (1987; p.198) stated: "I believe that we should get away altogether from tests and correlations among tests, and look instead at more realistic sources of information about how peoples around the world develop skills important to their way of life." Authentic assessments comprise several instruments to measure students' performance. Armstrong (2000) ranked "observation" as the most reliable assessment tool. He argued that teachers just need to stay aside and observe how students solve problems and create real life fashion products in order to possess a clear picture about students' performance in different discipline. In addition to observation, several

ways might serve for documenting students' performance. Armstrong (2009) mentioned the following:

- Work Samples: it is about a file within which students productions of language are saved. Thanks to this file, a teacher can easily assess students' progress and track the weak points and strengths of every single student.
- Videotape: this way can be used to record classroom project presentations, role plays, and even some field trips/visits. A teacher will easily get back to these recordings in order to assess students' performance. It may also serve students for personal assessment/self-criticism.
- Student Journal: students should be incited to keep a daily journal about their personal experiences with the school, the administration, the teacher, and with people outside school. The student's journal may include writings, drawings, and doodles.
- Sociograms: it is about visual recording of students' performances during classroom interaction. Symbols for categorization, negative interaction, and neural contact between classmates are used.
- Informal tests: they are also named as non-standardized tests. This method serves to build a qualitative report about students' assimilation of some specific language learning areas.
- Student-kept charts: teachers can urge students to keep their records of academic progress by using figures, charts, and graphs. This procedure helps students to precisely track their academic progress, and compare their previous performance to the actual one. It can also serve as a booster for students to devote more efforts.

In addition to the ways introduced by Armstrong, Hoerr (2000; p.26) proposed different ways of assessment that a multiple intelligences school may use:

- Progress Reports: every single student has a personal progress report that is considered as a formal communication shared between school officials, teachers, and even parents. The report contains rubrics and a list of criteria to be checked on according to the student's performance. In addition to that, detailed narratives about the student's progress, the objectives successfully achieved, and the student's efforts to demonstrate knowledge are included within the report. It also includes details about students' areas of weaknesses and strengths. Parents receive this report twice a year to shape a detailed picture about their children's progress at school. This ongoing process of communication between parents and schools is of great importance for it involves all the concerned elements in the learning process.
- Projects, Exhibitions, and Presentations (PEPs): students' understanding is assessed through creating projects and organizing exhibitions. This way of assessment challenges learners' different skills because they have to demonstrate more than a good mastery of the topic. They further need to organize their information while presenting, maintain eye-contact with those following their presentation, control their speech rate, projecting their voices, and reading their audiences through facial expressions. This kind of assessment urges students to collaborate with each other and engage their interpersonal intelligence.
- School Displays: this way is about exhibiting students' projects and productions on the walls in a beautiful manner that reflects students' efforts. The walls and halls in a multiple intelligences school are used for presenting and improving students' performances. In addition to hanging their works on walls, students will have to illustrate their accomplishments to their classmates, visitors, and parents via a method that engage as much intelligences as possible.

- Portfolios: Hoerr (2000) defined a portfolio as "a collection of work and artifacts that give a picture of the child's growth- a way of capturing progress without using paper and pencil measures" (p.27). Portfolios are to be regularly reviewed by parents and teachers in order to follow students' progress in different intelligences. Using portfolios imply more than one benefit: first, it builds a linking point between teachers and parents since teachers have to meet students' parents and answer their questions/concerns. Second, students have to reflect on their accomplishments, and discuss them with their parents. Along with reflections issue, every single portfolio contains reflection sheets to be filled by students and teachers. A portfolio is an accurate of students' accomplishments, including: photographs, videotapes, audiotapes, three dimensional accomplishments, and even accomplishments fulfilled outside school.

Conclusion

It is proved that the combination of MI teaching strategies with convenient authentic assessment practices enables students to reach the highest of their performance abilities. One of the great benefits of authentic assessment strategies is that they switch students' attention from focusing on assimilating content and facts to enjoying the process of learning. Students, thus, make use of facts and figures to solve real life problems, to realize projects, and to discover new dimension of learning, (Hammoudi, 2010).

This chapter elaborated the issue of assessment as an important component in the educational process. In addition to that, it contained some basic terms that are related to assessment. Types and purposes of assessment also have been briefly examined. Then, the researcher has elaborated on alternative assessments and how they are related to the MI theory.

Part Two: Practical Part

Chapter Five: Experimental Design and Research Methodology

Introduction

The current chapter introduces the experimental design of the study, the research methodology, the instruments used to test the research hypotheses. To serve the objectives of the study and to insure the trust worthy of the results, the researcher has worked on insuring the validity and reliability of the instruments. The chapter also comprises the results of the study related to each of the instruments, e.g.: results and discussion of the questionnaire.

5.1 Analysis of the questionnaire

This section is dedicated to the analysis and interpretation of data gathered using one of the instruments; the instrument is the questionnaire. The latter targeted Algerian 2nd year secondary school EFL teachers' perceptions about the incorporation of MI theory in their classes. The questionnaire is composed of some close-ended questions and some open-ended questions in order to grasp teachers' views about the issues this study examines. The analysis of teachers' responses will provide a detailed overview about issues like: teachers' knowledge about MI theory, their practices to provide rich learning environment, their preferences about the materials they add to textbook activities, etc.

5.1.1 Data Collection

The questionnaire used in this study was adopted from Al-Omari's (2010) study about the implementation of MI theory in EFL textbooks. The researcher adopted the questionnaire and adapted it according the specific objectives of the current study and the characteristics of the Algerian context. This instrument was designed and administered in order to grasp teachers' perspectives about issues related to teachers' knowledge about the MI theory, the degree of applying MI theory in their classes, textbook

supplementation with extra materials, teachers' most preferred extra materials, etc. The data gathered through from the questionnaire results helped answering the following research questions:

1- How can EFL teachers' knowledge about MI theory be described?
2- To what extent is MI theory applied within EFL teachers' classes and institutions?
3- Do EFL textbooks support the use of MI theory?
4- To what extent do EFL teachers support EFL textbooks with extra materials?
5- What are the standards based on which EFL teachers choose extra materials?
6- What kinds of extra materials do EFL teachers prefer to supplement EFL textbooks?
7- What intelligences do EFL teachers' preferred extra materials engage?

5.1.2 Validity and Reliability of the questionnaire

As they represent the most critical category to students' learning, teachers' perceptions and attitudes are of high importance for the current study. Teachers' awareness about students' needs, the suitable teaching approach for the course objectives, and the techniques that serve better students' learning and engagement is to be exposed by every single teacher.

The questionnaire used to grasp teachers' perceptions has to be moderated in terms of validity and reliability so that to make sure that it exactly serves the objectives of the study, and to decide whether its results can be reliable or not. For this purpose, the researcher followed these procedures:

5.1.2.1 Validity of the questionnaire

As mentioned before the researcher needed to make sure that the questionnaire designed for EFL teachers elicits the required information about the issues being discussed. For this purpose, the researcher piloted the questionnaire to a group of teachers similar to the ones taking part as participants in the current study. The group was composed of ten secondary school EFL teachers.

This procedure allowed the researcher to track the gaps in the instrument, and to refine the questionnaire in order to come up with a valid final version. Before validating the final version and for more validity, the researcher sent the questionnaire to two expert teachers who have worked on the topic of multiple intelligences. The document sent to the two expert teachers included objectives and questions of the study and the draft questionnaire in order to check if the items of the questionnaire are serving the objectives and the research questions. Expert teachers' remarks helped the researcher add more items, drop any needless items, or clarify any ambiguous items. For example, the adopted questionnaire included an item about the choice of the textbook; the item was dropped since it is not the case in the Algerian context. The final version was then made according to the previous procedures.

5.1.3 Description of the questionnaire

As mentioned earlier, this instrument intended to elicit information about teachers' knowledge about MI theory, and their perceptions towards including it in their classes; in addition to the ways they follow to supplement the official textbook with extra materials. The questionnaire is composed of three sections. The first section collected information about participants' age, gender, experience, and the levels they have taught. The second section elicited information about participants' knowledge about MI theory, their

willingness to learn about MI theory, the source from which they got information about MI theory, the application of MI in their institutions, their thoughts about the application of MI theory in their classes, the extent to which they apply MI theory in their classes. The third section investigated in detail teachers' perceptions about the inclusion of MI theory in the EFL textbook, their perceptions about the need to supplement the EFL textbook with extra materials, the way how they choose extra materials, and teachers' most preferred extra materials and the intelligences these materials engage.

5.1.4 Population and sampling

The population of the study was composed of Algerian 2nd year secondary school EFL teachers affiliated to Ghardaia directorate of education. During the school year 2020/2021, secondary school EFL teachers affiliated to Ghardaia directorate of education were composed of 131 male and female teachers. Teachers shared the same ethnic and cultural background as they were all Algerians.

From a population of 131 teachers, the researcher has chosen purposefully a sample of 40 teachers. Forty copies of the questionnaire were distributed, yet only 36 were held back to the researcher. As for the purposeful choice of the sample, it was based on the possibility of reaching the participants, because the researcher could not reach some participants who live far away from the center of Ghardaia. Participants demonstrated a variety in terms of qualifications; 19 (52.8%) respondents hold MA degree, 09 (25%) respondents hold Licence degree, 07 (19.44%) were ENS graduates, and one (2.76) respondent had a Doctorate degree.

5.1.5 Results and Discussion

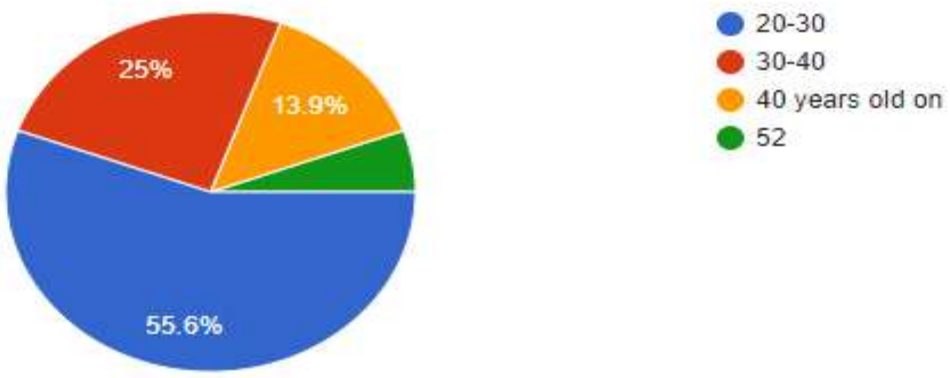
Data collected through this research instrument were analyzed and interpreted quantitatively and qualitatively. The structured questions were analyzed through counting means and percentages related to each item via Excel software. It is worth mentioning that the researcher did not use the SPSS to analyze the results because the objectives of this instrument did not include correlation calculations or distinguishing any issues among different responses. As for the semi-structured/open-ended questions, they were analyzed and interpreted qualitatively and quantitatively.

Item 1: *Age of participants:*

- *20-30 ( ) - 30-40 ( ) - More than 40 years old ( )*

Results from *item 1* showed that more than half of participants (twenty, i.e, 55.55%) aged between 20 and 30 years old. As for the other participants, nine of them (25%) aged between 30 and 40 years old, and seven of them (19.45%) aged more than 40 years old. The age range of participants revealed diversity among respondents' ages, with a remarkable favor for young participants.

Figure 5.2: Age of participants

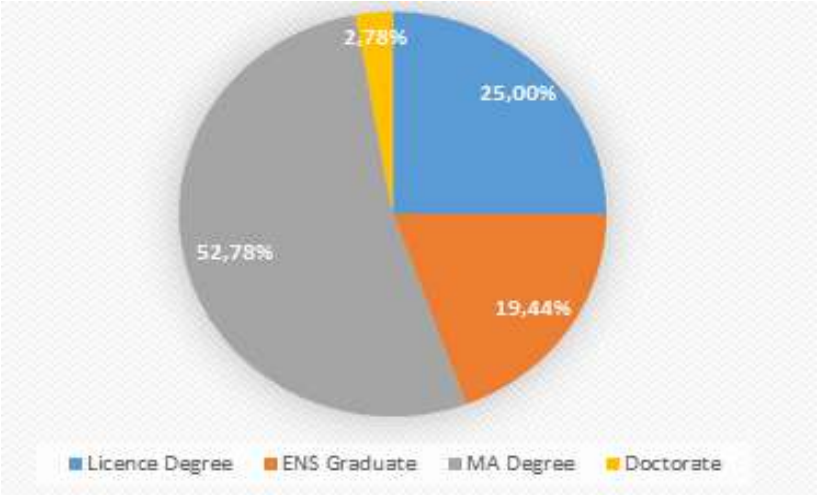


Item 2: *Participants' Degrees:*

Licence ( ), ENS Graduate ( ), MA ( ), Doctorate( )

Results from *item 2* reveal that there is a diversity of degrees among participants. Nine (25%) participants had a Licence Degree in English, whereas seven (19.44%) respondents declared that they graduated from Teachers Training School (ENS). On another hand, nineteen (52.78%) participants hold MA Degree in English; and only one participant (2.78%) who had a Doctorate. It is worth mentioning that ENS graduates are expected to have an idea about the MI theory since they go deep with EFL pedagogy and teaching methods. In addition to that, those holding an MA degree may also be already exposed to MI theory, especially those who followed Didactics as a discipline. So, if we gather ENS graduates and MA degree holders, then we might be talking of a proportion of (72.21%) of participants who have already heard about the theory. This hypothesis will be confirmed or rejected as the investigation proceeds.

Figure 5.3: Academic Degrees of Participants



Item 3: *Experience in EFL Teaching:*

Results from *item 3* revealed that participants' experience ranged between one year and 31 years of EFL teaching. In detail, twelve teachers (33.33%) had one year of

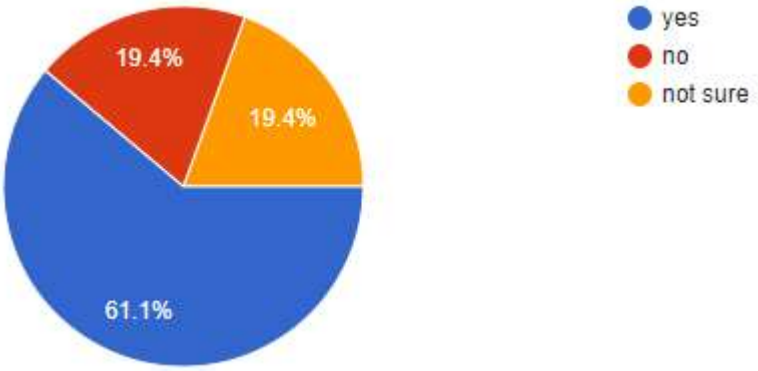
experience as EFL teachers, while four (11.11%) of them have been teaching EFL for two years. Two teachers (5.6%) had an experience of three years as EFL teachers, and three (8.33%) of them have been teaching EFL for four years. Only one teacher (2.8%) has been teaching EFL for five years, and also one teacher had an experience of six years. The rest of results can be listed as follows: one (2.8%) teacher taught for seven years; one (2.8%) teacher taught for eight years; two (5.6%) teachers had ten years of experience; two teachers (5.6%) had experience of twelve years; one teacher (2.8%) had twelve years of experience; two teachers (5.6%) had 17 years of experience; two (5.6%) had twenty years of experience; one teacher (2.8%) had twenty six years of experience; and one (2.8%) teacher had thirty one years of experience.

Item4: *have you ever heard about MI theory?*

Yes ( ), No ( ), Not sure ( )

Results from the *item 4* indicated that 22 (61.1%) participants have already heard about MI theory, while 7 (19.4%) participants declared that they have never heard about the theory. 7 (19.4%) participants were not sure about this point. Having a percentage of 61.1% of participants who have heard about MI theory was promising to get insightful and informative responses. The researcher believed that teachers' knowledge about MI theory is going to be of great benefit for the trustworthy of their responses, and even when relating their responses to other parts of the study.

Figure 5.4: participants' knowledge about MI theory

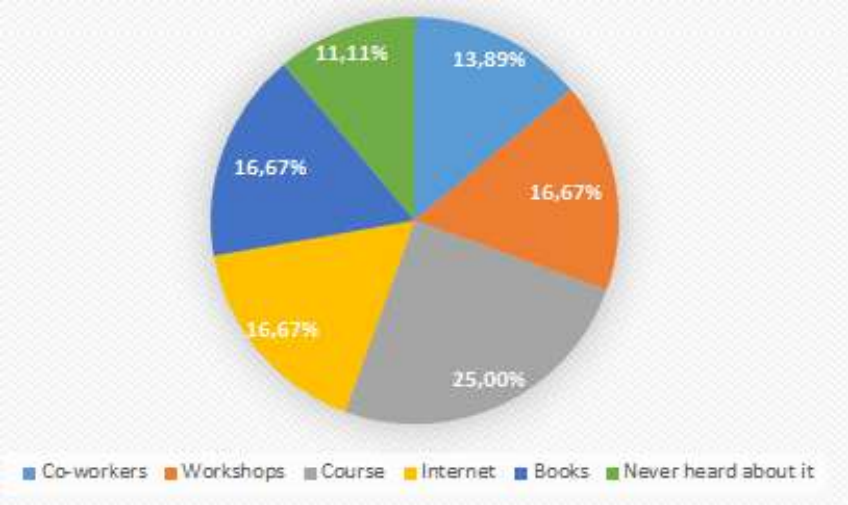


Item 5: *source of knowledge about MI theory*

Book ( ), Internet ( ), Workshop ( ), Co-workers ( ), Course ( ), didn't hear about it ( ).

Results from *item 5* reveal that there are five main sources from which participants knew about MI theory. Five (13.88%) respondents declared that their co-workers helped them to know about MI theory, while six (16.66%) participants stated that they learned about MI theory through workshops. Nine (25%) participants had the chance to enroll in a course about MI theory. Six (16.66%) participants stated Internet as their source, and six (16.66%) others learned about MI theory through books. On another hand, four (11.11%) stated that they have never heard about the theory. It can be stated here that comparing the results of the answer "didn't hear about it" in this item with the answer "No" in the previous item reveals inconsistency. Since the two questions elicit the same information, there should be the same number of participants with the same response for both of the questions. Yet, seven participants responded with "No" in the previous item, and only 4 participants who responded with "didn't hear about it" in this item.

Figure 5.5: Source of knowledge about MI theory

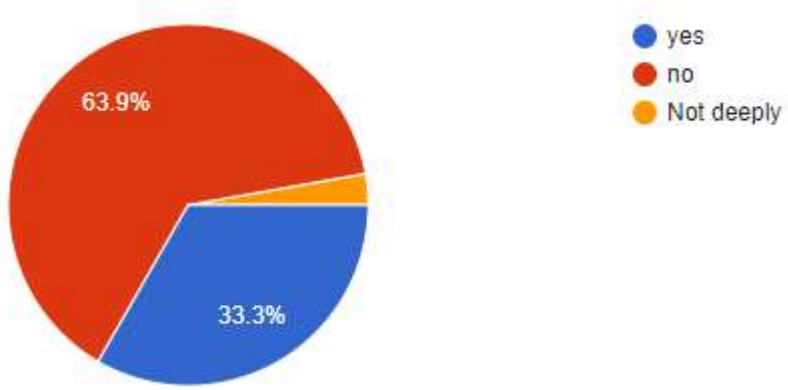


Item 6: Search about MI theory

Yes ( ), No ( ), Not deeply ( )

Results from *item 6* indicate that twenty three (63.9%) participants have never searched about MI theory, while twelve (33.3%) have searched about it. Only one participant (2.8) declared that he/she has searcher about it but not deeply.

Figure 5.6: Searching about MI theory



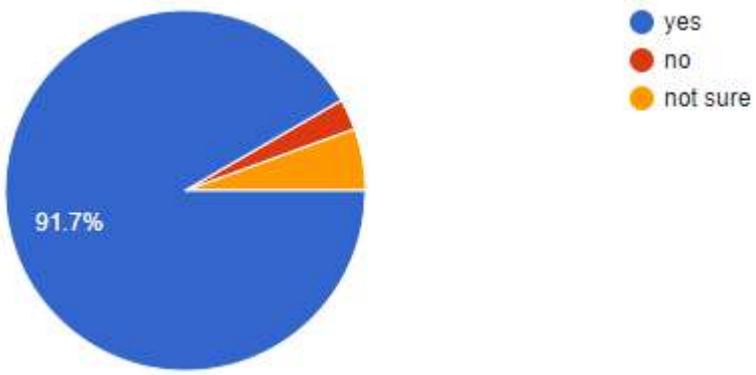
Item 7: *Willingness to learn about MI theory*

Yes ( ), No ( ), Not sure ( )

Results from *item 7* have shown that thirty (91.7%) participants have the will to learn more about MI theory, whereas two (5.6%) stated that they are not sure about this

point. Only, one (2.8%) stated that he/she has no desire to learn about MI theory. It is believed that the percentage of responses with "yes" is a way to shape an idea about teachers' aptitude to enhance their teaching performance, and to try new things in order to facilitate the teaching/learning process.

Figure 5.7: Willingness to learn about MI theory

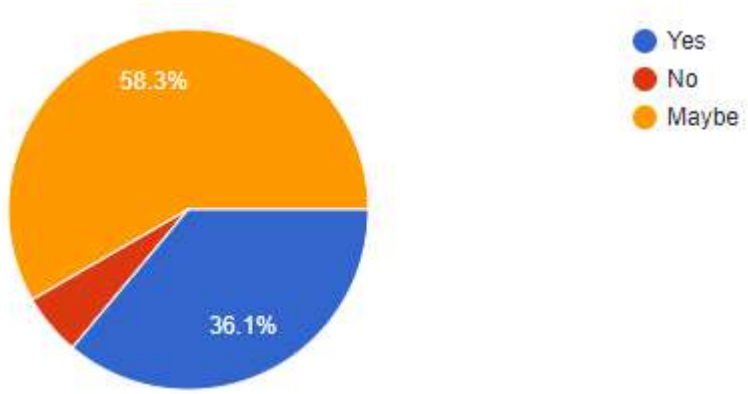


Item 8: *Awareness about the use of MI theory*

Yes ( ), No ( ), Not sure ( )

Results in *item 8* have shown that thirteen (36.1%) participants claimed that they use MI theory in their classes. However, twenty one (58.3%) participants were not sure whether they are using it or not. The latter results may be due to participants' lack of knowledge about MI theory, or their lack of knowledge about the incorporations of MI theory in EFL classes. Two (5.6%) participants stated that they don't use MI theory in their classes.

Figure 5.8: Awareness about the use of MI theory

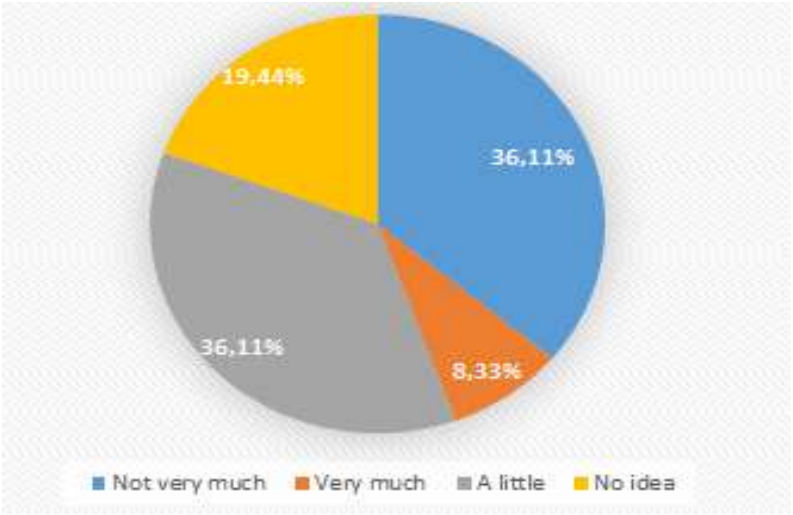


Item 9: *Degree of using MI theory*

A little ( ), not very much ( ), Very much ( ), No idea ( )

Results from *item 9* reveal that thirteen (36.1%) participants stated that they apply MI theory in their classes, but only a little. Thirteen (36.1%) participants have declared that they do not apply the theory very much. On another hand, three (8.33%) participants stated that they apply it very much in their classes. There remains one category composed of seven (19.4%) participants who claimed that they have no clue about the extent to which they are applying the theory.

Figure 5.9: Degree of applying MI theory

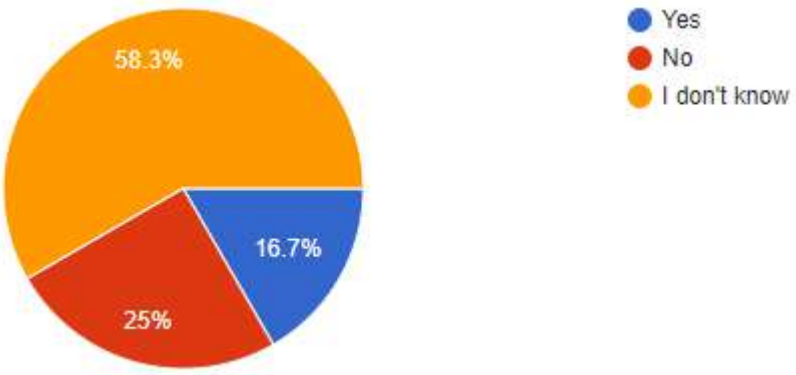


Item 10: *MI theory Implementation in institutions*

Yes ( ), No ( ), No idea ( )

Results from *item 10* show that nine (25%) teachers stated that the institutions they work within do not apply MI theory. Six (16.7%) participants claimed that their institutions apply MI theory principles. However, twenty one respondents declared they had no idea about whether their institutions implement MI theory or not. The researcher believes that the high percentage of respondents with *"no idea"* reveal a gap between teachers and their institutions educational policy which may be due to lack of communication and the hierarchical relation between the administration and the educational staff.

Figure 5.10: MI theory implementation in institutions



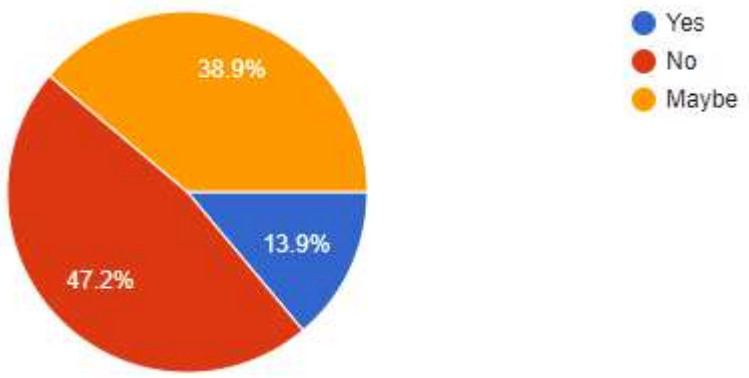
Item 11: *teachers' perceptions about EFL textbook support of MI theory*

Yes ( ), No ( ), maybe ( )

Results from *item 11* reveal that seventeen (47.2%) participants thought that the EFL textbook do not support the MI theory. However, fourteen (28.9%) participants said that they were not sure about this point. Only five (13.9%) participants have stated that the EFL textbook supports MI theory. The proportion of responses with "maybe" may be due to participants' uncertainty about the way how MI can be incorporated in EFL

textbooks. As for the proportion of responses with "No", the researcher believes that it reflects the common belief among teachers that Algerian EFL textbooks do not fit learners' level, and their real needs.

Figure 5.11: Teachers' perceptions about EFL textbook support of MI theory

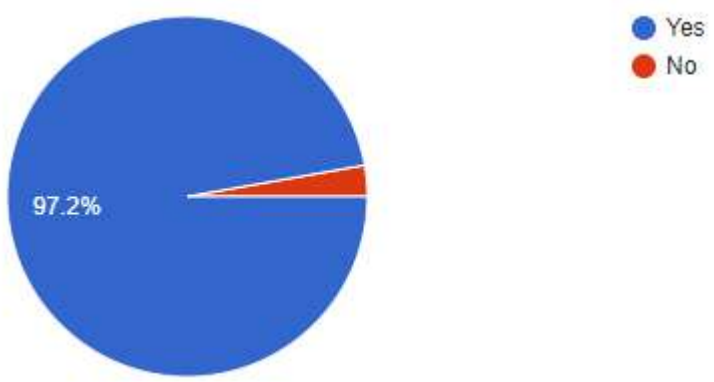


Item 12: *Textbook Supplementation with extra materials*

Yes ( ), No ( )

Results from *item 12* indicate that the great majority of teachers claimed that they supplement textbooks with extra materials. In detail, thirty five (97.2%) stated that they supplement the textbook with extra material. However, only one teacher (2.8%) has declared that they do not supplement the textbook with any extra materials. It is believed that these results confirm that teachers generally believe that the textbook they use still needs a lot of improvements, and that teachers generally do great efforts to satisfy their learners' needs.

Figure 5.12: textbook supplementation with extra materials

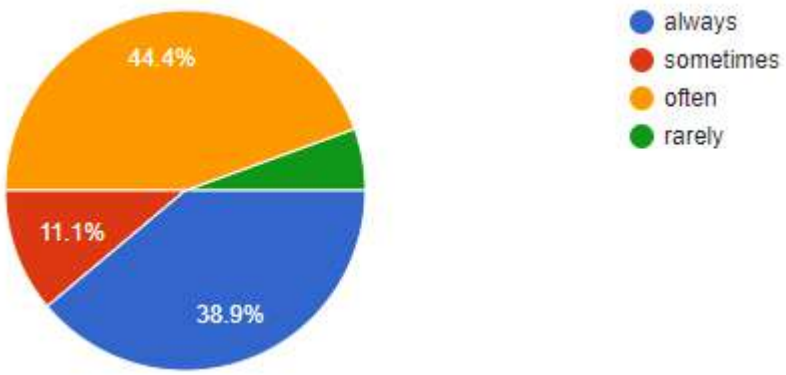


Item 13: *Degree of supplementing textbook with extra materials*

Always ( ), Often ( ), Sometimes ( ), rarely ( )

Results from *item13* reveal that 14 (38.9%) teachers declared that they always supplement the textbook with extra materials. While, sixteen (44.4%) teachers stated that they often supplement the textbook with extra materials. On another hand, four (11.1%) teachers claimed that they sometimes supplement the textbook with extra materials. Yet, only two (5.6%) teachers admitted that they rarely add extra materials to the textbook. The results reveal that the degree of supplementation varies among teachers for several reasons. These reasons may be the nature of the lesson, time constraints, lack of tools, etc.

Figure 5.13: Degree of supplementing textbook with extra materials



Item 14: *Reasons for supplementing the textbook with extra materials*

The current item included this open-ended question: *"why do you think the EFL textbook should be supplemented with extra materials?"* The question was intentionally left open in order to elicit as much responses as possible. Yet, teachers' responses were mainly focusing on ten main reasons. First, the reason that was strongly present among teachers' arguments is that *the current textbook does not fit learners' real level*. Teachers needed to come up with extra materials in order to make the tasks easier for learners, and to reach the required objectives as a result. Second, the second reason was *to better understand the lesson*. Teachers believed that the textbook content does not help students to understand the lesson from all its sides. So, they needed to add extra materials in order to cover the perceived gaps.

Third, the third reason was also repetitively stated by teachers. Instructors stated that they supplement textbook with extra materials in order *to increase students' engagement and motivation*. The issue of students' engagement is badly imposing itself in all classes of all disciplines and streams, especially with the heavy presence of Information Technology (IT) in students' daily life. Teachers believed that students' motivation and engagement can be increased through the inclusion of attractive materials like: photos, charts, video tapes, etc. Fourth, the fourth reason was *to meet learners' needs and expectations*. Teachers perceived that the current textbook content is not convenient with learners' needs and expectations. Because of the specificities of this era learners, teachers believed that their students' needs are not enough satisfied through the textbook content. To clarify, the topics examined within the textbook appeared to be old fashioned and not keeping pace with topics that attract learners' attention.

Five, the fifth reason was *to facilitate teaching/learning process*. This reason is highly related to the previous reasons. While making use of the textbook content, teachers

are always facing the challenge of keeping the balance between what is required (finishing the syllabus) on one hand, and the tools to be used and overcoming the difficulties on another hand. In other words, when targeting some competencies/functions teachers find themselves teaching students structures/functions/notions that should be already mastered. The "should be mastered" competencies are required to understand the current competence. As a result, they feel the need for extra materials in order to fill that gap, to facilitate the task for themselves, and to overcome the time constraints. Six, the sixth reason teachers have stated is that *the current textbook lacks attractive activities*. According to teachers, the textbook activities do not spark students' attention; i.e. games, puzzles, tasks with pictures, activities in a form of mission are expected to be more attractive for students. Rather than that, exposing students to attractive activities may include an implicit illustration of some points missing during the explanation.

Seven, this reason is tightly related to the sixth one. Teachers stated that they supplement textbook with extra materials because they believe that *there should exist a variety of activities that fit learners' needs and abilities.* Through their journey of teaching the same students, teachers develop an almost complete perception about their students' real competencies and preferences. Thus, teachers are expected to supplement the textbook with some activities that are convenient with learners' abilities. As for students' needs, it should be mentioned here that mentioning the term *needs* is not precise, because students' needs can be known only through specific academic instruments like: survey, open discussion, interview, etc. Hence, the researcher believes that Algerian public schools are not yet accustomed to assessing students' needs before designing/choosing the suitable material. More than that, the material is designed and imposed on all schools from all different backgrounds no matter what were the different specificities.

Eight, the current reason is also highly related to the previous one; many teachers have stated that *the textbook content is limited*. In terms of texts provided, pictures, layout, activities, teachers always felt that the content is not satisfying. They generally think of any extra material that may serve the goals of the current lesson in order to cover the missing points. On another hand, the researcher believes that some novice teachers regard the use of the textbook as a challenge, because they were not well trained on the right and efficient way to use this material. As a result, they do their best with designing a good lesson plan without relying on the textbook, just because the way it is presented / the way it should be presented for students is not well understood for them. The tenth reason was stated only one time, and it was the only response that included the multiple intelligences idea. The respondent stated that he/she supplemented the textbook with extra materials in order *to engage as much intelligences as possible*. The researcher believes that the fact that the idea of multiple intelligences was mentioned by only one respondent means clearly that teachers do not build their lesson plans on MI theory. This fact also contradicts with teachers' previous statements about using MI theory in their classes. Yet, it also means that teachers unconsciously apply some of the MI theory principles.

Item 15: *standards followed to choose extra materials*

How do you choose extra materials? (Mark all applicable items)

Item 15 included eight choices, teachers were asked to check on any item they feel fit to their thoughts when choosing extra materials. Results will be respectively ordered from the most used standard to the less used one. Teachers' responses revealed a remarkable variety in ways of choosing materials. In detail, twenty seven (75%) teachers stated that they choose extra materials according to *the activity type (music, game, listening, reading, etc)*. Teachers generally think of adding some activities in order to

facilitate the teaching/learning process, so they simply pick various activities of different types as an efficient way to supplement the textbook content. The second standard was: *layout (pictures, colorful, etc).* Nineteen (52%) teachers follow this standard when choosing extra materials. According to teachers, students' are always attracted to materials with appealing layout, so they always favor materials with lovely pictures, and nice colors.

Third, the third item was *authentic materials.* Eighteen (50%) teachers have chosen this item as another standard for choosing extra materials. Authentic materials according to Richards (2001) are texts or any kind of materials that are designed mainly for native speakers community, with no consideration of non-native learners. Teachers may think of exposing their students to extracts from British/American newspapers, or even making them listen to audio tapes from BBC or NBC in order to keep them in touch with the authentic English they are expected to master. Despite this standard is of high importance, the researcher believes that it may be at the expense of lesson duration. To clarify, such materials require at least a good level of language mastery, while some students are still struggling to understand teachers' instruction within the classroom.

Four, the fourth standard followed by teachers was: "*It is adapted for language learners".* Twelve (33.3%) teachers have choose extra materials because they are specifically designed for language learners. Teachers believe that materials made for language learners can better serve the objectives of their lessons since they are designed by experts or experienced teachers. On another hand, teachers generally tend to facilitate the task for themselves by adapting ready-made materials. By adding some adjustments, the adapted materials will be of great benefit for students. Five, eleven (30.67%) teachers choose extra materials if *they are communicative*. Based on the complementarity between language and communication, teachers took the issue of communication as a crucial

standard for choosing extra materials. As a result, they avoided purely grammatical activities, and those activities working mainly on language structures.

Six, the sixth standard is the approach/method/theory teachers adopt. Ten (27.87%) teachers have declared that they choose extra materials depending on the approach/method/theory they follow. Teaching methods/approaches/theories define, to a great extent, the activities carried inside the classroom. The communicative approach, for example, implicates realia since it uses language for communication. However, the Grammar Translation Method (GTM) focuses mainly on mastering grammar functions and drilling; so it implicates lists of verbs and vocabulary items to be taken by heart. It is worth mentioning that teachers got over blind docility to one approach/method/theory. Alternatively, they follow an eclectic approach through which they choose from various approaches the educational practices that best serve the main objectives of the lesson.

Seven, 9 (25%) teachers stated that they choose *current materials* as extra materials. The use of current materials includes the incorporation of most recent ones that are closest to students' daily life. Any kind of material that students consider as fashionable and attracts their attention can be labeled as current material. The use of smart boards, online discussion with native speakers, including the use of Internet in the lesson process may all be considered as current materials, and can well serve the lesson objectives once rationally and objectively used. Eight, the eighth standard is *Cultural Component*. Six (16.7%) teachers declared that they choose extra materials based on the cultural component. It is meant by the cultural component any material that does not contradict the cultural values of the context in which the teacher is working. Sometimes, teachers feel the need for adjusting a text or dropping a picture in order not to distort a value in students' minds. As a result, they look for other options to make the content goes in harmony with students' cultural and religious values.

Item 16: *most incorporated materials/activities/techniques and the intelligences it engage. Which of these materials/activities/techniques do you incorporate in your lessons? (mark all applicable items)*

The last item (*Item 16)* included a list of 45 choices. The list was composed of materials, activities, and techniques that teachers may incorporate in their lessons. Teachers were asked to check among the choices all those apply to their practices. This item seeks to find out materials, activities, and techniques mostly used by teachers, and what intelligences each of these choices engage. Results are categorized in tables according to the eight different intelligences, and each table mentions the material/activity/technique, number of teachers who have chosen it, and the percentage out of the total number of teachers. It is worth mentioning that teachers were not told about the intelligence each of these activities engages in order to investigate their awareness about the intelligences their educational practices engage.

- **Verbal/Linguistic Intelligence (VL):** The following table mentions materials / activities / techniques engaging the VL intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Debates	Video/ movies	Note Taking	Listening	Writing	Crossword Puzzles	Speaking	Story telling	Slides
Number of Teachers	12	16	15	21	16	11	17	12	6
Percentage	33.3%	44.4%	41.7%	58.3%	44.4%	30.6%	47.2%	33.3%	16.7%

Table 5.1.2: Teachers' incorporated activities engaging VL intelligence

As expected, activities engaging the VL intelligence were the most incorporated by teachers. In detail, twenty (58.3%) teachers have chosen *listening* as the most

incorporated activity. *Speaking* was also remarkably incorporated, with a total number of seventeen (47.2%) teachers. Third, *Writing* and *video/movies* both ranked third among VL activities, sixteen (44.4%) teachers have chosen these two activities. Four, *Note Taking* was chosen by fifteen (41.7%) teachers. It is hypothesized that this activity ranked after *writing* and *listening* because it integrates these two activities. Five, twelve (33.3%) teachers have chosen *Debates* and *Story Telling* with the same percentage. Six, *Crossword Puzzles* was chosen by eleven (30.6%) teachers as an activity engaging VL intelligence since it enriches students' diction. Seven, six (16.7%) have chosen *Slides* for it elicits students' linguistic intelligence. It is observed that this teaching aid was less incorporated by teachers. The researcher believes that this may be due to lack of means to prepare and present slides.

- **Logical/Mathematical (LM) Intelligence:** The following table mentions materials / activities / techniques engaging the LM intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Categorizing	Board Games	Stats	Logic Puzzles and Games	Story Problem with numbers	Classifying	Innovative and Critical thinking strategies
Number of Teachers	17	7	0	8	3	6	1
Percentage	47.2%	19.4%	0%	22.2%	8.3%	16.7%	2.8%

Table 5.1.3: Teachers' incorporated activities engaging LM intelligence

Results from this table reveal that *Categorizing* was by far the most incorporated activity among LM activities, seventeen (47.2%) teachers have chosen it. The second one was *Logic Puzzles and Games,* eight (22.2%) teachers stated that they incorporate this

activity in their lessons. Third, seven (19.4%) teachers have chosen *Board Games* as another incorporated activity. *Classifying* was another activity that engages LM activity; six (16.7%) teachers have mentioned *classifying* as a useful activity. three (8.3%) teachers have stated that they incorporate *Story Problem with numbers* in their lessons. Only one (2.8%) teachers has claimed the use of *Innovative Critical Thinking Strategies* as a useful activity in his/her lessons. As for *Stats,* none of teacher (0%) incorporates this activity in his/her lessons. A critical analysis these these findings reveals that LM activities are remarkably less incorporated by teachers, in comparison to VL activities. The number of activities engaging the two intelligences (VL and LM) is almost the same, yet the number of teachers is different.

- **Visual Spatial (VS) Intelligence:** The following table mentions materials / activities / techniques engaging the VS intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Drawing	Visual Aids	Coloring
Number of Teachers	10	20	8
Percentage	27%	55.6%	22.2%

Table 5.1.4: Teachers' incorporated activities engaging VS intelligence

Despite the activities engaging VS intelligence were less than other intelligences, results indicated an acceptable incorporation for this intelligence. twenty (55.6%) teachers stated that they used *Visual Aids* in their lessons to spark students' attention. As for *Drawing,* ten (27%) claimed that they incorporate this activity in their lessons. *Coloring* was also classified among activities engaging VS intelligence; eight (22.2%) teachers claimed implicating *coloring* activities in their lessons. It is hypothesized that *Coloring* was less incorporated by teachers for it may better fit younger ages, which is not the case

with secondary school learners. The researcher admits that other materials engaging VS intelligence (maps, photos, mind maps, etc) could be included with the aforementioned ones.

- **Musical (M) Intelligence:** The following table mentions materials / activities / techniques engaging the M intelligence, number of teachers who have chosen it, and the percentage they represent.

Material/Activity/Technique	Songs	Singing
Number of Teachers	18	6
Percentage	50%	16.7%

Table 5.1.5: Teachers' incorporated activities engaging M intelligence

Results indicated that the current intelligence was less incorporated by teachers. Eighteen (50%) teachers declared that they include *songs* in their lessons to confer fun to the learning environment. Six (16.7%) teachers claimed they incorporate *Singing* in their sessions. The inclusion of singing may be through making up songs together then singing them, or to organize the content in sort of songs. It might also include listening to songs in order to cater for students' M intelligence. Again, the activities engaging M intelligence could be more numerous so that teachers will have more choices to pick among. It can also be noticed that the Algerian context gives less attention to music and singing in classroom due to the cultural component, and the conservative trait of most of Algerians.

- **Bodily / Kinesthetic (BK) Intelligence:** The following table mentions materials / activities / techniques engaging the BK intelligence, number of teachers who have chosen it, and the percentage they represent.

Material/ Activity/	Role Plays	Body Languag	Total Physical	Movin g	Hands-on	Participatin g Sports	Making Sculpture	Runnin g

Technique		e	Respons e	Around Class	Activitie s		s	
Number of Teachers	17	15	13	9	7	4	1	0
Percentag e	47.2 %	41.7%	36.1%	25%	19.4%	11.1%	2.8%	0%

Table 5.1.6: Teachers' incorporated activities engaging BK intelligence

Results from this sub-item reveal that activities engaging BK intelligence were also incorporated by teachers. The most incorporated activity was *Role Plays,* seventeen (47.2%) mentioned that they include this activity among classroom activities according to the need and the objective of the activity. Fifteen (41.7%) teachers stated that they include *Body language* activities in their sessions in order to enhance their students' body control. As a famous language teaching method, *Total Physical Response* was also incorporated by thirteen (36.1%) teachers. As for *Moving around Class*, nine (25%) teachers claimed that they ask their students to wander in class to enjoy discovering and to exchange feedback with their classmates. Seven (19.4%) teachers declared that they incorporate *hands-on activities* in their lessons to make students enjoy practicing language and discovering facts by using their hands.

- **Interpersonal (IR) Intelligence:** The following table mentions materials / activities / techniques engaging the IR intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Group Problem Solving	Pair Work	Cooperative Learning	Debates	Group Brain Storming	Group Work	Peer Teaching
Number of Teachers	12	25	13	12	16	15	8
Percentage	33.3%	69.4%	36.1%	33.3%	44.4%	41.7%	22.2%

Table 5.1.7: Teachers' incorporated activities engaging IR intelligence

Results from the current sub-item reveal that activities engaging IR intelligence were also widely incorporated among teachers. In detail, twenty five (69.4%) teachers claimed including *Pair Work* among the techniques they use in classroom. This result reflects the wide popularity of this technique among language teachers. The second technique is *Group Brain Storming*, sixteen (44.4%) teachers declared that they use this technique in their sessions. *Group Brain Storming* is generally present when students are divided into groups for competitive or cooperative reasons. Students are asked to think together in order to brainstorm their thoughts about a given topic/ issue/ idea. As for *Group Work,* fifteen (41.7%) teachers declared the use of this technique in their lessons. This technique is tightly close to *Group Brain Storming* for they serve the same objective, which is inducing students to listen to one another and to convince one another.

Cooperative learning was also incorporated by teachers as a useful tool to make students work with each other. Thirteen (36.1%) teachers stated that they ask their students to work together to solve problematic situations. Twelve (33.3%) teachers claimed that they organize *Debates* between students so that they can strengthen their language and test their social skills. It might be noticed that the activity of *Debates* was also included among VL activities because it caters for both linguistic and social skills. *Group Problem Solving* is another technique that was remarkably incorporated by teachers. Twelve (33.3%) stated that after dividing their students into groups they put them in a problematic situation, and they ask them to work together to solve the situation. The last technique among IR techniques is *Peer Teaching.* In this technique, teachers ask their students to work in peers and try to explain complicated issues in the lesson for one another. Eight (22.2%) teachers claimed the use of this technique. Yet, it is believed that the over use of this technique is risky in terms of assessing students' comprehension. A

teacher cannot check all the peers in the classroom; even he/she could do it is going to be time consuming.

- **Intrapersonal (IA) Intelligence:** The following table mentions materials / activities / techniques engaging the IA intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Projects	Options for Homework	Activities with Self-Evaluation	Talking About Mankind	Reflective Journals	Personal Journals
Number of Teachers	9	7	7	4	2	0
Percentage	25%	19.4%	19.4%	11.1%	5.6%	0%

Table 5.1.8: Teachers' incorporated activities engaging IA intelligence

Results from this sub-item revealed that activities engaging IA intelligence were less incorporated than expected. The most used activity was *Projects;* nine (25%) teachers declared that they ask their students to realize their home works in terms of projects. The researcher believes there may exist of confusion in the use of the term *Projects* because the term was used in students' EFL textbook. The textbook designers have described each of the units as a project to be realized at the end of the unit. Accordingly, the description provided in the introduction mentioned that the textbook approach was project-oriented, (Riche, et al; 2005, p.6). The second technique was *Option for Homework.* The technique is about giving students the choice to pick among various options a way to do their homework. This technique enables students to rely on their strengths and to work on their weaknesses. Seven (19.4%) teachers claimed the use of this technique.

Activities with Self-Evaluation were also incorporated among other activities. This activity relies on students' knowledge about their competence, and works on their

objectivity to assess their works. Seven (19.4%) declared that they include this activity in their lessons. The fourth activity is *Talking about Mankind*; four (11.1%) claimed that they introduce their students to talk/write about mankind. Talking about mankind enhances the student's recognition of oneself. *Reflective Journals* is also an activity that engages students' IA intelligence. It is about students writing journals as reflections about different issues and topics they may face in their daily life. Two (5.6%) teachers stated that they ask their students to write reflective journals and share them with their classmates. The last activity is *Personal Journal;* none of teachers (0%) claimed the inclusion of such activity in his/her lessons.

- **Natural (N) Intelligence:** The following table mentions materials / activities / techniques engaging the N intelligence, number of teachers who have chosen it, and the percentage they represent.

Material / Activity / Technique	Materials Related to Natural World	Talking about Environment	Field Trips
Number of Teachers	11	7	3
Percentage	30.6%	19.4%	8.3%

Table 5.1.9: Teachers' incorporated activities engaging N intelligence

Activities and materials engaging N intelligence were also present. Eleven (30.6%) claimed that they incorporate *Materials Related to Natural World.* These materials may be plants, animals, photos of animals, environment issues, natural phenomena, etc. The inclusion of these materials enables students to shape an informative idea about the environment within which they live. Another activity engaging N intelligence is *Talking about Environment.* Seven (19.4%) teachers stated that they schedule speaking sessions to talk about environment. They may further organize debates and open discussion about environment. The last activity is *Field Trips;* three (8.3%) teachers declared that they organize, whenever possible, field trips in order to introduce students to their environment

and to raise their awareness about its importance. As an activity, it implies a lot of benefits, namely: students will use all their senses to discover new natural phenomena; they will enrich their diction, etc.

Concluding Remarks: in addition to the reflections mentioned while exposing the results of the questionnaire in detail, we can add these concluding remarks to the results analysis.

First, a detailed analysis of individual answers indicates that teachers graduating from ENS showed an acceptable knowledge about MI theory. This is expected to be the result of the process they go through in their academic career. Based on that, it can be said that teachers always need serious and specific training on how to deal with the student's psyche, how to choose the right technique/activity/material, how to manage overcrowded classes, and so many other issues.

Second, among the results of *item 5,* five (13.9%) teachers stated that they have heard about MI theory through their co-workers. Such result, believes the researcher, is interesting and surprising. This result can pave the way for further legalized cooperation among teachers. It can even move further to Team-teaching, and other sorts of cooperation among teachers.

Continuing with *item 5,* six (16.6%) teachers declared that they have knew about MI theory from Internet, and six (16.6%) others stated that they learned about MI theory through Workshops. These results mean that teachers are doing great efforts to satisfy their students' needs, and to provide a motivating atmosphere for learning. The fact that teachers are devoting personal efforts on their expense means two things: 1) Teachers may have not chosen to be teachers, but once they put their feet in the classroom they do whatever it takes to make their students satisfied about the content being instructed, (Hammoudi, 2010). 2) This means that someone has to assume the responsibility of

training teachers, providing all the means needed, working on making teachers' life better.

Four, results from *item 6* indicated that the majority of teachers have a great will to learn about MI theory. This is directly related to the previous concluding remark. Accordingly, stake holders should take advantage of this opportunity.

Five, results from *item 8 reveal* reveal that more half of teachers (twenty one; 58.3%) are not sure whether they apply MI theory in their classes or not. Though their claim that they know about it, they were not sure about its incorporation in the classroom. This may be due: 1) They are not interested in applying MI theory in their sessions. 2) They know about the theory but they do not know how to transform their knowledge into practical procedures. 3) They confuse between the application of MI theory and taking into consideration learning styles while designing their lessons.

Six, the choice *No idea* in *item9* and the choice *Not sure* in *item 8* should be consistent in terms of number of checks. Since the two items elicit the same information, the number of responses should be the same. This may be still due to the confusion about MI theory and its application in the classroom.

Sven, according to results in *item 10*, twenty (58.3%) teachers stated that they do not if their institutions apply MI theory or not. This means that there is a lack of communication between teachers' and their institutions. It means also that the educational policy of the institutions is not quite clearly stated for the stuff. It means also that there exists a kind of hierarchical relation between administration and teachers, while the relation should better be participatory and complementary.

Eight, results from *item 11* are twofold; one, seventeen (47.2%) teachers believed that the textbook they use does not support the use of MI theory. This reflects teachers' common belief that the Algerian EFL textbook still needs improvements to meet learners' needs and different learning styles. Two, fourteen (28.9%) teachers showed uncertainty about their answers. The last conclusion confirms the hypothesis stated in *item 8* that teachers' uncertainty about the use of MI theory in their lessons may either be due to their ignorance about how to transform their knowledge into practical transformation, or to their confusion of MI theory with learning styles, since they share some common points.

Nine, results from *item 12* reveal that the majority of teachers (Thirty five; 97.2%) supplement textbook with extra materials. This conclusion confirms results in *item 11* where teachers stated that the Algerian EFL textbook needs to be supplemented with extra materials.

As for *item 13*, results indicated that the degree of supplementing textbooks with extra materials varies among teachers. Some teachers always supplement the textbook, while some others often do it. Other teachers stated that they sometimes supplement the textbook with extra materials. Meanwhile, two (5.6%) teachers claimed that they rarely add extra materials. These results reveal that there is always a space for improvement when it comes to using the materials at-hand. We can also state the following: the degree of supplementing the textbook with extra materials can be due to these three reasons:

- The need for supplementation: through the careful observation of the concerned lesson, teachers may feel the need for some extra materials in order to fill the points missing in the lesson. Teachers may even want to assess any required skills before moving to the scheduled lesson. On another hand, the nature of the lesson requires certain types of materials. To clarify, some lessons are easier to

assimilate than other lessons; based on this fact, teachers decide the extent to what extent they should include extra materials.

- Time constraints: teachers are always facing the challenge of finishing the lesson in the scheduled time. The extent of using of materials takes into consideration two issues: providing students with diversified content through different types of materials so that the feel satisfied about the content being presented; taking into account the lesson duration by rationally including the needed extra materials.
- Materials available: speaking about the Algerian context, the availability of materials is, to certain degree, an obstacle for teachers. In so many occasions, teachers are obliged to print the pictures, to bring a chart, to make copies of a text, to bring a tape recorder/overhead projector at their expense. This situation, the researcher believes, puts a heavy burden on teachers' shoulders and affects the degree of using extra materials.
- Classroom conditions: This is related to the previous component. Considerations about overcrowded classes, the classroom furniture and temperature appear always to challenge teachers' choices of the materials and the lesson items. Overcrowded classes need certain types of materials so that all students benefit, and the session finishes by the allotted time. Algerian classes are, generally, known by their being overcrowded and lacking many conditions that facilitate the learning process. Algerian teachers, as a result, tend to use materials that can be accessible by the whole classroom, like: chart/picture stuck to the board, audio/video tapes, etc.

Eleven, results in *item 14* reveal that only one teacher (2.8%) stated the inclusion of multiple intelligences as a reason for supplementing textbook with extra materials. This

means that only one teacher takes MI theory into consideration when designing their lessons. This result contradicts with teachers' previous claims that they incorporate MI theory in their lessons.

In *Item 16,* teachers' responses indicate that they incorporate different activities that engage multiple intelligences. Yet, an analysis of teachers' previous claims reveals the contrary. This fact could only be explained as follows: as they were attempting to design lessons for different learning styles and to meet learners' needs, teachers were unintentionally applying the principles of MI theory. Since MI theory and learning styles share a lot of common points, it was easy to find out that teachers met some MI theory principles by designing lessons that take different learning styles into account.

Through the *item 16,* it can be concluded that the less incorporated intelligence was M intelligence. The reason for this result may be due to these two causes: first, teachers' M intelligence is not good enough to cater for their learners'. As researchers declared, teachers should first recognize their intelligence profile before working on enhancing their students' multiple intelligence. Thus, they avoid activities engaging M intelligence, simply because they are not skillful at this intelligence. Second, incorporating music in Algerian classes is still a taboo topic. The conservative trait of the Algerian society considers that music is a sort of fun and entertainment, and that it should be kept out of educational contexts.

Continuing with *item 16,* results revealed that VS intelligence was less incorporated than expected. The researcher believes that the list of activities provided affected the results. In other words, if materials like: graphs, maps, illustrations, graphs and tables, and grids were used, then results would be different.

5.2 Content Analysis of Textbook

This section is dedicated to analyzing and interpreting the results of the second instrument used in the study, which is textbook content analysis grid. This instrument investigates the incorporation of MI theory in second year secondary school EFL textbook "Getting Through". Results of the content analysis will provide a feedback about: the textbook intelligence profile, occurrence frequency of intelligences, the balance of intelligences among different units of the textbook, intelligences that need to be more incorporated. It contains also some suggestions about how to enrich lessons with activities engaging more intelligences. The content analysis will be done depending on the grid illustrating activities that engage different intelligences.

5.2.1 Data Collection

To analyze the textbook content the researcher adopted a content analysis grid from Al-Omari's study (2010). Al-Omari's study analyzed the content of Jordanian EFL textbooks "Action Pack Series" in light of MI theory. The researcher did not add any adjustments to the adopted grid for it serves the same objectives, and targets the same textbook category as the current study. Based on the content analysis of *Getting Through*, the researcher investigated the textbook intelligence profile, the balance of intelligences among different units of the textbook, and occurrence frequency of different intelligences in the textbook. Data gathered through the textbook analysis helped answering the following questions:

1- What is the occurrence frequency of multiple intelligences in the textbook under study?
2- How is the intelligence profile of 2nd year secondary school EFL textbook "*Getting Through*"?

3- How can the balance of multiple intelligences in the textbook be described?

4- How can we adjust the textbook so that they engage more intelligences?

5.2.2 Validity and Reliability of the content analysis

Since the textbook is one of the most crucial components of the teaching/learning process, the researcher considered that the content analysis of this material will unveil many issues and facts about its efficiency and impact on students' learning. In order to come up with valid and reliable results, the content analysis grid had to be moderated in order to make sure that the instrument targets the same objectives of the study, and to decide whether results can be reliable or not. For this purpose, the researcher followed these procedures:

5.2.2.1 Validity of the content analysis grid

As mentioned above, the researcher wanted to make sure that the designed content analysis grid serves the same objectives of the study, and elicits exactly the intended information. For the stated purpose the researcher tested the validity of the content analysis grid by sending it to two Algerian researchers who have done research on the same topic. The instrument included objectives and questions of the study, and the draft grid of activities in order to check if the grid serves the same objectives and research questions.

The two experts provided their feedback about the instrument and included their remarks about the list of activities and the intelligences engaged, in addition to some suggested adjustments. Expert teachers' remarks helped the researcher add more items, or drop any needless items. For example, the adopted grid of activities included only three activities that engage the musical intelligence; the researcher added some activities that

engage the targeted intelligence. The final version was then made according to the previous procedures.

5.2.2.2 Reliability of the content analysis

It is meant by reliability the consistency of results measurement. By testing the research reliability, we can decide whether the results obtained are to be generalized or not. To test the reliability of the content analysis grid, the researcher followed the following procedures:

-**Intra-rater Reliability:** after three weeks of analyzing the textbook content, the same activities were analyzed by the researcher in order to calculate the reliability co-efficient between the first and the second analysis. The researcher analyzed, as a sample, only two units of the textbook under study. As demonstrated in **Table 5.2.1**, the percentage co-efficient of the analysis was 97.52% which is considered very high.

Unit	Intelligence	Percentage
Unit 01	Verbal/Linguistic	100.0%
	Logical/Mathematical	100.0%
	Visual/Spatial	98.2%
	Bodily/Kinesthetic	97.4%
	Musical	100.0%
	Interpersonal	98.6%
	Intrapersonal	86.2%
	Natural	99.8%
	Total	97.52%
Unit 02	Verbal/Linguistic	100.0%
	Logical/Mathematical	100.0%
	Visual/Spatial	99.2%
	Bodily/Kinesthetic	100.0%

Musical	100.0%
Interpersonal	97.2%
Intrapersonal	84.6%
Natural	87.6%
Total	96.07

Table 5.2.1: Intra-rater Reliability (agreement percentages)

- **Inter-rater Reliability:** to establish the inter-rater reliability, two analysts were asked to conduct the same analysis following the same procedures and the researcher's method. However, the two analysts analyzed only a sample of two units from the textbook under study. The choice of the analysts was based on their experience in the field, and their knowledge about the topic. The first one has conducted a research about the use of MI theory in language teaching on 2010. The second one has published an article about the incorporation of MI theory in EFL textbooks on 2017. The two analysts agreed on the categories and units of analysis, and content analyzed a sample of two units in order to calculate the reliability co-efficient (agreement percentage) between the researcher analysis and theirs. The results demonstrated an agreement percentage of 96.5% between the three analyses. **Appendix14** demonstrates the inter-reliability coefficient between the researchers' results and the two analysts' results.

5.2.3 Description of the content analysis grid

As stated earlier, the objective of the content analysis was to investigate the occurrence frequency of Gardner's MI theory in 2nd year secondary school EFL textbook "*Getting Through*". It aimed also to investigate the balance of intelligences among different units of the textbook under study. The content analysis grid was adopted from Al-Omary's (2010) doctoral thesis about the inclusion of multiple intelligences theory in Jordanian EFL textbooks "*Action Pack*" series. After moderating the content analysis

grid, the final version of the instrument was ready to be used. The grid is composed of eight different sections; each section covers one of the eight intelligences, namely: Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily/Kinesthetic, Musical, Interpersonal, Intrapersonal, Natural intelligences.

Each of the eight sections contains a brief definition of the intelligence and a list of activities/materials/techniques engaging that intelligence. The grid of activities / materials / techniques is considered as a reference to refer to when analyzing the textbook. Whenever the researcher finds in the textbook the same activity / material / technique as in the grid, then they are automatically engaging the same intelligence.

To make the process of analysis as clear as possible for the reader, the researcher identified the unit and the category of analysis. In other words, the unit of analysis is the activity, while the category of analysis is the intelligence in the textbook under study. Henceforth, the study investigates the inclusion of different categories within each unit of the whole textbook. The same principle was applied for analyzing the exam samples.

5.2.4 Data Analysis

The textbook was analyzed by determining the intelligences incorporated in each activity of the whole textbook. Before detailing the analysis, it is worth providing an overview of the textbook structure. 2nd year secondary school EFL textbook “Getting Through” is composed of 8 units , each unit has a specific notion and a related specific topic. Within one unit, we find two parts, the first one is labeled: Discovering language, in which the learner is expected to discover issues about grammar, pronunciation, and vocabulary; the second part is labeled: Developing skills, in which the learner is expected to discover functions, listening and speaking, and reading and writing. At the end of each unit, there is a final project to be realized by the learner; to realize the final project, the

learner is required to master the knowledge he/she accumulated through the unit process. The textbook writers described it as a textbook relying on the competency-based approach that is learner-centered and project oriented, (Riche, et al., 2005).

To identify the intelligences in each activity of the textbook, the researcher adopted a list demonstrating the potential activities, the description and the teaching techniques of each intelligence. The list used was adopted from the study of Al-Omari (2010). In order to facilitate the task for the reader, the researcher used labels identifying each intelligence whether in tables or when discussing the findings. The labels are used as follows: VL for verbal/linguistic, LM for logical/mathematical, VS for visual/spatial, IR for interpersonal, IA for intrapersonal, BK for bodily/kinesthetic, M for musical intelligence, and N for naturalistic intelligence.

After identifying the intelligences in each activity, the occurrence frequency of each intelligence was counted for the whole unit. Then, the researcher created tables for each unit. After that, the researcher counted the number of occurrence each intelligence per unit, then in the whole textbook. The software used to calculate the results was Excel. The results gotten from Excel comprise the total number of activities in the 8 units of the textbook, the occurrence frequency of each intelligence in the whole textbook, and the percentage of occurrence for each intelligence in the whole textbook. The findings demonstrate the intelligence profile of 2nd year secondary school EFL textbook “Getting Through”.

In addition to the detailed list that describes the intelligences, the researcher took into consideration the instruction of the activity, the elements used in the activity (pictures, realia, graphs, etc), the techniques and materials needed for doing the activity, and the skills being incorporated. It is also worth mentioning that the content analysis is

only restricted to recognize and categorize the intelligences incorporated in each activity. The degree to which a given activity caters for a given intelligence was avoided by the researcher because it was statistically difficult to measure this criterion.

5.2.5 Population and Sampling

The population of the study was composed of Algerian secondary school EFL textbooks. The textbooks concerned were those published by the National Authority for School Publications (Office National des Publications Scolaires, ONPS) in 2005, and certified in 2008. Among the three textbooks of secondary school level, the researcher selected second year secondary school EFL textbook "*Getting Through*". The choice of the textbook was random in order to avoid bias.

5.2.6 Procedures of the study

The researcher carried out the following procedures to collect data for the study:

1. The researcher consulted the website of the directorate of education in order to determine the list of secondary schools affiliated to Ghardaia directorate of education.
2. The researcher defined the research population: EFL textbook and teachers of 2nd year secondary schools.
3. The researcher determined Names and the location of the schools to be part of the sample of the study.
4. The researcher collected participants' emails in order to send them the questionnaire via their emails. 36 out of 40 participants have sent their answers
5. The researcher prepared the units and categories of analysis in the textbook under study.

6. After preparing the units and categories of analysis, the researcher content analyzed the textbook and the exam samples following the frame previously decided.
7. After two weeks, the researcher analyzed again two sections of the textbook in order to establish the intra-rater reliability.
8. Two other raters analyzed a sample of two units from the textbook in order to establish the inter-rater reliability.
9. The researcher presented and discussed the research findings.
10. The researcher attempted to redesign some selected activities of the textbook. The activities were selected randomly.

Results and Discussion

The presentation of results is divided into two levels. The first level is dedicated to the analysis of results according to occurrence frequency of intelligences within the textbook. While, the second level analyses results according to units of the textbook in order to investigate balance of intelligences among different units of the textbook.

- **Textbook Level:**

  The content analysis revealed that the textbook included three hundred thirty one (331) activities divided among 8 units. The eight units of the textbook are entitled and given a specific topic for each. The following table identifies the eight units titles and topics.

Unit	**Title**	**Topic**
Unit 01	Signs of the Time	Lifestyles
Unit 02	Make Peace	Peace and Conflict Resolution
Unit 03	Waste not, Want not	World Resources and Sustainable Development

Unit 04	Budding Scientist	Science and Experiments
Unit 05	News and Tales	Literature and the media
Unit 06	No Man is an Island	Disasters and Solidarity
Unit 07	Science or Fiction	Technology and the Arts
Unit 08	Business is Business	Management and Efficiency

Table 5.2.2: Units and topics of the textbook

It should be mentioned right from the beginning that the degree to which an intelligence is engaged in a given activity could not be measured, for there was no reliable and valid tool for this kind of measurement. The researcher calculated the frequency of MI in all activities in the eight units of the textbook. **Table 5.2.3** illustrates the frequency of MI in all activities of the textbook.

	08 Units								
	Verbal/Linguistic	**Logical/Mathematical**	**Visual/Spatial**	**Interpersonal**	**Intrapersonal**	**Musical**	**Bodily/Kinesthetic**	**Natural**	**Total**
Total	**331 (100.0%)**	**18 (5.43%)**	**19 (5.74%)**	**36 (10.87%)**	**13 (3,92%)**	**00 (00%)**	**13 (3.92%)**	**18 (5.43%)**	**331 (100%)**

Table 5.2.3: Occurrence frequency of MI in all activities of the textbook

Results of content analysis revealed that Musical (M) intelligence was not engaged in any of the textbook activities. As a result, the percentage of its frequency was 00%.

Verbal/Linguistic (VL) intelligence was by far the most dominant intelligence. 331 activities out of 331 engaged the VL intelligence. The percentage of activities engaging VL intelligence was 100.0%. The reason why VL was considered as dominant is because

its percentage exceeded 50%. Thus, less dominant intelligences had less than 50% as a percentage.

Other intelligences, namely: LM, VS, IR, IA, M, BK, and N intelligences were all less dominant, since all its percentages were less than 50%. Results about the inclusions of intelligences in the textbook are going to be presented respectively from the most engaged one to the less engaged.

Interpersonal (IR) intelligence was ranked second, after VL intelligence, in terms of frequency. 36 activities engaged IR intelligence with a percentage of 10.87%. Regarding its percentage, it is considered as less dominant intelligence.

Visual/Spatial (VS) intelligence was the third engaged intelligence with a frequency of 19 out of 331 of textbook activities. The percentage calculated for VS intelligence was 5.74%. This intelligence was less dominant since its percentage was less than 50%.

Logical/Mathematical (LM) and Natural (N) intelligences both ranked third in terms of frequency. According to the content analysis, LM and N intelligences were engaged in 18 of the textbook activities, with a percentage of 5.43% for both of the intelligences.

As for the fourth place, Bodily/Kinesthetic (BK) and Intrapersonal (IA) intelligences were both engaged in 13 of the textbook activities. They were both considered a less dominant intelligences since their percentage was 3.92%.

The less engaged intelligence was Musical (M) intelligence. It did not appear in any of the textbook activities, and the percentage, thus, was 00%.

- **Units Level:**

Unit 01: table 5.2.4 identifies the frequency of intelligences and activities in Unit 01

Unit 01									
Intelligences	**Verbal/Linguistic**	**Logical/Mathematical**	**Visual/Spatial**	**Interpersonal**	**Intrapersonal**	**Musical**	**Bodily/Kinesthetic**	**Natural**	**Total**
	44	02	03	06	03	00	03	01	44
	100.0%	4.54%	6.81%	13.63%	6.81%	00%	6.81%	2.27%	13.29%

Table 5.2.4: Occurrence Frequency of MI in Unit 01

Unit 01 was entitled *"Signs of the Time",* and the topic devoted was *"Lifestyles".* The unit contained 44 activities with a percentage of 13.29% of the whole textbook activities. Results of Unit 01 indicated that the most dominant intelligence was VL intelligence. It appeared in 44 activities. The percentage of VL intelligence frequency was 100.0%. As for IR intelligence it was engaged in 06 activities, with a percentage of 13.63%. Though it ranked second, IR intelligence was not considered as dominant because its percentage did not exceed 50%.

The third ranked intelligences were VS, IA, and BK intelligences. They were engaged in 03 activities. The percentage calculated for these intelligences was 6.81%. As for LM intelligence, it was engaged in 02 activities, with a percentage of 4.54% out of the unit activities. N intelligence appeared only in 01 activity, and the percentage calculated was 2.27%. The less included intelligence was M

intelligence; it did not appear in any of the unit activities, and its percentage, as a result, was 00%.

Unit 02: Table 5.2.5 identifies the frequency of intelligences and activities in Unit 02.

Unit 02									
Intelligences	**Verbal/Linguistic**	**Logical/Mathematical**	**Visual/Spatial**	**Interpersonal**	**Intrapersonal**	**Musical**	**Bodily/Kinesthetic**	**Natural**	**Total**
	44	02	04	06	02	00	02	01	44
	100.0%	4.54%	9.09%	13.63%	4.54%	00%	4.54%	2.27%	13.29%

Table 5.2.5: Occurrence Frequency of MI in Unit 02

Unit 02 was entitled *"Make peace"*, and the topic introduced was *"Peace and Conflict Resolution".* The unit contained 44 activities, with a percentage of 13.29% out of the total textbook activities. Results from Unit 02 indicated that the most dominant was, by far, the VL intelligence. It was engaged in 44 activities, and the percentage calculated was 100.0%. IR intelligence was ranked second; it was engaged in 06 activities, with a percentage of 13.63% out the unit total number of activities.

The third intelligence was VS intelligence; it was incorporated 04 times in the unit activities, and the percentage calculated was 9.09%. As for LM, IA, and BK intelligences, they were all engaged in 02 activities, and their percentage was 4.54%. The seventh intelligence was N intelligence; it was incorporated in only one activity, and the percentage – thus – was 2.27%. The last intelligence was M intelligence; it was not used in any of the unit activities. Hence, its percentage will be 00%.

Unit 03: Table 5.2.6 illustrates the frequency of intelligences and activities in Unit 03

Unit 03									
Intelligences	**Verbal/Linguistic**	**Logical/Mathematical**	**Visual/Spatial**	**Interpersonal**	**Intrapersonal**	**Musical**	**Bodily/Kinesthetic**	**Natural**	**Total**
	45	01	03	04	03	00	01	09	45
	100.0%	2.22%	6.66%	8.88%	6.66%	00%	2.22%	20.0%	13.59%

Table5.2.6: Occurrence frequency of MI in Unit03

Unit03 was entitled *"Waste not, Want not"*, and the topic devoted to it was *"World Resources and Sustainable Development".* The unit contained 45 activities, and it covered 13.59% of the total number of textbook activities. As for the intelligences engaged, VL intelligence was the most dominant. VL appeared in 45 activities, and the percentage calculated was 100.0%. Surprisingly, N intelligence was engaged in 09 activities, and it covered 20.0% of the unit activities.

IR intelligence was incorporated in 04 activities, with a percentage of 8.88% out of the total number of textbook activities. VS and IA intelligences were both engaged in 03 of the unit activities, and the percentage calculated was 6.66%. As for LM and BK intelligences, they were both incorporated in 01 of the unit activities, with a percentage of 2.22%. The M intelligence was not engaged in any of the unit activities, and the percentage, thus, calculated was 00%.

Unit 04: Table 5.2.7 identifies the frequency of intelligences and activities in Unit 04

Unit 04

Intelligences	Verbal/Linguistic	Logical/Mathematical	Visual/Spatial	Interpersonal	Intrapersonal	Musical	Bodily/Kinesthetic	Natural	Total
	45	05	02	06	03	00	01	01	45
	100.0%	11.11%	4.44%	13.33%	6.66%	00%	2.22%	2.22%	13.59%

Table 5.2.7: Occurrence frequency of MI in Unit 04

Unit 04 was entitled: *"Budding Scientist",* and the topic investigated was: *"Science and Experiments"*. The unit contained 45 activities, and the percentage calculated was 13.59% out of the total number of the textbook activities. The most dominant intelligence was VL intelligence, with a presence in 45 of the unit activities, and a percentage of 100.0%. IR intelligence was engaged in 06 activities, and the percentage calculated was 13.33%.

Yet, LM intelligence ranked third with a presence in 05 of the unit activities, and a percentage of 11.11%. IA intelligence was engaged in 03 of the unit activities, and the percentage calculated was 6.66%. As for VS intelligence, it was incorporated in 02 activities, with a percentage of 4.44%. BK and N intelligences appeared both in only one activity, and the percentage was 2.22%. As usual, the M intelligence did not show up in any of the unit activities, and the percentage was consequently 00%.

Unit 05: Table 5.2.8 identifies the frequency of intelligences and activities in Unit 05

Unit 05

Intelligences	Verbal/Linguistic	Logical/Mathematical	Visual/Spatial	Interpersonal	Intrapersonal	Musical	Bodily/Kinesthetic	Natural	Total
	42	01	02	04	01	00	01	05	42
	100.0%	2.38%	4.76%	9.52%	2.38%	00%	2.38%	11.9%	12.68%

Table 5.2.8: Occurrence frequency of MI in Unit05

Unit 05 was entitled *"News and Tales",* and the topic devoted was *"Literature and the Media".* This unit contained 42 activities, with a percentage of 12.68% out of the total number of textbook activities. The most dominant intelligence was VL intelligence which was engaged in 42 of the unit activities, and the percentage calculated was 100.0%. The second intelligence was N intelligence; this latter was incorporated in 05 of the unit activities, with a percentage of 11.9%.

The third ranked intelligence was IR intelligence, which appeared in 04 activities, and its percentage was calculated 09.52%. As for VS intelligence, it was engaged in 02 of the unit activities, and the percentage calculated was 5.12%. Three intelligences, namely: LM, IA, and BK intelligences were all incorporated only one time in the unit activities, with a percentage of 2.38%. M intelligence was not engaged in any of the unit activities, and the percentage, hence, was 00%.

Unit 06: Table 5.2.9 identifies the frequency of intelligences and activities in Unit 06.

Unit 06

Intelligences	Verbal/Linguistic	Logical/Mathematical	Visual/Spatial	Interpersonal	Intrapersonal	Musical	Bodily/Kinesthetic	Natural	Total
	32	03	00	04	01	00	01	02	32
	100.0%	9.37%	0.00%	12.5%	3.12%	00%	3.12%	6.25%	9.66%

Table 5.2.9: Occurrence frequency of MI in Unit06

Unit 06 was entitled *"No Man is an Island"*, and the topic investigated was *"Disasters and Solidarity".* Unit 06 included 32 activities, with a percentage of 9.66% out of the total number of textbook activities. VL linguistic intelligence, as always, was the most dominant; It was present in 32 of the unit activities, and the percentage calculated was 100.0%. The second ranked intelligence was IR intelligence which was engaged in 04 of the unit activities, and its percentage was 12.5%.

As for LM intelligence, it was engaged in 03 of the unit activities, and the percentage calculated was 9.37%. N intelligences ranked third among the intelligences engaged. It appeared in 02 activities, with a percentage of 6.25% out of the unit activities. BK and IA intelligences were both engaged in only one activity, and the percentage calculated was 3.12%. The less incorporated activities were VS and M intelligences; the two intelligences were not engaged in any of the unit activities, and the percentage was 00%.

Unit 07: table 5.2.10 identifies the frequency of intelligences and activities in Unit 07

Unit 07

Intelligences	Verbal/Linguistic	Logical/Mathematical	Visual/Spatial	Interpersonal	Intrapersonal	Musical	Bodily/Kinesthetic	Natural	Total
	46	03	03	03	00	00	02	01	46
	100.0%	6.52%	6.52%	6.52%	0.00%	0.00%	4.34%	2.17%	13.89%

Table 5.2.10: Occurrence frequency of MI in Unit07

Unit 07 was entitled *"Science or Fiction"*, and the topic introduced was *"Technology and the Arts".* This unit included 46 activities, with a percentage of 13.89% out of the total number of textbook activities. The most dominant intelligence was VL with a presence in all the unit activities (46), and a percentage of 100.0%. Three intelligences (LM, VS, and VS intelligences) were ranked second. The three intelligences appeared in 03 activities, and the percentage calculated was 6.52%.

BK intelligence was engaged in 02 activities, with a percentage of 4.34% out of the total number of the unit activities. As for N intelligence, it was incorporated in only one activity, and the percentage calculated was 2.17%. The less engaged intelligences were IA and M intelligences. The two intelligences did not appear in any of the unit activities, and the percentage calculated was 0.00%.

Unit 08: Table 23 identifies the frequency of intelligences and activities in Unit 08

Unit 08									
Intelligences	**Verbal/Linguistic**	**Logical/Mathematical**	**Visual/Spatial**	**Interpersonal**	**Intrapersonal**	**Musical**	**Bodily/Kinesthetic**	**Natural**	**Total**

	36	01	02	03	00	00	02	01	36
	100.0%	2.77%	5.55%	8.33%	0.00%	00%	5.55%	2.77%	10.87%

Table 5.2.11: Occurrence frequency of MI in Unit08

Unit 08 was entitled *"Business is Business"* and the topic investigated was *"Management and Efficiency".* Unit 08 contained 36 activities, with a percentage of 10.87% out of the total number of the textbook activities. VL intelligence was engaged in 36 of the unit activities, and the percentage calculated was 100.0%. IR intelligence was the second most engaged intelligence; It appeared in 03 of the unit activities, with a percentage of 8.33%.

VS and BK intelligences ranked second in terms of intelligences engaged in the unit. The two intelligences were incorporated in 02 of the unit activities, and the percentage calculated was 5.55%. As for LM and N intelligences, they appeared in only one of the unit activities, with a percentage of 2.77%. The less dominant intelligences were M and IA intelligences. They were not engaged in any of the textbook activities, and the percentage- thus- was 00.0%.

After the content analysis of 2nd year secondary school EFL textbook "*Getting Through",* the researcher has noticed the following issues:

- **Predominant Intelligences:** it is said that learning a language is about mastering the four skills (reading, writing, listening, speaking). Coming to the context of the current study, it was expected that the most engaged intelligence in the textbook analyzed would be VL intelligence. The hypothesis was made because VL intelligence includes the use of the four skills. The hypothesis was confirmed after content analyzing the textbook. VL intelligence was present in 100% of the textbook activities, because the learner needs to produce language

in any of the textbook activities. Though some activities seemed to engage another intelligence, VL intelligence was automatically included. For example: a figure in page 35 introduced students to a model of how to calculate the calories they consume. It seems that this activity mainly engages LM intelligence, however students need to rely on their VL intelligence in order to understand the figure.

- **Less Dominant Intelligences:** regarding the standard set previously (all intelligences engaged in less than 50% of the activities are considered less dominant), all intelligences (LM, VS, IR, IA, BK, M, and N) were less dominant. The intelligences were poorly engaged in all the textbook activities. The percentage of intelligences incorporation ranged from 00.0% for M intelligence to 10.87 % at max for IR intelligence. These results were not expected regarding some experimental studies to which the current study was compared. Boulmaiz (2017) for example, analyzed 1st year secondary school EFL textbook "*At the Crossroads"*, and found that the percentage of intelligences incorporation, other than VL, ranged from 00.0% to 43.15%. Though the two textbooks (*at the Crossroads* and *Getting Through*) were written by the same committee, yet the results were different. This difference may be due to the topics included or the level difference.

On another hand, if we compare the result of the content analysis and the questionnaire results we will find a cause-effect relation between the poor inclusion of all intelligences and the high percentage of teachers supplementing the textbook with extra materials (97.2%). Due to the poor incorporation of other intelligences, teachers feel obliged to supplement the textbook with extra material.

- **Balance of intelligences incorporation among units:** generally speaking, the incorporation of intelligence among different units of the textbook was balanced. For example, LM percentages of incorporation in different units were: 4.54% for Unit 01, 4.54% for Unit 02, 2.22% for Unit 03, 2.56% for Unit 05. Yet, the same intelligence was more incorporated in some other units. For example: 11.11% for unit 04, 9.37% for Unit 06, and 6.52% for Unit 07.

  The extent to which an intelligence was incorporated may be due to two reasons: 1) The topic of the unit under study; as an example, the topic investigated in Unit 04 was "*Science and Experiments".* As a result, LM intelligence was the most engaged (11.11%) after VL intelligence. Unit 03 topic was "*World Resources and Sustainable Development",* and the inclusion of N intelligence reached 20%. This, it is believed, was because of the rapprochement between the topic and the intelligence engaged.

  2) The objectives that the textbook writers set; one of the current textbook objectives is to help the learner learn how to work with peer, (Riche et al, 2005, p.6). Based on this, the intended objective introduces to the inclusion of IR intelligence. Coming to the current incorporation of IR in *Getting Through,* it was noticed that IR intelligence ranked second, after VL intelligence, in terms of percentage of incorporation with a percentage of 10.87% out of the total number of textbook activities.

- **Activities that engage more than one intelligence:** through the content analysis, it was concluded that an important proportion of textbook activities engage more than one intelligence. The researcher found out that 108 (32.68%) out of the total number of the textbook activities incorporate more than one intelligence. To decide if an activity engages more than one intelligence, the

researcher took into consideration, not only, the instruction of the activity, but also any graphs, figures, pictures, tables the learner may refer to.

For example: p.23 ; the instruction of the activity was: “Pair Work. Write a short dialogue predicting what might happen in the future in fields such as teaching and communication. Then act out the dialogue in front of the class”. By analyzing this instruction, it can be concluded that three intelligences are engaged, namely: VL, IR, BK. To explain, pair work incorporates IR intelligence; acting the dialogue out incorporates BK intelligence; writing the dialogue engages VL intelligence.

In page.66, students were provided with a picture that illustrates the photosynthesis process. They were asked the following: “Look at the picture and fill in the blanks in sentences (A-E) using the correct form of the verbs in the box on the right”. By analyzing the instruction and the joined picture, this activity incorporates two intelligences, namely: VL and N intelligences. The instruction clearly engages VL intelligence, however the picture elicits students N intelligence through the inclusion of a picture about flora.

- **Comparing the textbook description with results of the content analysis:** a careful reading of the textbook description enables the reader to develop an informative idea about the approach followed, the objectives, the writers’ ambitions, the way how the textbook is presented, teachers’ role, learners’ role, and the way how students should be assessed. Concerning the congruence between results of the content analysis and the claims stated in the textbook description, we can draw the reader’s attention to the following points:

First, textbook writers stated that the textbook followed a "competency-based approach which is both project-based and learner centered", (Riche et al, 2005, p.6). The principles of MI theory encourage the same practices as the textbook writers' have mentioned. MI theory, for example, shares with Competency-Based Approach a principle like: differentiated instructional support, effective use of assessment, learner-centered approach.

Second, it is mentioned in the textbook description that the textbook activities are expected to help learners' improve "methodological skills (how to collect and process data, how to work with peers, how to design a project and present it to the class". By analyzing the statement, we can conclude that three intelligences are incorporated, namely: IA intelligence for collecting and processing data; IR intelligence for working with peers; BK intelligence for presenting the project.

Third, the textbook description mentioned Portfolios as a way of assessing students' progress, (Riche et al, 2005, p.6). This approach to assessment is also adopted by MI theory practitioners. Supportively, the MI theory follows an approach to alternative assessments, which urges educationists to vary their ways of assessing students' performance.

Fourth, according to the textbook writers, texts included in the units cater for different abilities, needs, and class interests. Though, these claims go in harmony with the principles of MI theory; yet, the researcher believes that the materials included in the units could more various. It was also noticed the textbook relied heavily on texts as main source of information, whereas 21st students need the mastery of skills like critical thinking, cooperation,

communication, and problem solving through the inclusion of different materials like: graphs, statistics, real life problematic situations, etc.

Fifth, according to the textbook description, students are required to keep a portfolio for their works, and to fill the grid at the end of the unit in order to check their own progress. Relatively, self-assessment is encouraged incorporated by MI theory. Based on their efforts to provide alternative assessments, MI theory practitioners tend to urge their students to assess their own progress, and to take the responsibility of their own learning.

Sixth, textbook writers' claim about their ambition to promote a spirit of personal initiative and autonomy in both teachers and learners is also another proof of the congruence about their statements and MI theory principles. As a matter of fact MI theory supports autonomous learning and students' efforts to improve their intelligence profile.

Seventh, textbook writers gave teachers the freedom to pick up or to leave aside activities, depending on their teaching schemes and their students' capabilities. The researcher believes that the statement is an implicit admission that the textbook is not a "one size fit all" peace. It also means that textbook writers recognize the wide variety of cultural components in the Algerian context. Furthermore, they know that the availability of materials differs from a school to another; thus they left the floor open for any kind of adjustments.

5.3 Content analysis of Exam Samples

This section is dedicated to analyzing and interpreting the results of the third instrument used in the study, which is exams content analysis grid. This instrument

investigates the incorporation of MI theory in second year secondary school EFL exams. Results of the content analysis will provide a feedback about: exams intelligence profile, occurrence frequency of intelligences, intelligences that need to be more incorporated. It contains also some suggestions about how to enrich the assessment process with practices engaging various intelligences. The content analysis will be done depending on the grid illustrating activities that engage different intelligences.

5.3.1 Data Collection

To analyze the exams content, the researcher adopted a content analysis grid from Al-Omari's study (2010). Al-Omari's study analyzed the content of Jordanian EFL textbooks "Action Pack Series" in light of MI theory. Based on the idea that the same activities and instructions can be used for classroom activities and exam activities, the researcher did not add any adjustments to the adopted grid for it serves the objective of the current study. Based on the content analysis of exam samples, the researcher investigated the exams intelligence profile, the balance of intelligences among exam sample, and occurrence frequency of different intelligences in exam sample. Data gathered through the content analysis of exams helped answering the following questions:

1- What is the occurrence frequency of multiple intelligences in the 2nd year secondary school exams?

2- How can the intelligence profile of 2nd year secondary school exam be described?

3- Is there a balance of multiple intelligences incorporation in 2nd year secondary school exams?

5- How can we adjust the assessment process so that it engages various intelligences?

5.3.2 Validity and Reliability of the content analysis

Since assessment is one of the most crucial components of the teaching/learning process, the researcher considered that the content analysis of one of the assessment tools will unveil many issues and facts about its efficiency and impact on students' learning. In order to come up with valid and reliable results, the content analysis grid had to be moderated in order to make sure that the instrument targets the same objectives of the study, and to decide whether results can be reliable or not. For this purpose, the researcher followed these procedures:

5.3.2.1 Validity of the content analysis grid

As mentioned above, the researcher wanted to make sure that the designed content analysis grid serves the same objectives of the study, and elicits exactly the intended information. For the stated purpose the researcher tested the validity of the content analysis grid by sending it to two Algerian researchers who have done research on the same topic. The instrument included objectives and questions of the study and the draft grid of activities in order to check if the grid serves the same objectives and research questions.

The two experts provided their feedback about the instrument and included their remarks about the list of activities and the intelligences engaged, in addition to some suggested adjustments. Expert teachers' remarks helped the researcher add more items or drop any needless items. For example, the adopted grid of activities included only three activities that engage the musical intelligence; the researcher added some activities that

engage the targeted intelligence. The final version was then made according to the previous procedures.

5.3.2.2 Reliability of the content analysis

It is meant by reliability the consistency of results measurement. By testing the research reliability, we can decide whether the results obtained are to be generalized or not. To test the reliability of the content analysis grid, the researcher followed the following procedures:

- **Intra-rater Reliability:** after three weeks of the content analysis of exam samples, the same activities were analyzed by the researcher in order to calculate the reliability co-efficient between the first and the second analysis. The researcher analyzed, as a sample, only ten samples out of the fifty samples under study. As demonstrated in **Table 5.3.1**, the percentage co-efficient of the analysis was 99.06% which is considered very high.

Intelligence	**Percentage**
Verbal/Linguistic	100.0%
Logical/Mathematical	100.0%
Visual/Spatial	97.3%
Bodily/Kinesthetic	100.0%
Musical	100.0%
Interpersonal	98.8%
Intrapersonal	100.0%
Natural	96.4%
Total	**99.06%**

Table 5.3.1: Intra-rater Reliability (agreement percentages)

- **Inter-rater Reliability:** to establish the inter-rater reliability, two analysts were asked to conduct the same analysis following the same procedures and the researcher's method. However, the two analysts analyzed only ten samples out of the fifty samples under study. The choice of the analysts was based on their experience in the field, and their knowledge about the topic. The first one has conducted a research about the use of MI theory in language teaching on 2010. The second one has published an article about the incorporation of MI theory in EFL textbooks on 2017. The two analysts agreed on the categories and units of analysis, and content analyzed ten exam samples in order to calculate the reliability co-efficient (agreement percentage) between the researcher analysis and theirs. The results demonstrated an agreement percentage of 98.76% between the three analyses. **Appendix04** demonstrates the inter-reliability coefficient between the researchers' results and the two analysts' results.

5.3.3 Description of the content analysis grid

As stated earlier, the objective of the content analysis was to investigate the occurrence frequency of Gardner's MI theory in 2nd year secondary school EFL exams. It aimed also to investigate the balance of intelligences among different samples of exams. The content analysis grid was adopted from Al-Omari's (2010) doctoral thesis about the inclusion of multiple intelligences theory in Jordanian EFL textbooks "*Action Pack*" series. After moderating the content analysis grid, the final version of the instrument was ready to be used. The grid is composed of eight different sections; each section covers one of the eight intelligences, namely: Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily/Kinesthetic, Musical, Interpersonal, Intrapersonal, Natural intelligences.

Each of the eight sections contains a brief definition of the intelligence and a list of activities/materials/techniques engaging that intelligence. The grid of activities / materials / techniques is considered as a reference to refer to when analyzing exam samples. Whenever the researcher finds among the exam samples the same activity as in the grid, then they are automatically engaging the same intelligence.

To make the process of analysis as clear as possible for the reader, the researcher identified the unit and the category of analysis. In other words, the unit of analysis is the activity, while the category of analysis is the intelligence in the exam samples under study. Henceforth, the study investigated the inclusion of different categories within each unit of the whole sample.

5.3.4 Data Analysis

Exam samples were analyzed by determining the intelligences incorporated in each activity of the whole sample. To identify the intelligences in each activity of the whole sample, the researcher adopted a list demonstrating the potential activities and the description of each intelligence. The list used was adopted from the study of Al-Omari (2010). In order to facilitate the task for the reader, the researcher used labels identifying each intelligence whether in tables or when discussing the findings. The labels are used as follows: VL for verbal/linguistic, LM for logical/mathematical, VS for visual/spatial, IR for interpersonal, IA for intrapersonal, BK for bodily/kinesthetic, M for musical intelligence, and N for naturalistic intelligence.

After identifying the intelligences in each activity, the occurrence frequency of each intelligence was counted for the whole sample. Then, the researcher created a table within which he illustrated, in numbers, the results. After that, the researcher counted the number of occurrence each intelligence per the whole sample. The software used to calculate the

results was Excel. The results gotten from Excel comprise the total number of activities in fifty (5o) exam samples. The findings demonstrate the intelligence profile of 2nd year secondary school exams.

In addition to the detailed list that describes the intelligences, the researcher took into consideration the instruction of the activity, the elements used in the activity (pictures, realia, graphs, etc), the techniques and materials needed for doing the activity, and the skills being incorporated. Furthermore, texts provided in exams were analyzed in light of the intelligences engaged. Though it was difficult to exactly define the intelligence engaged, the researcher took only the general topic introduced as a unit of analysis. For example: “natural disasters” would be categorized among topics engaging the natural intelligence (N).

It is also worth mentioning that the content analysis is only restricted to recognize and categorize the intelligences incorporated in each activity. The degree to which a given activity caters for a given intelligence was avoided by the researcher because it was statistically difficult to measure this criterion.

5.3.5 Population and Sampling

The population of the study was composed of 2nd year secondary school official EFL exams. Since the population of the study cannot be defined by an exact number, the researcher did not define the number of population included. From the whole population, the researcher chose a sample of fifty (50) exam samples to analyze. The choice of the exam samples was randomly done from a web page in which Algerian EFL teachers upload their designed exams.

5.3.6 Procedures of the study

The researcher carried out the following procedures to collect data for the study:

1- The researcher made the final draft of the content analysis grid for analyzing exam samples.
2- The researcher decided the sample to be chosen from the whole population: fifty 2nd year secondary EFL exams.
3- The researcher downloaded the sample decided from the website targeted.
4- The researcher analyzed the content of exam samples according to units and categories previously defined.
5- After two weeks, the researcher analyzed again ten samples out of the fifty exam samples under study in order to establish the intra-rater reliability coefficient.
6- Two external raters analyzed ten samples out of the fifty samples under study in order to establish the inter-rater reliability coefficient.
7- The researcher presented and discussed the research findings.
8- The researcher, then, provided some suggestions about alternative ways of assessment.

Results and Discussion

This phase is divided into two sub-phases; first, results and discussion of findings; second, suggestions about other types of assessment.

1) **Results and discussion of findings:** through the content analysis of exam samples, the researcher came up with these statistics. As mentioned before, the number of exam samples analyzed: 50 samples, while the units analyzed were

590 units. As for the criterion set for defining the percentage of frequency, 590 units means 100% as a percentage. The following table details the findings in number:

	Intelligence							
Category	Verbal/Linguistic	Logical/Mathematical	Visual/Spatial	Bodily/Kinesthetic	Musical	Interpersonal	Intrapersonal	Natural
Frequency	590	03	03	00	00	22	11	65
Percentage	100.0%	0.5%	0.5%	00%	00%	3.72%	1.86%	11.01%

Table 5.3.2: Frequency and Percentages of MI in exams content analysis

Verbal/Linguistic Intelligence (VL): As expected, VL intelligence was the most dominant among other intelligence. It was incorporated in 590 intelligences, and the percentage calculated was 100.0%. VL intelligence incorporation in exam activities was noticed in activities instructions like: “find a synonym for this word”, “rephrase the following statement”, “write a paragraph about an earthquake you have witnessed”. Furthermore, students reading the text was also considered as an activity engaging VL intelligence.

Logical/Mathematical Intelligence (LM): the LM intelligence was a less dominant intelligence in exam samples. This intelligence was incorporated in only three units. The percentage calculated for LM intelligence incorporation was 0.5%. We can mention some of the activities instruction that engage LM intelligence: “Classify the components of Photosynthesis according to their functions”, “A story with numbers including distances and coordinates”, “fill in the chronology line according to dates mentioned in the text”.

Visual/Spatial Intelligence (VS): the VS was also a less dominant intelligence in exam samples. VS intelligence was incorporate in 03 exam samples, with a percentage of 0.5% out of the total number of units. The incorporation of VS intelligence was tracked in some examples like: “a text speaking about space, distances”, “the experience of watching earth from space”, “a text introducing Elon Musk company”, “write a paragraph about the experience of being an aeronaut”.

Interpersonal Intelligence (IR): this intelligence was another less dominant intelligence among exam samples. IR intelligence was incorporated in 22 activities of the exam samples. The percentage calculated for this frequency was 3.72% out of the total number of activities. Activities engaging IR intelligence look like: “write a paragraph in which you convince a friend not to drop out school”, “write a paragraph to sensitize people about taking safety measures before, during, and after a natural disaster”.

Intrapersonal Intelligence (IA): this intelligence was also less dominant among activities of the exam samples. IA intelligence was incorporated in 11 activities of exam samples. The percentage of IA intelligence in exam samples was 1.86% out of the total number of activities. The incorporation of this intelligence appeared for example in: “a text questioning human existence”, “a text talking about human’s greed”.

Bodily/Kinesthetic Intelligence (BK): BK intelligence did not appear in any of the exam samples. The frequency, as a result, was 00, and the percentage calculated was 00%.

Musical Intelligence (M): M intelligence did not appear in any of the exam samples. The frequency, as a result, was 00, and the percentage calculated was 00%.

Natural Intelligence (N): this intelligence was incorporated slightly more than other intelligences, except VL intelligence. N intelligence was incorporated in 65 activities. The percentage of N intelligence incorporation was 11.01% out of the total number of activities. The appearance of N intelligence was noticed in: "text about new technologies", "talk about an earthquake you have witnessed", "picture of photosynthesis attached to a text".

The findings of the exam samples content analysis draw the reader's attention to many points. We can mention these:

First, the most engaged intelligence was VL intelligence. This kind of assessment is tightly related to standardized tests that are officially adopted by the Algerian ministry of education. The overreliance on VL intelligence in assessment may be due to several reasons, like:

- **Teachers practices in the classroom:** according to results of the other instrument (teachers' questionnaire), the most engaged intelligence in all levels is VL intelligence. Teachers' main objective was to prepare students for the day of the exam. Since exams are in form of standardized tests and focus mainly on VL intelligence, then it was expected that the most engaged intelligence in classroom activities is VL intelligence.
- **Language teaching factor:** to master a language, one has to speak, write, read, and understand that language. These four skills are included within activities engaging VL intelligences. One of the reasons why VL intelligence was most

dominant is because we are teaching language, and because the closest intelligence to language use is VL intelligence. Thus, it can be concluded that this result was logical and expected.

- **Assessment system:** if we take a look to the way how our students are assessed, we can easily conclude that these practices have a lot to do with the findings. Again, when comparing the findings of the two other instruments (teachers' questionnaire, textbook analysis) with the findings of exams content analysis, we can notice a lack of congruence. This may be due to heterogeneity between classroom practices (teachers' claim), the textbook content, and the official assessment system.

  To explain, teachers' claim the incorporation of different intelligences in order to vary learning sources, and to facilitate the teaching learning process. The textbook on another hand includes, to some extent, different materials that engage different intelligences and adopt recent methods of assessment (self-assessment, portfolio). Yet, official exams expose an almost total ignorance of other intelligences, except some slight inclusion of N intelligences in texts and "Written Expression" exercises. Hammoudi (2010, p. 236) stated the following: "It would doubtlessly be plain hypocrisy to apply this new theory and set pupils to participate in a wide multispectral experiences in the nine intelligences then assess them through standardized tests which focus parochially on verbal or logical domains".

- **Assessment of VL intelligence:** one of the reasons why VL is heavily used in exam activities is because it is easy to assess this intelligence. VL intelligence exposes students' mastery and manipulation of language. It is easier for a teacher students' mastery of language than assessing his/her LM, VS, or IA

intelligence. Teachers may not be blamed for choosing the easy way, since a lot of factors are going against their efforts to design a good lesson and to work on all students' differences. Overcrowded classes, overloaded syllabuses, lack of equipment, etc. are challenging factors for any teacher.

- **National Exams factor:** at the end of every educational stage, there is a national exam that decides eligible students going to the next stage. The way how the national exams are built, and the criteria set for eligibility have a lot to do with the way how students are assessed in other stages. It is believed that students are being prepared for the final national exams of every educational stage, thus teachers always to design look-like exams in order not to confuse students' perceptions about national exams. The psychological pressure exerted by national exams can explain this issue. Related to this point, alternative assessments attempted by teachers in the classroom are not decisive for students' aptitude to pass to the next level. Worse than that, they are considered, in many occasions, as a chance to compensate for those who failed in standardized tests.

Second, the incorporation of BK intelligence was impossible to be applied in an official exam. Since BK intelligence requires students to act out, use their body, and move around classroom, it was logically and pedagogically not possible to include this intelligence. The same principle applies for M intelligence.

Third, topics mainly included in exams texts are: Natural Disasters, Pollution, Letters, Holidays, Human Rights, and Charity Organizations. "Written Expression" phase in most of the samples analyzed were about natural disasters, formal/informal letters, personalities.

2) Suggestions of other types of assessment

Speaking about assessment, MI theory suggested totally different ways of how students' learning should be assessed. Relatively, MI theory encourages the use of authentic assessment practices that compare students to their previous performance, and relate assessment to students' daily life. In this respect, Armstrong (2010) stressed that authentic assessment should make in use a variety of measuring tools and methods. After reviewing suggestions made by Armstrong (2010), Hammoudi (2010), and Hoerr (2010), the researcher will mention different ways of assessing Gardner's eight different intelligences:

- **Verbal/Linguistic Intelligence (VL) Assessment:** to assess this intelligence, the teacher needs to follow these criteria:
    - **Precision:** it is about the accurate use of language that enables students to improve their linguistic skills.
    - **Logic:** it means students taking care of the logical sequence of their language productions. It is also related to providing arguments, giving examples and illustrations.
    - **Demonstrations:** thanks to students' demonstrations of skills the teachers can assess their tone, emphasis, and interpretation. Students always try to simulate their favorite language use. It is up to the teacher, then, to agree on the purpose of the demonstration, linguistic characteristics required, and student's demonstration. On another hand, teachers can use checklists to assess facial expressions, body language, and volume control. **Appendix 05** demonstrates the potential checklist for assessing students' demonstrations.

- **Logs and Journal:** VL intelligence can be assessed through consulting students' writings in their logs and journals. Students' writings may include reflections about classroom interactions, with peers or the whole class. This tool enables the student to assess his VL intelligence, and recalling all classroom situations.
- **Group Projects:** when working together to prepare a project, students need to communicate about the assignment, the method, the presentation. As a result, students are implicitly enhancing their VL intelligence. The teacher, as a monitor, is wandering from a group to another in order to observe his/her students' VL competencies.
- **Observation Checklists:** VL intelligence can also be assessed through observation checklists. Through this tool teachers can assess students' interactions and their development of higher order thinking skills. The design of the observation check list comes after identifying the required specific VL skills. After designing the observation skills, the teacher tells his/her students about the VL skills demonstrated during classroom instruction. **Appendix 06** demonstrates an example of a checklist for assessing VL skills.
- **Interviews:** this tool might be one of the most efficient ways to assess students' VL intelligence. Through an interview students can show their teachers the degree their VL intelligence has achieved. It is believed that high-order-open ended questions enable students to improve their thinking and idea. Oral/written answers provided an informative idea about students' progress at a specific teaching point and their VL intelligence progress.

Appendix 07 demonstrates an example of an interview assessing VL intelligence.

- **Logical/Mathematical Intelligence (LM) Assessment:** in order to assess this intelligence, teachers have to follow these norms:
  - **Precision:** it is about students' accuracy and the details provided. Teachers assess these two standards when observing students' performance.
  - **Problem Solving:** the degree to which a student can solve a problem, his/her plan to solve a problem, and the evaluation of the whole problem solving result are assessed through this criterion.
  - **Metacognition:** it is about students' awareness and monitoring over his/her thinking. Before performing a problem solving task, a student recalls his/her accumulated knowledge about similar type of problem.
  - **Logic:** this criterion assesses students' reasoning skills. In other words, the logical sequencing a student follows while solving a problem is to be assessed through this criterion.

    Based on these standards, the following tools may serve for assessing LM intelligence:
  - **Demonstrations:** via this tool, students can show to their classmates the way to solve a problematic situation. For example: a criminal case can be solved through a demonstration. The demonstration includes a logical order, cause effect relations, chronology of events, and so on. This tool can be assessed through a check lists; **Appendix 08** is an example of a checklist assessing demonstration engaging LM intelligence.

- **Group and Individual Projects:** through realizing projects, students are assessed in terms of thinking process while solving the problem project, and students' capability to individually solve the problem.
- **Teacher-made tests:** these tests assess students' ability to solve logical or mathematical issues. For instance: in order to evaluate student's problem solving abilities, the teacher-made test will assess: information needed to solve a problem, and the ability to solve more/less difficult problems.
- **Logs and Journals:** by keeping journals and logs, students will have the chance to assess and reflect on their logical thinking, and their problem solving processes. Teachers should elicit students to keep their journals and logs before and after any assignment in order to assess their own progress.

- **Visual/Spatial Intelligence (VS) Assessment:** the norms to be followed in order to develop this intelligence are:
  - **Flexibility:** it is about students' ability to visually present a content from different perspectives.
  - **Originality:** it is about innovating something that was never done before. Since this status is difficult to achieve, teachers can only incite their students to try things that are not previously done.
  - **Spatial Reasoning:** as defined by Hammoudi (2010): "it is the ability to determine how visual elements connect in proportion". This standard covers the main concern of VS intelligence.
  - **Persistence:** on their way to realize a project, students' projects might be rejected several times. This standard (persistence) seeks students' high performance and persistence to come out with a final satisfying version.

  The VS intelligence can be assessed via the following tools:

- **Journals:** by keeping journals, students will accumulate notes about their thoughts, reflections, and diaries. After reviewing their journals, students can assess their thoughts, works, and ideas; then build their future attempts upon.
- **Portfolios:** by reviewing students' portfolios, teachers can decide students' eligibility to pass to next level. A portfolio may include the teacher's remarks about a student's progress over the year. The final evaluation comes after a series of process evaluation carried by students and teachers.
- **Exhibitions:** when defending their theses, or presenting a work an explaining it students' VS intelligence are being assessed. Students' videos previews, charts, posters are to be evaluated by a reviewer using a standard-based assessment.

- **Interpersonal Intelligence Assessment (IR) Assessment:** like other intelligences, this one also requires following some norms to develop it:
  - **Consensus Seeking:** this criterion requires from members of the same group to exchange ideas, to talk about several options to do the task, and to agree on the way how to present the task. As a result, they will achieve a status of consensus.
  - **Cooperative Problem Solving:** students' cooperation to solve a problem means the automatic inclusion of IR intelligence. Despite the different views, students who succeed to come up with the best solution after discussing various options are expected to make a good problem solving group.
  - **Teamwork:** this criterion is considered to be the corner stone of IR intelligence. When assessing teams' performances, teachers should pay

attention to the development of individual talents, and cooperation. The required final product should reflect a perfect group interdependence.

In order to assess IR intelligence, these tools can be useful:

- **Observation Checklist:** this tool can be used when listening and observing the speaker, when discussing with students the guidelines of group work. To develop IR intelligence students are expect to listen attentively, to encourage classmates, to celebrate achievements, and to solve conflicts. All these skills can be checked via a checklist designed for this purpose. **Appendix 09** illustrates a checklist developed to assess IR intelligence.
- **Journals:** in a cooperative learning environment, students keep their journals to reflect about the team work process, their perceptions about the skills they are developing, and issues that are not yet solved. Any unanswered questions could be solved through pair discussion, or class discussion. Students can meet the highest required standard by following their teachers' feedback.
- **Demonstrations:** IR intelligence could also be assessed through students' demonstrations. There should be a consensus on the required criteria to make a demonstration successful. We mention, for instance, the following criteria: content of the conversation, needed props, length of the demonstration, and the visual adds. Teachers are invited to observe students' interactions when preparing the demonstration of their roles.

- **Intrapersonal Intelligence (IA) Assessment:** teachers can rely on these standards to improve IA intelligence:

- **Synthesis:** it is about synthesizing information to carry a given task. The process of synthesizing information might be done through graphic organizers, classification, ordering, etc.
- **Self-Awareness:** this intelligence is highly related to self-awareness. Teachers are expected to let students discover their preferred intelligence. Thanks to this procedure, students will be aware about their strong intelligences. An MI inventory (see **Appendix 10**) is a useful tool for assessing one's intelligence profile.
- **Reflection:** students' written reflections can be a tool to observe their IA intelligence. By writing their thoughts about the different situations they face in the classroom, students' IA intelligence can be assessed.

IA intelligence is believed to be assessed through these tools:

- **Logs and Journals:** this tool is the closest tool to this intelligence, since it perfectly reflects students' perceptions about different issues. By assessing a student's self-awareness, and ability to reflect and synthesize a teacher can shape an informative idea about a student's IA intelligence. IA intelligence and privacy are so close, yet the would-be-assessed logs and journals should contain only students' introspections about school work.
- **Teacher-directed Assignments:** through assignments, teachers can push students to use skills like: analyzing, synthesizing, and thinking creatively and critically. The assignment, for example, might be asking students to logically order information so that they make sense. After doing the assignment, the final required product would be: a critical creative thinker.

- **Musical Intelligence (M) Assessment:** like other intelligences, M intelligence assessment should follow certain standards:

- **Accuracy:** it is about the accurate practice of rhythms. This standard is related to how well a performer follows symbols, and controls the pitch and beat.
- **Comfort:**

  The state of comfort and easiness before any performance can be reached through adequate training, repetition.

- **Originality:** it is about making up a song by involving new ways of showing different sorts of feelings. A composer seeks originality by trying new combinations of sounds, while a singer seeks originality by trying to attend and to relate different musical notes.
- **Persistence:** a musical assignment needs persistence to be accomplished. Reviving adjustments and persisting make the way to create a well-structured melody.

  To assess this intelligence, we can use these tools:

- **Checklists:** many have been made for the assessment of any musical performance. As an example, one checklist is for the relation between the performer's attitudes and feelings, and music. **Appendix 11** demonstrates a checklist to assess the progress of musical intelligence.
- **Anecdotal Observations:** they appear in a form of random notes written by the teacher and stuck to students' files. Teachers provide students with notes about their musical weaknesses and strengths.
- **Audiotapes and videotapes of performances:** it simply means recording students' performances. By referring to several recordings over a year, a teacher can easily judge a student's M intelligence progress.

- **Bodily/Kinesthetic Intelligence (BK) Assessment:** the standard used to develop this intelligence are:
  - **Consistency:** it is about using the same physical activity several times.
  - **Perseverance:** this standard is related to student centered activities. It means keep trying and not giving up even if the task is difficult. It means also try other ways to do the task.
  - **Originality:** this means eliciting students to innovate ways to solve a problem using their BK intelligence.
  - **Flexibility:** it is about being ready to try different approaches to perform a task.

  Some assessment tools that serve to evaluate BK intelligence may be:
  - **Observation Checklists:** a physical performance can be assessed through a checklist. Teachers may visually record students' performances then assess them by using the designed checklist. **Appendix 12** contains a checklist for assessing BK intelligence performance.
  - **Journal Entry:** students can write journal entries after performing their physical tasks. The journal may include what has been learned, what was considered difficult, what was considered easy, what needs improvements. Teachers should review students' journal entries, and plan practical procedures upon.
- **Natural Intelligence (N) Assessment:** this intelligence can be improved through following these standards:
  - **Persistence:** a naturalistic intelligent person should show persistence for accomplishing tasks like: finding answers for questions.

- **Accuracy:** it is directly related to accurately observing details, and being on the alert for any remarks, either seen, heard, or smelled.
- **Logic:** since this intelligence cares about different species, there should exist logic when identifying, classifying, and categorizing attributes. This standard relies basically on logical reasoning.

These tools may serve for assessing this intelligence:

- **Logs and Journals:** during or after performing tasks engaging N intelligence, students should include their remarks, thoughts, and reflections about the task. Teachers later can consult students' journals in order to assess their understanding and to plan practical procedures upon.
- **Checklists:** thanks to checklists teachers can assess students' performance by relying on previously set standards. Teachers may check their students' perseverance, logical reasoning, their mastery over different species of Flora and Fauna.
- **Anecdotal Observations:** this tool can be used by both students and teachers. Teachers, on one hand, write their observations when assessing students' performances. Students, on the other hand, write their observations when watching their classmates' performances, or recalling theirs.

Conclusion

This chapter included the main findings of the experimental phase of the study. Results of the teachers' questionnaire indicated that teachers showed a remarkable interest in applying MI theory in their classes, and that the textbook they are using is a poor material to rely on. In addition to that, the activities teachers have claimed using in their classes engage almost all the eight intelligences.

On another vein, the textbook content analysis showed a heavy reliance on VL intelligence. Other intelligences were slightly included, while the M intelligence marked a total absence. The congruence between teachers' perceptions and textbook analysis findings appeared, in more than one occasion, as a cause-effect relation. As an example, the poor intelligence profile of the textbook urges teachers to include extra material where more intelligences were engaged. It is also worth mentioning that teachers' interest in varying the learning sources for learners, and their eager to facilitate the learning experience made them, unintentionally, apply the MI theory principles.

Findings related to exam samples analysis showed a total reliance on VL intelligence and an ignorance of other intelligence, except the inclusion of N intelligence and IA intelligence in some occasions. Relating the findings of this instrument with the other ones reveal a total incongruence between classroom practices and assessment practices. As mentioned before, activities incorporated in the classroom were not the same ones incorporated when assessing students' achievements. At the end of this chapter, the researcher provided different ways of assessing Gardner's eight different intelligences.

Chapter Six:

Pedagogical

Incorporations

Introduction

This chapter is divided into two sections. The first part is dedicated to a suggestion of three activities redesigned according to the topic with more various incorporations of intelligences. The second part is dedicated to the pedagogical incorporations of the results of this study.

Before detailing the incorporations of findings, the reader should bear in mind the following factors:

1- The incorporations of this study are important for policy makers, textbook writers, parents, teachers, students, and other stake holders.
2- Students can use MI theory as a tool to identify their strengths and weaknesses.
3- Teachers can use MI theory principles to vary learning contexts.
4- Teachers can use MI theory to redesign classroom activities.
5- Teachers can use MI theory to identify their intelligence profile and the one of their students.
6- Parents should be knowledgeable of their children's MI profile so that they can boost their learning in and out of school.

The practical incorporations of this study are expected to answer the following questions:

1- How can teachers make use of MI theory principles for their advantage?
2- How can textbook writers consider the principles of MI theory when designing different EFL textbooks?
3- How can teachers implicate alternative assessments to address different students' intelligences?

4- How can policy makers reconsider educational policies in light of the MI theory principles?

Learning, as a key concept, should be regarded as "the maximal activation of the human intelligences to discover the systems and rules that govern the natural and human resources and make use of them for the benefit of mankind. Learning is natural curiosity which leads to creativity. It is a research operation"(Hammoudi, 2010, p.298). As this definition tells, learning relies more on human individual capacities to create valuable products for human kind. Hammoudi's definition considers curiosity as the main motor for learning, and that it urges educators/learners to make use of natural and human resources for their benefit. Teachers are expected to incite learners to use their brains, rather than to provide them with ready-made information to memorize. The researcher agrees with Hammoudi's definition of learning for it serves the objectives of this study.

A logical definition of Learning leads to following the right process in order to reach a point of a satisfying learning status. According to Armstrong (2000), the process of learning should systematically follow these stages: Curiosity, Experience, Knowledge, Memory, Eruditeness, Effective Action and Creativity. *Curiosity*: to start a lesson successfully, teachers should stress on the spark of curiosity in their teaching. *Experience:* students' learning can be reinforced by involvement and experience. *Memory:* learning cannot be enhanced without memory. Thus, teachers can highlight novelty and regular exercising to intelligently involve students' memory in the learning process. *Eruditeness:* it is a high stage that reflects a profound mastery of the subject matter. *Effective learning and Creativity:* this stage is the most targeted situation through a systematic learning process.

The pedagogical incorporations of the current study start by relating curriculum design to the MI theory incorporation. Deutsch (1997) asserted that curriculum designer should take into account learning theories, learning styles, learners' differences, and various ways of presenting the content. As the results of the textbook content analysis revealed, there was a heavy reliance on VL intelligences over other intelligences. Hence, the researcher believes that a careful design of the textbook in light of MI theory principles provides learners with more chances to enjoy the learning process, and to discover the relation between the content learned at school and real life situations they will face.

One of the findings of this study revealed a lack of congruence between the claims introduced in the description of the textbook and the actual content of the textbook. To explain, the description claimed a use of competency-based approach which is project oriented and learner centered. Yet, the content analysis results revealed an over focus on skills like: reading, writing. Such findings can be useful for textbook designers to incorporate more skills and intelligences for a better and deeper learning that engage more senses and intelligences. Curriculum and instruction complement one another. On another hand, the portfolio technique, that textbook designers claimed its use, requires the incorporation of different intelligences through various types of activities. However, the actual application of this technique in 2nd year secondary school textbook indicated either a miss understanding of the technique, or a conscious focus on test-driven materials.

The previous conclusion is expected to draw textbook designers' attention to the issue of congruence between the textbook description and the content included in. It is also expected to incite textbook designers to vary learning opportunities through the textbook content. Dean (1995), stressed:

> A curriculum development approach views language teaching and language program development as a dynamic system of interrelated elements. The systematic approach focuses on the planning, development, implementation, and evaluation phases of language teaching, and has been widely adopted in many areas of education planning (p. ix).

Relatively, Richards and Rodgers (2001, p.118) suggested a four-stage sequence through which a syllabus designer can cater for different human intelligences:

- Stage one: Awaken the Intelligence through multisensory experiences-touching, tasting, seeing, and so on – learners can be sensitized to the many-faceted properties of objects and events in the world that surrounds them.
- Stage two: Amplify the Intelligence. Students strengthen and improve the intelligences by inventing objects and events of their own choosing and defining with others the properties and contexts of experience of these objects and events.
- Stage three: Teach with/for the Intelligence. At this stage the intelligence is linked to the focus of the class, that is, to some aspect of language learning. This is done via worksheets and small-group projects and discussion.
- Stage four: Transfer of Intelligence. Students reflect on the learning experiences of the previous three stages and relate these to issue and challenges in the out-of-class world.

For Algerian EFL teachers, the gap revealed between the textbook content and their classroom practices confirms the fact that their efforts are going in harmony with recent teaching practices and MI theory principles in specific. According to Gardner (2000),

curricula should be adapted so that they serve learning styles and learners' strengths. Consequently, classroom activities should engage students' different intelligences. Tanner (2001) provided teachers with a MI language skills activities chart. Tanner's chart includes language four skills (reading, writing, listening, and speaking) in addition to grammar, vocabulary, and literature (**See Appendix 14)**.

When coming to lesson planning, it is known that a good lesson plan is mainly based on stating SMART (Specific, Measurable, Achievable, Relevant, Time-bound) objectives. Webber (2005, p.143) suggested a list of questions through which a teacher can assess the efficiency of the learning objectives:

- Are objectives measurable?

- Do objectives state observable learner performance?

- Do objectives outline conditions under which behaviors occur?

- Are objectives stated with prescribed learner performances in mind?

- Are objectives written with an action verb, like: list, compare, illustrate?

- Do objectives describe the minimum expectations for all students?

- Are objectives stated in as few words as possible?

- Do objectives begin with: the learner will…" (TLW)?

- Are objectives listed in brief bullets?

- Does each lesson plan/file use one, two, or three well stated objectives?

- Does each objective describe one performance only?

- Will objectives be followed by specific, appropriate assessment activities?

In addition to Tanner's (2001) chart and Webber's (2005) list of learning objectives, many researchers have detailed the topic of MI-based lesson plans, and provided practical steps to design a lesson plan in light of MI theory principles. Plamberg (2002), for example, provided a seven-step sequence to design an MI-based lesson plan.

- **Step One:** a teacher should first identify his/her intelligence profile. Tanner (2001a) designed a survey for identifying language teachers' intelligence profile. Walter McKenzie (1999) also has made a survey for identifying human intelligence profile (**See Appendix 15)**.

- **Step Two:** learners' intelligences profiles should also be identified. Several surveys have been created for this purpose, like: Berman (1998), and Armstrong (2000) observation checklists.

- **Step Three:** lists of classroom activities have been developed for language teachers. EFL teachers need to categorize the activities according to the intelligences they engage and learners' differences. In addition to the intelligence profile survey, Berman (1998) provided teachers with a list of activities for language activities.

- **Step Four:** Tanner (2001b) created a language-skills activities chart in which he suggested eight different ways (intelligences) to enhance this skill (e.g., speaking). The teacher is required to create a list for one of language skills, then compare it with Tanner's list.

- **Step Five:** after examining some foreign-language teaching workbooks, the teacher selects activities that engage several intelligences. The teacher can also investigate if some intelligences are usually related to one another.

- Step Six: the teacher, now, is expected to reflect on his/her last lesson presented in the classroom. Supposing that the majority of his/her students were LM learners, what changes he/she would bring to the lesson plan.

- Step Seven: the teacher writes the topic in a large sheet of paper and draws a circle around the topic. The teacher, then, writes notes about tasks, texts, exercises, methods of work, aids, activities, and songs that they may think of using in the lesson. After that, the teacher arranges his/her ideas according to the intelligences potentially engaged. After having written all the ideas down, the teacher asks the following questions: are there activities that can be combined? Are there activities that can be modified to serve the teaching objectives more efficiently? Are there some activities that seem not appropriate for the present context? The remaining activities are going to be reordered from old to new, from easiest to most difficult.

- Step Eight: the teacher plans the lesson according to the previous steps.

After preparing the lesson plan, the teacher needs to ask the following questions in order to evaluate the efficiency of his/her lesson plan (Nicholson-Nilson, 1998):

- Have you provided the learners with opportunities to speak, listen, read, and write?
- Have you included numbers, calculations or activities requiring critical thinking?
- Have you included pictures, graphs, and/or art?
- Have you included activities involving movement?
- Have you included music and/or rhythms?
- Have you included pair work and/or group work?

- Have you included learners with private learning time and/or time for reflection?
- Have you included categorization tasks and/or arranging exercises?
- Have you helped the learners consider the topic/theme/grammar points of today's lesson in relation to a larger context?

Based on the previous guidelines, the researcher provides an attempt to design a sample of activities from three different lessons of the textbook. Before exposing the designed activities, the following issues should be clear for the reader:

- Each of the activities is chosen according to the topic of the unit. For example: the third activity is related to the eighth unit "Business is Business".
- Teachers can insert language structures in the different phases of activity. For example: a teacher can ask his/her students to write their reflection about the field trip, and include: "want to", "want not to", "used to", and so on.
- The activity related to Unit 08: "Business is Business", engaged more IA intelligence since it works for students as individuals more than a group. For instance: an individual needs to know the different procedures required when getting into a bank.
- In fact, the designed activities need more time, but serve deeper knowledge about the topic. On another hand, the Algerian context puts teachers in situations where they are obliged to work with large class sizes. These latter are more difficult to manage in terms of carrying activities and dividing groups; that is why more time is needed.

Lesson One: Unit 01 "Lifestyles"	
Activities	Intelligences

	Engaged
Objectives: in this lesson, students will learn the following: - **Grammar:** Present simple tense, **Going to** and the present progressive. - **Pronunciation:** Comma pauses, homonyms - **Vocabulary:** Words related to food, clothes… - **Functions:** Narrating, talking about plans and intentions - **Skills:** Writing a short essay using comparison and contrast	
The teacher sticks some pictures about Algerian customs on the classroom wall, and asks students to go consult them and to reflect on the pictures between each other.	VS, IR, BK, VL
The teacher provides students with list of words related to the pictures they are seeing. Then, he/she asks students to relate pictures to their appropriate words. (they can work in pairs)	VL, LM, VS, IR
Asking students to reflect on pictures and reveal what helped them to link pictures to their appropriate words	IA, IR, VL
Try to bring up songs about different customs , and ask students to identify if the selected pictures are included	VL, M
Divide students into groups and ask them to select one of the pictures. Then, ask them to search about the custom in the selected picture. After doing their research, students will present their assignments as role plays, make up a song, make a poster where they organize the content.	VL, BK, IR, M, IA, VS, LM
Organize an exhibition where students bring traditional meals, or wear traditional clothes. In the exhibition, students are expected to	VS, VL, LM, IR

present demonstration and clarifications to the audience.	

Lesson Two: Unit 04 "Budding Scientist"	
Activity	**Intelligences Engaged**
Objectives: in this lesson, students will learn the following: - **Grammar:** If-conditional, the comparative adjectives - **Pronunciation:** Diphthongs, Stress in words ending in : **gy**, **-ical**, **-ics.** - **Functions:** Expressing condition, making Predictions, giving warnings. - **Skills:** reporting results of a scientific experiment, talking about a dilemma	
Sticking pictures about old/recent inventions on walls, then asking students to walk around the classroom and watch the pictures	VS, BK
Draw a table including: inventor, invented object and ask students to fill the table according to the list provided	VL, LM
Taking students to the museum/library in order to do more research on the invented machines and the inventor. After that, they are going to: - Draw a mind map about the information they have gathered - Record themselves in video and try to talk about the experience and the information they have gathered.	VL, BK, IR, IA, VS

- They can also be divided into groups in order to make role plays about the inventor, they can make models of the invented machines, make posters illustrating information about inventor/invented machines	

Lesson Three: Unit 08 "Business is Business"	
Activity	**Intelligences Engaged**
Objectives: in this lesson, students will learn the following: - **Grammar:** Link words: to, in order to, so that/in order that - **Pronunciation:** Contrastive and corrective sentence stress, sound-spelling links - **Vocabulary:** Words and phrases related to business, **mis-, dis-, in-, un-…** - **Functions:** Complaining, apologizing, asking and answering questions - **Skills:** Reading business letters, reading for specific information, writing a report, making inferences	
The teacher brings materials like: check, credit card, a model of a request letter to open a bank account. Then he/she lets students see and touch the materials	BK
The teacher asks students to identify the materials	VL, IA, LM
Students can help each other to answer the teacher's question	VL, IR
The teacher takes students in a field trip to visit a local bank in	BK, VL, IA

order to witness the process of different financial operations	
A bank agent can be asked to explain to students how different operations are carried	VL, IA, BK
The teacher asks students to work individually and go to the bank and get information about different operations and procedures. Students are required after that to: - Write a report in which they explain different operations (official documents should be included). - Record individual videos and explain the services that the local bank offers for customers (official documents should be included in demonstrations). - Students are required to realize different situations as role plays (client-agent, client-client, agent-agent, agent-supervisor)	VL, LM, VS, IR, BK, IA

The suggested activities are not to be a one "true way" to design lesson plans in light of MI theory principles. Teachers, however, need to develop their own teaching practices through choosing among various literary sources the most suitable activities for their learners. Ommagio (2001) asserted that attempting to make their own theories of how second-language acquisition occurs would be beneficial for language teachers.

Though results about Algerian EFL teachers' classroom practices revealed an unconscious application of some of MI theory principles; yet, the textbook content was, to a great extent, far from teachers' expectations. This result is expected to spark the attention of stake holders, textbook writers committees, and ministry officials to include teachers in the EFL textbook writing processes. More important than that is to give

teachers more decisive role in deciding the content of the textbook and the variety of activities. After consulting a principal EFL inspector in the Algerian MoNE (Tairi), she confirmed that the committee of textbook writers is composed of university teachers and an inspector of EFL. She denied the inclusion of psychologists, sociologists, or secondary school EFL teachers. Relating this fact with the previously mentioned result is expected to make the ministry principals reconsider the members of EFL textbook writing committee.

As for the results related to teachers' perceptions about the incorporation of MI theory in their institutions, the findings can be helpful for institutions headmasters. Suggestions have been introduced to vary the ways of assessing students' performance. Hallways, halls, rooms, amphitheaters, and laboratories can all be useful places for students to demonstrate their works or defend their projects. Since these techniques go in harmony with MI principles of assessment, school headmasters are invited to bring vitality to the different school buildings. The previously mentioned findings provide school headmasters with hints about their teachers' needs/expectations, and the several potential uses of the school infrastructures.

Results of exams content analysis and their relation with teachers' claims about the activities used in the classroom revealed that an incongruence has been tracked between classroom activities and official exams activities. For example, a teacher claimed the use of activities engaging, at least, four intelligences. However, official exams content analysis revealed the heavy focus on VL intelligence. This fact is expected to draw the attention of the teachers and the ministry officials. To explain, teachers need to think about the variety of activities provided in an official exam. Different materials accompanying exam papers may cater for different intelligences. For example, the use of

more pictures, graphs, and considering the text included and the written expression phase will surely encourage the use of more intelligences to include more of learners' styles.

According to results, teachers' classroom activities revealed a variety of practices that engage several intelligences. On the contrary, exam activities always bounced around VL and LM intelligences. Instructions like: "find the synonym in the text" and "classify these words according to the suffixes" are almost always present within official exam samples. Teachers are expected to cater for more intelligences in the official exams through including various materials and various activities instructions. Students were always blamed for cheating behavior; yet, a careful look to their motives may introduce us to the fact that they are being assessed in skills they do not master, or they were not sufficiently trained for. Teachers, from the other side, feel obliged to prepare their students for final national exams; that is why they design look-like samples of the national exams.

The inclusion of final national exams leads us to include the ministry officials in this complicated issue. For the Algerian ministry of education, national exams like: BAC and BEM decide students' aptitude to pass to the next level. Psychologically speaking, national exams exert a noticeable pressure on teachers' exam samples. This is due to teachers' preference to prepare their students for national exams through designing almost the same exercises. For validity issues, exam activities should contain the same instructions as the ones practiced in normal sessions. Results of this study revealed the contrary, and variety of activities noticed in the classroom was absent in exam activities. This finding is expected to draw the ministry officials' attention to rethink their assessment policies. The reconsideration process might result in: 1- giving teachers more freedom, 2- adding other assessment phases, 3- rethinking the percentages given to the four official assessment phases, and 4- potentially, rethinking national exams.

According to the findings of this study, teachers' classroom practices and activities are, to some extent, hindered by the official exigencies. To explain, classroom activities expose a remarkable amount of variety in terms of materials and intelligences engaged. Yet, when it comes to assessment, teachers feel obliged to follow a ready-made scheme that is regarded poor in terms of skills assessed, materials included, and intelligences engaged. Based on this issue, the ministry officials are expected to give teachers more freedom to vary the ways how to assess students. The researcher believes that this procedure would: provide students with more chances to demonstrate their competencies, introduce teachers to alternative assessments, assess skills that are related to students' real life situations (not only academic skills), and inform parents about unusual abilities in their children.

The findings of this study might be a base for rethinking the percentages given to each of the four assessment phases that are used to count the student's Grade Point Average (GPA). In the Algerian context a student's final GPA is a result of continuous assessment, term test, oral skills, project presentation, and the final term exam. The percentage given to the term exam is higher than the ones given to other assessments (40/40). Based on the principle that students need to be assessed in the same way they are taught, it is possible that the three remaining assessments would be given higher percentages so that teachers will feel more freedom to vary the assessment methods. As a result, students will enjoy the assessment process and feel motivated to demonstrate their potentials. On another hand, teachers will harvest the fruits of their classroom efforts. The researcher believes that even parents will perceive the change in their kids' attitudes toward exams. Techniques like: projects, ongoing assessment, demonstrations, etc. can be used as alternative assessments.

Although the previously mentioned suggestions would make a quantum leap in the different assessment methods, the national exams still stand as a not-to-be-touched box. Relatively, the official exam scheme, that is composed of three main phases, namely: Reading Comprehension, Text Exploration, and Written Expression, is imposed as the only scheme to follow. When asking about the reasons, the researcher has been told that students are to be prepared for BAC exam, so they should do the same activities to avoid confusion and surprises. The findings of this study and the deduced consequences of the actual assessment procedures are expected to make the ministry officials rethink the standards set for national exams, or the ways how these exams are administered.

The present study comprises also some social incorporations that are expected to answer these questions:

1- How is this work going to affect society?
2- How is this work to affecting parents' perceptions of their children's school achievements?
3- How are parents going to make use of the findings of this work for the benefit of their children?

One of the most important components of an educational process is "parents". Since they are always close to their children, they are supposed to hold a clear idea about their children's abilities. Yet, the researcher believes that schools focusing only on academic skills exclude parents from the teaching/learning process; especially illiterate parents. The MI theory comes here as a solution that efficiently implicates parents in the teaching/learning process. As follows, the researcher clarifies the practical procedures through which MI theory qualifies parents to be a crucial component in the teaching/learning process:

1- As a first step, parents should know about the principles of the MI theory in order to exactly identify their role among different procedures. By having a clear idea about the theory and its incorporations in the teaching/learning process, parents will start perceiving differently their children's achievements. Relatively, parents need to understand that there is no savant and stupid pupil. Alternatively, they should know that the teaching method is not convenient with the kid's learning style.

2- MI theory urges parents to identify their kids' learning styles and intelligences. Thanks to this procedure parents will clearly identify the right ways to teach their children. As another option, parents can regularly meet their kids' teachers in order to exchange ideas about their favorite learning styles. So, it can be said that MI theory encourages parents and teachers to cooperate for the benefit of learners. This procedure is threefold benefit: first, teachers suffering from large class sizes will have parents by their sides to help them reach every singly student in the classroom; second, learners will enjoy a regular care for their learning; three, parents will have a clear idea about their children's abilities and other details about their personalities.

3- Assessment through MI theory principles is also an opportunity for implicating parents in the process. Parents can help teachers by filling the observation checklists designed for assessing their children's different intelligences. On another hand, official communications used between teachers, administration, and parents can be a useful tool to follow pupils' achievements. Assessing students through demonstrations enables parents to attend their children's performances to motivate them and to have an idea about the development of their children's abilities. Students' projects are also a way to help strengthen the

parent-child rapport. This can be achieved through inciting parents to help their kids realize their projects. More than that, it makes parents excited and motivated when observing their kids doing efforts to realize their projects. Last but not least, it urges parents to rethink their perceptions towards learning.

The incorporation of MI theory in institutions is by far beneficial for schools, students, and parents. Among the school activities that engage different intelligences, one can mention demonstration, open debates, scientific competitions, speeches, sport activities, musical activities, etc. The aforementioned activities may be within the curriculum activities, or can even be adopted as extra-curricular activities. Organizing such activities allow discovering different talents among students. The talent discovery may precede a process of special care for gifted students, and even introduce them to start their professional careers. As a result, the institution would be the starting point for: public speakers (VL intelligence), mathematicians (LM intelligence), architects (VS intelligence), psychologists (IR intelligence), Philosophers (IA intelligence), Athletes/actors (BK intelligence), Musicians (M intelligence),Biologists (N intelligence). The talent discovery benefits the school's reputation and makes of it a widely popular institution.

MI theory incorporations include also teachers. Christison (1998) urges teachers to identify their own intelligence profiles. This enables them to link real life experiences with MI theory principles. The link between real life experiences and MI theory enables teachers to better understand the theory and incorporate it in their classroom practices. A good understanding of their strengths and weaknesses enables teachers to take good decisions about classroom situations. In order to identify EFL teachers' intelligence, Christison (1998) designed an inventory survey. The inventory can also identify the intelligence profiles of teachers from other fields. Christison's survey (1998) was

composed of eight sections; each section contained ten statements and investigated one of Gardner's eight intelligences.

On another vein, McKenzie (1999) asserted that identifying someone's intelligence profile is a momentaneous operation upon which we decide the practical procedures to follow in order to strengthen weak intelligences. Supportively, Gardner (1999) stated that an intelligence profile can change. Gardner warned readers not to label people according to their intelligence profile. In his own words, Gardner (1999) stated:

> If I were asked to assess someone's intelligences, I would not be satisfied until I had observed him solving problems and fashioning products in a number of settings. This is usually not practical. And even then, I would have no guarantee that the intelligence profile would remain the same a year or two later (p. 139).

In addition to identifying their own intelligence profiles teachers can identify their learners' intelligence profile so that they can improve it. According to Botelho (2003), learners are also encouraged to know about their intelligence profiles for better understanding their own learning attitudes. On another hand, identifying the intelligence profile enables learners to better understand some daily life situations. This process makes learners aware of their strengths and weaknesses; thus, they can rely on their strengths and work on their weaknesses. To identify learners' intelligence profile, Christison (1999) invented a survey for learners, in which students mention the way how they use MI theory in their lives. Among the instruments created for investigating learners' intelligence profile the one of Lazear (1993). Lazear's inventory is composed of three self-analysis surveys for three educational levels, namely: primary, middle, and secondary school language learners.

Classroom activities/techniques/materials can also be categorized in light of the intelligences engaged. Teachers are expected to choose among activities those engaging several intelligences so that they can serve several learning styles, and save the session time. Some language teachers face some difficulties to link some intelligences to language teaching. Botelho (2003) stressed that teachers can explore different ways of presenting a lesson in order to find the logical link between the intelligence and its occurrence in language learning. She added that by doing this, teachers will discover plenty of materials used for language teaching. It is also suggested that with some adaptations, the same material can be used for different purposes, students' ages, and levels of proficiency. Teachers would be astonished of the infinite possibilities they can find for relating each activity to the corresponding intelligence. The researcher will later present different ways to connect each of the eight intelligences with language teaching activities.

According to Christison, Deborah, and Kennedy (2004), MI theory introduces a way that can be used as a guide for designing classroom activities that engage different ways of learning and knowing. They added that the inclusion of MI theory in teaching strategies enables to allow some control for learners to choose the learning and assessment methods. On another vein, Richards and Rodgers (2001) asserted that there exist no goals or syllabuses designed for MI theory instruction in linguistic terms. Rather than that MI theory considers a language classroom as a starting point for series of educational support system in order to encourage the learner to understand, identify, choose, and design his/her own learning.

Al-Omari (2010) stressed that the MI model does not prescribe a one-way pedagogical formula; rather than that, the MI model that incite teachers to create, imagine, think, explore, try, and reform. Speaking about different ways of learning, MI

theory guarantees, at least, eight several ways of learning. It is worth mentioning that the incorporation of MI theory in the lesson planning does not necessarily mean designing eight different plans for the same lesson. In his turn, Armstrong (2000, p. 51) mentioned three teaching strategies through which MI theory enables a rich variety of classroom activities:

1- Designing a lesson should follow these principles: variety, flexibility, learnability, and linkage.
2- Designing a lesson should be realized through various ways. Since every single learner has his/her own cognitive system, we cannot set only one instructional strategy and claim that it fits all learners.
3- The lesson designer can adjust different teaching strategies so that they serve several learners' intelligences.

Teachers reading this work might be wondering about different ways of managing their classes and incorporating the MI theory principles at the same time. Any teacher sets rules, routines, procedures, and regulations in order to maintain a good classroom management. MI theory did not provide a clear-cut scheme for classroom management, yet it offers teachers a new perspective on different types of management strategies in order to maintain a good learning environment. Armstrong (2009, p.112) proposed five classroom management strategies, and suggested eight different ways for each of these strategies:

1- Gaining Students' Attention: according to MI theory, using words to get students' attention is the least effective way since they do not distinguish the teacher's voice from other talking voices. It is suggested to move to other intelligences in order to gain students' attention. The principle is to use

nonlinguistic signs to attract students' attention. As follows, eight different strategies to ensure students' attention:

- VL intelligence: write the words "silence, please" on the whiteboard.
- M intelligence: Clap a short rhythmic phrase and have students clap it back.
- BK intelligence: put your finger against your lips to suggest silence while holding your arms up. Have students mirror your gestures.
- VS intelligence: Put a blown-up photo of an attentive classroom on the board (perhaps a photo of the actual students involved to enhance positive behavior).
- LM intelligence: use a stopwatch to keep track of the time being wasted and write on the whiteboard the number of seconds lost at 30-second intervals.
- IR intelligence: whisper in the ear of a student, "IT's time to start - pass it on", and then wait while students pass the message around the room.
- IA intelligence: start teaching the lesson and allow students to take charge of their own behavior.
- N intelligence: play a recording of a shrill bird whistle, or (even better) bring a live animal into the classroom. Generally speaking, whenever there is an animal visitor in a classroom, that's where the attention will be.

2- Preparing for Transitions: teachers can train students to get prepared for transitions through specific cues. Each type of transition can be expressed using a given cue:

- M intelligence: the teacher can explain to his/her students that different selections of music will be used to indicate time for: break, Lunch, Dismissal.
- VS intelligence: this intelligence requires the use of graphic symbols or pictures to alert students to be prepared for a new transition: Break = picture

of kids playing, Lunch = kids eating in a cafeteria, Dismissal = a picture of students getting on the school bus or walking home from school.

- BK intelligence: for this intelligence, the teacher can use specific gestures or body movements to signal the coming transition. Practically, the teacher makes the gesture, then students make the same gesture, as a sign that the message is successfully received. Break = stretching and yawning, Lunch = Rubbing stomach and licking lips, Dismissal = putting hands above eyes and peering outside of the classroom (signifying looking in a homeward direction).
- LM intelligence: to indicate a transition through LM intelligence, the teacher can place a large digital "countdown" clock that students can see from anywhere in the classroom. The teacher then sets it for the time left until the transition, and lets students keep track of the time left until the transition occurs.
- IR intelligence: the teacher can use the telephone-tree model. It is about giving a cue to one student, who then tells two students, who themselves each reveal two students, and so on until the whole classroom is informed about the transition.

3- Communicating Class Rules: the teacher can communicate the classroom/rules for proper conduct through MI theory:

- VL intelligence: rules written and posted in the classroom (this is the most conventional approach).
- LM intelligence: rules are numbered and later referred to by number (e.g., "you are doing great job of following rule #4").

- VS intelligence: next to the written rules are graphic symbols of what to do and what not to do (e.g., “respect for other” might be symbolized by image of two people holding hands).
- BK intelligence: each rule has a specific gesture; students show they know the rules by going through the different gestures (e.g., “respect for others” might be symbolized by hugging oneself).
- M intelligence: the rules are set to a song (either written by students or set to a melody of an existing song), or each rule is associated with a relevant song.
- IR intelligence: each rule is assigned to a small group of students who then have responsibility for knowing its ins and outs, interpreting it, and even enforcing it.
- IA intelligence: students are responsible for creating the class rules at the beginning of the year and developing their own ways of communicating them to others.
- N intelligence: an animal/plant is assigned to each of the rules (e.g., “respectful rabbit”). Students learn the rules by imitating the movements of the animals.

4- Forming Groups: one of the main applications of MI theory in classroom management strategies is forming groups. Teachers tend generally to arbitrarily form classroom groups, since they recognize the benefits of having heterogeneous groups working cooperatively. MI theory suggests a range of techniques for creating heterogeneous groups based on incidental features related to each intelligence.

- VL intelligence: the teacher thinks of a vowel sound in his/her first name. Then, the teacher sounds it out loud. He wanders around the classroom and finds three or four pupils who make the same vowel sound.
- LM intelligence: the teacher asks his/her students to raise one of the five fingers, then he/she asks pupils to keep their fingers raised. The teacher then looks for the same raised fingers in order to form a group.
- VS intelligence: the teacher finds three or four pupils who are wearing the same color of clothes as he/she is wearing.
- BK intelligence: the teacher starts hopping on one foot then finds three or four pupils who are hopping on the same foot.
- M intelligence: the teacher asks students about some songs they all know. The teacher writes on the board three or five songs. The teacher then whispers one of the songs in a student's ear. On the teacher's signal, the student starts singing that song and finds in the classroom those singing the same song.
- N intelligence: the teacher asks students to visualize a goat, a sheep, a cow in a pasture. The teacher then tells students: "suddenly a loud noise was heard, two animals run off, there was only the remaining one making sound". The teacher asks students to start making sounds of the remaining animal. Students making the same sound will for a group.

5- Managing Individual Behaviors: despite the efficient communication of routines and rules, there will always be students who fail to follow the instructions. This issue may take up much time of the lesson process. Although MI theory has no magical formula for these behaviors, it can provide a context for looking at a range of discipline systems to deal with these challenges. MI theory proposes a broad range of discipline methods matched to the eight intelligences:

- VL intelligence: the teacher talks to the student, provides him/her with books referring to the problem, and points the solutions. The teacher also can help the student use the self-talk strategies for gaining control.
- LM intelligence: Through the incorporation of Drelkurs's (1993) logical consequences the teacher can ask the student to quantify and chart the occurrence of negative and positive behaviors.
- VS intelligence: the teacher asks the student to draw or visualize appropriate behaviors. The teacher can even show the student videos that deal with issues and model the appropriate behavior.
- BK intelligence: the teacher asks students to role-play inappropriate and appropriate behaviors, then asks them to find the differences. Students can also be asked to use physical cues in order to deal with stressful situations (taking deep breath, tightening and relaxing muscles).
- M intelligence: the teacher can find music selections that deal with students' faced issues. He/she can also find some music selections that help create the appropriate behavior. The student can also be asked to play his favorite music in his mind whenever he/she feels out of control.
- IR intelligence: the teacher can provide peer group counseling. The role model is responsible to teach and look after a younger child. The hyperactive student can be given other social outlets.
- IA intelligence: the teacher can ask the students to go on a "time-out" in order to gain control. One-to one counseling can also be a solution. The teachers can stress on self-esteem activities and high-interest projects.
- N intelligence: animal stories that teach improper and proper behaviors can be taught to students. The teacher can use animal metaphor when dealing with

difficult behavior. Animal-assisted-therapy can be used for social, emotional, and cognitive functioning.

The following figure (Armstrong, 2009, p.119) illustrates MI strategies for managing individual behaviors:

Intelligence	Aggressive Student	Withdrawn Student	Hyperactive Student
Linguistic	Bibliotherapy on theme of anger management	Taking up debate, oratory, or storytelling	Books on theme of hyperactivity (e.g., *The Boy Who Burned Too Brightly*)
Logical-Mathematical	Dreikurs's logical-consequences system	Interactive computer network, chess club	Quantification of time on task
Spatial	Visualizing ways of managing conflict	Movies on theme of withdrawn child who meets a friend	Video games that help develop focus and control (neurofeedback)
Bodily-Kinesthetic	Role-play aggressive behavior and try out alternatives	Pairing with trusted person for walks, sports, games	Progressive relaxation, yoga, hands-on learning, strenuous exercise
Musical	Songs promoting social skills	Discography encouraging connection with others	Stimulating music ("Musical Ritalin")
Interpersonal	Taking group class in martial arts	Group counseling	Leadership role in cooperative learning group
Intrapersonal	Time out, contracting	One-to-one counseling/ psychotherapy	Focusing exercises
Naturalist	Identifying with an animal that can then learn how to "tame itself"	Introspective book about nature involving friendship (e.g., *The Secret Garden*)	Time in nature

It is worth mentioning that MI theory strategies for managing students' emotional problems or behavioral difficulties are very limited to a small number of simple interventions, and that it cannot replace scientific procedures carried by a professional team. Some students prefer strategies that are related to their poor intelligence, while other students may feel anxious when working on their poor intelligence in front of their classmates. Thus, a teacher has better knowledge about the strategy that works better for

the student's learning. The main factor that makes MI theory efficient for managing individual behaviors is that it offers a variety of options for attending to and recognizing individual needs.

Hammoudi (2010, p.208) provided EFL teachers with suggestions of activities engaging each of the eight intelligences, and questions activating those intelligences:

1- VL intelligence: "storytelling" is one of the popular activities engaging this intelligence. This activity relies on the joy and curiosity of students to learn about the details of the story. Teachers, thus, need to decrease their talking time and let students discover the different details of the story. Implicitly, students will acquire new vocabulary items, linguistic structures, transition, etc. It is worth mentioning that teachers should carefully decide the difficulty level of a story on order not to kill the joy of learning. Other than "storytelling", teachers can teach their students about idioms. For example, they provide students with a list of idioms and list of their explanations. Students are asked to match the idioms with explanations.

   Examples of questions that activate VL intelligence:

- Describe any progress in education and literacy over the past ten years!
- Describe the news media in Algeria. What TV, radio, magazines, and films are popular?
- Interview a Secondary-School Algerian teacher. Ask him/her to describe the Algerian educational concerns.
- Discuss the community's involvement in education and compare or contrast parental involvement in your own community.

- Using photography or photographs from magazines, create a scrapbook; add one or more stories for each illustration.

2- LM intelligence: first, teachers can use guided discovery activities to make students deduce the rules. Second, ordering activities are always known by its including logical reasoning skills.

Examples of questions activating LM intelligence:

- What is the average salary of secondary school teachers in Algeria? Graph some comparative wages.
- Using graphs or posters, indicate the industries that have helped Algeria most?
- Where are the greatest concentrations of people in Algeria?
- How has demography influenced prosperity and poverty in Algerian community?
- Using only numbers, create a poster showing how you would describe Algeria.

3- VS intelligence: for engaging this intelligence, teacher can use activities like: first, “Lifelines” serves to practice the simple past in a funny way. Students are invited to draw a line and mark some events of their lives. Students, then, can exchange their lifelines to know about each other. Students may later use their lifelines to write autobiographies.

Examples of questions activating VS intelligence:

- Describe two well-known architects in Algeria.
- Where are Algeria’s art institutions? What do they offer artists?
- Represent some of the architectural designs popular in Algeria.
- Using any art form, describe one day in the life of an Algerian teen from a wealthy family.
- How has Algerian art influenced art in other parts of the world?

4- BK intelligence: Role-Play is the most suitable activity that caters for BK intelligences. It incorporates almost all of the intelligences since the student needs to expose his/her linguistic abilities, body language, logical thinking, musical skills, and so on. First, the teacher asks his/her students to stand up; he/she tells students that he/she will read a list of adjectives. Whenever one student hears an adjective that describes his/her felling, he/she sits down. The last standing one is required to produce an adjective of his/her own. Second, the teacher asks students to organize themselves according to the number family members. The largest family on the left and the smallest one on the right. Students, then, are required to sit and form pairs in order to start the next activity. Three, students are asked to organize themselves according to the size of their shoes. The largest on the right and the smallest on the left. Then, each student sits down with the one next to him/her to form a pair in order to start the next activity.

Examples of questions activating BK intelligence:

- What are the famous carnivals in Algeria? What challenges people to support them?
- What are two well-known athletes in Algeria?
- Why has football become famous in Algeria? Describe the game as they play it.
- Can you describe the art of horse racing in Algeria as it is done for fun and competition?
- Describe or represent the sport you most enjoy as it would be played in Algeria.

5- IR intelligence: first, pair work is believed to be the most used IR activity among teacher. However, teachers are warned not to use two consecutive pair work activities in order to avoid boredom. Group work, is also commonly used to engage IR intelligence. But, teachers need to carefully choose the group members, define clearly the task, avoid the space time, have a good control over students.

Examples of questions activating IR intelligence:

- Using Gardner's eight ways of knowing, represent an Algerian family and describe its class privileges and disadvantages.
- Role-play several key Algerian historical people, put on (as if) on radio talk show and discuss how family life relates to politics.
- What do Algerians wear? What do they care about? What do they want for their future?
- How do Algerians relate to women? How do Algerian women relate to men?
- In what ways have Algerian people changed over the past ten years?

6- IA intelligence: among the activities that engage this intelligence: first, creative writing; second, personal reflections, journals, annotations.

Examples of questions activating IA intelligence:

- Write your personal reflections on one Algerian leader.
- What would you like to say to Algeria's current leaders?
- Create a diary that illustrates one week in an Algerian secondary school.
- What would you experience if you were to spend two weeks in a foreign country?
- What would you like to say to Algerian teens about life, education, values, art and music?

7- M intelligence: teachers are invited to make the incorporation of M intelligence as a main part of their program. Students may be given the chance to choose the songs they would like to cover.

Examples of questions activating M intelligence:

- Write a song in the style of the most popular music teens enjoy in Algeria.
- What Algerian classical musicians are well known?
- How is music taught in Algerian secondary schools?
- Identify Algerian music in a film and show its influence on the story.
- Write a song to describe a typical day in Algeria for secondary school student.

8- N intelligence: to incorporate this intelligence, a teacher can focus on activities like: noticing relationships, categorizing, classifying. Instructions may be like: "Separate the sentences into two stories. There are seven parts in one and eight in the other. Label each part "a" or "b" as in the examples".

Examples of questions activating N intelligence:

- From the perspective of a camel, reveal why Algerian people would benefit from your position as a symbol that represents strength, success, and patience.
- Illustrate the problems in Algeria that threaten the camel's existence.
- How would the camel improve the Algerian lifestyles so that humans and nature could both benefit and prosper?
- How is the camel a symbol of patience?
- Relate a myth, a story or a play in which the camel plays a central role.

It is worth mentioning that the questions vary according to the objective of the activity. Thus, we may include other countries, instead of Algeria. The questions consequently will be different. In addition to that, Weber (2005, p.84) suggested potential group or individual expressions that agree with MI theory principles:

1- VL intelligence:

- Write a letter to your newspaper editor suggesting a solution to one current natural resources management problem in your community.
- Interview a well-known conservation expert on mock radio program.
- Write a poem, play or essay or produce a brochure to show some aspects of resource management.

2- LM intelligence:

- Report statistics on the resource management programs in your community; show how the statistics can be interpreted.
- Prepare a cost analysis statement of a good resource management educational program for the public.
- Present a statistical report that would encourage more interest in conversation. How can big business help?

3- VS intelligence:

- Draw a blue print for a center to educate the public on source management.
- Create posters for teaching and expressing key issues.
- Present a slide show or create a photo albums to show problems and solutions.

4- BK intelligence:

- Videotape the neighborhood resources and use your tape to create a classroom discussion. You might include scenes from family activities or from created role-plays.
- Organize a silent play to express your ideas about natural resources and their future management in your community.

5- IR intelligence:

- As a radio talk show host, interview four experts on resource management and get their opinions about best solutions.
- Interview members of your class for their ideas about the problems and solutions.
- Prepare a debate with others in your group and present this debate to the class.

6- IA intelligence:

- Write an essay for a local magazine about who owns the problems and what should be done to manage the resources.
- Pretend you are a logger, am anti-logger, a green peace leader, and a fisher. Keep a diary as each person for one week
- Observe your school resource management and chart your observations. What is your opinion of the school management? What improvement do you suggest?

7- M intelligence:

- Prepare a musical play for the class involving some aspects of resource management. Express your story, mood and setting through carefully selected/created music.
- Write a song that expresses your idea about problems and solutions.
- Choose background music that reflects the problem; then present music that reflects an ideal solution.

8- N intelligence:

- Write about problems and possibilities to avoid them in natural disaster
- Interview a naturalist about problems and solutions.
- Create a naturals museum or display to organize and exhibit your findings

According to Weber (2005), the idea behind this strategy is to “set the students to reflect on impressions, create new understanding, and be aware of the ideas of others”. Thanks to this strategy, new ideas will appear through the multi-perspective consideration of issues. More than that, the main benefit observed is to apply knowledge to new situations and challenges in the community.

Conclusion

This chapter elaborated the pedagogical incorporations that EFL teachers may use in their classes. In addition to that, the researcher designed some activities in a way that they incorporate different intelligences. The topics of the activities were chosen according to the units of the textbook under study for the reader can compare between the activities existing in the textbook units and the ones designed by the researcher. This chapter included also a comprehensive review on different researchers’ suggestions about issues like: MI theory and classroom management, activities engaging MI, questions activating MI, examples of instructions accorded to MI theory and necessitate group/individual work.

It is of great importance to remind the reader at the end of this chapter that the goal behind investigating MI theory incorporations in EFL classes was not to design a ready-made material for teachers; rather it was to incite teachers to believe in the power of electing suitable activities according to the specificities of the group they are teaching. Believing in MI theory means to free teachers’ minds from constraints like: exams, school traditions, textbook content, etc. More important than all these constraints, student’s learning and the value it adds to the society where he/she lives.

General Conclusion

According to recent studies, present educational practices and conception of the instructional process should be reconsidered in order to best fit the brain processing. Studies have also proven that individualistic learning serves better learners' potentials. On the contrary, "one size fits all" practices may help some learners, but the majority of others will be marginalized. Accordingly, attaining a good learning is only achieved through including various means of instruction. MI theory adopts a model that accounts for enhancing different human learning abilities. Algerian educational system has witnessed several improvements during the last decades. Speaking about the Algerian context, teaching EFL adopted the competency-based approach as the official theory of instruction. It is believed that incorporating MI theory in Algerian curricula will work for help improving learning achievement.

The principles of MI theory and the rationale behind considering students' learning styles share several common points. While MI theory focuses on human intelligences, learning styles work on learners' differences. For both, individual differences are targeted. Though terms incorporated are different, but the two poles consider individualized learning as the best way through which we attain good learning. It said that knowledge is accumulative; both of the poles built their principles on different types of literature. MI theory is a result of long process of brain-based research, however learning styles are based on psychology findings. Despite the different origins, they both work on enhancing learning efficiency. Rather than blindly following one way, teachers in the classroom are invited to select among instructional practices those appealing students' differences, classroom conditions, available materials, time constraints, content exigencies, etc.

When relating MI theory to language teaching approaches, it is observed that MI theory share some principles with different language teaching approaches. For instance, Grammar Translation Method engages VL intelligence; Suggestopedia incorporate VL, VS, and M intelligences. Though these theories are considered old fashioned and not existing anymore in language teaching industry, they still have some common points with MI theory. This latter built on the shoulders of previous approaches and shaped its own perception of learning. MI theory encourages the multi-faceted perception of learning through a model that takes into account almost all individual differences among learners in the classroom. In addition to the aforementioned principles, MI theory stresses the importance of assessing learning through different methods. MI theory correlates between learning and assessment, and asserts that as long as students learn differently, they should different preferences to perform their achievements.

Based on the findings of this study, teachers' classroom practices agreed, to a great extent, with MI theory principles. The extra materials added to textbook activities revealed an important diversity in terms of intelligences engaged. Teachers devoted great efforts to make of the learning process a joyful journey. Yet, the support provided to them is still not satisfying. As a key feature of the learning process, teachers should be more supported via classroom materials, supportive working environment, better classroom conditions, and a better social status. A close look at the challenges facing nowadays teachers reveals that all circumstances work against their self-satisfaction. For instance, overcrowded classes, overloaded syllabuses, irresponsible parents, wavering school policies, low wages, and so on; all these challenges are hinder teachers from totally focusing on teaching as a vocation. On the contrary, any teacher fighting against these conditions will gradually give up believing in teaching as a noble mission, according to Maslow pyramid of needs.

Among the aspects that need to be stressed in any educational system, teachers training should be a regular process for, like, every five years. The field of TEFL is quickly evolving around the world; teaching strategies, materials, textbooks, methods, grow astonishingly fast. Since English is an international language, its instruction should up to latest teaching methods, and the materials, as a result, should also be up to date. A careful look to some Facebook groups where Algerian EFL teachers exchange ideas and perceptions about the progression of sessions, it can be easily noticed that groups are wide data bases for exchanging ready-made lesson plans. As the findings reveal, teachers showed a remarkable eager to learn more and to improve their potentials. This eager should be invested on and satisfied by offering teachers regular opportunities for training on latest theories about classroom management, EFL teaching, materials exploitation, etc.

Related to the point of Algerian EFL teachers Facebook groups, we can say that collaboration between teachers is a very helpful tool to facilitate a lot of tasks, especially for novice teachers. Collaboration between teachers can realized through different means. For instance, within the same institution EFL teachers can attend sessions for each other in order to grasp ideas about issues like: classroom management, time management, behaviors management, teaching methods, etc. More than that, it is believed that the presence of another within the same room decreases students' agitation to disruptive behaviors. This kind of cooperation sets among teachers a sense of integration and collaboration, decreases stress among novice teachers, and simplifies many, perceived-complicated, tasks. Cooperation can also exist among teachers from different disciplines. Actually, MI theory supports this kind of collaboration via Team-teaching. In addition to that, this strategy allows teachers to exchange information about students' achievement, behaviors in classroom, students' social status, etc. It is highly important for any teacher to have an almost complete picture about his/her students' detailed information.

The status of Algerian EFL textbook should be reconsidered. The textbooks that secondary school teachers are using were published on 2005. According to the findings of this study, a remarkable gap exists between teachers' classroom practices and the content of the textbook. Algerian EFL teachers perceived the content of the textbook as out of date. As declared a principal inspector in the ministry of education, secondary schools textbook designers is composed only of university teachers and one secondary school inspector. She openly denied the inclusion of any psychologists, sociologists, or secondary school EFL teachers. The non-existence of the previous categories explains, to some extent, the poor content, and unrealistic content of the textbook under study. The researcher believes that international experts in textbook design should also be included within the operation. The researcher does not perceive any point at including university teachers in the process of writing secondary school textbooks.

It should be said that Algerian schools do not fit for the application of MI theory. The adoption of MI theory as a learning philosophy requires the availability of all school infrastructures. Amphitheaters, libraries, laboratories, stadiums, and large and well equipped rooms are all needed for an efficient elaboration of MI theory principles. These infrastructures do not serve only for the incorporation of MI theory, but they are also indispensable for bringing life to school. In addition to the essential infrastructures, organizing extra-curricular activities, sport events, field trips, plays, students' exhibitions contribute to the make of schools a vivid institution where students compete/collaborate to improve their talents. The fulfillment of the previous suggestions will amazingly contribute to decreasing the phenomenon of school-drop in Algerian society, since it is offering students various chances self-prove. Socially, it contributes, to some extent, to decrease social ills through occupying students' time in doing good things.

The reconsideration of Algerian school status leads us to mention the role of parents. It is agreed among all educational theories that the role of parents is essential for a successful learning progression. It is not a secret reveal when saying that parents are, generally, perceived by teachers and school principals as irresponsible and expecting them to do the task for them. MI theory, like other educational theories, requires the high involvement of parents in learning. Thanks to the simplified observation checklist, parents can observe/assess their children. Students' involvement in school events, realization of projects, presenting demonstrations need assistance of parents (mental, physical, and financial). On another hand, parents' attendance of different school events paves the way for meeting teachers and receiving feedback about their children's performance and the specific help needed, and even some advices about their children's personality. In a nutshell, MI theory proposes a core of operations that all work for the benefit of learners.

One of the main parts of the current study was Assessment and MI theory. Based on a comparison between classroom activities and exam activities, it was concluded that exam activities differ, to a great, extent from classroom activities. According to the principal inspector in MoNE, exams should follow the official scheme, which is used in national exam (BAC). She added that teachers are supposed to prepare students for the final national exams, that is why they tend more to incite students to write. Teachers, themselves, are told to prepare their students for national exams. Let us imagine the heavy psychological burden of telling a student that he/she is being prepared to pass an exam after three years. On another hand, official exams are scored on forty (40/40); and the scores given to other assessments, namely: test (20/20), continuous evaluation (20/20). Taking into account the previous detail, we can conclude that official exams are given more importance though they do not reflect classroom activities. in addition to that, a lot

of EFL teachers consider other assessments as a way for compensating exam low achievers.

The researcher suggests that less score (20/20) should be given to official exams, and more importance should be devoted for ongoing assessment, project realizations, and speaking. The focus on these aspects pushes students to work during the whole year, and encourages them to improve their life skills rather than focusing on merely academic stuffs. As for national exams, a careful analysis of its content reveals that there is only one scheme; the same types questions are always asked; the difference exists only in the texts included. Thus, preparing for this type of exam is, according to the researcher, easier than it is instilled in our students' minds. Worse than that, these exams do not reflect students' actual competencies. It should be said that the effect of these exams is harmful for a great proportion of students.

Students' future professional careers rely a lot on the ways how they were assessed during their under-graduation educational careers. To explain, MI theory offers teachers several solutions to assess student's learning, and enables students to conceive an informative and clear idea about their real potentials and personal traits. Thus, students will clearly know what jobs that best suit them in the near future. More than that, history proved that many sport champions, singers, actors, and scientists have been presented to the world via school events. Even those not included can be supported by parents, or funding institutions in order to produce something useful to the world.

Speaking about the situation in the Algerian context, we should admit that there is still a lot to do in order to reach a position where schools, teachers, parents, stake holders, policy makers all work for the benefit of the learner. The researcher might be accused by being pessimistic and subjective, but it is said that "the first step to repentance is to

confess our sins". Regarding all the challenging issues previously illustrated, one can clearly say that a serious (really serious) political will is needed to take our educational system to a better deserved position. The change should start by deciding a clear long-term vision about the purpose of education, and its effect on the sustainable development. Questions like: "what kind of learners do we need?", "how can we relate education to economic challenges?", "what should we teach our students?" need to be asked. Change should include all educational components, namely: schools, teachers, parents, students, media discourse, funding institutions in order to guarantee a balanced process of improvement. One of the main things to be reconsidered is the teacher's status. As an example, we cannot expect much from a teacher with a low wage, and tiring long travels to work places. The incident of Bordj Baji Mokhtar highly appears in this example, unfortunately.

It is a fact that the inclusion of an MI strategy is efficient and fruitful; yet, it takes too much time and effort. All educational groups are invited to continue working as groups, individuals, on finding the best and simplest ways of applying this strategy. The main goal is to help our students, ourselves, our schools, and our country, grow. Yes, it is going to be a hectic journey but the benefits will be limitless, as it is said "after rain, the good weather".

Bibliography

Al-Omari, T. A. (2010). A Content Analysis of Action Pack Series in Light of the Multiple Intelligences Theory and Teachers' Existing Knowledge and Perceptions about it: Guidelines for English Language Teaching in Jordan. Unpublished doctoral thesis, Yarmouk University, Irbid, Jordan.

Armstrong, T. (2000). *Multiple Intelligences in the Classroom.(2nd ed.)*. Alexandria: Association for Supervision and Curriculum Development, Va: ASCD.

Armstrong, T. (2003). *The multiple intelligences of reading and writing : making the words come alive*. Alexandria, Va: ASCD.

Armstrong, T. (2009). Multiple Intelligences. Retrieved on October 18, 2020, from http://www.thom asarmstrong.com/multiple_intelligences.php

Baddeley, A., & Hitch, G. J. (1974). Working memory. *Psychology of Learning and Motivation*, 8, 47-90.

Berman, M. (2005). *A Multiple Intelligences Road to ELT Classroom*.,Trowbridge: Cromwell press, UK.

Bloom, B. (1956). *Taxonomy of educational objectives: The classification of educational goals*. New York, NY: Longmans, Green.

Botelho, M. (2003). Multiple Intelligences Theory in English Language Teaching: An Analysis of current Textbooks, Materials and Teachers' perceptions. M.A. Thesis. Ohio State University, USA.

Boulmaiz, D., (2017), The Place Of The Multiple Intelligences Theory In The Algerian EFL Textbook : An Evaluation Of 1st Year Secondary School Textbook "At The Crossroads." *مجلة العلوم الإنسانية*, Algeria, 1(8).

Boulmaiz, J. (2020). Combining the Competency-Based Approach and the Multiple Intelligences Theory for Better Achievements: The Case of First Year LMD Students at the English Department- University of Oum El Bouaghi. Unpublished Doctorat

thesis, Faculty of letters and foreign languages, University of Oum El Bouaghi, Algeria.

Brody, N. (2000). History of theories and measurements of intelligence. In R. J. Sternberg (Ed.), *Handbook of intelligence* (pp. 16-33). New York, NY: Cambridge University Press.

Brown, D. (1994). *Principles of Language Learning and Teaching.* (3rd ed.). New Jersey, USA.

Brown, D. (2001). *Teaching by Principles, an Interactive Approach to Language Pedagogy. (2nd ed.).* New York: Addison Wesley Longman, USA.

Burns, R. (1972). Behavioral objectives for competency-based education. In R. Burns & J. L. Klingstedt (Eds.), *Competency-based education: An introduction* (pp. 42-51). Englewood Cliffs, N.J: Educational Technology Publications, Inc.

Campbell. L, Campbell. B, & Dickinson, D. (2004). *Teaching and learning through multiple intelligences (3rd ed.)*. MA: Pearson/Allyn and Bacon. Boston, USA.

Chan, D. (2001). Assessing Giftedness of Chinese Secondary Students in Hong Kong: a Multiple Intelligences Perspective. *High Ability Studies*, 12(2), pp. 215-234.

Chao, T. (2004). Teaching and learning EFL through multiple intelligences: Voices from a university classroom. Unpublished doctoral thesis, Monash University, Melbourne, Australia.

Chen, J. Q. (2002). Intelligence : Multiple intelligences. In J. W. Guthrie (Ed.), *Encyclopedia of education (2nd ed)* (pp. 1198-1201). USA: McMillan Reference.

Cohen, L., Manion, L., & Morrison, K. (2005). *Research methods in education (5th ed.)*. London: Routledge Falmer, Taylor & Francis Group, UK.

Community for Youth and Adults with Learning Disabilities (LD) Pride (2008). Understanding your Learning Styles. Retrieved on January 12, 2021, from: http://www.idpride.net/Understanding-Learning Styles.pdf Prentice Hall Regents, USA.

Crawford, J. (2002). The Role of materials in the language classroom: Finding the balance. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice* (pp. 80-91). Cambridge: Cambridge University Press.

Dastgoshadeh, A. & Jalilzadeh, K. (2011), Multiple Intelligences-based Curriculum for the Third Millennium. International Conference on Education, Research and Innovation, Singapore 2011, Singapore.

Davidson, J. E., & Downing, C. L. (2000). Contemporary models of intelligence. In R. J. Sternberg (Ed.), *Handbook of intelligence* (pp. 34-52). New York, NY: Cambridge University Press.

Ellis, A. K. (2004). *Exemplars of curriculum theory*. New York, NY: Routledge/ Taylor & Francis Group, USA.

Finley, S. (1999). The Relationship Between Learning Styles/ Multiple Intelligences and Academic Achievement of High School Students. *High School Journal*. Retrieved on October 03, 2020, from http://www.highbeam.com/doc/1G1-59210397.html

Fogarty, R., 2009. *How to integrate the curricula. 3rd ed*. Thousand Oaks, Calif.: Corwin.

Gardner H. (2000). Can technology exploit our many ways of knowing? In D.T. Gordon (Ed.), *The digital classroom: How technology is changing the way we teach and learn* (pp. 32–35). Cambridge: President and Fellows of Harvard College, USA.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences (2nd ed.)*. New York: Basic Books.

Gardner, H. (1999). *Multiple intelligences: New horizons*. New York, NY: Basic Books.

Gardner, H. (1999a). *Intelligence Reframed: Multiple Intelligences for the 21st Century*. New York: Basic Books.

Gardner, H. (2003, April). Multiple intelligences after twenty years. Paper presented at the American Educational Research Association, Chicago, Illinois.

Gardner, H. (2004). *Frames of Mind: The Theory of Multiple Intelligences (10th ed.)*. New York: Basic Books.

Gardner, H. (2006). *Multiple Intelligences*. New Horizons (1st ed.). New York: Basic Books.

Gardner, H. Kornhaber, M. and Moran, M. (2006). Orchestrating Multiple Intelligences. Retrieved on November 04, 2020, from: http://prodev.dadeschools.net/MINT/Orchestrating%20Multiple% 20Intellingences.pdf

Garinger, D. (2002). Textbook Selection for the ESL Classroom. *TEFL Web Journal.* Retrieved on May 25, 2021 from: http://www.cal.org/resources/digest/0210garinger.html

Giles, E. Pitre, S. Womack, S. (2009). Multiple Intelligences and Learning Styles. Department of Educational Psychology and Instructional Technology, University of Georgia. Retrieved on October 20, 2020, from http://projects.coe.uga.edu/epltt/index.php?title=Multi ple_Intelligences_and_Learning_Styles

Gilman, L. (2001). Human Intelligence, the Theory of Multiple Intelligences. Retrieved Retrieved on October 02, 2020, from: http://www.indiana.edu/~intell/mitheory.shtml

Gilman, L. (2007). The Theory of Multiple Intelligences. Retrieved on October 20, 2020, fromhttp://www.indiana.edu/~intell/mitheory.shtml #criticism

Gredler, M. E. (1999). *Classroom assessment and learning*. New York: Longman.

Guignon, A. (2004). Multiple Intelligences: A Theory for Everyone. *Education World*. Retrieved October 16, 2020, from http://www.education-world.com/a_curr/curr054.shtml

Guild, P. B. (1997). Where Do Learning Theories overlap? *Educational Leadership,* 55(1), 30-31.

Guilford, J. P. (1960), Basic conceptual problems in the psychology of thinking. *Annals of the New York Academy of Sciences*, 91, 6–21. doi: 10.1111/j.1749-6632.1961.tb50913.x

Hammoudi, A. (2010). Multiple Intelligences and Teaching English as a Foreign Language: The Case of Second -Year Pupils at Malika Gaid Secondary School Sétif. Unpublished doctoral thesis, Ferhat Abbas University, Setif, Algeria.

Harmer, J. (2010). *How to teach English: An introduction to the practice of English language teaching (2nd ed.)*. Harlow: Pearson Education Limited.

Hoerr, T. R. (2000). *Becoming a multiple intelligences school*. Alexandria, VA: Association for Supervision and Curriculum Development.

Hunt, E. (2011). *Human intelligence*. New York, NY: Cambridge University Press.

Hunt, E. (2011). Where are we? Where are we going? Reflections on the current and future state of research on intelligence. In R. J. Sternberg & S. B. Kaufman (Eds.), *The Cambridge handbook of intelligence* (pp. 863-885). Cambridge: Cambridge University Press.

Jallad, N. (2006). The Effect of Multiple Intelligences Strategies on EFL Ninth Graders' Achievement in Reading Comprehension. Unpublished M.A. Thesis, Yarmouk University, Irbid, Jordan.

Johnstone, B., Wilhelm, K.L. (1997). The Construct Validity of the Hooper Visual Organization Test. *Assessment*,4(3), pp. 243-248.

Jordan, A., Carlile, O., and Stack, A. (2008). *Approaches to learning: A guide for teachers*. Berkshire, UK: Open University Press.

Kallenbach, S. and Viens, J. (2002). Open to Interpretation: Multiple Intelligences Theory in Adult Literacy Education. Findings from the Adult Multiple Intelligences Study. National Center for the Study of Adult Learning and Literacy (NCSALL). Retrieved on October 06, 2020, from: www.ncsall.net/fileadmin/re-sources/research/report21.pdf

Konold. T. R., & Canivez, G. L. (2009). Aptitude tests. In E.M. Anderman & L.H. Anderman (Eds.), *Psychology of classroom learning: An encyclopedia* (pp. 47-51). New York, NY: McMillan Reference USA, a part of Gale, Cengage Learning.

Kyllonen. P.C., & Gitomer. D. H. (2002). Individual differences: Abilities and aptitudes. In J. W. Guthrie (Ed.), *Encyclopedia of education (2nd ed)* (pp. 1112-1118). USA: McMillan Reference.

Lawson, J. R. (2001). Brain-Based Learning. Retrieved on October 23, 2020, from http://coe.sdsu.edu/eet/Articles/brainbased/index.htm

Lazear, D. (1993). *Seven Pathways of Learning: teaching students and parents about multiple intelligences.* Tucson, AZ: Zephyr Press.

Leahy, R. (2009). *Authentic educating*. Lanham, MD: University Press of America, Inc.

Lei, S. (n.d.). Applying Multiple Intelligences Theory in Undergraduate EFL Classroom. Retrieved on May 7, 2021, from: http://www.celea. org.cn/pastversion/lw/pdf/SongLei.pdf

Mackintosh, N. J. (2011). History of theories and measurement of intelligence. In R. J. Sternberg & S. B. Kaufman (Eds.), *The Cambridge handbook of intelligence* (pp. 03-19). Cambridge: Cambridge University Press.

Mason.E.J., & Wilox.K. (2009). Intelligence: An overview. In E.M. Anderman & L.H. Anderman (Eds.), *Psychology of classroom learning: An encyclopedia* (pp. 497-505). New York, NY: McMillan Reference USA, a part of Gale, Cengage Learning.

McKenzie, W. (1999). The multiple intelligences survey. Surfaquarium Consulting. Retrieved from http://surfaquarium.com/MI/inventory.pdf

McKenzie, W. (2005). *Multiple intelligences and instructional technology: A manual for every mind (2nd ed)*. Washington, D.C: International Society for Technology in Education.

McMahon, S., Parks, M. and Rose, D. (2004). Multiple Intelligences and Reading Achievement: An Examination of the Teele Inventory of Multiple Intelligences. *The Journal of Experimental Education*; 73(1), pp. 41-52.

McNamara T. (2001). Rethinking alternative assessment. *Language Testing*, 18(4), pp. 329-332.

National Center for the Study of Adult Learning and Literacy (NCSALL) (2006). Adult Multiple Intelligences Theory. Harvard University Graduate School Education. Cambridge , USA.

Nettelbeck, T. (2011). Basic processes of intelligence. In R. J. Sternberg & S. B. Kaufman (Eds.), *The Cambridge handbook of intelligence* (pp. 371-393). Cambridge: Cambridge University Press.

Nicholas, A. (2000). The Theory of Multiple Intelligences: A Case of Missing Cognitive Matter. *Australian Journal of Education*. Retrieved on November 2, 2020, from: http://www.highbeam.com /doc/1G1-74336474.html

Norvig, P. and Russell, S. (2009). Artificial Intelligence: A Modern Approach. Prentice Hall. Retrieved January 10, 2021, from: oosd-assignment-1.googlecode.com/files/Intelligence.doc

Nunan, D. (1991). *Language teaching methodology: A textbook for teachers*. New York, NY: Prentice Hall.

Nunan, D. (2013). *Learner-centered English language education: The selected works of David Nunan*. New York, NY: Routledge/ Taylor & Francis Group.

O'Shea, M. (2009). *Theory of Multiple Intelligences*. Retrieved October 21, 2020, from: http://www.sip.ie/sip065/mitheory.html

Osters, S. (2003). Writing Measurable Learning Outcomes. Paper presented at the 3rd Annual Texas A&M Assessment Conference, USA. Retrieved from http://www.gavilan.edu/research/spd/Writing-Measurable-Learning-Outcomes.pdf

Palmberg, R. (2002). Catering for Multiple Intelligences in EFL Coursebooks. *Humanising Language Teaching*, 4(1).

Pandey, V. C. (2005). *Intelligence and motivation*. New Delhi, India: Isha Books.

Parida, B.R. (2007). *Improving English teaching: Role of psycho-social factors*. New Delhi: Discovery Publishing House.

Pellegrino, J. W. (2002). Intelligence: Myths, mysteries, and realities. In J. W. Guthrie (Ed.), *Encyclopedia of education (2nd ed)* (pp. 1201-1206). USA: McMillan Reference.

Plucker, J. (2007). Howard Gardner. Retrieved on October 18, 2020, from: http://www.indiana.edu/~intell/gardner.shtml

Prashnig, B. (2005). Learning Styles vs. Multiple Intelligences (MI). Two Concepts for Enhancing Learning and Teaching. Retrieved on November 15, 2020, from: http://www.creativelearningcentre.com/downloads/LS%

Pritchard.A. (2009). *Ways of learning: Learning theories and learning styles in the classroom. (2nd ed).*New York, NY: Routledge, Taylor and Francis Group.

Razmjoo, S. (2008). On the Relationship between Multiple Intelligences and Language Proficiency. *The Reading Matrix*, 8(2).

Richards, J. and Rodgers, T. (2001). *Approaches and Methods in Language Teaching(2nd ed.).* Cambridge: Cambridge University Press.

Richards, J. C. (2006). *Communicative language teaching today*. Cambridge: Cambridge University Press.

Riche, B., Arab, S. A., Ameziane, H., Hami, H., & Louadj, K. (2005). *Getting Through: Secondary education: year two- English (teacher's book). Algeria*. The NationalAuthority for School Publications (O.N.P.S).

Rodgers, T. S. (2003). Methodology in the new millennium. *English Teaching Forum*, 41(4), 2-13.

Schwert, A. (2004). Using the Theory of Multiple Intelligences to Enhance Science Education. M. Ed. Thesis, University of Toledo, Ohio, USA.

Seider, S., & Gardner, H. (2009). Multiple intelligences. In E.M. Anderman & L.H. Anderman (Eds.), *Psychology of classroom learning: An encyclopedia* (pp. 635-638). New York, NY: McMillan Reference USA, a part of Gale, Cengage Learning.

Sheldon, L. E. (1988). Evaluating ELT Textbooks and Materials. *ELT Journal*, 42(4), pp. 237-246.

Siver, H., Strong, R. and Perinin, M. (1997). Integrating Learning Styles and Multiple Intelligences. *Educational Leadership.* P. 22-27.

Smith, M. (2008). Howard Gardner and multiple intelligences, the Encyclopedia of Informal Education. Retrieved on May 03, 2021, from: http://www.infed.org/thinkers/gardner.html

Smith, M. (2008). Howard Gardner, Multiple Intelligences and Education. Retrieved on October 20, 2020, from: http://www.in fed.org/thinkers/gardner.html

Snider, D. P. (2001). Multiple Intelligences Theory and Foreign Language Teaching. Unpublished doctoral thesis, University of Utah, USA.

Stemler, S. (2001). An Overview of Content Analysis. *Practical Assessment, Research and Evaluation*, 7(17).

Sternberg, J. (1982). *Handbook of Human Intelligence*. Volume 2. Press Syndicate of the University of Cambridge. Trumpington Street, Cambridge.

Sternberg, R. J. (1990). *Metaphors of mind: Conceptions of the nature of intelligence*. New York, NY: Cambridge University Press.

Sternberg, R. J. (2009). Sketch of a componential subtheory of human intelligence. In J. C. Kaufman & E. L. Grigorenko (Eds.), *The essential Sternberg : essays on intelligence, psychology, and education* (pp. 03-31). New York, NY: Springer Publishing Company, LLC.

Sternberg, R. J., Grigorenko, E. L., & Kidd, K. K. (2005). Intelligence, race, and genetics. *American Psychologist*, 60(1), 46-59. doi: 10.1037/0003-066X.60.1.46

Tele, S. (2000). *Rainbows of intelligence: Exploring how students learn*. New York, NY: Skyhorse Publishing.

Thompson, H. (2009). Standard Intelligence vs. Multiple Intelligences. Retrieved on May 03, 2021 from: http://hmt.myweb.uga.edu/we bwrite/printable2.htm

Ting-Yu Hsu (2007). An Innovative Measurement: Multiple Intelligences Inventory for English Language Learners. M.A. Thesis, Providence University. Taichung, Taiwan.

Violand-Sanchez, E. (1998). The triune brain and learning: practical insights for the classroom. In J. Reid (Ed.). *Understanding Learning Styles in the Second Language Classroom* (pp. 27-33). Upper Saddle River: Prentice Hall Regents, USA.

Wang, J. (1998). Evaluating an EFL Textbook – A New English Course. Retrieved on December 7, 2020, from www.ling.lancs.ac.uk/groupscrile/docs/crile31wang.pdf

Wechsler, D. (1950). Cognitive, conative, and non-intellective intelligence. *American Psychologist*, 5(3), 78-83. doi: 10.1037/h0063112

Weiss, S. (1999). Interview with Howard Gardner. Retrieved on May 2, 2021, from: www.georgejacobs.net/.../Gardner%20 Interview%20-%20NEA%201999.doc

Yun Dai, D. (2008). Intelligence and intellectual development. In N. J. Salkind. (Ed.), *Encyclopedia of educational psychology* (pp. 536-543). Thousand Oaks, California: SAGE Publications, Inc.

APPENDICES

Appendix01: Aspects of Garner's Intelligences and the Brain Operations Included

Intelligence	Core Components	Symbol Systems	High End-states	Neurological Systems (primary areas)	Developmental Factors	Ways that cultures value	Evolutionoary Origins	Presence in Other Species
Linguistic	Sensitivity to the sounds, structure, meanings, and functions of words and language	Phonetic languages (e.g, English)	Writer, orator (e.g, Virginia Woolf, Martin Luther King Jr.)	Left temporal and frontal lobes (e.g, Broca's/Wernick's areas)	"Explodes" in early childhood remains robust until old age	Oral histories, storytelling literature	Written notations found dating to 30.000 years ago	Apes' ability to name
Logical-Mathematical	Sensitivity to, and capacity to discern, logical or numerical patterns; ability to handle long chains of reasoning	Computer languages (e.g., Basic)	Scientist, mathematician (e.g., Madame Curie, Blaise Pascal)	Left frontal and right parietal lobes	Peaks in adolescence and early adulthood; higher math insights decline after age 40	Scientifi c discoveries, mathematical theories, counting and classifi cation systems	Early number systems and calendars found	Bees calculate distances through their dances
Spatial	Capacity to perceive the visual-spatial world accurately and to perform transformations on one's initial perceptions	Ideographic languages (e.g., Chinese)	Artist, architect (e.g., Frida Kahlo, I. M. Pei)	Posterior regions of right hemisphere	Topological thinking in early childhood gives way to Euclidean paradigm around age 9–10; artistic eye stays robust into old age	Artistic works, navigational systems, architectural designs, inventions	Cave drawings	Territorial instinct of several species
Bodily-Kinesthetic	Ability to control one's body movements and to handle objects skillfully	Sign languages, Braille*	Athlete, dancer, sculptor (e.g., Martha Graham, Auguste Rodin)	Cerebellum, basal ganglia, motor cortex	Varies depending upon component (strength, fl exibility) or domain (gymnastics, baseball, mime)	Crafts, athletic performances, dramatic works, dance forms, sculpture	Evidence of early tool use	Tool use of primates, anteaters, and other species

Musical	Ability to produce and appreciate rhythm, pitch, and timbre; appreciation of the forms of musical expressiveness	Musical notational systems, Morse Code	Composer, performer (e.g., Stevie Wonder, Midori)	Right temporal lobe	Earliest intelligence to develop; prodigies often go through developmental crisis	Musical compositions, performances, recordings	Evidence of musical instruments back to Stone Age	Bird song
Interpersonal	Capacity to discern and respond appropriately to the moods, temperaments, motivations, and desires of other people	Social cues (e.g., gestures and facial expressions)	Counselor, political leader (e.g., Carl Rogers, Nelson Mandela)	Frontal lobes, temporal lobe (especially right hemisphere), limbic system	Attachment/ bonding during first 3 years critical	Political documents, social institutions	Communal living groups required for hunting/ gathering	Maternal bonding observed in primates and other species
Intrapersonal	Access to one's own "feeling" life and the ability to discriminate among one's emotions; knowledge of one's own strengths and weaknesses	Symbols of the self (e.g., in dreams and artwork)	Psychotherapist, religious leader (e.g., Sigmund Freud, the Buddha)	Frontal lobes, parietal lobes, limbic system	Formation of boundary between "self" and "other" during first 3 years critical	Religious systems, psychological theories, rites of passage	Early evidence of religious life	Chimpanzees can locate self in mirror; apes experience fear
Naturalist	Expertise in distinguishing among members of a species; recognizing the existence of other neighboring species; and charting out the relations, formally or informally, among several species	Species classification systems (e.g., Linnaeus), habitat maps	Naturalist, biologist, animal activist (e.g., Charles Darwin, E. O. Wilson, Jane Goodall)	Areas of left parietal lobe important for discriminating "living" from "nonliving" things	Shows up dramatically in some young children; schooling or experience increases formal or informal expertise	Folk taxonomies, herbal lore, hunting rituals, animal spirit mythologies	Early hunting tools reveal understanding of other species	Hunting instinct in innumerable species to discriminate between prey and nonprey

Appendix 02: Summary of Eight Ways of Teaching; source: Armstrong 2009 (pp. 58-59)

Intelligence	Teaching Activities (examples)	Teaching Materials (examples)	Instructional Strategies	Sample Educational Movement (primary intelligence)	Sample Teacher Presentation Skill	Sample Activity to Begin a Lesson
Linguistic	lectures, discussions, word games, storytelling, choral reading, journal writing	books, tape recorders, typewriters, stamp sets, books on tape	read about it, write about it, talk about it, listen to it	Critical Literacy	Teaching through storytelling	long word on the blackboard
Logical-Mathematical	brainteasers, problem solving, science experiments, mental calculation, number games, critical thinking	calculators, math manipulatives, science equipment, math games	quantify it, think critically about it, put it in a logical framework, experiment with it	Critical Thinking	Socratic questioning	posing a logical paradox
Spatial-Visual	Visual presentations, art activities, imagination games, mind-mapping, metaphor, visualization	graphs, maps, video, Lego sets, art materials, optical illusions, cameras, picture library	see it, draw it, visualize it, color it, mind-map it	Integrated Arts Instruction	drawing/ mind-mapping concepts	Unusual picture on the overhead
Bodily-Kinesthetic	hands-on learning, drama, dance, sports that teach, tactile activities, relaxation exercises	building tools, clay, sports equipment, manipulatives, tactile learning resources	build it, act it out, touch it, get a "gut feeling" of it, dance it	Hands-On Learning	using gestures/ dramatic expressions	mysterious artifact passed around the class
Musical	Rhythmic learning, rap ping, using songs that teach	tape recorder, tape collection, musical instruments	sing it, rap it, listen to it	Orff Schulwerk	using voice rhythmically	piece of music played as students come into class
Interpersonal	Cooperative learning, peer tutoring, community involvement, social gatherings, simulations	board games, party supplies, props for role-plays	teach it, collaborate on it, interact with respect to it	Cooperative Learning	Dynamically interacting with students	"Turn to a neighbor and share . . . "
Intrapersonal	individualized instruction, independent study, options in course of study, self esteem building	self-checking materials, journals, materials for projects	connect it to your personal life, make choices with regard to it, reflect on it	Individualized Instruction	bringing feeling into presentation	"Close your eyes and think of a time in your life when . . . "

Naturalist	nature study, ecological awareness, care of animals	plants, animals, naturalists' tools (e.g., binoculars), gardening tools	connect it to living things and natural phenomena	Ecological Studies	linking subject matter to natural phenomena	bring in an interesting plant or animal to spark discussion about topic

Appendix03: Inter-rater Reliability of Textbook Content Analysis

		Inter-rater %		
Unit	**Intelligence**	**R with P1**	**R with P2**	**P1 with P2**
	Verbal/Linguistic	100.0%	100.0%	100.0%
	Logical/Mathematical	95.6	94.4%	96.6%
	Visual/Spatial	96%	98.0%	98.2%
	Bodily/Kinesthetic	98.8%	99.2%	98.4%
Unit 01	Musical	100.0%	100.0%	100.0%
	Interpersonal	99.0%	98.8%	97.4%
	Intrapersonal	86.3%	84.2%	86.6%
	Natural	100.0%	100.0%	100.0%
	Total	**96.9%**	**96.8%**	**97.15%**
	Verbal/Linguistic	100.0%	100.0%	100.0%
	Logical/Mathematical	96.0%	96.2%	95.4%
	Visual/Spatial	94.3%	94.6%	94.4%
	Bodily/Kinesthetic	98.4%	96.2%	94.3%
Unit 02	Musical	100.0%	100.0%	100.0%
	Interpersonal	96.5%	96.2%	96.3%
	Intrapersonal	87.1%	86.3%	85.4%
	Natural	100.0%	100.0%	100.0%
	Total	**96.5%**	**96.1%**	**95.7%**

Appendix04: Inter-rater Reliability of Official Exams Content Analysis

	Inter-rater %		
Intelligence	**R with P1**	**R with P2**	**P1 with P2**
Verbal/Linguistic	100.0%	100.0%	100.0%
Logical/Mathematical	100.0%	100.0%%	100.0%%
Visual/Spatial	96.8%	98.2%	96.2%
Bodily/Kinesthetic	100.0%	100.0%	100.0%
Musical	100.0%	100.0%	100.0%
Interpersonal	98.6%	96.8%	94.4%
Intrapersonal	96.4%	97.0%	96.6%
Natural	100.0%	100.0%	100.0%
Total	**98.9%**	**99.0%**	**98.4%**

Appendix 05: Checklist for assessing VL intelligence through demonstrations

CHECK LIST

Student Name _____ Date _____ Event _____

	Strong Demonstration	Good Demonstration	Not yet
-Strong voice projection			
-Clear eye contact with Audience			
-Facial gestures fit feeling of text			
-Appropriate gestures			
-Multiple inflections			

Appendix 06: checklist for assessing students' VL intelligence through observation

PRIMARY EXAMPLES

What a good idea!

Thank you for sharing that with me

I like that idea

What do you think?

Why do you think that?

Why do you think we should do it that way?

MIDDLE GRADE EXAMPLES

Tell me more about ……

That's a great idea because……

Can you give some more detail?

How can we work on this together?

SECONDARY EXAMPLES

Explain how you see the difference between…..

What do you think would happen if……

This seems to be similar to ……

Appendix 07: Interview for assessing students' VL intelligence

PRIMARY EXAMPLES

James, what kind of stories do you like reading?

What is your goal as a reader?

What kinds of things do you like to write about?

What would be a fun writing experience for you?

MIDDLE GRADE EXAMPLES

Rebecca, tell me about your reading habits?

What kind of letter writer are you? Explain.

What fictional character would you like to be and why?

What reading goals have you set for yourself this year?

SECONDARY EXAMPLES

Steve, tell me about your reading habits.

What kind of books do you read for pleasure?

What kind of an essay writer are you?

What reading and writing goals have you set for yourself this year?

Appendix 08: checklist for assessing students' LM intelligence through demonstrations

Student Name:_____ Class:_____

Date:_____

___explained purpose of demonstration

___explained steps in demonstration

___made accurate calculations

___showed each step

___explained reasons for each step

___explained difficulties

Appendix 09: checklist for assessing IR intelligence through observation

PRIMARY EXAMPLES

- Listen to partners
- Stays with the group
- Looks at the speaker
- Is sensitive to others' feelings

MIDDLE GRADE EXAMPLES

- Uses quiet voice
- Does not interrupt others
- Helps others
- Performs the role assigned
- Listen to all ideas
- Looks for more that one answer
- Encourages others

SECONDARY EXAMPLES

- Control voice level
- Respect others' opinions or ideas
- Help the group stay on tasks
- Is a responsible group member/Helps explore different views .

Appendix 10: Checklist for assessing students' M intelligence

OBSERVATION CHECK LISTS

Attitudes and Feelings (teacher or peer)	Attitudes and feelings (self)
1. Participates in musical/ rhythmic activities eagerly	1. I like it when we sing.
2. Enjoys and responds to the beat	2. when my group performs to the beat, I feel good about participating.
3.Willing to try musical/ rhythmic experiences	3.Background music being played during independent work time helps me concentrate
4.Likes music time	4.I use the (title) song to help me remember the facts.

DEVELOPMENTAL CHECK LIST

- Uses music or dance as a way to recall information
- Solves problems using the musical/rhythmic intelligence
- Plays an instrument
- Moves a body part (e.g., taps toes) to a beat
- Identifies sounds
- Responds to sound and beat
- Comprehends what is read during independent reading time with background music being played

Appendix 11: Observation checklist for assessing students' BK intelligence

Students performing Romeo and Juliet or "Haiziya and her lover"

_____ Historically accurate costumes_____ Feeling tone in speaking role

_____ Clear articulation _____ Gestures fit the words

_____Other .....

Appendix 12: Walter McKenzie's MI Survey

Complete each section by placing a "1" next to each statement you feel accurately describes you. If you do not identify with a statement, leave the space provided blank. Then total the column in each section.

Section 1

_____ I enjoy categorizing things by common traits

_____ Ecological issues are important to me

_____ Hiking and camping are enjoyable activities

_____ I enjoy working on a garden

_____ I believe preserving our National Parks is important

_____ Putting things in hierarchies makes sense to me

_____ Animals are important in my life

_____ My home has a recycling system in place

_____ I enjoy studying biology, botany and/or zoology

_____ I spend a great deal of time outdoors

_____ TOTAL for Section 1

Section 2

_____ I easily pick up on patterns

_____ I focus in on noise and sounds

_____ Moving to a beat is easy for me

_____ I've always been interested in playing an instrument

_____ The cadence of poetry intrigues me

_____ I remember things by putting them in a rhyme

_____ Concentration is difficult while listening to a radio or television

_____ I enjoy many kinds of music

_____ Musicals are more interesting than dramatic plays

_____ Remembering song lyrics is easy for me

_____ TOTAL for Section 2

Section 3

_____ I keep my things neat and orderly

_____ Step-by-step directions are a big help

_____ Solving problems comes easily to me

_____ I get easily frustrated with disorganized people

_____ I can complete calculations quickly in my head

_____ Puzzles requiring reasoning are fun

_____ I can't begin an assignment until all my questions are answered

_____ Structure helps me be successful

_____ I find working on a computer spreadsheet or database rewarding

_____ Things have to make sense to me or I am dissatisfied

_____ TOTAL for Section 3

Section 4

_____ It is important to see my role in the "big picture" of things

_____ I enjoy discussing questions about life

_____ Religion is important to me

_____ I enjoy viewing art masterpieces

_____ Relaxation and meditation exercises are rewarding

_____ I like visiting breathtaking sites in nature

_____ I enjoy reading ancient and modern philosophers

_____ Learning new things is easier when I understand their value

_____ I wonder if there are other forms of intelligent life in the universe

_____ Studying history and ancient culture helps give me perspective

_____ TOTAL for Section 4

Section 5

_____ I learn best interacting with others

_____ The more the merrier

_____ Study groups are very productive for me

_____ I enjoy chat rooms

_____ Participating in politics is important

_____ Television and radio talk shows are enjoyable

_____ I am a "team player"

_____ I dislike working alone

_____ Clubs and extracurricular activities are fun

_____ I pay attention to social issues and causes

_____ TOTAL for Section 5

Section 6

_____ I enjoy making things with my hands

_____ Sitting still for long periods of time is difficult for me

_____ I enjoy outdoor games and sports

_____ I value non-verbal communication such as sign language

_____ A fit body is important for a fit mind

_____ Arts and crafts are enjoyable pastimes

_____ _Expression through dance is beautiful

_____ I like working with tools

_____ I live an active lifestyle

_____ I learn by doing

_____ TOTAL for Section 6

Section 7

_____ I enjoy reading all kinds of materials

_____ Taking notes helps me remember and understand

_____ I faithfully contact friends through letters and/or e-mail

_____ It is easy for me to explain my ideas to others

_____ I keep a journal

_____ Word puzzles like crosswords and jumbles are fun

_____ I write for pleasure

_____ I enjoy playing with words like puns, anagrams and spoonerisms

_____ Foreign languages interest me

_____ Debates and public speaking are activities I like to participate in

_____ TOTAL for Section 7

Section 8

_____ I am keenly aware of my moral beliefs

_____ I learn best when I have an emotional attachment to the subject

_____ Fairness is important to me

_____ My attitude effects how I learn

_____ Social justice issues concern me

_____ Working alone can be just as productive as working in a group

_____ I need to know why I should do something before I agree to do it

_____ When I believe in something I will give 100% effort to it

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_____ I like to be involved in causes that help others

_____ I am willing to protest or sign a petition to right a wrong

_____ TOTAL for Section 8

Section 9

_____ I can imagine ideas in my mind

_____ Rearranging a room is fun for me

_____ I enjoy creating art using varied media

_____ I remember well using graphic organizers

_____ Performance art can be very gratifying

_____ Spreadsheets are great for making charts, graphs and tables

_____ Three dimensional puzzles bring me much enjoyment

_____ Music videos are very stimulating

_____ I can recall things in mental pictures

_____ I am good at reading maps and blueprints

_____ TOTAL for Section 9

Part II

Now carry forward your total from each section and multiply by 10

Appendix 13: Teachers' Questionnaire

A questionnaire about Teachers' Knowledge of Multiple Intelligences Theory. Please read the following questions and answer them to best describe you and your teaching experiences. Feel free to add ant relevant information for each question.

3. Age: ( ) 20-30 ( ) 30-40 ( ) 40~

4. Educational background:

B.A. ( ) M.A. ( ) Ph.D.

5. How long have you been teaching English as a foreign language (EFL), (Number of years)?

( ) less than 6 years ( ) 6-15 ( ) more than 15

7. Have you ever heard about Multiple Intelligences Theory (MIT)?

( ) yes ( ) not sure ( ) no

If yes, how did you learn about it?

( ) book ( ) course ( ) workshops ( )Internet

( ) learning from co-workers/ friends.

8. Have you ever researched about MIT?

( ) yes ( ) no

9. Would you like to know more about MIT?

( ) yes ( ) maybe no ( ) no

10. Do you think you use MIT in your teaching?

( ) yes ( ) not sure ( ) no

If yes, how much do you apply it?

( ) often ( ) not very often ( ) a little

11. Is MIT implemented in your institution?

( ) Yes ( ) No ( ) I don't know

12. Do you think that the EFL textbook you use supports the implementation of MIT in classes?

( ) Yes ( ) No ( ) Maybe

13. Do you supplement textbook with extra materials?

( ) yes ( ) No

14. How often do you supplement textbook with extra materials?

( ) Always ( ) Sometimes ( ) Often ( ) Rarely ( )

15. Why do you think textbook should be supplemented with extra materials?

16. How do you choose extra materials? ( ) method/approach/theory ( ) layout (nice pictures, coloreful, etc). ( ) because it is a communicative activity ( ) because it is current material (songs, reading, movie, etc). ( ) authentic materials ( ) because it is adapted for language learners ( ) cultural component

17. Which of these types of activities, materials, or techniques do you incorporate in your lessons? (Mark all applicable items)

( ) categorizing items (animals, adjectives, nouns, etc)	( ) making sculptures or art craft with clay, wood, or other materials
( ) reflective journal	( ) reading
( ) group problem solving	( ) maps
( ) pair work	( ) talking about mankind and related issues
( ) songs/ video clips	( ) coloring
( ) role plays	( ) speaking
( ) board games	( ) personal journal keeping
( ) TRP (Total Physical Response)/ mime	( ) talking about environmental issues
( ) cooperative learning activities	( ) activities with a self-evaluation component
( ) field trips (zoo, museums, restaurants, etc)	( ) jazz chants / rhymes
( ) debates	( ) singing
( ) videos / movies	( ) charts / grids
( ) individualized projects	( ) dancing
( ) note-taking	( ) group work
( ) drawing	( ) running
( ) listening	( ) body language
( ) playing musical instruments	( ) story telling

Appendix 14: List of activities and the intelligences engaged

Verbal/linguistic activities:

- Sustained silent reading
- Reading books, newspaper or parts of a play
- Telling jokes and riddles
- Writing letters, diaries, stories, poetry, instructions, lists, book reviews
- Retelling stories, identifying with characters, extracting information from text
- Enriching vocabulary through word games and puzzles
- Brainstorming, debates, discussion, giving speeches
- Memorizing, journal keeping, note taking
- Summaries, translation exercises.

Visual/spatial activities:

- Using pictures to create, interpret, and illustrate stories
- Giving guided visualization
- Drawing maps, diagrams, illustration, graphs, tables, photos
- Making mind maps, using charts and grids
- Designing, drawing, using imagination and fantasy
- Watching videos, slides and movies
- Visual awareness activities

Logical/mathematical activities:

- Sequencing events into story line and sequential presentation of subject matter
- Presenting television shows about science, science demonstrations and experiments
- Reading about famous scientists and their discoveries, or detective stories
- Organizing with Venn diagrams, sorting, classification; using symbols
- Logical-mathematical games like Clue
- Following directions to accomplish a goal, hypothesizing, predicting, and
- experimenting
- Problem-solving language activities using logic, reasoning puzzles and logical
- argumentation
- Analyzing grammar, pattern identification, code making, code breaking

Bodily/kinesthetic activities:

- Incorporating movement into the lessons
- Mimes, dramas and role-plays
- Creative movement, body language
- Kinds of physical education and dance, classroom aerobics
- Human sculptures, graphs and tableaux
- Hands-on activities, construction and manipulative activities
- Cooperative group rotation

Musical Intelligence activities:

- Background music to relax and enhance learning
- Turning some parts of lessons into a song or rhythmic chant
- Using raps, jazz and chants to memory lesson
- Playing recorded or live music
- Making music instruments
- Choral reading, singing and speaking
- Creating and forming songs or tunes
- Encouraging awareness of surrounded sounds

Interpersonal intelligence activities:

- Group brainstorming, and group problem solving
- Project work
- Pair work, group discussion
- Peer teaching and peer editing
- Intercultural awareness activities
- Circle time and self-esteem activities
- Giving and receiving feedback and constructive criticism

Intrapersonal intelligence activities:

- Activities with a self-evaluation component
- Personal journal keeping
- Individualized projects
- Reflective learning activities
- Writing about personal goals and hopes for the future
- Goal setting

- Recording thoughts, feelings and moods
- Self evaluation
- Circle time and self-esteem activities

Naturalistic intelligence activities:

- Showing slides, films that features nature
- Organizing activities that involves nature like bird watching
- Growing a plant and describing the developing process
- Discussing animal rights and earth preservation
- Drawing or photographing natural objects
- Talking about pets or natural places to classmates
- Collecting natural things like leaves, flowers to show and describe to others
- Reading books, magazines, newspapers on the nature

Rrésumé

L'incorporation de La Théorie des Intelligences Multiples (IM) dans Les Classes Algériennes d'Anglais come Langue Etrangère (ALE) : Une Etude de Cas des Classes d'ALE de 2éme Année Secondaire

La présente étude examine les incorporations de la théorie des intelligences multiples (IM) dans les classes algériennes d'ALE. L'objectif de cette étude était d'examiner les perceptions des enseignants de l'école secondaire ALE sur l'incorporation de la théorie des IM dans leurs classes et dans les manuels qu'ils utilisent. L'étude visait également a examiner l'incorporation de la théorie de l'IM dans le manuel d'ALE de 2eme année du secondaire « Getting Through ». L'un des objectifs de l'étude était d'examiner l'incorporation de la théorie de l'IM dans les examens officiels d'ALE de 2eme année du secondaire. L'échantillon de l'étude était composé de 36 enseignants d'ALE de 2eme année secondaire affilie a la direction de l'éducation de Ghardaia. Quant a l'analyse de contenu, l'échantillon comprenait le manuel d'ALE de 2eme année « Getting Through », et 50 échantillons d'examens officiels d'ALE de 2eme année secondaire. La conception de la recherche a suivi une méthode mixte composée d'un questionnaire pour les enseignants et d'une analyse de contenu du manuel et des examens officiels. Les résultats de l'étude ont révélé que les connaissances des enseignants sur la théorie de l'IM étaient limitées ; cependant, leurs déclarations sur les pratiques en classe indiquaient une incorporation inconsciente des principes de la théorie de l'IM. De plus, les perceptions des enseignants indiquaient une confusion entre les styles d'apprentissage et la théorie de l'IM. L'analyse du contenu du manuel a révélé que l'intelligence verbale/linguistique (VL) était largement privilégiée (100%) par rapport aux autres intelligences. L'analyse du contenu des échantillons d'examens officiels a également une forte dépendance a l'égard de l'intelligence VL (100%). Apres avoir compare les activités du manuel et celles des examens officiels, les résultats ont indique un manque de congruence des deux composants. Il a était recommandé que la théorie de l'IM soit adoptée par les institutions afin que les différentes composantes de l'éducation soient impliquées, notamment: les enseignants, les étudiants, les parents, les administrateurs, et les décideurs des politiques.

Mots-clés: Théorie des intelligences Multiples, manuel d'ALE, examens officiels d'ALE, analyse de contenu.

ملخص

إدراج نظرية الذكاءات المتعددة (MI) في فصول اللغة الإنجليزية بوصفها أجنبية (EFL) في الجزائر: دراسة حالة لأقسام السنة الثانية من التعليم الثانوي

تبحث الدراسة الحالية في إدراج نظرية الذكاءات المتعددة (MI) في فصول اللغة الإنجليزية بوصفها أجنبية (EFL) في الجزائر. هدفت هذه الدراسة إلى تقصي تصورات معلمي اللغة الإنجليزية بالمدارس الثانوية حول دمج نظرية MI في فصولهم وفي الكتب المدرسية التي يستخدمونها. هدفت الدراسة أيضًا إلى تقصي مدى دمج نظرية الذكاءات المتعددة في منهاج اللغة الإنجليزية للسنة الثانية من التعليم الثانوي . "Getting Through"كان أحد أهداف الدراسة أيضًا تقصي دمج نظرية الذكاءات المتعددة في امتحانات اللغة الإنجليزية للسنة الثانية ثانوي. تكونت عينة الدراسة من 36 مدرسًا للغة الإنجليزية في السنة الثانية ثانوي في المدارس التابعة لمديرية التربية بولاية غرداية. أما بالنسبة لتحليل المحتوى ، فقد اشتملت العينة على منهاج اللغة الإنجليزية للسنة الثانية ثانوي "Getting Through"، و 50 عينة من امتحانات اللغة الإنجليزية للسنة الثانية ثانوي. كان تصميم البحث مزيجا مكونا من استبيان للمعلمين، وتحليل محتوى الكتاب المدرسي والامتحانات الرسمية. أظهرت نتائج الدراسة أن معرفة المعلمين بنظرية الذكاءات المتعددة محدودة. ومع ذلك ، فإن تأكيداتهم حول ممارساتهم داخل القسم أشارت إلى تضمين غير مقصود لمبادئ نظرية الذكاءات المتعددة. علاوة على ذلك ، أشارت تصورات المعلمين إلى حدوث خلط بين أساليب التعلم ونظرية الذكاءات المتعددة. كشف تحليل محتوى الكتاب المدرسي عن تركيز كبير على الذكاء اللفظي / اللغوي (100٪). فيما كشف تحليل محتوى عينات الامتحانات أيضًا عن اعتماد كبير على الذكاء اللفظي/اللغوي. بعد مقارنة تمارين الكتاب المدرسي وتمارين الامتحانات الرسمية ، أشارت النتائج إلى عدم التطابق بين المكونين. تم التوصية بضرورة تبني نظرية الذكاءات المتعددة من قبل المؤسسات بحيث يتم إشراك كل مكونات العملية التعليمية المختلفة ، بما في ذلك: المعلمين والطلاب وأولياء الأمور والإداريين وأصحاب القرار.

الكلمات المفتاحية: نظرية الذكاءات المتعددة ، تدريس اللغة الإنجليزية كلغة أجنبية، منهاج اللغة الإنجليزية كلغة أجنبية ، امتحانات اللغة الإنجليزية كلغة أجنبية، تحليل المحتوى.