**People's Democratic Republic of Algeria**

**Ministry of Higher Education and Scientific Research**

**Djillali Liabes University of Sidi Belabbes**

**Faculty of Letters, Languages and Arts**

**Department of English**

# Teaching Thinking Skills in EFL Classes: The Case of Second Year Pupils at Adjel Mahmoud Middle School. Biskra

**Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Magister in Didactics**

**Submitted by:**
**Mr.Chenini Abdelhak**

**Supervised by:**
**Prof. Zouaoui MERBOUH**

**Board of Examiners:**

**Chairman: Prof. Mohamed MELOUK Professor (University of Sidi Belabbes)**

**Supervisor: Prof. Zouaoui MERBOUH Professor (University of Sidi Belabbes)**

**Examiner: Prof. Belabbas OUERRAD Professor (University of Sidi Belabbes)**

**Academic Year: 2014/2015**

# Dedication

I thank Allah almighty for the strength and patience he has given me to write this dissertation.

I would like to dedicate this work to my dear parents Mabrouk and Fatima Ezzahraa.

To my little angel Meriem Ezzahraa and my dear and supportive wife Boutheina.

To my sisters Nouhed, Djamila, Hadjer, and Rofaida.

To my friends and all my pupils.

## Acknowledgements

First and foremost, I would like to express my most sincere thanks to my supervisor Pr. Merbouh for his precious advice and guidance. I also would like to thank the head of this Magister project Pr. Melouk and all the other teachers, namely: Dr. Guerrouj, Dr. Ben Aissi, and Dr. Mostari, who contributed to shaping our academic personality.

I would like to express my gratitude to the board of examiners for their time and insightful feedback.

I am also grateful to Mrs. Amri Chenini Boutheina, teacher at the Department of English at the university of Biskra, for her proof reading and continuous support.

I would like to express my deepest and heartful thanks to all my pupils at Adjel Mahmoud Middle School and to my colleague Mr. Boutabba Abdelaziz for his support.

## Abstract

The study is an attempt to examine the possibility of teaching thinking skills to middle school EFL learners in the south east of Algeria, precisely, the city of Biskra. It further aims at adopting the right tools, materials, and pedagogy that would most suit the context of EFL learning and teaching in the aforementioned region and raise the learners' awareness of the importance and the practicality of the subject matter. This research is stimulated by the fact that teaching thinking skills is the key to help pupils make a link between classroom lessons and what they encounter in real life. However, neglecting thinking skills might cause a major handicap for EFL learners who might perform well in classroom settings but fail to bring what is learnt about in the real world when needed. The research will take the case of second year middle school EFL pupils at Adjel Mahmoud Middle School, Biskra. The pupils will be split into two groups, one group will serve as a control group which will receive no thinking instruction while the other group will be taken as a target group upon which the study will build its findings. To achieve the aforementioned aims, action research method will be adopted and formative short term plans will be carried out. The instruments of data collection will be classroom observation, pretest and post-test, as well as an interview addressed to the teachers of EFL in the same district. The dissertation will be divided into four chapters; the first one is devoted to the learning situation and methodology while the second is a review of literature. The third chapter is mainly concerned with the data analysis while the fourth contains suggestions for future prospects.

## List of Tables:

## List of Figures:

## List of Graphs:

## List of Abbreviations/ Acronyms:

**EFL:** English as a Foreign Language.

**MS2:** Middle School Year 2.

**TD:** Travaux Dirigés.

**EG:** Experimental Group.

**CG:** Control Group.

**CoRT:** Cognitive Research Trust.

# Contents



## Chapter One

## Learning Situation and Methodology

## Chapter Two

## Review of Literature

## Chapter Three

## Data Analysis

# Chapter Four

## Recommendations and Suggestions

# General Introduction

Education is, as it is commonly known, the basis for the development of nations and societies and its major aim is the making of good citizens. If education fails or brings ineffective results, it is then subject to questioning in terms of its content and the way it proceeds. Education influences and is influenced by the other fields of life and the different circumstances and changes. If what is going on in Algeria and some Arab countries is taken as an example, discontent and/or rebellion against the political regimes, it can be noticed that it is a step towards a change in all fields, a reaction against elitism where some are supposed to think and decide on behalf of the rest. Obviously, it is a time where every individual needs to think for himself. Hence, it is high time thinking skills were taught in our schools because the making of good citizens means educating, teaching, and training our children, pupils, and students on the best ways to think for the benefit of themselves and their society.

In Algeria, as a matter of fact, educators, principals, and parents complain about the outcomes of their children's learning in the midst of the overwhelming development in the educational domain. The work market (school in our case) as well is not satisfied with the performance of newly recruited degree holders considering them a disappointment to the expectations of the market. In this fashion, employers undertake a long and costly process of training the novice workers from scratch in order to benefit from their services afterwards. This vicious circle brings us back to questioning the use and efficiency of the content

of the educational system which is supposed to relate school tasks with real life problem solving situations.

In the field of English language teaching and almost in all the other fields, it is noticed that schools in Algeria are still giving priority to teaching knowledge, which is no longer the way to success, while priority would better be given to developing thinking skills that help learners consider ways of bringing such knowledge about when needed. No one can deny the importance of teaching knowledge but nowadays and due to the rapid pace of the development and spread of technology, the school is no longer the place where to get knowledge but rather a space where learners acquire the ability to analyze, judge, collect and use the right information, make decisions, work in pairs and teams to solve real life like problems. It is then of no use for students to have a huge amount of knowledge while they cannot decide what is the right behaviour when they encounter a problem. The reverse holds, as for being equipped with a limited amount of information but a number of alternative solutions is considered.

The adoption of The Competency Based Approach to Language Teaching and Learning (CBLT) in the Algerian middle and secondary education was a very important step towards a change in the way language is taught. With this huge step, a shift towards learner centeredness took place and learning in pairs and groups became inevitable in order to give equal opportunities to all the pupils to get actively involved in the learning process and encourage peer interaction as well as to create real life like situations. Yet, the outcomes do not rise to the occasion because the majority of English language teachers are purely teaching language skills (knowledge about and use of the target language) which are no

longer enough and neglect the thinking skills altogether (which help learners to be creative in their production of ideas and become proficient in the target language). However, neglecting thinking skills would lead to a mismatch between the learner and the wished linguistic competence, moreover, to an abyss between the classroom and the real world. Therefore, to understand the required skills to master the subject, pupils need to learn to think because thinking itself is a skill that must be learned.

The purpose of the study is to focus on the teaching of thinking skills in EFL classes for middle school students and to evaluate how such an approach could be an effective way to bridge the gap between what is taught at school and what is needed in the real world. The aim of this research is, thus, to try to find an effective way that would help teachers lead students to accomplish the dual task of reaching a satisfactory linguistic competence along with developing lifelong thinking skills.

The following research questions would put the study in a clearer perspective:

1) How possible would it be in terms of the tools and materials to integrate thinking skills in EFL classrooms?
2) What is the most suitable approach to teach thinking and linguistic skills at the same time?
3) What is the impact of teaching thinking skills on the performance of EFL learners?

In order to reach satisfactory outcomes concerning EFL learning and teaching, we hypothesize:

1) Implementing specific frameworks and programmes which would exploit the students' thinking abilities simultaneously as they grasp the language aspects being taught would be useful.
2) Adopting the "*Indirect Approach to Teaching Thinking Skills"* which integrates direct instruction in specific thinking skills into EFL lessons will improve pupils thinking and enhance EFL learning.
3) If the thinking lessons are well planned and presented by teachers, students might gradually become skilled and creative thinkers in terms of dealing with any language problem they encounter in or outside the classroom.

To achieve the objectives of the study, the researcher divided the work into four chapters. The first one is an introductory chapter that sheds light on the phenomenon of thinking and its effects within the area of foreign language teaching and learning. In addition, the first chapter presents the methodology that is used to conduct this study, the population of the study, the research design. The second chapter reveals the related literature. The third chapter presents and describes the procedures that have been used while analyzing the available data which has been collected trying to answer the research questions. The fourth chapter, however, summarizes the findings and recommendations of the research work while trying to put it within its limitations, to open later on the doors for further research.

# Chapter One

## Learning Situation and Methodology

# Chapter One

# Learning Situation and Methodology

## 1.1 Introduction:

This chapter will limit the scope of thinking to the educational concern. It will also explore how the issue evolved from a human phenomenon to a learned skill through identifying its importance in the teaching and learning operation. A presentation of the actual position of thinking skills in MS2 syllabus will be included in this chapter as well. There is also a section devoted to the description of the research methodology adopted in the field work concerning the population, the research design, and the research tools.

## 1.2 Significance of Teaching Thinking Skills in EFL Classes:

The study raises a very crucial point which is based on the facts and obstacles that hinder the progress of EFL teaching and learning during the pre-university phase. The absence of thinking skills in the curriculum reflects negatively especially on university students' performance, for instance, university students who opt to study English may write well and use good grammar; but they have trouble defending their points of view or analyzing and making judgments because they do not receive thinking lessons at the earlier stages. In addition, the course-books do not focus on ***"big ideas, offer no analysis, and pose no challenging questions"*** (Kennedy, 1991, p: 662), but instead it contains a load of information which cannot, according to most EFL teachers, be covered in the given instructional time. This is not only the teacher's fault, who is one of the pillars of the educational operation, but also the shortcomings of the course-book

and the educational policy as well. Moreover, teachers teach the same way they were taught, the classical way, because they feel more secure and consider new ideas as a risk. However, one of the principal goals of education according to Piaget (1958) is to encourage pupils to bring new ideas and not just simply accept and repeat what previous generations have done.

In other words, this study is an attempt to prove the necessity of teaching thinking skills at an early stage in the context of EFL teaching and learning. Furthermore, this study may have implications or provide suggestions for curriculum designers, supervisors, and teachers in terms of improving the quality of teaching and teaching outcomes.

**1.3 Thinking Skills in MS 2 EFL Syllabus:**

The educational authorities in Algeria have set the finalities of teaching English to MS2 pupils as well as the objectives to achieve and the competencies to implement. The following division is taken from MS 2 Teacher's Book:

**1.3.1Finalities:**

The final destination of teaching English to MS 2 pupils is to help future citizens to integrate in modernity. This means participation in a community of people who use English by showing and exchanging ideas and experiences in the fields of science, technology, culture and civilization where the English language is supposed to be the principal means of communication**.** Develop the spirit of criticism, tolerance and open-mindedness in the learners' personalities so to become effective leaders in any field of life**.** Implant competencies that will help the learner live comfortably in his environment. These competencies are

interdependent. The non-acquisition of one of them will stop or delay the acquisition of the others. All the competencies must be integrated.

### 1.3.2 Objectives:

The main objectives of teaching the English language to middle school pupils are devided into three categories as suggested by the Ministry of National Education.

#### 1.3.2.1 Linguistic objectives:

The MS2 learner is supposed to be equipped with a basic amount of language material: grammar, phonetics, vocabulary and the four skills. The MS 2 syllabus aims at consolidating and developing the MS 1 acquisition.

• Grammar: discovering the rules of English.

• Phonetics: improving the pronunciation and intonation.

• Vocabulary: increasing the learner's stock of lexis.

• The four skills: more training in listening, speaking, reading and writing aiming at communication and interaction in a free and creative way.

#### 1.3.2.2Methodological objectives:

The most expected methodological objectives turn around a number of strategies that pupils are supposed to master. These strategies can be summarized as follows:

• Promoting the pupils' learning strategies aiming at autonomy.

• Making the pupils acquire methods for working and thinking.

• Helping pupils acquire strategies of self-evaluation.

• Guiding pupils to exploit various documents and become interested in subjects that are not dealt with in class.

**1.3.2.3 Cultural objectives:**

The cultural objective is to prompt the pupil to open up his mind through discovering the context of English civilization and culture. Thus, there is a necessity to:

• Identify the pupils' real needs.

• Regard English as a real tool of communication.

• Develop oral communication (listening and speaking) and written communication (reading and writing)

•Create situations of real communication.

• Choose topics according to pupils' age and interests.

• Focus on the pupil (pupil-centered teaching).

• Use suitable teaching aids.

Examined closely, it is evident that the MS 2 syllabus hardly ever gives any importance to finding out ways to develop thinking skills. Despite the rich content, the absence of a space for developing pupils' thinking skills would probably hinder the process of learning and the learning objectives brought about by the official educational body. Focus on thinking skills would make the learning meaningful to the pupils and prompt them towards identifying the learning objectives by themselves which would pave the way for autonomy afterwards.

**1.4 Teacher Roles:**

The teacher is supposed to adopt a number of different roles at different stages of a lesson. These roles vary depending on the teaching approach, learning needs, and the pupils' preferred learning style. In section, it would be better to

tackle the roles of the teacher in both situations: absence and then presence of thinking skills in EFL classes.

### 1.4.1 Teacher Roles with the Absence of Thinking Skills:

It is very necessary here to exhibit the roles that the teacher adopts to manage the classroom and to successfully guide the pupils through every lesson. Spratt et al (2011) believe that the teacher's behaviours during every lesson are the key to achieve its objectives. They suggested some roles teacher often adopt. The planner is the most important role that the teacher plays before going to the classroom; he is supposed to prepare and reflect on the lesson before teaching as well anticipate problems and select or adapt materials. The manager is a role where the teacher adopts some tasks of a policeman and tries to organize the learning space, set up rules, and make sure everything in the classroom runs smoothly. The teacher is sometimes a monitor when he goes around while the learners are doing a task trying to provide support. Another role is the facilitator, this happens when the teacher works on helping and encouraging learner autonomy. Diagnostician is a very essential role which the teacher adopts to find out the causes of the different difficulties the pupils may face. The teacher assessor is a very important role in deciding about the outcomes of learning; it is then when the teacher evaluates the language level by using different means of assessment. The last role which is neglected by many teachers is to be a rapport builder and create good relationships with and between learners. The teacher then needs to be careful when deciding which role to adopt in each stage of the lesson depending on the teaching approach used and the learning style preferred. (199)

The different roles of the teacher can be illustrated in the following figure:

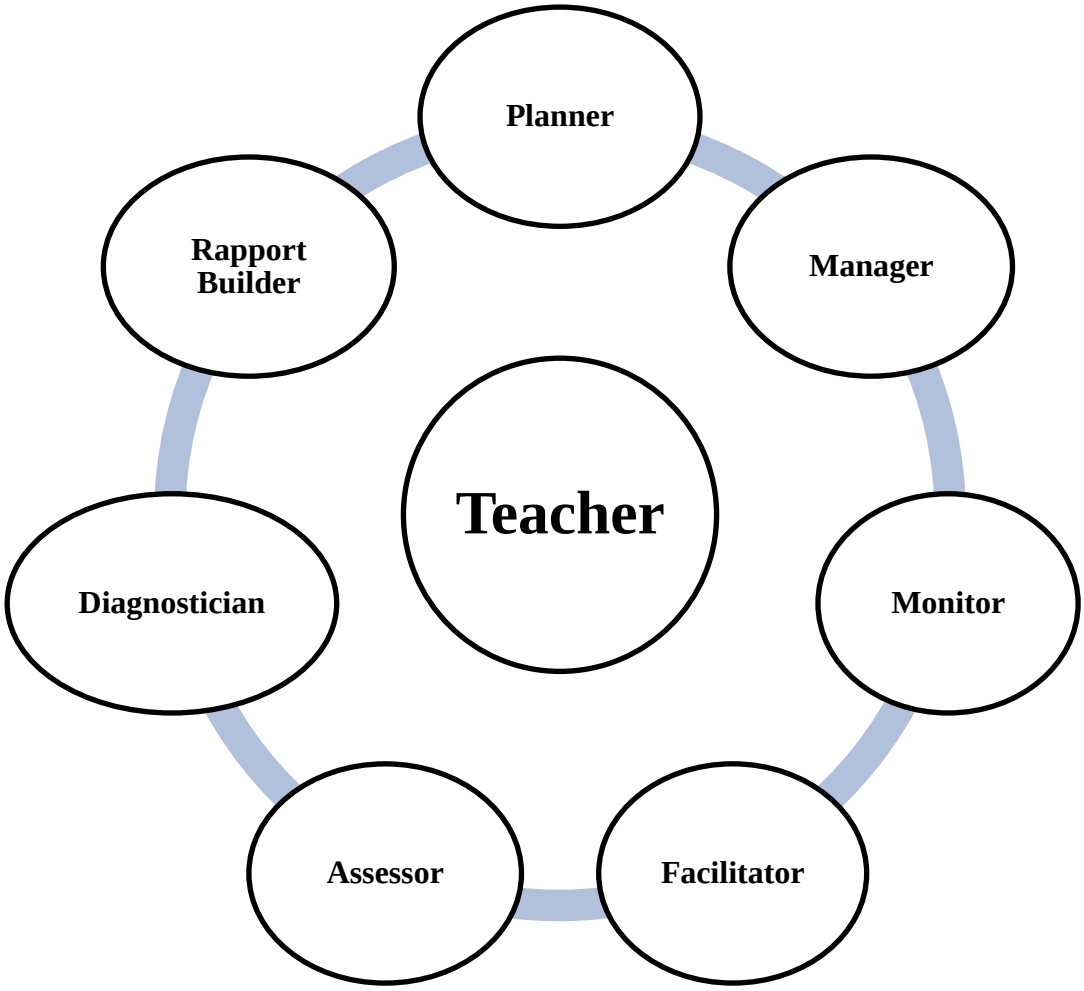



**Figure 1.1: The Different Roles of the Teacher**

### 1.4.2 Teacher Roles with the Integration of Thinking Skills:

The aforementioned roles can also be adopted by the teacher with the integration of thinking skills; however, there are more tasks for the teacher to perform and more important points to stress. In fact it is not an easy job to shift from one role to another trying at the same time to guarantee a suitable and fruitful learning atmosphere. Integrating thinking skills in EFL teaching is a very demanding approach and teachers need to be very precise when planning their lessons as well as the roles to adopt during each stage of the lesson.

In order to push students to develop levels of thinking, Hays and Devitt (2008) state that teachers should be systematic in their instruction and prepare challenging lessons and provide activities which allow discussion among learners (p66). In the same context, Freire (1973) emphasizes the necessity of dialogues in a classroom where the teacher and learner practise some sort of a conference in a situation of genuine two-way communication characterized by mutual acceptance and trust between the teacher and the learners; thus, the teacher learns from the learners and, the learners learn from the teacher. Furthermore, Freire expects teachers to ask questions to learners and listen to learners' questions as well, arguing that this practice forces and challenges the learners to think critically and to adopt a critical attitude towards the world. On the other hand, Freire strongly objects to some practices whereby teachers provide answers and solutions to learners believing that such practice encourages laziness and prevents pupils from being autonomous afterwards. Therefore, teachers should continuously re-assess their methods and approaches to make sure they are doing all they can to support the development of their students' cognitive processes and abilities.

The establishment of a supportive learning atmosphere allows the learners to express their ideas, ask questions without hesitation, and accept other people's points of view as the following figure suggests:

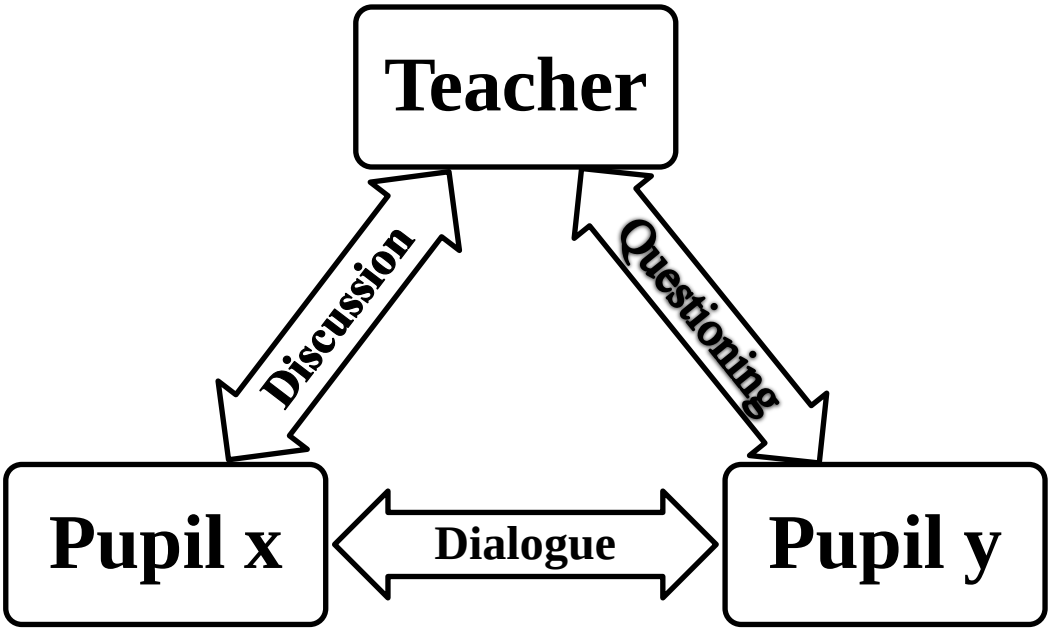



**Figure 1.2: Encouraging Thinking in the Classroom**

**1.5 Learner Roles:**

The learner being one of the partners in the teaching and learning operation has to be responsible concerning his/her learning. As the latter is a lifelong process, the learner is required to adopt learning strategies that promote autonomy in and outside the classroom. In the classroom, the pupils have to be fully engaged and actively involved in the lesson where they try to stay focus during the whole session and be open-minded when engaging in pair and group work. However, outside the classroom, the pupils should be more responsible for managing their learning by setting an organized schedule that would encompass their revision and practice as well as their rest time. If the mentioned strategies are well applied, the learner will be able to mobilize the acquired knowledge and skills and to reinvest them in new situations.

### 1.6 Difficulties of Teaching Thinking Skills:

Far from theory, a lot of important aspects need to be taken into consideration such as teacher training, learners' social and cultural background, and the availability of ICTs. These aspects affect teaching and the outcomes of learning. Untrained teachers, most of the time, encounter many problems which frustrate most of them in the beginning of their career and make them spend their first years searching for the right way to deal with what goes on in the classroom.

The practicality of the classroom requires the teachers to be highly equipped with knowledge about teaching and to have an idea about their pupils' profiles so that to adapt the content of the syllabus depending on their needs. But unfortunately, most novice teachers in the Algerian school nowadays lack a huge amount of teaching knowledge, and are, thus, characterized by a weak mastery of the teaching materials and classroom management. The absence of pre-service teacher training affects the educational process; it results in sending graduate students who acquire an amount of theoretical knowledge about teaching but have never experienced teaching itself. Therefore, according to Britten (1988), they would teach as they have been taught. In other words, pre-service teacher training according to Loughran and Russel (1997) is a very crucial phase in the making of responsible teachers; however, the missing of such a phase would ultimately result in low and frustrating educational outcomes afterwards.

In addition to teacher training, the social and cultural background of the pupils is a very important factor which can negatively or positively affect their learning. Sullivan et al (2010) carried out a research concerning the impact the

pupils' social background on their educational performance and they came to the conclusion that pupils whose parents have professional and managerial jobs, most of the time, perform much better than those of unemployed parents. It is also the case when talking about pupils whose parents use foreign language or at least had a past experience compared to those of illiterate parents. It is then of a great importance for teachers to have an idea about their learners' social and cultural background so to adopt techniques to encourage those socially and culturally disadvantaged pupils.

Another difficulty is the availability and the mastery of ICTs. Employing ICTs is very beneficial in EFL classrooms, however, many teachers and learners are very poor performers when it comes to such type of material. Moreover, a great number of schools do not afford ICT materials. One may wonder how come in such a digital age the school does not benefit from ICTs. But it is a fact, the ICT material available at schools, most of the time, is not sufficient and does not satisfy the needs of EFL learners and teachers. Mayora (2006) argues that employing ICTs increases students' interest in the classroom. In the same flow, Anderson and Speck (2001) state that the use of ICTs diminishes the role of the teacher; this fact encourages the learner to activate his thinking skills which would open the door to learner autonomy.

All in all, the above mentioned aspects are interrelated; therefore, it is very necessary to train the teacher to be aware of his learners' needs and the materials beforehand while going through the content of the syllabus. The pupils also share responsibility with their teacher especially when it comes to the use of ICTs

because nowadays pupils are supposed to be digital natives; yet, a large number of them do not master such type of material due, most of the time, to their social and economic background. It is then of a great importance to afford ICTs at schools so to give the pupils the opportunity to be technologically and linguistically, the case of EFL classrooms, competent. As a result, they would perform much better because learning would seem meaningful to them when it is very close to their real world needs.

### 1.7 Methodology:

This section of the first chapter is devoted to the description of the methodology used for conducting research related to teaching thinking skills in the English classroom.

#### 1.7.1 Description of the Research Method:

The study will be conducted through an action research method. The aforementioned method is very rewarding because it does not generalize facts as most academic studies do, but focuses on gaining knowledge that could be invested directly in the chosen teaching situations. Corey (1952) states that: ***"Action research is undertaken on the hypothesis that the research approach to the solution of practical problems will result in better decisions and actions than will result if major dependence is placed upon intuition and subjective recall of evidence about consequences"*** ( Journal of Educational Psychology) .Action research enhances collaborations with teachers in the same teaching context, allowing them to share experiences and ideas, and permits the researcher to evaluate his own research practices. The action research has been chosen as a

suitable method for conducting this study knowing that it will help in the description and evaluation of the thinking lessons in the language classroom.

The independent variable in this study is the method of instruction (integrating thinking skills). The dependent variable is the post-test scores while the pretest is used as a covariate. The results of each group will be compared to determine whether or not there is a possible correlation with the method of instruction and the growth in thinking skills and the linguistic level.

**1.7.2 Population and Sampling:**

The participants of the study are second year middle school pupils split into two groups of 18 pupils each, one control group and one experimental group. The groups will be heterogeneous in terms of sex and ability as well as to share the same instructor. Therefore, the study will use random sampling to give equal opportunities of representation to all the members of the population of MS 2 learners. The choice of this sample has been made as properly as possible to provide reliable and valid results and ensure a practical value for future research in this field. The purpose behind the choice of MS2 pupils is to attempt to integrate thinking skills in the curriculum since it is their second year as EFL learners taking the basics of this foreign language, therefore, pupils will acquire a critical and creative ability since the beginning of their cycle as EFL learners.

In addition to the two groups of pupils, a third party of the population represents the interviewed English teachers. The interviewed teachers belong to the same educational district which means they share almost the same social background and learning conditions. The educational district encompasses eight

middle schools, without counting the school where the experiment takes place, of three teachers each. The number of the teachers to be interviewed is then twenty four (24). The table below summarizes all information about the population involved in the study:

| | **Males** | **Females** | **Total Number** |
|---|---|---|---|
| **Control Group** | **6** | **12** | **18** |
| **Experimental Group** | **8** | **10** | **18** |
| **Total Number of Pupils** | | | **36** |
| **School 1** | **0** | **2** | **2** |
| **School 2** | **1** | **2** | **3** |
| **School 3** | **0** | **3** | **3** |
| **School 4** | **2** | **2** | **4** |
| **School 5** | **1** | **2** | **3** |
| **School 6** | **2** | **1** | **3** |
| **School 7** | **0** | **3** | **3** |
| **School 8** | **1** | **2** | **3** |
| **Total Number of the Interviewed Teachers** | | | **24** |

**Table 1.1: Sample of the Study**

### 1.7.3 Instrumentation:

For the sake of gathering reliable data for this work, ensuring at the same time triangulation of data sources, the researcher has decided to use, as mentioned before, three tools:

#### 1.7.3.1 Observation:

The nature and circumstances of the study allows the researcher to be part of the research community, thus, participant observation is used as a primary tool to collect live data. The fact that the researcher being the teacher and the observer at the same time enables him to learn about the activities of the pupils under study in the natural setting through observing and participating in those activities. Participant observation provides researchers with ways to check for nonverbal expression of feelings, determine who interacts with whom, grasp how participants communicate with each other, and checks for how much time is spent on various activities (Schmuck, 1997.cited in Kawulich, 2005).

For validity purposes, an observation checklist is used to observe the pupils' ability to use creative and critical thinking through the target language. In such a case the observer tries to assess the learners' attitude towards the method of instruction, their ability to combine ides, to what extent they can identify and cite good reasons for their opinions, the way they help and correct one another, and how they adapt to irregular circumstances, special limitations, constraints and over-generalizations.

Classroom observation here is not sufficient since the researcher plays a dual role which affects the process of observing especially when he intervenes

from time to time. Thus, a second instrument is used as mentioned before in the research design

**1.7.3.2 Interview:**

Cannell and Kahn (1968) define a research interview as a conversation between two people for the specific purpose of obtaining research-relevant information. A data collection technique such as interviewing can result in enormous amounts of information being collected by questioning people directly. Interviews are an important part of any action research project as they provide the opportunity for the researcher to investigate further, to solve problems and to gather data which could not have been obtained in other ways (Cunningham, 1993 cited in Patton, 2001).

Although it is a time-consuming tool of data collection, the interview provides very useful and detailed information about personal feelings and opinions. The interview allows more detailed questions to be asked as well as helps generate further questions that might be of a great importance for the topic of research.

A semi-structured interview based on open-ended questions is designed and addressed to the teachers of English working in the same educational district. The interview was scheduled according to the participants' timetables; therefore, it was not possible for the researcher to accede twenty minutes with each participant due to time restrictions.

The interview was first piloted at the level of Adjel Mahmoud Middle School before it finally took place. Two colleagues participated in the operation

and effectively contributed to the editing of the interview schedule. As a result, some necessary points were revised and the decision about the length of the interview was taken.

#### 1.7.3.3 Test:

The test in such a study is somehow a compulsory tool of data collection for the purpose of comparing the control and the target groups as well as measuring the degree of the changes expected from the experimental treatment. The researcher adopted a pretest-posttest design as an attempt to obtain reliable results.

##### 1.7.3.3.1 Pre-test:

The pretest in this research design is very important. The pretest scores would later on give critical results which ease the job for the researcher to measure the degree of change after the received intervention.

In this research, the pretest is prepared to test certain thinking skills namely: *Categorizing, Sequencing, Making Associations, Making Decisions, and Solving Problems.* The length of the pretest and the degree of difficulty were appropriate to the level of the pupils. The pretest scores and their analysis will be discussed in the third chapter.

##### 1.7.3.3.2 Intervention:

Based on the data collected via classroom observations, interviews, and pretest scores, the intervention comes in the form of lessons that contain specific activities addressed to the experimental group. The aim of the lessons is to

promote positive learning experiences for the pupils through systematically applying their thinking skills along with their language learning. The expected result is that the pupils will gradually learn to enjoy more challenging tasks.

The suggested lessons are based on Williams' and Puchta's (2011) work where they have developed a model of thinking skills that takes into account the specific needs of the foreign language class. Their approach incorporates two significant advantages. First, activities that are meaningful and at the same time intellectually challenging are more likely to achieve a higher level of cognitive engagement from learners than those ELT activities that can be somewhat over-simple from a cognitive point of view. Secondly, the tasks they have developed have a real-world purpose; examples include problem solving, decision making, thinking about the consequences of one's own or other people's actions. (Puchta, 2012:p16)

The whole period of treatment lasted for six months whereby the researcher chose to divide it into three periods of equal importance but of hierarchical progress, two months were devoted to each period.

**a. The First Period:**

During this period, the focus was on preparing the pupils, the experimental group, to activate their linguistic intelligence through the exploitation of their thinking skill. For that purpose, activities focusing on making comparison, categorizing, sequencing, focusing attention, and memorizing were devised. The pupils were expected to enjoy such type of activities for they involve not only

linguistic but also energetic efforts that would probably free them from the complexities of using the foreign language.

**b. The Second Period:**

This period was supposed to be an opportunity for the pupils to use their linguistic and thinking skills acquired in the first period to explore space, time, and numbers for the purpose of making associations between them in real life situations. The target group learners are then expected to overcome the problem they faced during the first period and show a higher level of performance in comparison to the previous period.

**c. The Third Period:**

During this period the pupils are recommended to use what has been learnt previously for the purpose of developing specific skills namely: analyzing cause and effect, making decisions, solving problems, and of higher importance using their creative thinking.

The planning and distribution of the activities in these three periods is a simulation of what happens in everyday life as Puchta (2012) states:

> ***"…When there is a problem we need to solve, we first of all need to assess what the actual problem is. We need to use our senses in order to get an accurate idea of what the problem is before we can start thinking of possible solutions. Once we know what the problem encompasses, we then need to envisage clearly the objectives we want to achieve, and how we can get there. In order to do that, we need to think of the consequences of possible scenarios or actions, and when we get stuck we need to think creatively (and often 'out of the box'). Finally, we need to be able to evaluate our actions".*** (p16)

By the end of the treatment period, a posttest took place as a summative evaluation.

**1.7.3.3.3 Post-test:**

The post-test includes an assessment of students' use and application of their thinking skills to solve language learning problems. Test results have been examined to answer the main question of the research: is there a correlation between the method of instruction and the growth in thinking skills and the linguistic level?

Therefore, the researcher has followed the Pearson Correlation Coefficient to count the correlation coefficient between the two variables. In this case:

-The null hypothesis is that there is no significant correlation between the two variables.

-The alternative hypothesis is that a strong correlation exists between the two variables.

The following representation would clarify the pretest-posttest design:

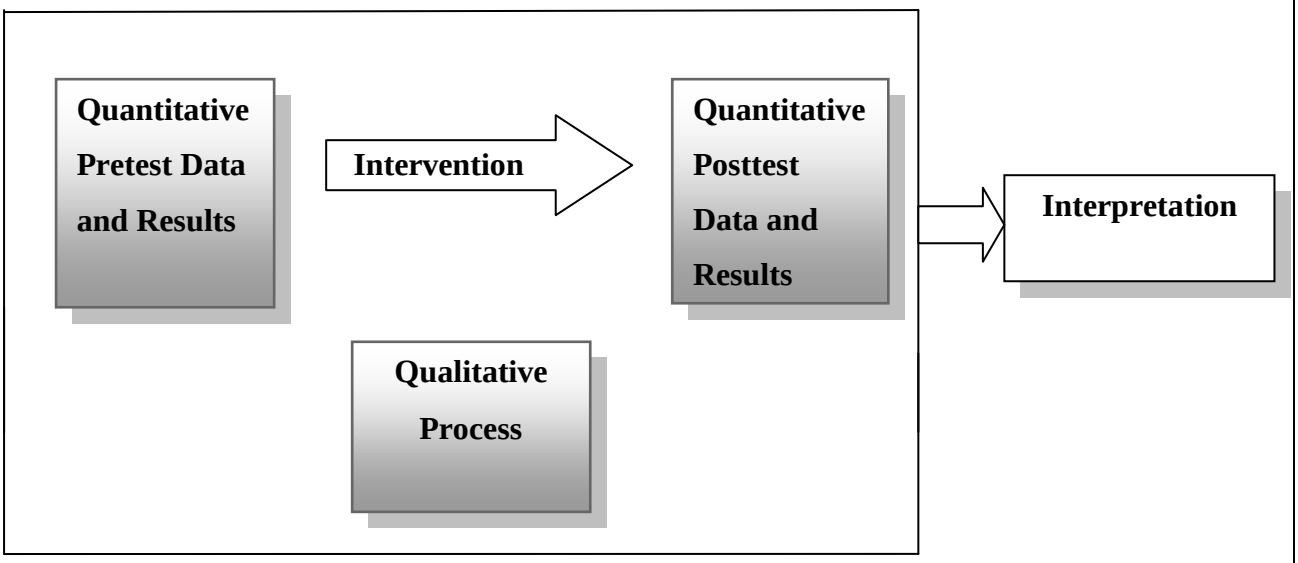



**Figure 1.3: Pretest-Posttest Design**

### 1.7.4 Data Collection Procedures:

The collection of data is an important step in deciding what action needs to be taken. To achieve triangulation, the investigator chose three tools; two of which were meant to collect qualitative data (classroom observation and interview) while the third one was devised to gather quantitative data (pretest and posttest).

Classroom observation as a primary tool took place before and during the intervention. The pre-action observation was meant for collecting data in order to limit the scope of the research questions and hypothesize appropriate solutions. During the pre-action period which lasted for two months (March and April 2013), the teacher being the investigator tried to reflect on his method of instruction while evaluating the pupils' reactions and performances.

The interview of the teachers was also a pre-action step (September 2013). The main purpose of the interview is to gather factual data and opinions right

from a fertile field. The data collected via the interview served as a solid basis for the quality of the action taken later on.

A pretest took place before the action begins (October 2013) for the sake of collecting data, represented in the pretest scores, that would later serve in measuring the change expected from the taken action.

During the treatment which lasted for six months, with the average of two sessions per month for the experimental group (November 2013- April2014), a while-action classroom observation is used to gather data concerning all the events that occurred during the lessons especially those of which may be of a great importance for the study. During the period of the treatment, the teacher tries as well to reflect on his method of teaching while evaluating the pupils' reactions and performances.

By the end of the intervention period, a posttest took place and the resulted scores are gathered and compared to pretest ones. The degree of change and the data analysis will be discussed in chapter three.

### 1.7.5 Data Analysis Procedures:

As it was already mentioned above, two types of data were collected: qualitative and quantitative. Therefore, the data analysis phase was divided into two parts because qualitative and quantitative data have to be analyzed independently and in different procedures that suit each type of data. The investigator then tries to explain the various steps that were adopted during the data analysis phase.

#### 1.7.5.1 Qualitative Data Analysis:

The nature of the qualitative data requires the researcher to be careful and meticulous when analyzing them. This type of data includes peoples' points of view concerning a given topic, and as matter of fact, human beings' different and similar views need to be treated carefully in order to obtain reliable results. According to Taylor-Powel and Renner (2003), specific steps must be followed:

##### 1.7.5.1.1 Data Transcription:

The step of data transcription helps the investigator to get to know the quality of the collected data through reading and re-reading as well as writing down any impressions that may be useful later on. Therefore, it is a very necessary phase during data analysis. There are several techniques for transcribing data; the researcher chooses the techniques that would best meet the types of the collected data. The right choice of the transcription techniques would make easier the process of data categorization later.

##### 1.7.5.1.2 Data Categorization:

This can be achieved through identifying themes, ideas, or incidents and organizing them into coherent categories that summarize and bring meaning to them. The categorization involves the assignment of abbreviated codes of few letters, words, or symbols placed next to the found ideas. Categorizing data is inevitable in qualitative methods for it makes things clearer for the researcher and helps him differentiate between more important and less important data and get rid of unnecessary others.

#### 1.7.5.1.3 Data Interpretation:

A good place to start is to bring together all important points and finding the investigator has discovered as a result of categorizing and storing the data. After that, it would be of great help to synthesize the findings then present them using visual displays such as: graphs, charts, and diagrams. Interpreting data allows the investigator to discuss the results of the research and decide whether the hypotheses suggested in the beginning of the study are proved or rejected.

### 1.7.5.2 Quantitative Data Analysis:

Unlike qualitative data analysis, quantitative data analysis provides quantifiable and easy to understand results. The analysis should undergo specific steps: tabulation of data, descriptive or calculation of data as well as choosing the most appropriate statistical program of data analysis.

The data was analyzed primarily to identify statistical significant differences between the pretest and the posttest results which would answer the research question. As mentioned previously, the investigator has chosen to follow the Pearson Correlation Coefficient to count the correlation coefficient between the two variables.

The following diagram will explain further the design of the study:

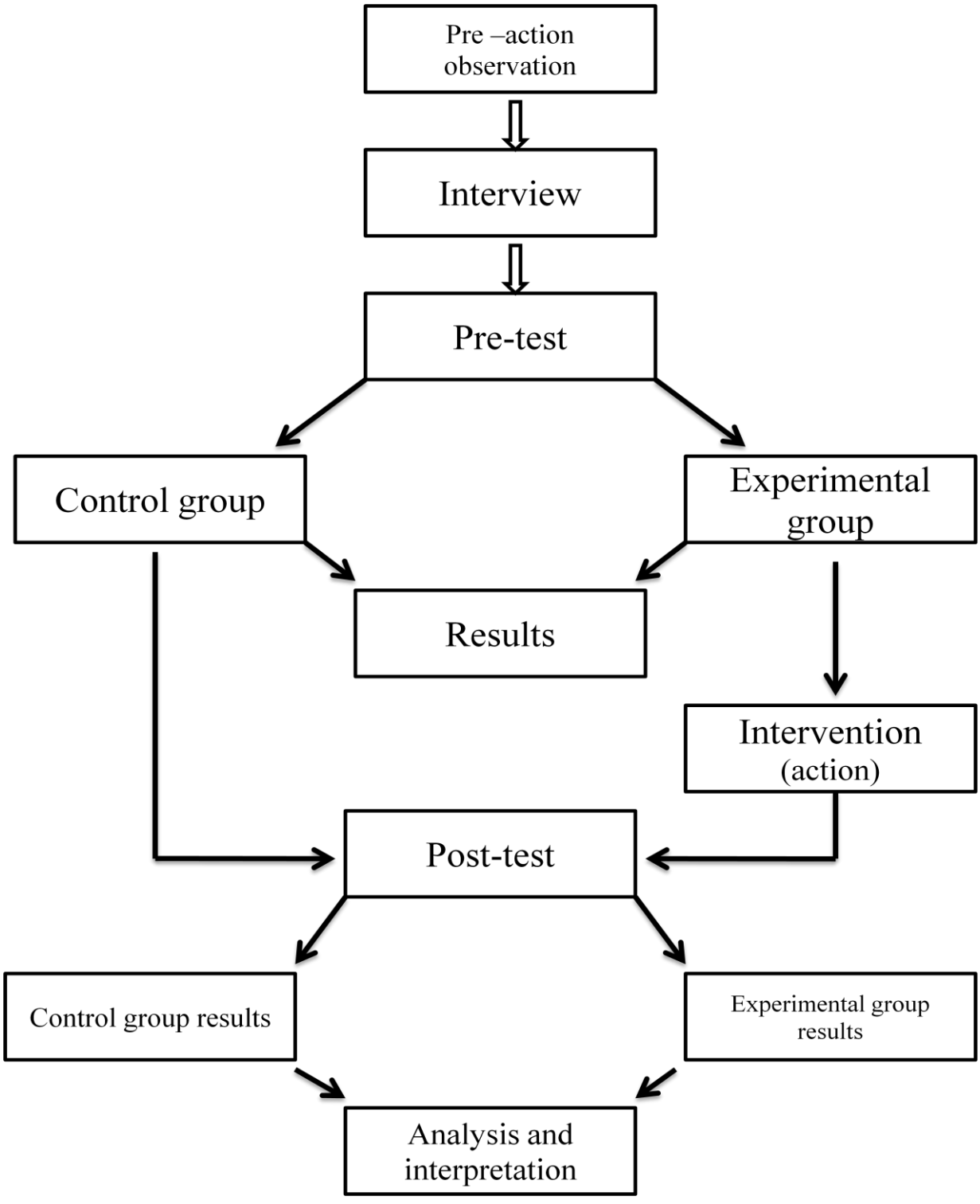



**Figure 1.4: Research Design**

## 1.8 Conclusion:

This first chapter was a general overview about the learning situation concerning the phenomenon of thinking and how it is perceived by EFL teachers. It also focused on the idea that teaching thinking skills encounters a number of hindrances of equal importance which can only be overtaken through specific learning or training. Another section in this chapter was devoted to the description of the research methodology and population of the study. The first chapter served as a background that would put the coming chapters in a clearer perspective and ease the progress of the field work and data analysis later on.

# Chapter Two

## Review of Literature

# Chapter Two

# Review of Literature

## 2.1 Introduction:

Thinking has always been a controversial topic standing between philosophy, which considers it as a tool that human beings use to deal with the world according to their goals and desires, and psychology where thinking is viewed as a mental behaviour that is subject to stimulus and response. In this chapter, the researcher will briefly g through the most influential works that have been carried out previously concerning thinking and its practical use. Focus will be on the importance of improving pupils thinking ability as well as the different approaches that encourage the teaching of thinking skills in EFL classrooms.

## 2.2 Brief History of Thinking:

The issue of thinking, how this human characteristic functions, and why it is important to teach people to think has been discussed over 2500 years ago during the era of the philosophers of classical Greece. Socrates, Sophocles, Thucydides, Plato, and Aristotle agreed on the importance of thinking and classified it among the pillars of powerful societies as Sophocles said: ***"thoughts are mightier than strength of hand"***. Socrates challenged those seen as authority figures of his time by adopting a method of questioning that demanded evidence and logic to supports their conclusions. The Socratic method of questioning is a strategy used to encourage learners to think through issues as Socrates believed

that knowledge cannot be acquired through direct instruction but rather through asking open ended questions to students. Plato late on adopted the view of Socrates and encouraged the youth to think which led him to death sentence by his government. Aristotle went beyond Socrates' method and tried to know how humans think until he reached the fact that thinking is a process which happens as a sequence of interrelated events. (Tebbs, 2000)

The view of the Greek philosophers survived over the centuries and was elaborated every time. Thomas Aquinas during the middle ages created a systematic approach to test thinking. Francis Bacon in the late sixteenth century claimed that information must be processed and gathered in an empirical fashion that can stand up to rigorous testing that leads to a theory. Rene Descartes in the early seventeenth century argued the need for a special "disciplining of the mind" to guide the thinking process. Thomas Hobbes', John Locke's, Kirkegaard's and Nietzshe's works are used to develop critical thinking skills in students enrolled in 21st century philosophy courses. (Bessick, 2008)

This was a very brief account concerning the history of thinking during different periods of time.

**2.3 Concepts of Thinking Skills:**

Thinking is one of the most controversial areas in psychology which became an important issue in education as well. When reviewing literature related to thinking we find that it is a broad term that can be defined in different ways. Here is a brief account of various concepts from different perspectives taking into consideration laymen's notions.

### 2.3.1 Common Notions of Thinking:

Thinking among laymen is usually defined as the state of using one's mind and imagination to solve problems or arrange future plans. De Bono (1976) summarizes a number of definitions and divides them according to the ages of the participants of his study: under twelves and over twelves. For the under twelves, thinking is as he suggests: ***"…a sort of daydreaming, reveries, contemplation, internal story-telling, and imagination. It is an exploration not of past experience but of projected experience."*** (p30). However, for the over twelves, he mentions: ***"…thinking seems to be that which goes on in the mind and is not related to the immediate situation. It is a sort of playing on the screen of the mind of past or future experience."*** (p31).That was in general some common notions of thinking from the point of view of various categories of people. While those categories differ in terms of age and surely educational level but they share the common point of making a direct link between thinking and imagination.

### 2.3.2 Experts' Concepts:

There are several and sometimes complicated definitions by many experts and professionals who give different important details. Dewey (1933) points out that thinking happens when the state of doubt is defeated by the power of enquiry; when ideas are not accepted and judgments are not made until thorough justifications have been found (p13). Thinking is viewed, according to Allen (2004), as a process which encompasses a number of interrelated procedures of finding, analyzing, and communicating information. Paul and Elder (2006) see that thinking is an art which follows a procedure based on analyzing and evaluating data. These views stress the fact that thinking is a complex skill that is

achieved through combination of skills. Allen's view is primarily based on Bloom's work (1956) in which the latter identified six levels within the cognitive domain: *Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.* Moreover, he divided the six levels into two categories according to the level of cognitive ability: the lower level of thinking represented in *Knowledge*, *comprehension*, and *application*; and the higher level of thinking described in *analysis*, *synthesis*, and *evaluation*. The lower level of thinking requires less thinking skills as it mostly deals with previously learned information, however, the higher level of thinking required more thinking skills based on analyzing, synthesizing, and evaluating information and thoughts. Although Bloom's is one of the most widely used taxonomies throughout the world to define thinking skills, yet there are some objections. Paul (1995) views that Bloom provided a framework with more precise vocabulary for teachers to communicate about curriculum and evaluation but those teachers who rely only on Bloom's for teaching thinking tend to focus on the higher level which is , according to Paul, seriously misleading.(p218)

Thinking is a broad term which is considered by many experts as the process whereby a series of connective transactions between items of perceived information may be created. Tebbs (2000) cited some definitions of thinking by a number of experts. Alvino (1990) defines thinking as a set of basic and advanced skills and subskills that govern a person's mental processes. Beyer (1985) views that thinking is the process of determining the authenticity, accuracy, and worth of information or knowledge claims. Ennis (1987) considers thinking as reflective and reasonable behavior that is focused on what to believe or do. Levy (1997)

says that thinking is an active and systematic cognitive strategy to examine, evaluate, and understand events, solve problems, and make decisions on the basis of sound reasoning and valid evidence. (p22)

As noticed, the concept of critical thinking has undergone centuries of development, therefore, there are numerous definitions. It can be referred to as critical, analytical, practical, creative thinking. In this study, thinking is the umbrella term for critical and creative thinking skills.

**2.4 Thinking vs Intelligence:**

One of the most debatable and controversial topics in psychology ever since is the relationship and the difference between *thinking* and *intelligence.* The latter is viewed as mental ability which can be measured via IQ tests, however, this view is proved wrong by many researchers. Halpern (2003) claims that an intelligent person is the one that can learn to be a better thinker and use the different thinking skills appropriately whenever needed. De Bono (2007) objects on the general use of the term intelligence and describes it as the huge danger. According to him, intelligence is a potential of the brain that is governed by thinking skills and IQ tests assess the speed of mind which people call intelligence, therefore, he suggests another term *"coping with life"* as intelligence no longer covers this meaning. Gardner (1983, cited in Puchta, 2012) argues that there is no single unitary capability among humans; however, there are multiple intelligences. He also asserts convincingly that schooling in general assesses only two of the human intelligence (linguistic and logical mathematical).

Intelligence then is a dynamic potential of the human brain that can be fostered through improving thinking skills such as logical reasoning, problem-

solving, critical and creative thinking, thus, acquiring the ability to adapt oneself to a given situation.

The following figure would better explain the relationship between intelligence and thinking skills.

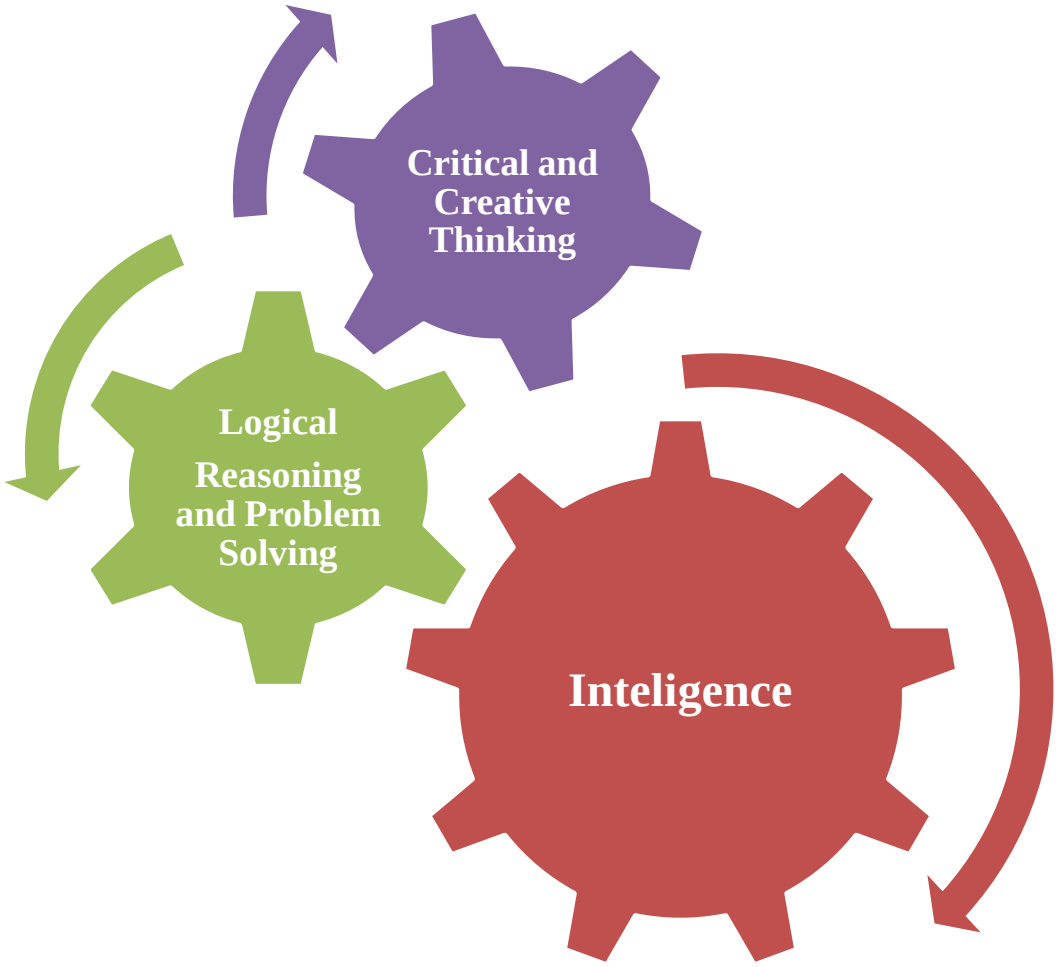



**Figure 2.1: The Relationship between Intelligence and Thinking Skills**

The figure illustrates that intelligence is a potential that exists in every human being but intelligence cannot stand alone; it needs to be driven by thinking

skills in order to activate and use it for its appropriate purposes. Intelligence cannot then be isolated from thinking skills.

### 2.5 Types of Thinking:

In order to be more specific, experts went further and divided thinking into different types according to its practical usage in fostering intelligence. Sulaiman et al (2010) cited the following types:

#### 2.5.1 Critical Thinking:

Sulaiman et al (2010) mentions that the theory of critical thinking emerged thanks to the work of Bloom (1956) in which the latter identified six levels within the cognitive domain: *Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.* Moreover, he divided the six levels into two categories according to the level of cognitive ability: the lower level of thinking represented in *Knowledge*, *comprehension*, and *application*; and the higher level of thinking described in *analysis*, *synthesis*, and *evaluation*. The lower level of thinking requires less thinking skills as it mostly deals with previously learned information, however, the higher level of thinking required more thinking skills and is defined as critical thinking which is based on analyzing, synthesizing, and evaluating information and thoughts. Bloom's taxonomy paved the way to other works such as Santrock (2008, as cited in Sulaiman et al, 2010) who suggested a number of techniques that might be helpful to teachers when planning their lessons:

1) Ask students "how" and "why" instead of only asking "what".
2) Reason and logic dominate the arguments while emotions are kept as far as possible.
3) Sometimes there is more than one answer.

4) Use reasoned comparison and judgment to decide which the best answer is.
5) Do not accept other people's views without evaluating and questioning them.
6) Be creative and consider beyond what is known.

Critical thinking is important not only in education but also in our daily life but it is education which encourages pupils, who will later on be the society's decision makers, to use critical thinking and fosters their intelligence.

**2.5.2 Analytical Thinking:**

According to Elder and Paul (2006), analytical thinking is the process of breaking a problem down using one's knowledge and analytical techniques. This type of thinking follows the scientific approach to problem solving so that learners develop the ability to solve problems quickly and effectively. It consists of a set of steps which allows students to break down complex problems into single and controllable smaller issues. In this fashion, the learners gather relevant data, identify key concepts, compare sets of data, look for cause and effect patters, and finally draw appropriate solutions. (02) Elder and Paul stress the importance of teaching this type of thinking skills and believe that students "***have no idea how sound analysis can lead the way to sound evaluation and assessment*"** (02); which is a **"very painful fact"** (02).

In order to teach pupils analytical thinking, teachers should teach analytically where they provide learners with tasks and materials that require analyzing, critiquing, judging, comparing and contrasting, evaluating, and assessing. (Sternberg and Grigorenko, 2003 cited in Sulaiman et ,2010).

### 2.5.3 Practical Thinking:

Practical thinking is the kind of thinking used to deal with everyday personal and practical problems as well as new and unusual situations. Practical thinking is not concerned with gathering information and analyzing them, but with using the knowledge that one already has to find solutions to problems in the real world. This type of thinking allows learners to adapt quickly to new situations, be open to find alternatives if a solution does not work, be flexible when approaching problems, develop good social skills, and apply what they learn in the classroom outside.( Sulaiman et al, 2010).

Teachers who tend to teach or integrate practical thinking in their lessons are required to motivate the pupils to put into practice anything they have learnt and see it as the most appropriate solution for a given problem to solve. (Sternberg and Grigorenko, 2003 cited in Sulaiman et al, 2010).

### 2.5.4 Creative Thinking:

This type of thinking is all about using imagination and blurring the lines between the real world and the imaginary one to extend the scope of the mind and find solutions in unexpected areas. (Michalko, 2006). Mastering creative thinking will allow learners to explore areas which would be otherwise unlikely and neglected. Michalko asserts that all creators from Da Vinci to Edison opt for their own interpretations of the world and never count on the interpretations of others. And most importantly, he adds, creators create because they believe in their creative abilities. Hence, it is of utmost importance to feed the learners' confidence in their creativity and let them show it and use it. (25)

In other words, creative thinking is the generation of new ideas within or across domains of knowledge, drawing upon or intentionally breaking with established symbolic rules and procedures. It usually involves the behaviors of preparation, incubation, insight, evaluation, elaboration, and communication. In the context of college teaching and learning, creative thinking deliberately and actively engages students in:

- Bringing together existing ideas into new configurations;
- Developing new properties or possibilities for something that already exists; and
- Discovering or imagining something entirely new.

**2.5.5 Convergent and Divergent Thinking:**

Guilford (1967) is best known for his distinction between convergent and divergent production, defines divergent and convergent thinking as two different ways human beings respond to a problem. Guilford explained divergent or synthetic thinking as the ability to scramble and organize ideas from across disciplines and fields of research to come up with a better understanding of the world. With this definition he links divergent thinking with creative thinking and its many characteristics like flexibility, originality, and elaboration; whereas convergent thinking is concerned with finding the single correct answer to a question, or the best solution to a problem. It draws strongly on speed, accuracy, logic and familiarity. It is very useful for students in exams of multi-choice questions (48).

In order to make learners use convergent and divergent thinking, teachers need to encourage them to think logically through allowing open discussions in

the classroom where pupils feel free to give their points of view concerning any given topic. ( Sulaiman et al, 2010).

### 2.5.6 Lateral and Vertical Thinking:

According to De Bono (1970), vertical thinking happens when one tries to select the most promising approach to solve a problem with the exclusion of the other approaches; while lateral thinking occurs when the human being attempts to generate as many alternative approaches as possible. Vertical thinking is then related to rightness; however, lateral thinking is closely related to richness and creativity.

Lateral thinkers think outside the box and use an indirect approach to solve problems. Lateral thinking learners tend to be disruptive in class and ask many questions because they want to know as much as possible about the topics in question. They never give up and always look for new ways to do tasks, and this is why they make a lot of mistakes, but still have higher IQ's. However, vertical thinking follows a methodological way of solving problems using step by step strategies to get to the point, saving time and energy. It respects a structured pattern to find solutions, unlike the restructuring of set patterns which occurs in lateral thinking.

## 2.6 Thinking and Thinking Skills:

According to De Bono (1976), thinking can be defined as the deliberate exploration of experience for a purpose and thinking skills are patterns of thinking that help learners go beyond the mere recall of information and enable them to explore and make sense of their world, to reason and problem solve, as well as to plan, create and invent.(33)

Thinking skills refer to processes of thinking and learning in a wide range of contexts, not just in school.

### 2.6.1 Reasoning:

Reasoning, according to Matthews and Lally (2010), is the act or process of drawing inferences and conclusions from information, facts, evidence, etc. Reasoning skills involve clarifying meaning, explaining, analyzing, opinion forming, decision making, interpreting and giving reasons for conclusions.(4)

### 2.6.2 Problem Solving:

Matthews and Lally (2010) state that problem solving demands the skills of reasoning and creative thinking: reasoning to define and analyze the problem, creative thinking to generate possible solutions, and reasoning again to select the preferred solution. Assessments in problem solving usually test understanding of information, data handling, modeling, logic and reasoning, rather than the creative generation of solutions.(4)

### 2.6.3 Global Perspectives:

Global Perspectives are qualifications designed to embed thinking and reasoning skills in issues of global importance. Students are expected to reflect on and reason about issues in a global context, and to develop the ability to reflect on their own thinking. Matthews and Lally (2010:4)

## 2.7 Bloom's Thinking Skills Taxonomy:

Bloom (1956) developed a classification of learning objectives in education which was the outcome of a serious work carried out by a committee of college and university examiners chaired by Bloom (1949 – 1954) aiming to facilitate communication among its members namely: teachers, learners, syllabus

and course books designers...etc. This classification was named after Benjamin Bloom "Bloom's Taxonomy". The latter contained three overlapping domains: *Cognitive, Affective, and Psycho-motor* and a number of levels was identified among each domain. Concerning the cognitive domain, levels are identified: knowledge, comprehension, application, analysis, synthesis, and evaluation.

The following table would better illustrate Bloom's Cognitive Domain:

| Level | Definition |
|---|---|
| **Knowledge** | Recall and remember information. |
| **Comprehension** | Understand the meaning of instructions and problems. |
| **Application** | Use what has been learned in the classroom in new situations. |
| **Analysis** | Separates material or concepts into component parts so that its organizational structure may be understood |
| **Synthesis** | Put parts together to form a whole, with emphasis on creating a new meaning or structure. Originality and creativity |
| **Evaluation** | Make judgments about the value of ideas or material. |

**Table 2.1: Bloom's Taxonomy (Cognitive Domain)**

**(Adapted from Bloom et al 1964)**

In fact, Bloom's taxonomy was revised by Anderson and krathwohl (2001) concerning the cognitive domain where they redefined it as the intersection of the Cognitive Process Dimension and the Knowledge Dimension and divided the six aforementioned levels into "***Higher Order Thinking Skills"*** and ***"Lower Order Thinking Skills"*** as the figure below suggests:

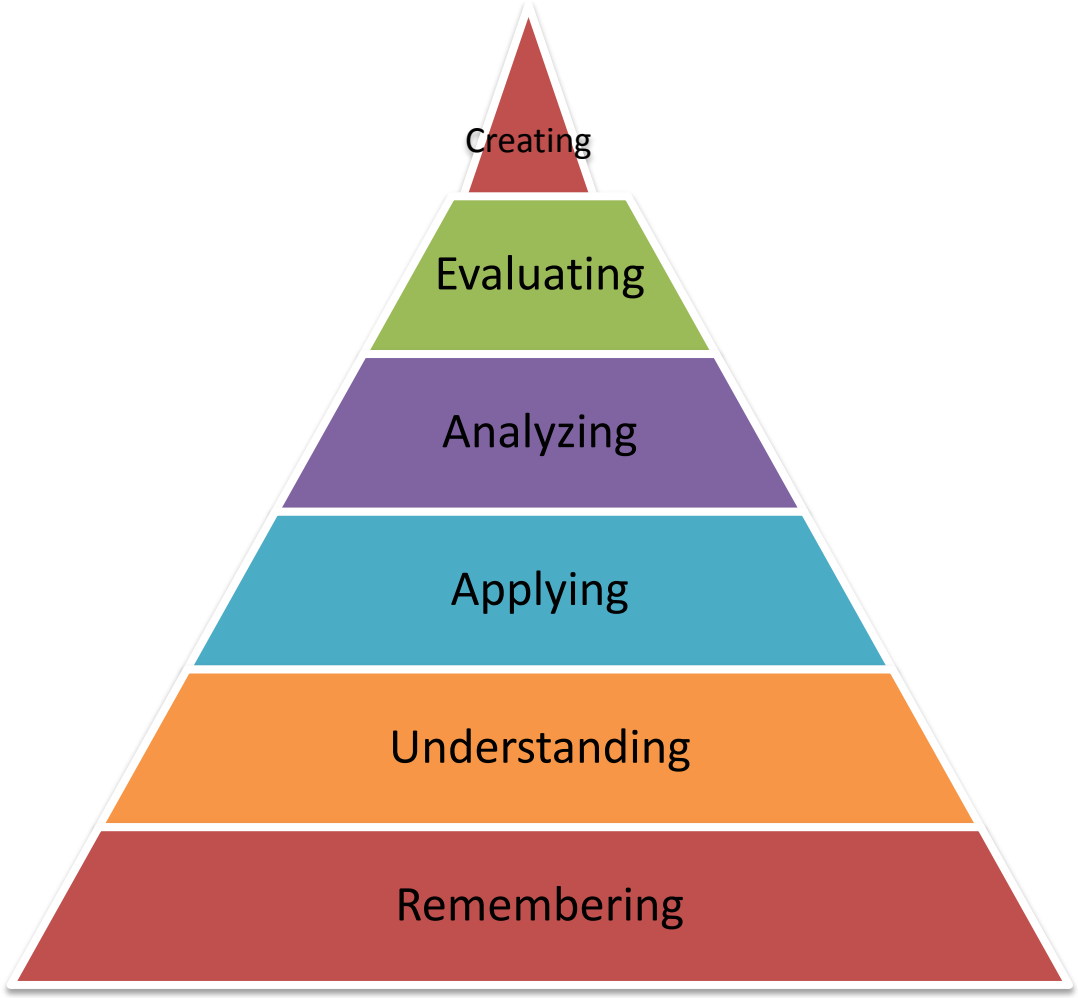



**Figure 2.2: Bloom's Higher and Lower Order Thinking Skills**

**(Adapted from Anderson and krathwohl 2001)**

The figure showing the highest level of thinking at the top of the pyramid and working its way down noting that "creating" is combining or reorganizing

elements to form a coherent or functional whole or into a new pattern, structure or idea.

Bloom's Taxonomy is one of the most influential works in education which is still used nowadays to develop the critical and creative thinking skills of the learners, yet, the majority of, especially, novice EFL teachers are not aware of the importance of Bloom's Taxonomy, moreover, they do not know how to put it into practice when planning their lessons.

**2.8 Importance of Teaching Thinking Skills:**

Thinking skills have become a necessity due to two main reasons. First, the fact that the basic four skills (reading, writing, listening, and speaking) are somehow well taught, yet they are not sufficient to reach the wished linguistic competence. Therefore, higher order thinking skills are required in addition to those basic skills in order to prepare pupils not only for school exams but also for any unpredictable situation in or outside the classroom because the aim of education is to encourage pupils to bring new ideas and cope with situations and not just to master the basics (Piaget, 1958). Second, the rapid pace of the development of knowledge lessens the learners' ability to store sufficient information; this fact calls for the need of transferable skills to help learners address different problems across their educational and later on professional careers (Fisher, 2005). Thinking skills are needed to make of every learner, not just the elite, a future active citizen who will be able to comprehend, judge, and participate in generating new ideas and processes.

The importance of thinking skills is certainly a vital issue. Developing thinking skills enables learners to gain a deeper understanding of topics, to be

more critical about evidence, to think flexibly and to make reasoned judgments and decisions rather than jumping to conclusions. These qualities in thinking are needed both in school and in the wider world. Learners need to develop a repertoire of thinking strategies to be drawn on when they encounter new situations and to consider a number of alternatives that can use in case something unexpected occurs.

## 2.9 Approaches to Teaching Thinking Skills:

Thinking is a skill that can be taught and education is the main responsible to improve it through implementing the appropriate teaching methodologies and approaches to meet the needs of the pupils to cope with the classroom's challenges and the world's later on. There are numerous approaches that teachers have used to improve their pupils thinking ability. Nisbet (1990, cited in Wilson, 2000) identifies two approaches:

### 2.9.1 The Direct Teaching of Thinking through Specifically Designed Programmes:

This approach considers thinking skills as learned behaviour patterns and calls for their direct instruction to learners. Thinking entails a set of specific skills, such as identifying cause and effect, comparing and contrasting, making a decision, classifying, and predicting, which are considered to have wide applicability and generalisability across all subject areas. Thus, this approach assumes that students will learn thinking skills better when they practise them independently from specific subject matter content.

The idea of teaching thinking deliberately began to gain interest with the publication of De Bono's book *Lateral Thinking* (1970) which focuses on creative

thinking and the direct teaching of thinking as a skill. At that time, thinking was not viewed as a skill, however, considered, among the majority, as a psychological human characteristic which is not expected to be developed or taught. But De Bono (1976) has examined the issue from a different perspective where he views that:

> ***"In education we rightly put great emphasis on understanding and analysis. We rightly extol scholarship because scholarship is valuable and because scholars are what the system brides itself on producing. But passive, descriptive, contemplative thinking – no matter how subtle or acute – is not the same as generative thinking. Generative thinking is concerned with bringing things about and solving problems. Generative thinking is practical, creative, and constructive. Generative thinking has to deal with the world and take action, even if knowledge is incomplete."*** (16).

De Bono (2007) stresses the direct teaching of thinking and claims that intelligence is a potential that is governed by thinking skills. In the same book, he criticizes universities as being somewhat out of date and argues that in the age of the extreme development of information communication technology, universities are still teaching knowledge and the skill of presenting information which does not help graduates to operate in the real world (40, 43). He adds that education in many places focuses on teaching literacy and numeracy which in fact lead to understanding but not forcibly to action (55, 58). De Bono has written many books about teaching thinking and suggested tools such as the *Cognitive Research Trust* (CoRT) *Thinking Program* or *The Six Thinking Hats Framework*; two of the most favored programmes for teaching and nurturing thinking skills in many developed and developing countries. They were introduced by Dr. Edward De

Bono, the father of thinking about thinking. CoRT has been taught since the mid 1970s. The CoRT thinking and the Six Thinking Hats are hands-on; they aim at equipping students to become effective, critical, creative, constructive, and comprehensive open minded thinkers.

McGuinness (1999) cited one of the best known general thinking skills programme world wide is Feuerstein's Instrumental Enrichment (IE) which was developed some 40 years ago. Remedial in its outlook and initially intended for slow learning adolescents, it is now used across wider age groups and abilities. Extensive evaluations of IE show positive effects primarily on measures of non-verbal reasoning.

In the 1990s, Costa and Liebmann noted an interest in research, workshops, in-service training, and conferences focusing upon issues of teaching thinking and the fact that the educational standards need to embrace thinking skills as essential elements in the proper education of young people. They wrote about their concern about proper preparation of students with respect to skills that would enable them to be systems thinkers and continuous learners in the future. Costa and Liebmann were convinced of the need for learners to be able to think for themselves as ***"self-initiating, self-modifying, and self-directing thinkers"*** and ***"beyond just fixing problems… anticipating what might happen… searching continuously for more creative solutions"*** (1997: xiv).

Fisher (2005), points out the works of many researchers in the context of teaching thinking skills such as Lipman's *Philosophy for Children Programme* (1980, 1991) which is designed to teach thinking skills explicitly and directly to children aged (5-15). Lipman's work was a result of his dissatisfaction towards

his university students' performance which he traces back to a lack of a number of basic skills and claims that: ***"it was too late to change their thinking habits at the university level…"*** (4). Fisher, in the same article, mentioned the work of Gardner *Multiple Intelligences* (1993) which stresses the teaching of thinking skills in order to develop various types of intelligences.

Wilson (2000) cited the work of Blagg et al (1988) who designed *The Somerset Thinking Skills Course* which focuses on problem solving, analyzing, synthesizing, predicting, and deciding. The aim of the course is to foster pupil's intelligence as well as to improve their ability to think critically and creatively.

Noor (2005) in his article *Teaching Thinking Skills: Redesigning Classroom Practices* believes that neglecting thinking skills leads to nowhere and educational curricula should give priority to teaching thinking. He says:

> ***"There is a lack of higher-order thinking ability among students and there is a need to prepare students for future effective problem-solver, thoughtful decision-maker and life-long learning. There is a necessity for students to be independent thinkers as an increasingly wide range of jobs in future requires capable workers/employees who have the ability to think"*** ( 2).

These are only some of the works that showed interest in thinking skills, some of which originate from works in psychology while some others derive from philosophy, however, they all insist on teaching thinking explicitly and suggests separate courses or instructional units in courses, where thinking skills are practised specifically and principles of good thinking are made explicit, in order to train students in those specific thinking skills and lead them to lifelong success.

### 2.9.2 The Indirect Teaching of Thinking/ Embedded in the Curriculum:

As opposed to the above, this approach views knowledge as the basis of thinking, hence, a solid background of knowledge reinforces one's ability to think. The contribution of knowledge to effective thinking is underlined. Thus, this approach assumes that thinking skills are learned best when they are infused in content of a course. Many researchers believe in the possibility to embed thinking skills in the curriculum and teach such skills through specific subjects in order to help pupils make the connection between what they learn and the real world.

Wilson (2000) cited the example of teaching thinking through mathematics, which has long been associated with logical thinking, and exemplified with Russell and Whitehead's *Principia Mathematica* (1910). McGuinness (1999, cited in Wilson, 2000) points out that thinking through mathematics enhances the pupils' reasoning and ability to solve mathematical problems not only in the classroom setting.

This approach attempts to integrate direct instruction in specific thinking skills into the context of existing academic disciplines which will improve the pupils' thinking and enhance content learning. Within this approach the teacher performs the job of redesigning the curriculum, exploring topics in greater depth, and promoting discussion among students.

There are many programmes such as *Activating Children's Thinking Skills (ACTS)* (McGuinness et al, 1997) designed to help teachers develop their pupils' thinking across the curriculum. This programme aimed to promote the development of thinking skills in ordinary classrooms in Northern Ireland at Key Stage 2. It was developed by McGuinness and a small group of teachers using

thinking diagrams or graphic organizers for decision-making, as an aid to making the steps in thinking explicit to learners.

McGuinness (1999) reported that teachers who adopted this approach find it practical and beneficial in terms of the learners' thinking, reasoning powers, and creativity.

As far as this research is concerned, it would paramount to shed light on teaching or integrating thinking skills in EFL classes in order to benefit from others' experiences.

**2.10 Teaching Thinking Skills in EFL Classes:**

It is only recently that teaching thinking skills became an approach to language learning and teaching. Specialists in this context claim that it is to a great extent beneficial to teach thinking skills in the language classroom and students gradually feel the change and show more interest and willingness to learn.

Dobrovolska et al (2002) state that the language teacher is responsible not only for developing the students' ***'language competence'*** but rather the way to bring such competence into action in unexpected situations. In the same flow of thought, Kabilan (2000) assumes that only using and knowing the meaning of the language points being taught does not lead to a good mastery of the target language, however, creative and critical thinking skills are needed. He adds that it is high time language teachers changed their attitudes towards students and took into consideration the student's prior knowledge, experiences, notions, and views of the world. Sokol (2006, 2007) calls for a shift towards a Thinking Approach

(TA) to language learning and teaching and comments on the way language is taught:

> ***"The need to develop learners' problem solving and thinking skills is widely recognized. Researchers also agree that it is better to do it within disciplines rather than in a separate course. Language instruction takes a large proportion of school curriculum. At the same time, programmes for the systematic development of learners' language and problem solving skills are virtually absent. This is equally true for primary, secondary and tertiary levels"*** (2007: 4).

Therefore, Sokol suggests a number of well designed programmes and frameworks which help learners improve their language and problem solving skills at the same time. Moreover, he created specific programmes of possible teacher training in the thinking approach.

Opp-Beckman and Klinghammer (2006) believe that thinking is a lifelong skill which teachers hope to awaken and nurture in their learners, wherever they may be going in life. They argue that:

> ***"In short, it is a way of introducing open-ended learning and thinking into our classes. It can mean accepting more than one "right" answer. It can even lead to cases where students become knowledge "experts" and end up knowing more than the teachers do about topics they have researched or explored"*** (136).

Puchta (2012) stresses that thinking requires development and asserts that: ***"…thinking is not a natural function like sleeping, walking and talking"***, he adds that a nurturing environment, whether at home or in the classroom, is the key to foster the children's thinking abilities. Puchta insists on giving learners the

opportunity to apply their thinking skills and recommends teachers to direct them to systematic ways of solving problems:

> ***"When children get used to systematically applying their thinking skills, they will go through positive learning experiences, and they will gradually learn to enjoy more challenging tasks. As a result, their self-confidence will grow"*** (6).

Hove (2011) points out: ***"English classroom is a logical environment in which to explicitly teach, and practice, critical thinking with the goal of developing lifelong habits of mind"*** (6), and claims that literary texts can be a very useful vehicle to teach thinking skills "***…if reading the world can be paralleled to reading a text…"*** (Mendelmen, 2007, cited in Hove, 2011) (11).

The English classroom provides an atmosphere to learn, practise, and develop habits of the mind that result in deep and insightful thinking skills. It is in the English session that pupils read, write, listen, and speak which lead them through the exploration of the topics they learn to demonstrate the ability to think critically when they communicate as they learn from and with each other, thus, they become productive members in society thereafter.

**2.11 Conclusion:**

After the brief examination of the works that showed interest in improving pupils' thinking skills, it is obvious that it has become increasingly important in this information age to invest the children's thinking ability for the benefit of countries in the future. Though it is not widespread, improving pupils' thinking skills is explicitly recognized as an educational goal in many developed countries.

In order to achieve that, both teachers and pupils should be prepared to invest in thinking skills and benefit from them in the instructional process. Hence

teachers are foremost supposed to be aware of "thinking" as a skill so that they are able to be as systematic as possible in providing lessons and instructions that not only inform the pupils, but also challenge their brains into becoming more creative and analytic in their learning. The work of the teacher, in this sense, will move the students through a learning path that starts with dealing with unfamiliar material all the way to actually using that material in the real world.

Learners, on the other hand, will play the roles of cooperators and partners in the process of learning, rather than receptors. They also should be aware of their own thinking abilities so that the activities put forward by the teacher make sense to them. Because the objective is not to intrigue pupils but to give them more confidence in the capacities of their brains. They should realize that they are being coached to become more effective learners, rather than feel trapped in difficult situations.

## Chapter Three

## Data Analysis

# Chapter Three

# Data Analysis

## 3.1 Introduction:

This chapter represents the analysis and the interpretation of the collected data. As mentioned in chapter one, the process of data analysis is divided into two main phases: qualitative data analysis then quantitative data analysis. As for qualitative data, the researcher adopted two main tools: classroom observation and a semi-structured interview addressed to the teachers; while for quantitative data, a pretest-posttest method was adopted. By the end of the process of data analysis, a summary of the results will be provided as an attempt to answer the research questions and to find out if any correlation exists between the suggested hypotheses and the practical side of the experiment.

## 3.2 Qualitative Data Analysis:

As mentioned above, classroom observation and interview were used to collect qualitative data. The latter will then be automatically analyzed separately. The interview will be analyzed first then the classroom observation following the chronological order.

### 3.2.1 The Interview:

The interview was mainly addressed to teachers of English who belong to the same educational district as the chosen sample of pupils. The total number of

the interviewed teachers was supposed to be twenty four (24) but due to some limitations such as the incompatibility in time tables, the investigator did not have the chance to interview all the twenty four teachers, therefore, only eight (08) teachers, those who currently teach **MS2** classes, were interviewed. The purpose behind interviewing the teachers was to report their opinions concerning integrating thinking skills in the EFL syllabus, the difficulties that may hinder the progress of such an idea, the balance between thinking and the other skills, and finally the way teachers should assess and evaluate thinking in coordination to the other skills.

The table below presents a general overview of the interview:

| **Respondents** | **Status** | **Institution of Training** | **Time** |
|---|---|---|---|
| 2 teachers | permanent | ITE | 45 min |
| 1 teacher | permanent | ENS | 45 min |
| 4 teachers | permanent | University | 45 min |
| 1 teacher | Part-time | University | 45 min |

**Table 3.1: General Information about the Interview**

From the table above, we notice that there is a variety among the interviewees who came from different institutions and received different types of training. Moreover, they differed in their experience as teachers of EFL. This fact allowed the researcher to consider various views that would be of a great value for the study.

### 3.2.1.1 Design of the Interview:

As far as the semi-structured interview is concerned, the investigator, after introducing himself and providing an idea about the interview and the purpose behind, asked five main questions at first, each question was followed by a number of more specific additional questions entailed every time with some clarifying questions. The following table summarizes the interview plan :

| Main Questions | Additional Questions | Clarifying Questions |
|---|---|---|
| **1-** What can you say about the level of your pupils? | **a-**What can they do well?<br>**b-**What cannot they do well?<br>**c-**What did you try as a solution?<br>**d-**Did it work ? | -Can you explain further?<br>-Can you give me some examples?<br>-Can you expand a little on this? |
| **2-** In your opinion, what are the reasons behind pupils' low performance? | **a-**How would you order those reasons depending on the degree of harm ?<br>**b-**What do you suggest as a solution? | |
| **3-** What do you know about thinking skills? | **a-**What is the places of thinking skills as compared to the other skills in the curriculum?<br>**b-**Have you ever tried to integrate thinking skills in your lessons ? | |
| **4-** What can you say about integrating thinking skills in EFL teaching? | **a-**Would you teach such type of skills explicitly or implicitly?<br>**b-** Why?<br>**c-** What possible techniques would you suggest? | |
| **5-** What do you think of using the following techniques? | **a-** Debate.<br>**b-** Media as a teaching resource.<br>**c-** Real life like problem solving situations. | |

**Table 3.2: The Interview Plan**

### 3.2.1.2: Results:

The investigator tried to pay attention to any kind of information or details that might be useful and beneficial to the results of the study. The questions of the interview were analyzed following the same order as mentioned in the table above.

- **Question 1:** What can you say about the level of your pupils?

This question received the same answer from all the teachers who admitted that their pupils are slow with the exception of very few ones who can be considered fast learners. Therefore, the teachers tried different techniques to solve the problem except the substitute one who experiences teaching for the first time so no enough knowledge to deal with such situations. Some of the techniques the teachers mentioned are :

- Using ICTs (mentioned by three teachers).
- Adapting the textbook texts and activities (said by two teachers).
- Two other teachers preferred using song at this level and age.

However, the teachers admitted that the impact the techniques they adopted did not rise to their expectations because of many factors according to them.

**Question 2:** In your opinion, what are the reasons behind pupils' low performance?

Unlike the first question, the second received different views. Three respondents believe that the main reason behind pupils low performance is the

overloaded syllabus which is not compatible with the given instructional time ; this leaves no chance for them to integrate extracurricular activities that would consolidate their pupils' level ; therefore, they suggest that the syllabus needs to be reconsidered. Three others assume that the main reason is the textbook which, according to them, contains many texts, dialogues, and activities that stand far from either the learners' interests or ability. Those teachers believe that providing a textbook that is designed according the pupils' interests and level would be a practical solution. The last two teachers traced it back to the pupils' social background which affects their educational progress and suggested that the teacher should pay more attention to this side of the pupil's experience.

What is noticed in the teachers' responses to this question is that none of them has mentioned the role of the teacher or teacher training not even as a probable reason for pupils' low performance. In fact it is a very important point to consider due to the teacher's sensitive contribution in the making of future citizens.

**Question 3:** What do you know about thinking skills?

The responses to this question were not surprising as the majority have no idea about thinking skills at least in the field of EFL teaching; they never tried to integrate them but they focus on developing the skills of reading, listening, speaking, and writing in their lessons. However, there was an exception; only one teacher has got a good amount of information concerning thinking skills and even the possibility of implementing them in EFL classes.

- **Question 4:** What can you say about integrating thinking skills in EFL teaching?

After a deep clarification from the part of the researcher, the teachers showed a significant enthusiasm towards the idea of integrating thinking skills in EFL classes. All the interviewees agreed on the implicit teaching of such skills as the most appropriate approach.

Some teachers suggested useful techniques such as to devote the tutorial (TD) session to improve the learners' thinking skills, increase the use of ICTs, and provide authentic materials for the pupils to practise the language. One teacher proposed the organization of inter school contests for the learners to experience the spirit of intellectual competition at an early age.

- **Question 5:** What do you think of using the following techniques?

**a- Debate :**

All the responses were not with the use of this technique; the teachers argued that neither the age nor the level of the pupils allows the adoption of debate.

**b- Media as a teaching resource :**

The respondents expressed a strong agreement towards using this technique on one hand while on the other they insisted on the re-adaptation of such a material to be appropriate to the pupils' level and age. It will not, according to the interviewees, be useful to bring to the classroom materials that are far away

from the learners' interest; it would rather hinder their thinking process. The choice of the resources then needs to be very precise and appropriate.

**c- Real life like problem solving situations :**

The interviewed teachers see that it would be paramount to train pupils on solving language related problems whenever they are involved in, and not just during tests and exams.

The results of the interview provided in-depth information right from the classroom, as the primary source, which helped a lot and contributed to a great extent in the researcher's decisions especially during the experimental treatment phase.

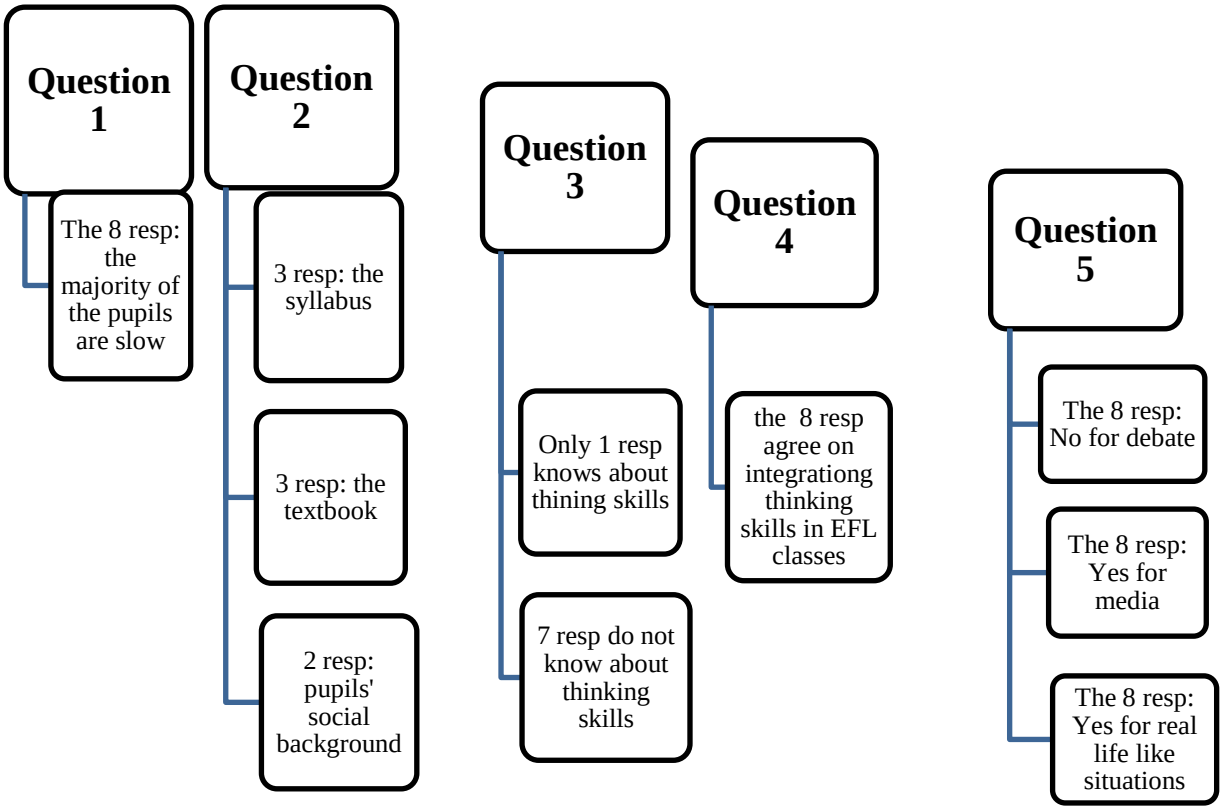



**Figure 3.1: Summary of the Interview**

### 3.2.2 Classroom Observation

The treatment or action phase, as mentioned earlier, was divided into three periods, therefore, the discussion and analysis of the observations were based on that division.

#### 3.2.2.1 The First Period:

Along this period which lasted for two (02) months the researcher being the teacher and the observer at the same time has tried to make the possible balance between doing his job, teaching, and taking notes and observing what goes on during the lesson. Both control and experimental groups were subject to observation, with the average of (04) sessions each group, for the purpose of finding out any kind of change.

The researcher tried during this period to focus on the following points: pupils' motivation and involvement in all types of activities, teacher talking time, and learner talking time. The teacher adopted different method of instruction in order to see the impact of integrating thinking skills on the performance of the pupils in the experimental group.

The following table is an attempt to summarize the data gathered with reference to both the experimental and the control groups during the first period of treatment:

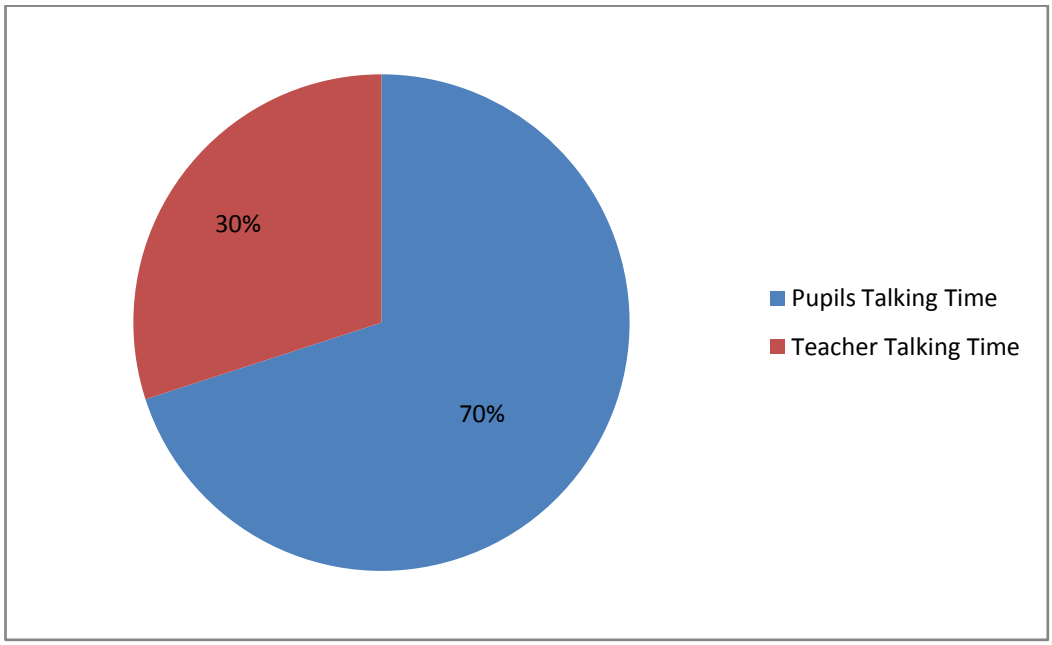
| Elements Being Observed | Control Group | Experimental Group |
|---|---|---|
| **Types of Activities** | The teacher has prepared activities focusing only on the linguistic side of the subject matter, and most of them were chosen from the course book | The teacher has prepared activities focusing on making comparison, categorizing, sequencing, focusing attention, and memorizing. |
| **Pupils Motivation and Involvement** | The majority was not motivated and the activities seemed difficult for them but some of them tried to complete the given tasks. | They were highly motivated and involved in doing the activities which were chosen according to their level and interests. |
| **Teacher Talking Time** | The teacher tried to limit his talking time to explaining the different instructions but he found himself every time talking more than he has planned. | The teacher tried to limit his talking time to explaining the different instructions and monitoring the pupils during pair and group work. |
| **Learner Talking Time** | The pupils didn't talk much because they failed in finding the right answers. | The pupils enjoyed having the chance to give answers and participate most of the time. |

**Table 3.3: EG and CG Classroom Observations during the First Period**

As the table suggests, it is clear that integrating thinking skills enhances the pupils' motivation and involvement in the making of the lesson. It is also

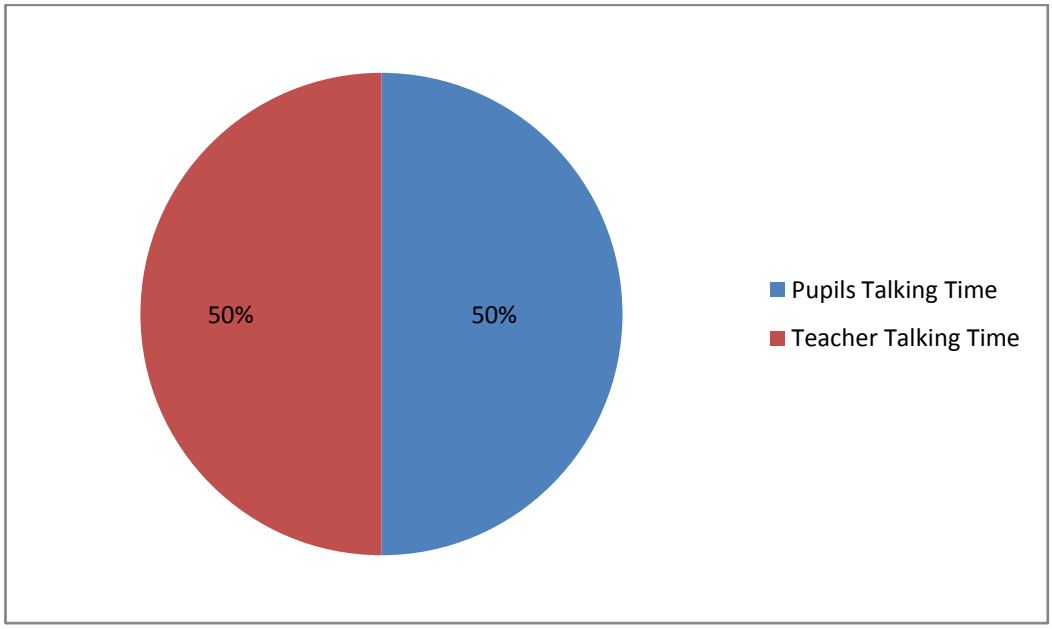
paramount for the learners to take part talking during the English session so to improve their speaking and listening skills; as the table shows, integrating thinking skills gives them more opportunities to talk and increases their chances to participate unlike those pupils in the CG who seemed frustrated and did not speak as expected.

The following pie-charts would better illustrate the pupils talking time for each group:




**Pie-chart 3.1: EG Talking Time**

The teaching methodology and the techniques implemented by the teacher encouraged the EG pupils to talk and try to interact with each other during every activity; as a result, they took the lion share as the chart above illustrates. In contrast, the CG pupils, who received no thinking instruction, hesitated to talk and faced difficulty in doing their activities. The chart below shows their talking time:




**Pie-chart 3.2: CG Talking Time**

These were the most important elements the researcher observed during the first period of the treatment. Along this period the researcher has encountered some difficulties due to the lack of experience in the field of scientific research. These difficulties can be summarized in the following points:

- The preparation and the choice of activities took more than the expected time because of the lack of material concerning the topic which is considered a new in the field of EFL teaching.
- The researcher failed most of the time in convincing the members of the CG, who due to age considerations felt ignored by the teacher compared to the EG, that it was just a scientific research that imposes such rules.
- The researcher did not succeed sometimes in adopting the role of the teacher and the observer at the same time.

The researcher then tried to reflect on his experience in this first period and adopt more effective techniques that would help him go through the rest of the study.

### 3.2.2.2 The Second Period:

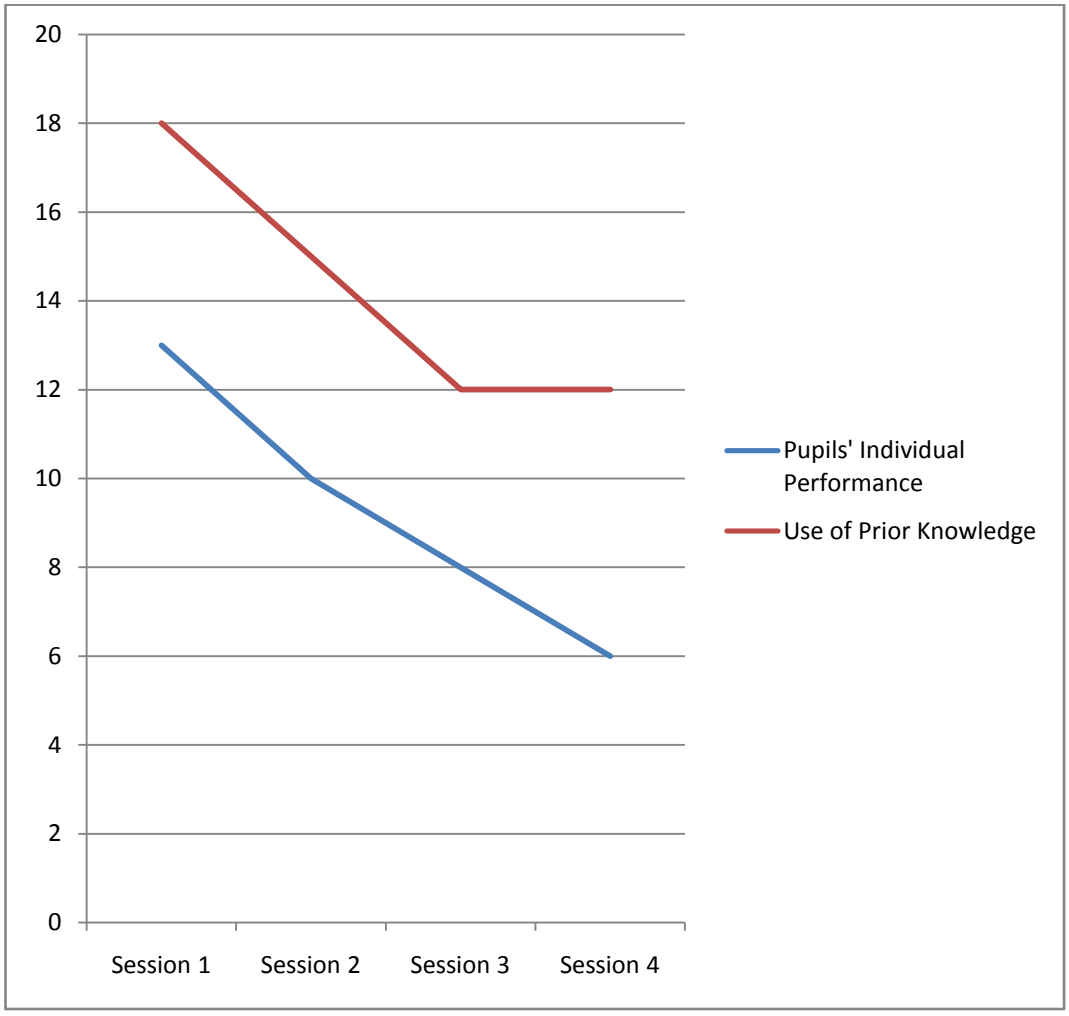
This period also lasted for two (02) months with the average of four (04) sessions each group. Focus during this period was on the pupils' individual performance within the group and how much they could use what they have learned in the first period. Therefore, the purpose of the observation was mainly to identify any progress in the learners' performance at the end of this period.The following table summarizes the notes taken by the researcher concerning both groups:

| **Elements Being Observed** | **Control Group** | **Experimental Group** |
|---|---|---|
| **Types of Activities** | The teacher has prepared activities that are based on what has been learned and focus on consolidating the pupils' use of grammar in context. | The teacher has prepared activities that encourage the pupils to explore space, time, and numbers for the purpose of making associations between them in real life situations. |
| **Learners Individual Performance in the Beginning of the Period** | (04) out of (18) could acceptably perform well individually. (03) Girls and (01) boy. | (13) out of (18) could acceptably perform well individually. (08) Girls and (05) boys. |
| **Learners Individual Performance at the End of the Period** | (05) Pupils out of (18) could perform well individually. (03) Girls and (02) boys. | Only (06) pupils out of (18) could perform well individually. (04) Girls and (02) boys. |
| **Degree of Using Prior Knowledge in the Beginning of the Period** | Average use of what has been learned previously. | Satisfactory use of what has been learned in the first period. |
| **Degree of Using Prior Knowledge at the End of the Period** | Low use of what has been learned previously. | Average use of what has been learned in the first period. |

**Table 3.4: EG and CG Classroom Observations during the Second Period**

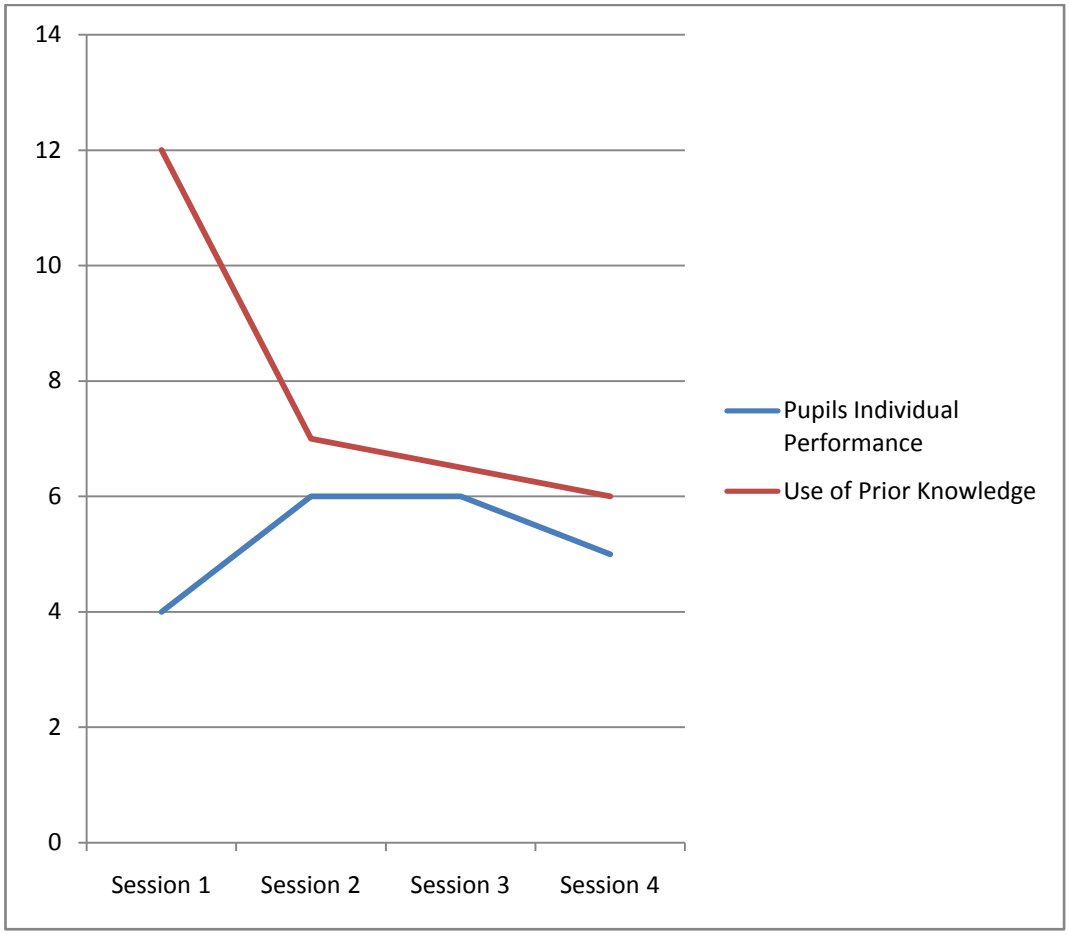
The observations noted in the table above show that the pupils faced some difficulties in integrating their thinking along with their linguistic skills especially at the end of the period. It is clear that the learners did not perform well at the individual side.

The following graphs would further illustrate the pupils' progress during this period:




**Graph 3.1: EG Progress during the Second Period**

The graph shows a kind of a decrease in the learners' individual performance as well as their use of the prior knowledge. The same remark is made about the CG.




**Graph 3.2: CG Progress during the Second Period**

The noticeable decrease in the pupils' individual performance and their use of what they have learned in the first period can be justified, according to the researcher, by the learners focus on the preparations for the second term examination which affected their individual performance in the English tutorial session. Add to that the strike which lasted for almost four (04) weeks and which might have influenced the learners' regular educational schedule and activity. Another reason was the bad weather that the region witnessed and which resulted in repeated absences of a number of pupils who caught cold; this fact affected the atmosphere of the classroom especially during pair and group work.

### 3.2.2.3 The Third Period:

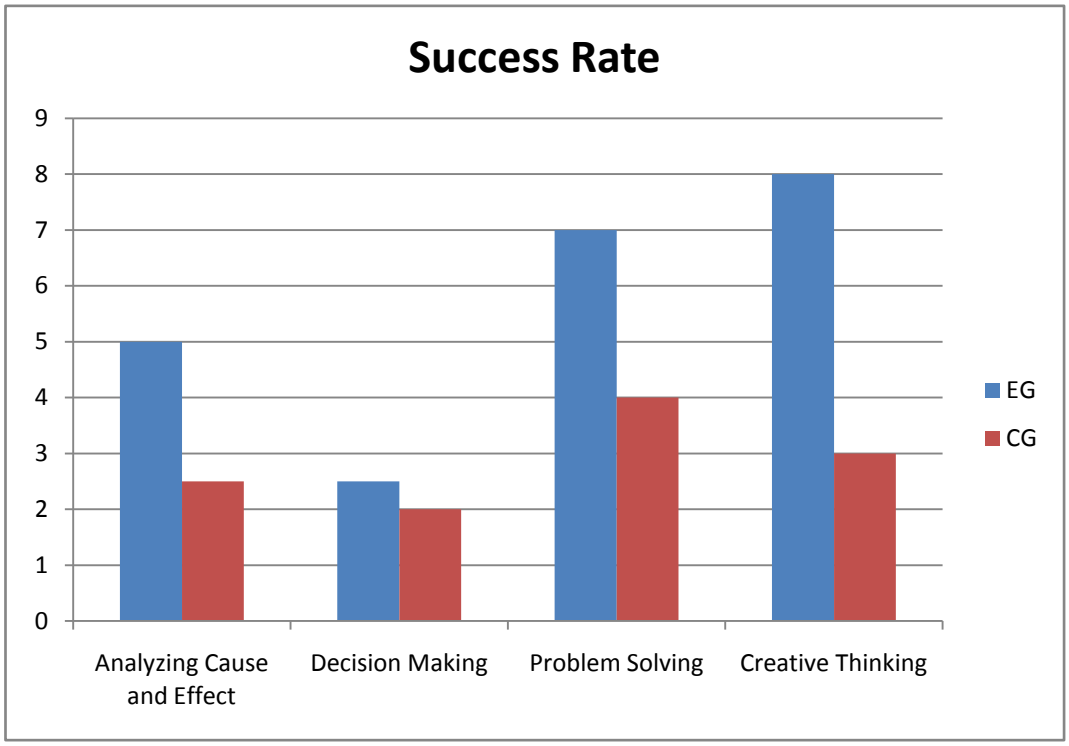
The third and the last period also lasted for two (02) months with the same average of sessions for each group as in the first and second periods. During this period the teacher tried to raise a little bit the level of difficulty of the devised activities and to simulate real-life like situations and problems for the learners to solve. The observations are summarized in the following table:

| **Elements Being Observed** | **Control Group** | **Experimental Group** |
|---|---|---|
| **Types of Activities** | The teacher has prepared activities from the course book, those activities are supposed to develop the learners' ability to analyze cause and effect, make decisions, solve problems, and use their creative thinking. | The teacher has prepared activities that recommend the pupils to use what has been learnt previously for the purpose of developing specific skills namely: analyzing cause and effect, making decisions, solving problems, and using their creative thinking. |
| **Success Rate in Analyzing Cause and Effect.** | Low success. | Average success. |
| **Success Rate in Making Decisions.** | Low achievement. | Low achievement. |
| **Success Rate in Solving Problems.** | Average success. | Satisfactory success. |
| **Success Rate in Using Creative Thinking.** | Low achievement. | Surprising achievement. |

**Table 3.5: EG and CG Success Rate during the Third Period**

As the table shows, it is obvious that the pupils at this age find it very difficult to analyze and make decisions. However, we notice a high level of achievement among the same group of learners when it comes to solving problems and using their creative thinking. In fact they preformed much better than what was expected by the researcher.

The following graph illustrates the pupils' success rates concerning the skills mentioned in the table:




**Bar Graph 3.1: EG and CG Success Rate during the Third Period**

Examined closely after the three periods and with all the observations made, we can say that the pupils at this level and age have the potential and ability to use their thinking skills in order to learn EFL but, on one hand, with the help of the teacher who would work on encouraging the learners to activate such a skill

and, on the other hand, the reconsideration of the content of the coursebook and syllabus.

### 3.3 Quantitative Data Analysis:

Unlike qualitative data analysis, quantitative data analysis provides quantifiable and easy to understand results. The analysis should undergo specific steps: tabulation of data, descriptive or calculation of data as well as choosing the most appropriate statistical program of data analysis.

The data were analyzed primarily to identify statistical significant differences between the pretest and the posttest results which would answer the research question. As mentioned previously, the investigator has chosen to follow the Pearson Correlation Coefficient to count the correlation coefficient between the two variables.

#### 3.3.1 The Pretest Scores Analysis:

The pretest is prepared to test certain thinking skills namely: *Categorizing, Sequencing, Making Associations, Making Decisions, and Solving Problems.* Therefore, five activities were devised (one activity for each skill). The length of the pretest and the degree of difficulty were appropriate to the level of the pupils. The researcher referred to the participants sa (P) and the pupils were given numbers (1 to 18). Both the control and the experimental groups took the same pretest and the scores are presented in the tables below:

| Pupils | Activity 1<br>Categorizing<br>02 pts | Activity 2<br>Sequencing<br>03 pts | Activity 3<br>Making Associations<br>04 pts | Activity4<br>Making Decisions<br>05 pts | Activity5<br>Solving Problems<br>06 pts | Final Mark<br>X/20 |
|---|---|---|---|---|---|---|
| **P1** | 01 pt | 0.5 pt | 0.5 pt | 0 pt | 0 pt | **02pts** |
| **P2** | 02 pts | 0 pt | 0.5 pt | 01 pt | 0.5 pt | **04 pts** |
| **P3** | 0.5 pt | 01.50 pt | 01 pt | 0.5 pt | 01 pt | **04.50 pts** |
| **P4** | 01.50 pt | 01.50 pts | 0 pt | 0.5 pt | 01 pt | **04.50 pts** |
| **P5** | 02 pts | 02 pts | 01 pt | 0 pt | 0 pt | **05 pts** |
| **P6** | 02 pts | 01.50 pt | 0 pt | 01 pt | 0.5 pt | **05 pts** |
| **P7** | 02 pts | 02 pts | 02 pts | 0 pt | 0 pt | **06 pts** |
| **P8** | 02 pts | 02.50 pts | 01.50 pt | 0.5 | 0 pt | **06.50 pts** |
| **P9** | 02 pts | 03 pts | 01 pt | 0 pt | 0.5 pt | **06.50 pts** |
| **P10** | 02 pts | 02.50 pts | 0.5 pt | 01 pt | 0.5 pt | **06.50 pts** |
| **P11** | 02 pts | 03 pts | 01 pt | 0.5 pt | 0.5 pt | **07 pts** |
| **P12** | 02 pts | 02.50 pts | 01.50 pt | 0.5 pt | 0.5 pt | **07 pts** |
| **P13** | 02 pts | 01.50 pt | 02 pts | 01 pt | 01 pt | **07 pts** |
| **P14** | 01 pt | 02.50 pts | 02 pts | 01 pt | 01 pt | **07.50 pts** |
| **P15** | 01.50 pt | 02 pts | 02 pts | 01 pt | 01 pt | **07.50 pts** |
| **P16** | 02 pts | 02 pts | 01.50 pt | 01.50 | 01 pt | **08 pts** |
| **P17** | 02 pts | 03 pts | 04 pts | 02.50 pts | 02.50 pts | **14 pts** |
| **P18** | 02 pts | 03 pts | 04 pts | 03.50 pts | 03.50 pts | **16 pts** |
| **N=18** | **Total** | | | | | **∑X=124.50** |

**Table 3.6 : EG Pretest Individual Scores**

The table above presented the scores of each pupil in the experimental group while the following table shows the results of the control group pupils :

| Pupils | Activity 1 Categorizing 02 pts | Activity 2 Sequencing 03 pts | Activity 3 Making Associations 04 pts | Activity4 Making Decisions 05 pts | Activity5 Solving Problems 06 pts | Final Mark X/20 |
|---|---|---|---|---|---|---|
| **P1** | 01 pt | 01 pt | 0 pt | 0 pt | 0 pt | **02pts** |
| **P2** | 02 pts | 0 pt | 0.5 pt | 0 pt | 0.5 pt | **0 3 pts** |
| **P3** | 0.5 pt | 01.50 pt | 0 pt | 0.5 pt | 0 pt | **03.50 pts** |
| **P4** | 01.50 pt | 01 pts | 0 pt | 0.5 pt | 01 pt | **04 pts** |
| **P5** | 01 pts | 02 pts | 01 pt | 0 pt | 0 pt | **04 pts** |
| **P6** | 01.50 pts | 01.50 pt | 0.5 pt | 01 pt | 0.5 pt | **05 pts** |
| **P7** | 02 pts | 02 pts | 01.50 pts | 0 pt | 0 pt | **05.50 pts** |
| **P8** | 02 pts | 01.50 pts | 01 pt | 0.5 | 0.5 pt | **05.50 pts** |
| **P9** | 02 pts | 02.50 pts | 01 pt | 0 pt | 0.5 pt | **06 pts** |
| **P10** | 02 pts | 02.50 pts | 0.5 pt | 01 pt | 0.5 pt | **06.50 pts** |
| **P11** | 02 pts | 03 pts | 01 pt | 0.5 pt | 0 pt | **06.50 pts** |
| **P12** | 02 pts | 02 pts | 01.50 pt | 0.5 pt | 01 pt | **07 pts** |
| **P13** | 02 pts | 01.50 pt | 02 pts | 01.50 pt | 01 pt | **07.50 pts** |
| **P14** | 02 pt | 02 pts | 01.50 pts | 01.50 pt | 01 pt | **08 pts** |
| **P15** | 01.50 pt | 02 pts | 02 pts | 01 pt | 01.50 pt | **08 pts** |
| **P16** | 02 pts | 02.50 pts | 02.50 pt | 03 pts | 02.50 pt | **12.50 pts** |
| **P17** | 02 pts | 03 pts | 03 pts | 02 pts | 03.50 pts | **13.50 pts** |
| **P18** | 02 pts | 03 pts | 03.50 pts | 04 pts | 04 pts | **16.50 pts** |
| **N=18** | **Total** | | | | | **∑X= 124.50** |

**Table 3.7 : CG Pretest Individual Scores**

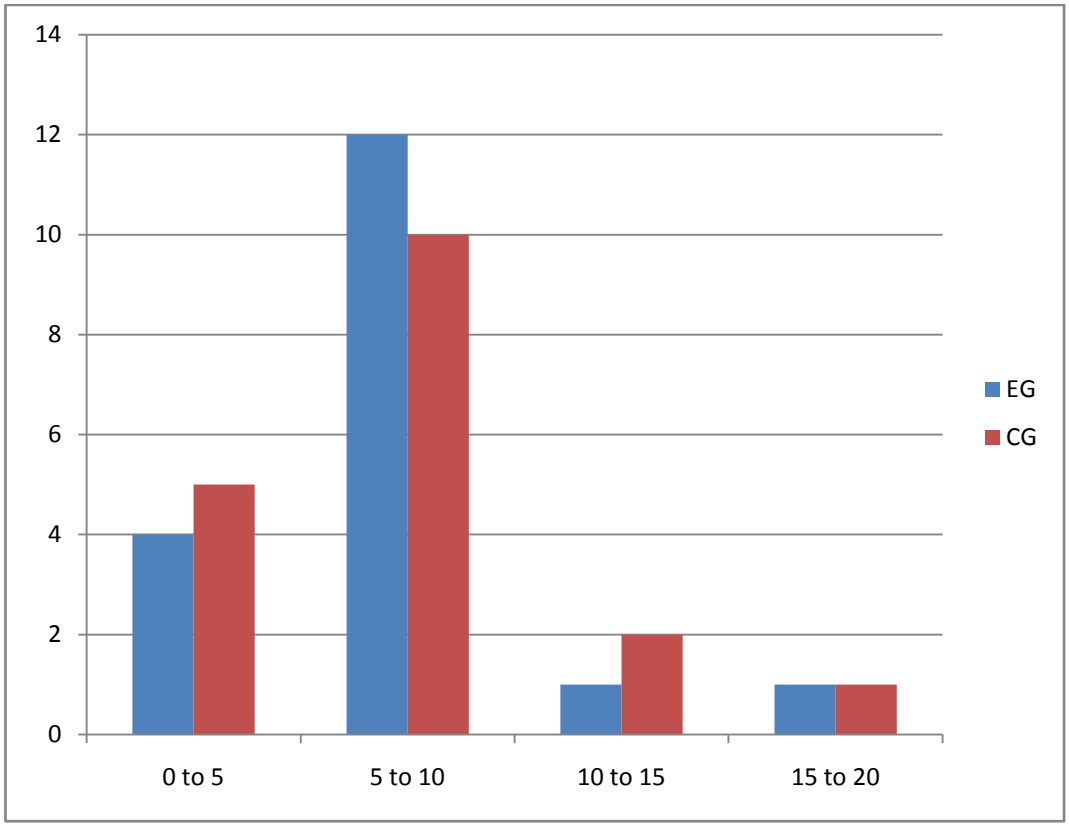
The table below summarizes both groups results :

| Scores | Experimental Group | Control Group |
|---|---|---|
| **0 -- 5** | 4 pupils<br>22.22% | 5 pupils<br>27.77% |
| **5 – 10** | 12 pupils<br>66.66% | 10 pupils<br>55.55% |
| **10 – 15** | 1 pupils<br>5.55% | 2 pupils<br>11.11% |
| **15 – 20** | 1 pupils<br>5.55% | 1 pupils<br>5.55% |
| **Total** | 18 pupils<br>100% | 18 pupils<br>100% |

**Table 3.8 : Summary of Pretest Scores for EG and CG**

The pretest scores indicate that the pupils in both groups performed almost similarly. The majority of the learners got less then 10 points out of 20 with the percentage of 88.88% in the experimental group and 83.33% in the control group ; however only 11.11% got more than 10 points in the experimental group and 16.66% in the control group.

The following bar graph presents both groups scores :




**Bar Graph 3.2: EG and CG Pretest Scores**

### 3.3.2 The Posttest Scores Analysis:

After taking the pretest, the investigator engaged in the treatment phase which lasted for six months with the average of two sessions per month for the experimental group (November 2013- April2014). By the end of the intervention period, a posttest took place and both the control and the experimental groups took the same posttest which was devised to test the same thinking skills as the pretest. The results are presented in the tables below:

| Pupils | Activity 1<br>Categorizing<br>02 pts | Activity 2<br>Sequencing<br>03 pts | Activity 3<br>Making Associations<br>04 pts | Activity4<br>Making Decisions<br>05 pts | Activity5<br>Solving Problems<br>06 pts | Final Mark<br>Y/20 |
|---|---|---|---|---|---|---|
| **P1** | 02 pt | 01.50 pt | 01 pt | 0 pt | 01 pt | **05.50pts** |
| **P2** | 02 pt | 01.50 pts | 01pt | 0.5 pt | 01 pt | **06 pts** |
| **P3** | 02 pt | 01.50 pt | 01 pt | 0.5 pt | 01 pt | **06 pts** |
| **P4** | 02 pts | 0.5 pt | 0.5 pt | 01 pt | 01 pt | **05.50 pts** |
| **P5** | 02 pts | 01.50 pt | 1.50 pt | 01 pt | 02 pt | **08 pts** |
| **P6** | 02 pts | 02 pts | 01 pt | 01 pt | 01.50 pt | **07.5 pts** |
| **P7** | 02 pts | 02 pts | 02 pts | 0 pt | 02 pt | **08pts** |
| **P8** | 01 pts | 02.50 pts | 01.50 pt | 01.50 pt | 02 pt | **08.50 pts** |
| **P9** | 02 pts | 02.50 pts | 01.50 pt | 01.50 pt | 02.50 pt | **10 pts** |
| **P10** | 02 pts | 02.50 pt | 03 pts | 02 pt | 01.50 pt | **11 pts** |
| **P11** | 02 pts | 02.5 pts | 01.50 pt | 01.50 pt | 02.50 pt | **10 pts** |
| **P12** | 01.50 pts | 02 pts | 03 pt | 02 pt | 02 pt | **10.50 pts** |
| **P13** | 02 pts | 02 pts | 02 pt | 01 pt | 03 pt | **10 pts** |
| **P14** | 02 pt | 02.50 pts | 03 pts | 01.50 pt | 02 pt | **11.50 pts** |
| **P15** | 02 pt | 02.50 pts | 02.50 pts | 02 pt | 02pt | **11 pts** |
| **P16** | 02 pts | 02 pts | 01.50 pt | 02 pt | 02.50 pt | **12 pts** |
| **P17** | 02 pts | 03 pts | 04 pts | 03.50 pts | 04 pts | **16.50 pts** |
| **P18** | 02 pts | 03 pts | 04 pts | 04.50 pts | 04.50 pts | **18 pts** |
| **N=18** | **Total** | | | | | **∑Y= 175.50** |

**Table 3.9: EG Posttest Individual Scores**

The posttest score for the experimental group shown in the table above differ to a great extent from those of the pretest for each individual in the group. The table below present the control group individual scores:

| Pupils | Activity 1 Categorizing 02 pts | Activity 2 Sequencing 03 pts | Activity 3 Making Associations 04 pts | Activity4 Making Decisions 05 pts | Activity5 Solving Problems 06 pts | Final Mark Y/20 |
|---|---|---|---|---|---|---|
| **P1** | 01 pt | 0.5 pt | 0 pt | 0 pt | 0.5 pt | **02pts** |
| **P2** | 01.50 pts | 0 pt | 0.5 pt | 0.5 pt | 0 pt | **2.50 pts** |
| **P3** | 01 pt | 01 pt | 01 pt | 0.5 pt | 0.5 pt | **04 pts** |
| **P4** | 0.5 pt | 01 pts | 0 pt | 0.5 pt | 01 pt | **03 pts** |
| **P5** | 01 pts | 01 pts | 0.5 pt | 0.5 pt | 01 pt | **04 pts** |
| **P6** | 02 pts | 01 pt | 0.5 pt | 0.5 pt | 0 pt | **04 pts** |
| **P7** | 01.50pts | 01.50 pts | 01 pts | 0 pt | 0.5 pt | **04.50 pts** |
| **P8** | 01 pts | 01.50 pts | 01 pt | 0.5 | 0.5 pt | **04.50 pts** |
| **P9** | 02 pts | 02 pts | 01.50 pt | 0 pt | 0.5 pt | **06 pts** |
| **P10** | 02 pts | 02 pts | 01.50 pt | 0.5 pt | 0 pt | **06 pts** |
| **P11** | 01 pts | 01 pts | 02 pt | 0.5 pt | 0.5 pt | **05 pts** |
| **P12** | 02 pts | 02.5 pts | 0.5 pt | 0.5 pt | 01.50 pt | **07 pts** |
| **P13** | 02 pts | 02 pt | 01 pts | 01.50 pt | 01.50 pt | **08 pts** |
| **P14** | 02 pt | 02.50 pts | 02 pts | 0.5 pt | 0 pt | **07 pts** |
| **P15** | 01.50 pt | 01.50 pts | 02 pts | 01 pt | 0.50 pt | **06.50 pts** |
| **P16** | 02 pts | 03 pts | 02.50 pt | 01.50 pts | 03 pt | **12 pts** |
| **P17** | 02 pts | 02 pts | 02.50 pts | 02 pts | 02.50 pts | **11.50 pts** |
| **P18** | 02 pts | 03 pts | 02.50 pts | 02.50 pts | 04 pts | **14 pts** |
| **N=18** | **Total** | | | | | **∑Y=111.50** |

**Table 3.10: CG Posttest Individual Scores**

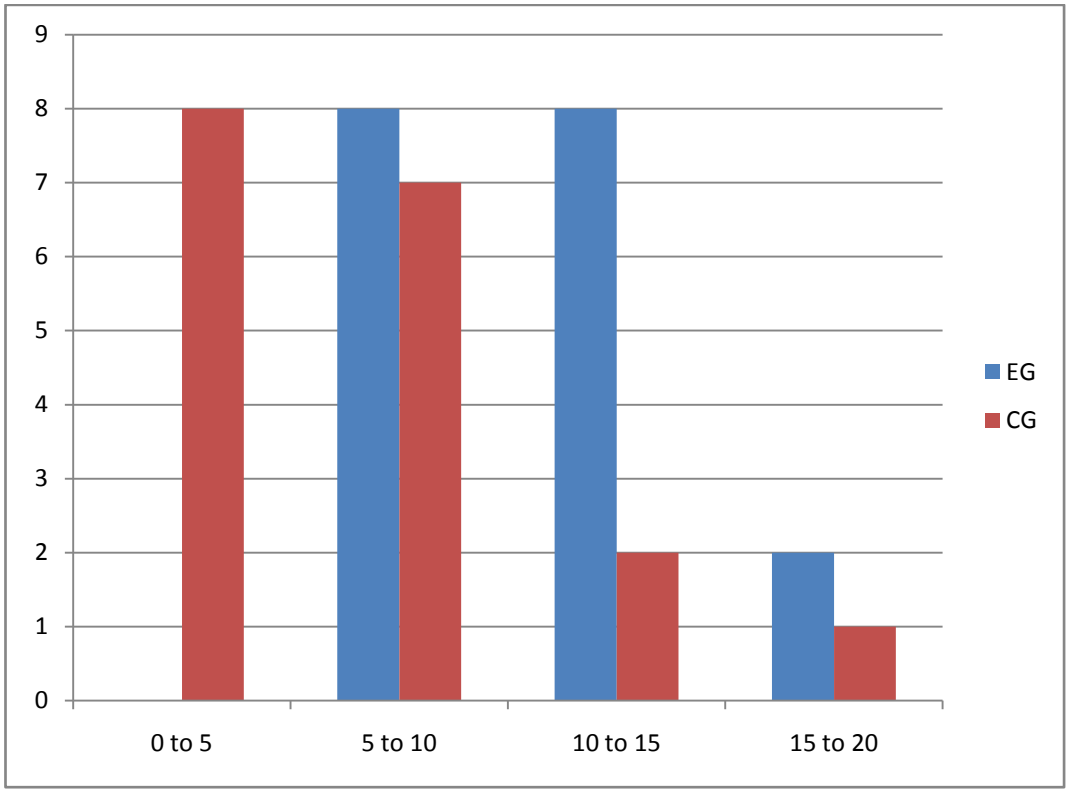
It is obvious that the control group individual posttest scores differ as well from those of the pretest; however, we need to compare them to results of the experimental group. The following table summarizes the comparison:

| Scores | Experimental Group | Control Group |
|---|---|---|
| **0 -- 5** | pupils<br>0% | 8 pupils<br>44.44% |
| **5 – 10** | 8 pupils<br>44.44% | 7 pupils<br>38.88% |
| **10 – 15** | 8 pupils<br>44.44% | 2 pupils<br>11.11% |
| **15 – 20** | 2 pupils<br>11.11% | 1 pupils<br>5.55% |
| **Total** | 18 pupils<br>100% | 18 pupils<br>100% |

**Table 3.11: Summary of Posttest Scores for EG and CG**

The posttest scores indicate a significant progress in the performance of the experimental group members, compared to the pretest scores, where 10 pupils could get more than 10 points representing 55.55% of the group. However, the scores of the control group witnessed a decrease where 83.33% got less than 10 points with 44.44% even less than 5 points.

The following bar graph would better summarize both groups posttest scores:




**Bar Graph 3.3: EG and CG Posttest Scores**

### 3.3.3 The Correlation between the Variables:

The posttest included an assessment of students' use and application of their thinking skills to solve language learning problems. Test results have been examined to answer the main question of the research: is there a correlation between the method of instruction and the growth in thinking skills and the linguistic level? Therefore, we have followed Pearson's Moment-Product Correlation Coefficient to count the correlation coefficient between the two variables. In this case, the null hypothesis means that there is no significant correlation between the two variables. However, the alternative hypothesis means that a strong correlation exists between the two variables.

### 3.3.3.1: The Calculation of the Correlation Coefficient:

The calculation of the correlation coefficient (r) requires the application of the following equation:

$$r\,(xy) = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$\sum$ : is the sum.

X : is the pretest score.

Y : is the posttest score.

N : is the number of cases.

### 3.3.3.2 The Correlation between Variables for the Experimental Group :

The researcher has calculated the correlation coefficient between the variables for the experimental group whose members experienced the integration of thinking skills in EFL lessons.

The following table illustrates the method of calculating the correlation coefficient between the method of instruction, as the independent variable, and the posttest scores as the dependent variable while the pretest is used as a covariate:

| N | X | Y | XY | $X^2$ | $Y^2$ |
|---|---|---|---|---|---|
| **P1** | 02 | 05.50 | 11 | 04 | 30.25 |
| **P2** | 04 | 06 | 24 | 16 | 36 |
| **P3** | 04.50 | 06 | 27 | 20.25 | 36 |
| **P4** | 04.50 | 05.50 | 24.75 | 20.25 | 30.25 |
| **P5** | 05 | 08 | 40 | 25 | 64 |
| **P6** | 05 | 07.50 | 37.5 | 25 | 56.25 |
| **P7** | 06 | 08 | 48 | 36 | 64 |
| **P8** | 06.50 | 08.50 | 55.25 | 42.25 | 72.25 |
| **P9** | 06.50 | 10 | 65 | 42.25 | 100 |
| **P10** | 06.50 | 11 | 71.5 | 42.25 | 121 |
| **P11** | 07 | 10 | 70 | 49 | 100 |
| **P12** | 07 | 10.50 | 73.5 | 49 | 110.25 |
| **P13** | 07 | 10 | 70 | 49 | 100 |
| **P14** | 07.50 | 11.50 | 86.25 | 56.25 | 132.25 |
| **P15** | 07.50 | 11 | 82.5 | 56.25 | 121 |
| **P16** | 08 | 12 | 96 | 64 | 144 |
| **P17** | 14 | 16.50 | 231 | 196 | 272.25 |
| **P18** | 16 | 18 | 288 | 256 | 324 |
| **N=18** | **$\sum x$=124.5** | **$\sum y$= 175.5** | **$\sum xy$=1401.25** | **$\sum x^2$=1048.75** | **$\sum y^2$=1913.75** |

$$r\,(xy)= \frac{N\sum XY - \sum X \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

$$r\,(xy)= \frac{18*1401.25 - 124.5*175.5}{\sqrt{[18*1048.75 - 15500.25]\,[18*1913.75 - 30800.25]}} \qquad = \frac{3372.75}{3509.65}$$

***r (xy)*= 0.96**

**Table 3.12: Calculation of the Correlation Coefficient (r)**

Pearson correlation coefficient ranges from r = (-1) to r = (+ 1) expressing a perfect positive relationship between the variables whenever +1> r > 0; and a perfect negative relationship whenever 0 > r > -1. However, when r = (0) the null hypothesis exists where there is no correlation between the variables.

In the study before hand, the correlation coefficient obtained r = 0.96 which expresses a strong correlation between the integration of thinking skills and the pupils' achievement. Therefore, the null hypothesis is rejected because r > 0.

**3.4 Discussion of the Main Results:**

The semi-structured interview addressed to the teachers, classroom observation, and pretest and posttest scores were adopted to identify the possibility of integrating thinking skills in EFL classes, the most suitable approach to teach such a type of skills and its impact on the learners' achievement. Therefore, a summary of he results is provided with reference to the hypotheses suggested in the beginning of the study.

The first hypothesis which suggests implementing specific frameworks and programmes which would exploit the students' thinking abilities simultaneously as they grasp the language aspects being taught is proved positive to a satisfactory extent through the notes taken as classroom observations during the three periods of treatment. The researcher noticed a significant difference between the experimental group and the control group in the learners' performance and motivation which explains the impact of the adopted teaching methods and frameworks that prompt the pupils to use the foreign language appropriately and purposefully.

As for the second hypothesis, all the interviewed teachers agreed that adopting an indirect approach to integrate thinking skills in EFL classes where such skills are implicitly taught within the other linguistic skills would be more appropriate and suitable for the pupils whose level is beginner and somehow low. The researcher's classroom observation also proved that it was useful and beneficial for the learner' who work individually, in pairs, and cooperate in groups to solve language problems that may encounter during their educational career in or outside the classroom.

Concerning the third hypothesis which predicts that if the thinking lessons are well planned and presented by teachers, the pupils might gradually become skilled and creative thinkers in terms of dealing with any language problem they encounter in or outside the classroom; in other words, there is a strong correlation between the method of instruction and the pupils' achievement and performance. The analysis of the pretest and posttest score of the experimental group compared to those of the control group proves that there is a perfect positive relationship between the aforementioned variables.

At last, it is necessary to stop at a very crucial point which is pre-service and in-service teacher training which is the key to the success of the teaching and learning operation. Good and effective pre-service training produces responsible teachers who, through their serious preparation and purposeful presentation, would positively influence their learners' attitudes towards the subject matter and help them improve their linguistic competence.

### 3.5 Limitations:

The scope of the study is limited to the data collected at level of Adjel Mahmoud Middle School in the educational district of El Alia North in Biskra, therefore, generalization is not recommended. Moreover, the posttest is administered at the end of the last trimester during a time that many pupils, especially those of the control group, may not give the test their undivided attention due to other factors such as regular school tests and final exams. Add to that, some external factors such as students' family, neighborhood, and friends may influence the pupils' performance and thus the study results.

Another major limitation is the investigator's short expertise in this field of research where he played the dual role of the teacher and the observer most of the time. This fact might have caused him to miss some details that may be of great importance for the study. Add to that, the researcher's lack of experience might have also affected his administration and interpretation of the obtained results.

### 3.6 Conclusion:

This chapter was entirely devoted to the analysis of the data which were collected via three different tools. Qualitative and then quantitative data were analyzed and the obtained results stipulate that integrating thinking skills in EFL classes is a possible but very demanding approach to adopt; it requires a thorough preparation for the teacher's part and a full involvement in the learning from the pupils' part.

The analysis of the results also revealed that there are some factors that may to a great extent affect the teaching process as well as the outcomes of

learning. The meant factors are motivation, social background of the learners, and the learning atmosphere not only in the classroom but also the whole school.

Based on the analysis of the obtained results in chapter three, chapter four is devoted to recommendations and suggestions that we hope to contribute to improve learning EFL at middle school.

# Chapter Four

## Recommendations and Suggestions

# Chapter Four

# Recommendations and Suggestions

## 4.1 Introduction:

The present chapter is devoted to some possible recommendations and suggestions concerning integrating and activating thinking skills in EFL Middle School classes. The results of the study lead to the conclusion that teaching thinking skills in EFL classes is way far to be fully mastered and that it is affected by different factors. One of the most affecting factors is the teachers' focus on covering the content of the syllabus which automatically leads to the fact that there is no time left for thinking in class. This is basically a result of the lame or even absence of pre-service training of teachers. Another important factor is that the pupils do not have a chance to practice thinking skills due to the overloaded curriculum which stresses only the acquisition of specific facts, language points, and concepts which do not challenge the learners' thinking.

## 4.2 Curriculum Considerations:

The challenges of the day and globalization which impose English as the international language require future citizens to cope with the world and apply their skills purposefully. Therefore, the curriculum would give more importance to critical and creative thinking because they are fundamental to successful, effective, and autonomous learning. When talking about the curriculum of English

at Middle School, focus should be on the dichotomy of content and skills and how the relationship between them should be.

Ackerman and Perkins (1989) wrote about integrating thinking and learning skills and how closely related the learning of the skills should be to the learning of the content. They believe that thinking skills and the content of the curriculum ought to be taught simultaneously and not separately because ***"...students ought to acquire both skills needed to acquire knowledge and some knowledge itself...)***. That is to say that thinking skills are learning skills and strategies selected to help learners acquire the syllabus content being studied and develop the ability to think and learn autonomously.

Then, for curriculum betterment, and not a whole curriculum redesign but only a revision of what it has been left out, it would very important to reconsider the thinking skills that would be included, the approach that would guarantee the coverage of both thinking skills and content, and the possible ways that would ease the applicability of the approach and the transferring of what has been learned to other contexts i.e : real life contexts.

### 4.2.1 Suggested Thinking Skills for MS2 Curriculum:

At such a beginner level where pupils are supposed to acquire the basics of English, it would be useful to support that acquisition by integrating skills that might help them create their own path and brush up their personality at an early age. Here the goal is to prepare individuals to open up to the world and integrate in its technological machinery that evolves every second in all the fields not to mention the educational one. Those skills can be :

- **Information Processing:** These skills enable pupils to locate and collect relevant information, to sort, classify, sequence, compare and contrast and to analyze part/whole relationships. In other words, pupils will learn ways and shortcuts to manage data and group them in logical categories so that information are sorted out in mind maps. (Fisher, 2000)
- **Decision Making:** This skill requires another set of key skills for decision-making which are: identifying when a decision needs to be made, thinking of possible options, evaluating the options, and choosing strategies for making the decision and reviewing how it works. (Walker, 2001)
- **Problem Solving:** Problem-solving is a key part of any approach to guiding behaviour in group programs and includes five key steps : identify the problem, brainstorm solutions, choose one solution, try the solution, decide if the solution worked. **(**Mulligan et al, 2001)
- **Creative Thinking:** These skills enable pupils to generate and extend ideas, to suggest hypotheses, to apply imagination and to look for alternative innovative outcomes. Therefore, new areas of interest will be discovered and neglected fields will be given more importance and time for scientific enquiry. (Fisher, 2000)

The figure below explains the above distinctions further:

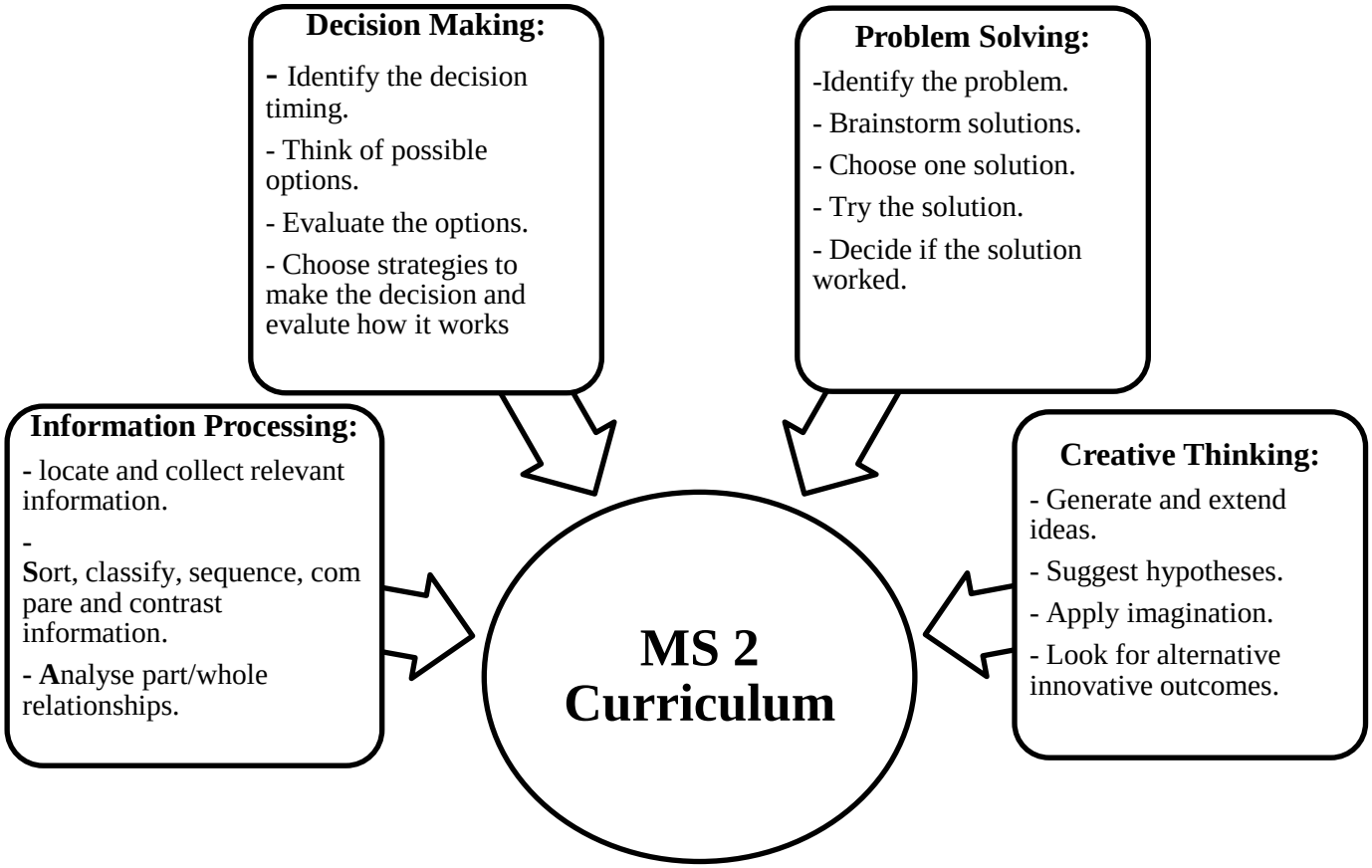



**Figure 4.1: Suggested Thinking Skills for MS2 Curriculum**

It is quite sure that the purpose is not to dictate the choice of the thinking skills that would be included in the curriculum but rather to raise awareness of the range of possibilities. Moreover, the choice of the skills should be followed with the choice of the most appropriate approach to ensure a successful integration.

### 4.2.2 Suggested Approach:

Fisher (2001) states that the integration of thinking skills in EFL classrooms requires adopting a cross-curricular approach which would enable the transfer of what has been learned and the use of thinking skills not only in the classroom but in all aspects of life. It is the approach where the skills are embedded in the lesson, i.e : the teacher addresses one or more skills when

dealing with a given topic ; in this case the topic being discussed is the focus while the skills are used as tools to understand it.

According to Matthews and Lally (2010), this approach is like any other one, it has as positive side as it gives the pupils the chance to use their learned skills in meaningful contexts; it allows more interaction between he teacher and the learners which maximizes their control and ownership of their learning. In other words, it encourages learner autonomy. However, it also has a negative side when the pupils ask question that the teacher might not know their answer because in such approach the teacher ***"must always be on the ball and responsive, and this can be both intense and tiring"*** (38).

The following figure would better illustrate the idea of integration:

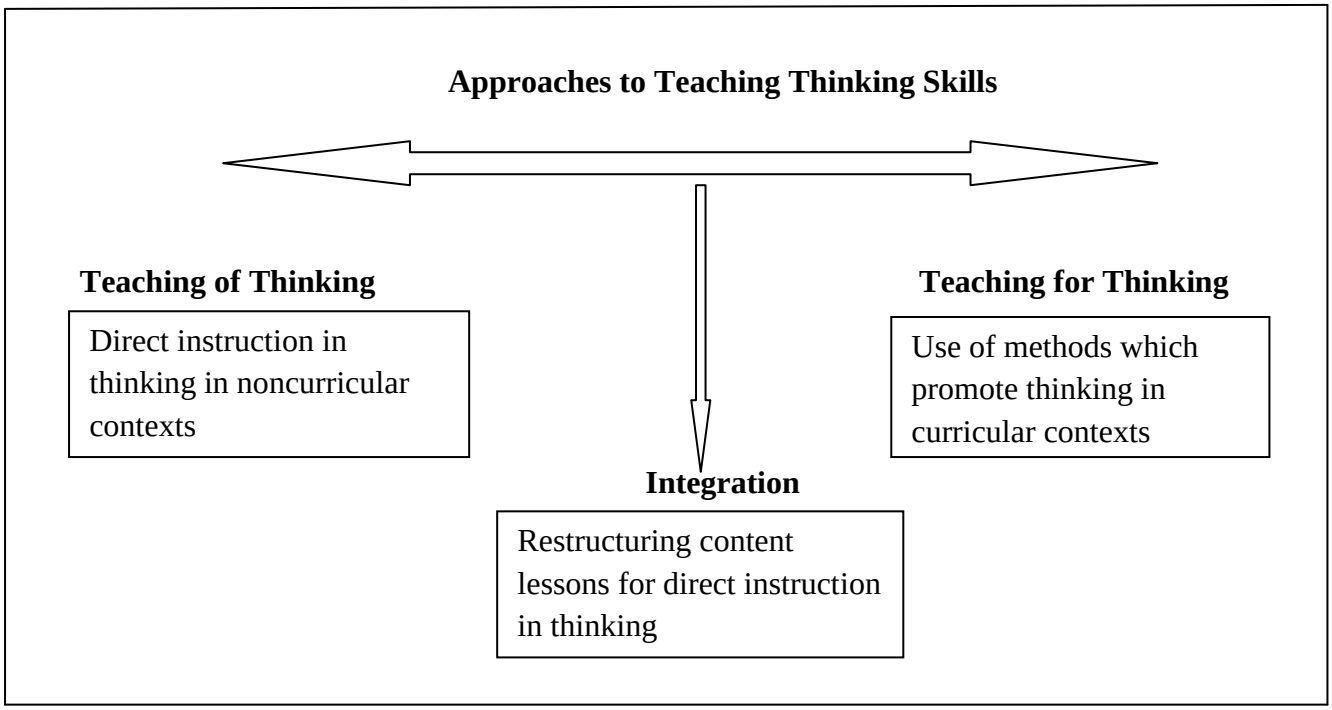



**Figure 4.2: Design of the Integration Approach**

**(Adapted from Critical Thinking Books and Software 1998)**

Again, it is not the purpose to dictate which approach to adopt, rather, it is an attempt to mention one of the available possibilities of integrating thinking skills in EFL classrooms. In fact, there are many other possibilities, i.e : approaches, but in the case of this research, the investigator adopted the above mentioned approach which though not well applied due to many different factors but it proved its efficiency referring to the results obtained from the administration of the pretest and posttest scores.

### 4.2.3 Applicability of the Suggested Approach:

The teacher, as a matter of fact, is responsible for the application of the content of the curriculum following a given approach. However, the teacher needs to be provided with a platform to refer to. The latter should clearly indicate the starting point and the wished level the teacher should lead his learners to. The applicability of the suggested approach requires the teacher to be aware that integrating thinking skills in EFL classes means working on two dimensions, i.e: the skills and the content of the syllabus. The following figure is adapted from McGuinness et al (2007) to serve as a suggested plan for the application of the approach:

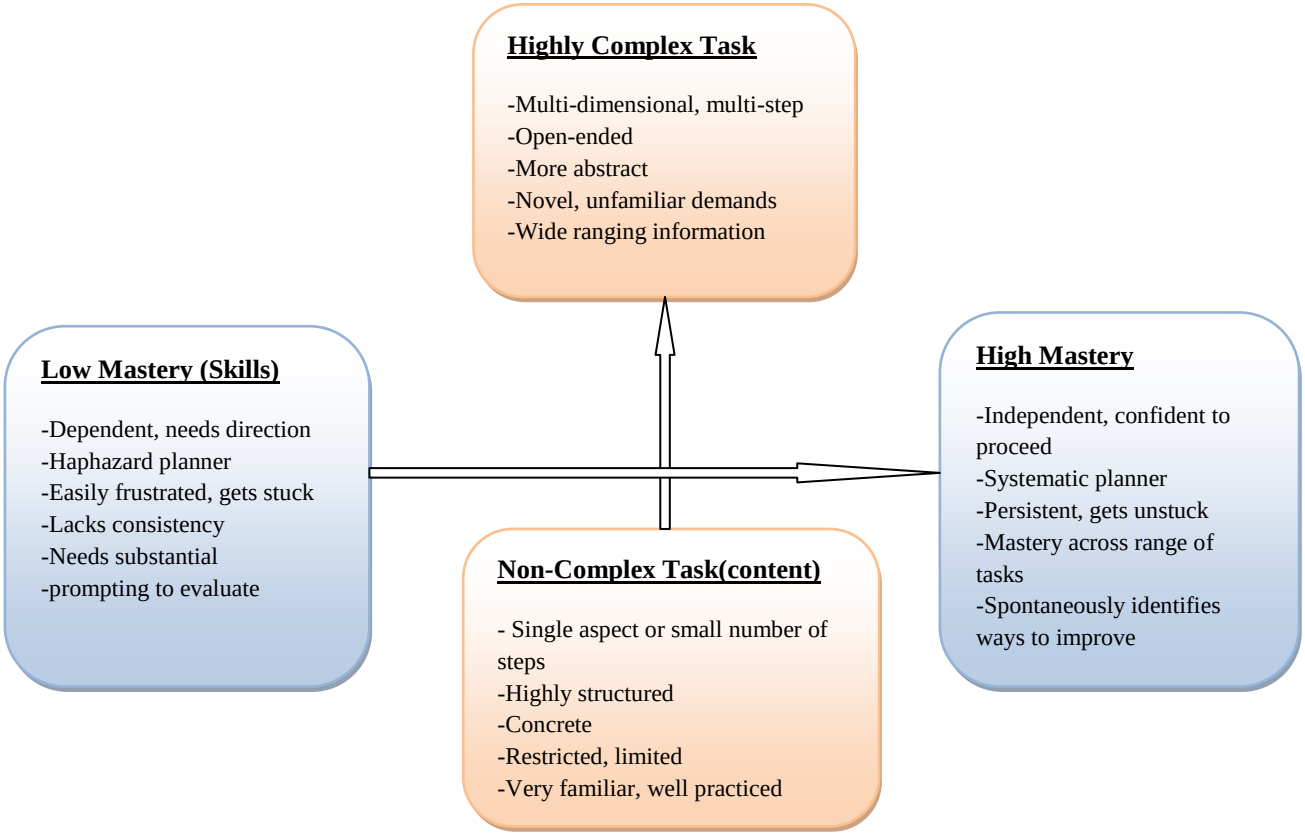



**Figure 4.3: Starting Point and Wished Level**

**(Adapted from McGuinness et al 2007)**

It is very necessary for the teacher to know where the starting point and the final destination because it would allow him to choose the most appropriate tools in advance and consider alternatives when preparing his lessons.

Since education nowadays is learner-centered, it is sometimes even necessary for the pupils to be aware of the starting point and the level they are supposed to achieve because it is engaging for them, and pupils at this age learn best when they are fully engaged; moreover, it enables them to think about and consider ways of planning and managing their own learning and contribute to that of their peers.

Corbett (2003) assumes that the application of any given approach stresses the availability of a number of conditions:

- There must be a clear goal to achieve.
- A challenging input that stimulates and motivates the pupils.
- Providing challenging activities which ought to be appropriate to the level of the learners and effective enough to meet the determined goals.
- The learner's role which is expected to vary from stage to stage depending on the course progress, i.e: towards more learner centeredness.
- The teacher's role which is expected to diminish depending on the course progress, i.e: towards less teacher centeredness.
- Providing a successful learning setting where the pupils engage in meaningful interaction throughout the course and benefit from peer-group work as well as reflect upon their learning in some solitude.

The following figure explains the relationship between these important conditions:

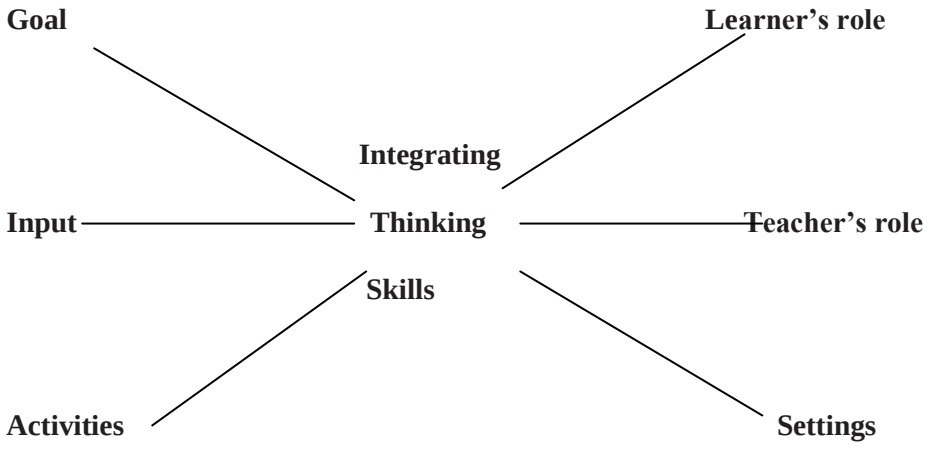



**Figure 4.4: A Suggested Lesson Design**

**(Adapted from Nunan, 1989 cited in Corbett, 2003)**

The figure above represents the general basics upon which the applicability of the approach is built. It allows the teacher to think over the different possibilities of application and ways of adapting them to meet the goals of the course.

In order to put theory into practice, a number of important factors such as: a well organized syllabus, a well designed course book, and a well trained teacher. The latter is the key to the success of the operation for his invaluable role as a planner, manager, monitor, facilitator...etc during the different stages of the lesson.

### 4.3 Teacher Considerations:

Today's learner centeredness and the pursuit of learner autonomy cannot deny or neglect the important role of the teacher as an organizer of the classroom learning environment. A good teacher then is characterized by a number of qualities that he acquires through his everyday teaching experience. Here are some points to stress concerning the critical role of the teacher in the suggested approach:

#### 4.3.1 Teacher Training

Modern education tends to focus on the development of thinking skills and foreign language teaching is not an exception. However, the majority of EFL teachers, as the results of the interview in the previous chapter showed, do not have a clear idea about thinking skills; thus, they do not know how thinking skills of their own learners can be developed. Therefore, specific pre-service and in-

service training programmes are recommended for EFL teachers at the pre-university phase.

Crump et al (1988) identify a positive relationship between teacher training and pupil achievement and believe that the teacher is expected to play a positive role to bring satisfactory changes for the pupils. In fact, the teachers influence their pupils in a way or another not only in the context of the curriculum but also in terms of their habits and personal attitudes. Sternberg and Bhana (1986) and many other researchers stress the necessity of teacher training because it is the key factor in the success of the teaching and learning process. However, one may wonder what teachers need to know in order to integrate thinking skills in their EFL lessons?

In fact, there are various and multiple programmes designed to train teachers to master specific methods that enhance pupils' thinking abilities; but in the present study, the focus is not on detailed explanations of the contents of such programmes, however, it sheds light on some general teaching knowledge points for teachers consider whenever thought of integrating thinking skills in their teaching.

Ashton (1988) mentions some points that can be taken as a basis to build on when training teachers to integrate thinking skills in EFL classes. These points can be summarized as follows:

#### 4.3.1.1 Knowledge on Integrating Thinking Skills:

Including this point in pre-service and in-service training would enrich teachers' knowledge on their profession; as a result they would have a good

mastery of their teaching and be able to consider any possible alternatives for any unexpected situations. The absence of pre-service and in-service training would result in a clueless teacher who might be linguistically competent but pedagogically unable to manage the requirements of his profession.

#### 4.3.1.2 Strategies for Activating Pupils' Thinking Skills:

One of the most important qualities of a good teacher is to be well equipped with a variety of teaching strategies to implement in every lesson. Those strategies are not selected randomly by the teacher; however, they are adopted to meet the objectives of the lesson. It is then an essential point to take into account during pre-service or in-service teacher training.

#### 4.3.1.3 Methods of Evaluating Thinking Skills:

Evaluation in general is not easy to master especially for novice teachers who tend to take after their former teachers believing that it is the right way to teach and evaluate their pupils. But in fact, evaluation encompasses certain criteria that guarantee reliability and indicate how much the input has been in-taken. Moreover, evaluation can be formal or informal, summative or formative depending on the learning objectives and the pupils' learning styles.

It is then inevitable to include such an essential point in any programme for pre-service or even in-service teacher training.

#### 4.3.1.4 Classroom Management:

Classroom management is one of the most common weak points among novice teacher who, most of the time, fail in managing their classrooms and

encounter difficulties in applying what they plan to the classroom setting. However, in order for them to succeed in such an important side of their job, they firstly have to know about their pupils' needs and learning styles for it helps them to prepare relevant lessons appropriate to the specificities of their classes. Secondly, teachers need to be aware of the different strategies of grouping pupils in order to achieve the maximum of the expected goals. Thirdly, teachers are required to be able to manage mixed ability classes where learning opportunities should be equally given to all learners regardless of their abilities.

It is then very important for teachers to receive a training concerning classroom management because it paves the way for them to provide good quality of teaching.

Teacher training is a compulsory phase in the making of professional teachers who would play very crucial roles in improving the quality of the learning outcomes. In addition to training, there are other important points for teachers to take into account such as lesson planning.

### 4.3.2 Lesson Planning:

There is no doubt that the majority of the teachers are experienced in planning lessons. The latter requires the teacher to pose the following questions:

- What are the broad aims I am trying to meet?
- What are the more specific objectives I am trying to meet?
- What are the means I am going to use to achieve these aims and objectives?

Matthews and Lally (2010) suggested a number of broad aims, objectives, and means that the teacher can refer to but is not supposed to limit his choice only to these suggestions.

As for broad aims, which are general broad statements or the final destination the pupils will need to achieve, they expect the teacher to lead the learners think for themselves, learn how to set life goals based on their abilities, raise pupils' awareness and understanding of what goes on in the world and how they can cope with the cultural diversities they might encounter. Another important aim is to provide suitable methods that help pupils make judgments that lead to the right decisions.

Concerning the objectives, which express certain specific ways of achieving the broad aims, they suggested that the pupils need to be able to achieve the following objectives:

- Locat, collect , sort, classify, sequence, compare and contrast relevant information.
- Use language to explain what they think.
- Pose and define problems then plan what to do as a solution and how to do it.
- Judge the value of what they read, hear and do.
- Generate and extend ideas.

The teacher is required every time to refer to the broad aims when setting the objectives.

Regarding the means, which refer o the activities that help the pupils to achieve the objectives of the lesson, thus, the broad aims of the course, Matthews and Lally (2010) state that all activities serve the same goal which is to help pupils achieve the objectives of the lesson; however, the difference is in the lesson focus, i.e : promote thinking skills rather than teach pure knowledge.(74)

The following suggested activity types might be used by EFL teachers but maybe the focus was not on thinking skills.

- **Games and competitions:** this activity type is usually preferred by the pupils because it is motivating especially when it is a team game where winning or losing is not related to the skills being developed.
- **Kinesthetic activities:** this activity type is helpful especially for those pupils who learn and think better when they can move around.
- **Research projects:** it is a very practical type of activities where the pupils experience the fact of taking part in team work.
- **Display work:** the visual and kinesthetic activities promote pupils' thinking and allow the use of ICTs in real context.
- **Questioning:** it is the type of activity where the teacher uses questions to provoke his pupils' thinking; it is very useful especially in the beginning of the lesson.

What is above is just a number of selected activity types that help promote learners' thinking skills along with the other four skills and the content of the syllabus. There are many other activity types for teachers to select what is appropriate and suitable for their pupils.

### 4.3.3 Teaching strategies and techniques:

Once the teacher has planned his lesson, a number of key strategies and techniques are required for him to build on good practice and to consider alternatives. The teacher should use strategies that work with the adopted approach, meet the objectives of the lesson and the level of his pupils i.e: encourage learner centeredness and ensure successful integration of thinking skills.

McGuinness et al (2007) provided a number of classroom strategies and techniques that proved success in cultivating and strengthening pupils' acquisition of the skills as well as using them in new encountered situations. Those strategies are presented in the following table :

| Strategy | Objective |
|---|---|
| **Setting Open-Ended Challenges** | Openededness promots creativity, enables pupils to construct their own meaning and decide about solutions. |
| **Making Thinking Important** | It is important to give the learners time to think about classroom questions and issues; as a result pupils will be aware of the importance of the act of thinking. |
| **Effective Questioning** | Pose questions that invite explanations and justifications; not only the teacher but also the pupils should be training to use this strategy. |
| **Making Thinking Explicit** | Sometimes it is beneficial to let pupils know the objectives of the lesson and the skills they need to use ; this would make learning meaningful for them. |
| **Enabling Collaborative Learning** | Engaging pupils in dialogues for example allows them to develop social and teamwork skills as well as their capacity for reasoning and argument. |
| **Promoting independent learning** | Focus on higher quality learning enables pupils self-directed where they plan, manage, and monitor their progress. |
| **Making Connections** | It is very important to make an explicit connection between the classroom and what happens in real life outside in order to help pupils transfer their learning. |

**Table 4.1: Classroom Teaching Strategies**

The purpose behind using the aforementioned strategies is to help pupils acquire the futuristic vision of becoming skillful thinkers who can use the foreign language appropriately in different contexts, accept other people's views and defend their opinions reasonably.

In addition to the teaching strategies discussed above, the use of information and communications technology (ICT) in teaching thinking skills is a very useful strategy teachers should implement. Teachers would better benefit from the availability of such a material to cope with modern age demands. Wegerif (2006) states that using technology " ***as a basis for discussion between learners can be a good way of infusing thinking skills into the curriculum"*** (3). Wegerif stresses the use of ICT especially during pair and group work because he believes that " ***The positive effect of collaborative learning is amplified if learners are taught to reason about alternatives and to articulate their thoughts and strategies as they work together"*** (3). Technology therefore can be implemented as a supports and resource to develop learners' linguistic performance and level of thinking.

After implementing various teaching strategies, teachers think about effective techniques to evaluate and assess the learners' progress.

**4.3.4 Assessment of thinking skills:**

Assessment helps teachers know about their pupils' progress, allows them to consider ways to better their teaching, and to work on finding solutions when the pupils' results are not satisfactory. But one may wonder about the possibility and ways of integrating the assessment of thinking skills in common formal and

informal school assessment forms. Thompson and Evans (2005) state that assessment is related to the objectives and aims of the course :

> ***"By setting lesson objectives and targets for assessment, you will be able to monitor the progress the children make and will see how language skills are successfully developed and used through this approach."*** (18).

Assessment then requires teachers to be highly aware of what they want to assess and how to go through that. Matthews and Lally (2010) say that teachers ought to select the assessment that will best meet the needs of their pupils as well as the course objectives. Moreover, they are supposed to prepare different question types to assess thinking skills in terms of solving a problem, carrying out a critical analysis of reasoning, evaluating the pupil's own reasoned argument, or evidence that the he has carried out some process of reflective thinking.

It is paramount to prepare the pupils for assessment and the question types that are more likely to encounter. These question types for Middle School pupils can for example take the form of:

- **Multiple Choice Items :**

Despite its drawbacks, it remains one of the most preferred, yet effective, assessment tool from the learners part.

- **Short Answer Questions :**

Usually structured in a way where pupils begin with display questions and build up to more real or referential questions.

- **Ouestions Requiring Extended Answers :**

This tool gives the opportunity to the pupils to demonstrate their intellectual capacities without feeling restricted, produce their own original arguments, and provide a full analysis or evaluation of an issue or problem.

The above mentioned assessment tools are not the only available ones; they represent just one of the multiple and various ranges of possibilities which can be adopted to formally assess learners' progress regarding thinking skills mastery and foreign language appropriate usage. In addition to the formal assessment tools, thinking skills and language can be informally assessed through verbal feedback and classroom observation focusing on how much the pupils are self-motivated and the way they interact using their language skills and the learned vocabulary to solve real life like problems, analyze issues and situations, and construct reasonable arguments.

To sum up, the teacher is one who decides about the assessment tools that would best provide reliable results; those tools ought to be selected in reference to the course objectives and learners' needs and level.

**4.4 Learner Considerations:**

The learner has become the center of the teaching and learning operation; and this learner centeredness imposes certain systematic rules and demands some specific practices and behaviours from the learner's part aiming at producing affective members who would serve the society later on. The learner is supposed to make use of what he learns at school and apply it to different contexts; and that is the ultimate goal of education.

### 4.4.1 Learning Strategies:

Modern learning allows the pupils to be more independent and self-reliant; but this cannot be achieved without adopting specific learning habits and strategies that would help the pupils in their educational career and ease the learning transfer, i.e: apply what is learned at school to other contexts. The learning strategies differ from one learner to another due to many factors such as: learner's age, learning style, and some other personal and individual preferences. Learners often try many strategies until they find out the one that best suit their abilities. Pupils are usually supposed to learn even at home by doing homework and assignments; but as matter of fact, many children do not like to be given homework because they think it is just to keep them busy and prevent them from playing; however, it aims at reinforcing what they learn at school and build home learning habits.

#### 4.4.1.1 Home Learning Habits:

Active learners usually do not restrict the learning process only to the classroom artificial setting but they always try to expand their learning efforts outside school in order to acquire the maximum; therefore, it is highly effective for pupils to devote some time at home to consolidate what they take at school successful learning begins at home. Here are some suggested tips that might be useful for learners build up good home learning habits:

- Look over the English copybook and vocabulary notebook.
- Revise what is learnt regularly.
- Use a dictionary when reading in or listening to English.

- Invite friend(s) to revise with when feeling uncomfortable doing it on your own.
- Devote some of TV time to watch English shows.
- Devote some of computer time to learn English.
- Benefit from internet and multimedia when doing homework.

These are only some suggestions while learners are free to create their own learning habits and adopt what suits them and their home conditions and family beliefs. Learners who succeed in adopting good learning habits at home will certainly encounter fewer difficulties in the classroom compared to those who do not bother finding ways to solve their learning problems and improve their level. In fact, the classroom requires another type of strategies different from those used at home; therefore, learners need to be more responsible in order to succeed again in adopting the right classroom strategies.

#### 4.4.1.2 Classroom Learning Strategies:

The classroom specific conditions require serious and disciplined behaviours from both teachers and learners. As for teachers, the researcher has already discussed their considerations earlier; whereas for learners, some strategies are suggested for learners to hopefully make use of:

- Be disciplined and respect the class code of conduct.
- Pay attention to the important details of the lesson.
- Learn when and how to ask for clarification.
- Be collaborative and positive contributor when working in pairs and groups.

- Use a dictionary and notebook to deal with unfamiliar vocabulary.
- Be open-minded when corrected by peers.
- Participate by giving ones' opinions and arguments.
- Accept, evaluate, and adapt peers' opinions and arguments.

Again, it is not the purpose to impose things but it is just to make the learners aware of some possible strategies that might be suitable for them and appropriate enough to their classroom to try and benefit from.

In fact, it is not easy for learners especially at a beginner level to choose and adopt the right learning strategies; but it is a matter of hard work and continuous practice. The teachers have an important role in helping their pupils select the most appropriate strategies; they are also supposed to make their learners aware of the importance of learning and how they can create their own learning mechanisms.

### 4.4.2 Metacognition:

Metacognition can simply be defined as learning how to learn. McGuinness et al (2007) define it as: ***" the ability of the learner to plan, monitor, redirect and evaluate how they think and learn."***(11). They stress the fact the metacognition is a fundamental concept in the development of thinking skills and believe that metacognition skills consist of two main aspects:

- **Knowledge:** pupils with metacognition skills know the mental strategies needed for any given task in addition to their awareness of which strategy is suitable for them.

- **Control :** pupils with metacognition skills have control of both one's thinking skills and one's self.

The learner then should pose some specific questions to himself when engaging in any given task. The table below illustrates some of those questions :

| When Planning | When Adapting | When Evaluating |
|---|---|---|
| - How am I going to do it?<br>- Is it similar to anything I've done before?<br>- Is it one of those? | -Do I understand it so far?<br>-Do I need to ask a question?<br>-Am I on the right track?<br>-Am I still on task?<br>-Is there a better way? | -How did I do it?<br>-What method/ strategy worked?<br>-What did I learn?<br>-Did my plan work out?<br>-Can I learn from my mistakes?<br>-Can I do better next time? |

**Table 4.2: Metacognitive Knowledge and Control Possible Questions**

**(Adapted from McGuinness et al 2007)**

As the table suggests, those questions would ease the task for the pupils and make it clear for them and help them implement the right skill and the suitable mental strategy. As a result, a road map could quite easily but surely be followed by the learners.

To conclude, it can be said is that learning is a lifelong process that makes the life of human beings meaningful. It requires efforts and contributes to the success of the society. Learning gives better fruits when it is the result of thorough planning and an awareness of goals.

## 4.5 Conclusion:

This chapter serves as a conclusion of the whole work where a sum of recommendations and suggestions are provided mainly to raise the awareness of course planners, teachers, pupils, and all the contributors in the teaching and learning process of the necessity of integrating thinking skills in EFL classes starting from middle school level. The chapter included some, hopefully, useful strategies that would of help for both teachers and learners. The suggested strategies are selected and adapted to suit the quality and level of our pupils.

Finally, a reminder for whoever interested in this work that it was not the purpose to dictate what do but rather to raise awareness of a range of useful possibilities. Therefore, the teachers who are interested in integrating thinking skills should not limited their choices to what is suggested in the present chapter; however, they should take it as a starting point for further implications.

# General Conclusion

The present study was an attempt to examine the possibility of integrating thinking skills in the field of EFL teaching and learning at the level of middle school, precisely **MS 2** classes at Adjel Mahmoud Middle School, Biskra.

It is obvious that the pupils at this level are not aware of the importance and the practicality of the subject matter; therefore, in order for them to understand the required skills to master the subject, they need to learn to think and adopt strategies that would help them bridge the gap between what is taught at school and what is needed in the real world. The overview about the phenomenon of thinking has shown that teaching thinking skills could meet a number of difficulties which can only be overcome by very special methods of learning and training.

The researcher has conducted the study through an action research method which is very rewarding because it does not generalize facts as most academic studies do, but focuses on gaining knowledge that could be invested directly in the chosen teaching situations. As for data collection, three tools were adopted to test the suggested hypotheses; those tools are: classroom observation, interview, pretest and posttest.

The study began with a brief description of the current situation and position of thinking skills in EFL classes at Middle School accompanied with a presentation of the research method in the first chapter. Then, chapter two included a reporting of the most influential findings in the related field of research. Chapter three was mainly devoted to the data analysis and interpretation.

Finally, the fourth chapter contained some recommendations and suggestions based on the results obtained from the analysis of the collected data.

The review of the available literature provided information about ways to improve the thinking skills of EFL pupils for the sake of investing in children's abilities to develop the future of countries. In fact, teaching thinking skills has become an explicit and indispensable part of educational curricula in many developed and even developing countries such as: Turkey, Indonesia, and Malaysia. Using thinking skills in the classroom requires the collaboration of well-trained teachers and pupils who are aware of this skill. Hence, teachers will provide lessons and exercises that challenge and instruct learners who, in return, will show more interest and desire to learn more.

After analyzing the data collected via the interview, classroom observation, and the pretest and posttest results, the researcher came up with the a number of conclusions with reference to the hypotheses and research questions provided earlier.

The results obtained from the qualitative and quantitative analyses of the collected data show that integrating thinking skills in EFL classes has become very necessary and it requires the implementation of specific frameworks for the learners to improve their mastery of the target language as well as using it appropriately outside the classroom when needed. Those frameworks and programmes need to be suitable and appropriate for the pupils' age, level and social background.

The interpretation of the results concerning the adoption of the "*Indirect Approach to Teaching Thinking Skills"* confirmed its efficiency and usefulness. Such an approach could, on one hand, make it relatively easy for the teacher to target more than one skill in one session; while on the other hand, it could enhance the pupils motivation and attention during the lesson. Moreover, it could help the learners explore their abilities and therefore adopt suitable learning strategies.

It is necessary to note that pre-service and in-service teacher training are crucial to the success of the teaching and learning operation. Good and effective pre-service training produces responsible teachers who, through their serious preparation and purposeful presentation, would positively influence their learners' attitudes towards the subject matter and help them improve their linguistic competence.

All in all, the results of the study show that integrating thinking skills in EFL classes at the level of Middle School is a very demanding job but fruitful if well done. It requires efforts from all parts of the teaching and learning operation especially the teacher who should be well prepared and the learner who has to adopt the appropriate learning strategies that would help him be aware of the goals behind learning a given subject. As far as future prospects are concerned, the present work could be a useful starting point for future researchers in the field of investing thinking skills in education and put it into practice in the Algerian school.

# References


Allen, M. (2004). Smart Thinking: Skills for Critical Understanding and Writing. (Second Ed). Oxford: Oxford University Press.

Anderson, L.W., and Krathwohl, D. R. (2001) A taxonomy for learning, teaching and assessing: a revision of Bloom's Taxonomy of educational objectives: Complete edition. New York: Longman,

Anderson, R., and Speck, B. (2001). "Using technology in K-8 literacy classrooms". Revue académiques des sciences sociales et humaines, 8, 3-16.

Ashton, P. (1988). Teaching higher-order thinking and content: An essential ingredient in teacher preparation. Gainesville, FL: University of Florida.

Beckman, L., and klinghammer, S. (2006) Shaping the Way We Teach English: Successful Practices Around the World. University of Oregon: Eugene OR USA.

Beyer, B. K. (1988). Developing a thinking skills program. Boston: Allyn and Bacon.

Bloom, B. (1956). "A taxanomy of educational objectives. Handbook 1: Cognitive domain". New York: McKay. In Duron, R., Limbach, B., & Waugh, W. (2006). "Critical thinking framework for any discipline". International Journal of Teaching and Learning in Higher Education, 17, 160-166.

Bloom B., Mesia, B., and Krathwohl, D. (1964). Taxonomy of Educational Objectives (two vols: The Affective Domain & The Cognitive Domain). New York : David McKay.

Britten, D. (1988). “Three Stages in Teacher Training”. In ELT Journal 24 (1), 3-8.

Cannell, C. F. and Kahn, R. L. (1968). Interviewing. The handbook of social psychology: Research method. New York: Addison-Wesley.

Corbett, J. (2003). An Intercultural Approach to English Language Teaching. London : Cromwell Press Ltd.

Corey, S. M. (1952). “Action Research by Teachers and the Population Sampling Problem”. Journal of Educational Psychology, 43, 331–338.

Costa, A. L. (1985). The behaviors of intelligence. (FourthEd). Alexandria, VA: Association for Supervision andCurriculum Development.

Costa, A, L. and Liebmann, R, M. ( 1997). The Process-Centered School: Sustaining a Renaissance Community. Thousand Oaks, CA: Corwin Press. Inc.

Crump, W. D., Schlichter, C. L., and Palk, B. E. (1988) "Teaching HOTS in the Middle and High School: A District-Level Initiative in Developing Higher Order Thinking Skills." Roper Review, 10(4), 205-211.

Cunningham, J. (1993). Action Research and Organisational Development. London: Praeger.

De Bono, E. (1970). Lateral Thinking. Middlesex, England: Penguin Books Ltd.

De Bono, E. (1976). Teaching Thinking. Middlesex, England: Penguin Books Ltd.

De Bono, E. (2007). Intelligence is not Enough. Dublin, Ireland: Blackhall Publishing.

Dewey, J. (1933). How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process. Lexington, Massachusetts: D.C. Health.

Dobrovolska, M., Galpern, J., Lasevich, E., and Sokol, A. (2002). "The Thinking Approach to Language Teaching as a Tool for the Resolution of the Key Contradictions of Language Teaching and Education". Studies about Languages, 1648-2824(3), 92-95.

Donovan, S,D., Bransford, J. D, and Pelligrino, J. W.(1999). How People Learn: Bridging Research and Practice. Washington DC: National Academy Press.

Fisher, R. (2000). A guide for teachers of able children. Brunel University : Scottish Network for Able Pupils.

Fisher, R. (2001) "Philosophy in Primary Schools: fostering thinking skills and literacy", Reading, 35(2), 67-73.

Fisher, A. (2005). Thinking Skills and Admission to Higher Education.University of East Anglia, Norwich: Centre for Research in Critical Thinking.

Freire, P. (1973). Education for critical consciousness. New York,: Seabury Press.

Guilford, J. P. (1967).The nature of human intelligence. New York: McGraw-Hill

Halpern, D. F. (2003). Thought & knowledge: An introduction to critical thinking (Fourth ed.). New Jersey: Lawrence Erlbaum Associates.

Hayes, K. Devitt, A. (2008). "Classroom discussions with student-led feedback: a useful activity to enhance development of critical thinking skills". Journal of Food Science Education, 7(4), 65- 68.

Kabilan, K,M (2000). "Creative and Critical Thinking in Language Classrooms". The Internet TESL Journal. Vol. VI, No 06.

Kennedy.M. (1991). "Policy Issues in Teacher Education". Phi Delta Kappan 72, 659-664.

Loughran, J., and Russel, T. (1997). Teaching about Teaching: Purpose, Passion and Pedagogy in Teacher Education. London: Falmer Press.

Matthews, R., and Lally, J. (2010). The Thinking Teacher's Toolkit : Critical Thinking, Thinking Skills and Global Perspectives. London : Continuum International Publishing Group.

McGuinness, C. (1999). From Thinking Skills to Thinking Classrooms: A Review and Evaluation of Approaches for Developing Pupils' Thinking. Research Report. Queen's University, Belfast. Norwich: The Crown Unit, St Clement House.

McGuinness, C., Scullion, T ., Bianch, L., & Gallagher, C. (2007). Thinking Skills and Personal Capabilities. Northern Ireland National Curriculum, Belfast :

PMB Publication.

Michalko, M.( 2006).Thinkertoys: A Handbook of Creative ThinkingTechniques. New York: The Crown Publishing Group.

Nickerson, R. S., Perkins, D. N., and Smith, E. E. (1985). The Teaching of Thinking. New Jersey: Lawrence Erlbaum Associates.

Noor, M, A. (2005) Teaching Thinking skills: Redesigning Classroom Practices. Singapore: Brunei Darussalam University.

Patton, M. (2001). Qualitative Research and Evaluation Method. Third Ed. Thousand Oaks, CA: Sage.

Paul, R. W. (1995). Critical thinking: How to prepare students for a rapidly changing world. Santa Rosa, CA: Foundation for Critical Thinking.

Paul, R. and Elder, L. (2006). "Critical Thinking: The Art of Socratic Questioning, Part III.". Journal of Developmental Education, 31(3), 34-35.

Piaget, J. (1958) The Growth of Logical Thinking from Childhood to Adolescence. London: Routledge and Kegan Paul.

Puchta, H., and Williams, M. (2011). Teaching Young Learners to Think. Innsbruck and Cambridge: Helbling Languages and Cambridge University Press.

Puchta,H. (2012). Developing Thinking Skills in the Young Learners' Classroom. Cambridge: Cambridge University Press.

Spratt, M., Pulverness, A., and Williams, M . (2011). Teaching Knowledge Test. Second edition. Cambridge: Cambridge University Press.

Sternberg, R. G., and Bhana, K. (1986)."Synthesis of Research on the Effectiveness of Intellectual Skills Programs: Snake-Oil Remedies or Miracle Cures?". Educational Leadership ,44(2), 60-67.

Sulaiman, T., Zainal Abiddin, N., Hassan, A., & Huey Yee, T. (2010). "A Review of Difference Types of Thinking in Fostering Student Intelligence". Eksplanasi, 5 (2), 1-11.

Sullivan, A., Ketende, S. and Joshi, H. (2010).Social Class and Inequalities in Early Cognitive Scores. Sociology. (in press). London : Institute of Education, Centre for Longitudinal Studies

Taylor-Powel, E., & Renner,M. (2003). Analyzing Qualitative Data. Madison : University of Wisconsin.

Thompson, G.,and Evans, H. (2005). Thinking it through : Linking language skills, thinking skills and drama. London : David Fulton Publishers Ltd.

Walker, K. (2001). Decision Making, K-state Research and Extension. Manhattan : KS.

Wilson, V. (2000). Can Thinking Skills Be Taught?. Belfast: Scottish Council for Research in Education.

## Webography:

Ackerman, D., and Perkins, D.N. (1989). Integrating Thinking and Learning Skills Across the Curriculum. Retrived November 23, 2014 from http://www.ascd.org/publications/books/61189156/chapters/Integrating-Thinking-and-Learning-Skills-Across-the-Curriculum.aspx

Elder, L., and Paul, R. (2006). The Thinker's Guide to Analytic Thinking: The Elements Of Thinking and the Standards they Must Meet. Retrived October 6, 2014 from www.criticalthinking.org.

Kawulich, B.B. (2005). "Participant Observation as a Data Collection Method". Forum Qualitative Sozialforschung / Forum: Qualitative Social

Research( Online Journal), 6(2), Art. 43, Retrived January 18, 2014 from http://nbn-resolving.de/urn:nbn:de:0114-fqs0502430.

Mayora, C. (2006). Integrating multimedia technology in a high school EFL program. English Teaching Forum. April.

Mulligan, S.A., Morris, S. L., Harper-Whalen, S., & Hill, A. (2001). Child Care Plus+: The Center on Inclusion in Early Childhood. Retrived February 28, 2015 from http://www.ccplus.org.

Sokol, A. (2006). The Thinking Approach to Language Teaching and Learning: Programmes of Possible Teacher Training Courses. Retrived December 29, 2013 from www.thinking-approach.org

Sokol, A. (2007).The Thinking Approach to Language Teaching and Learning. Portfolio of Possible Educational Projects. Retrived December 29, 2013 from www.thinking-approach.org.

The Design of Infusion Lessons. (1998). Critical Thinking Books and Software. Retrived March 3, 2015 from www.criticalthinking.com.

Wegerif, R.(2006). "Literature Review in Thinking Skills, Technology and Learning". School of Education, Open University. Retrived March 2, 2015 from

## Unpublished Theses:

Bessick, S, C. (2008). Improved Critical Thinking Skills as a Result of Direct Instruction and Their Relationship to Academic Achievement. Unpublished Doctoral Thesis. Indiana University of Pennsylvania.

Hove, G. (2011). Developing Critical Thinking Skills in the High School English Classroom. Unpublished Reasearch Paper for the Master of Science Degree in Education. University of Wisconsin-Stout.

Tebbs, T, J. (2000). Assessing Teacher's Self-Efficacy Towards Teaching Thinking Skills. Unpublished Doctoral Thesis. University of Connecticut

# Appendices

## Appendix 1: Sample Lesson (1 hour)

**Objective:** students will be able to ask questions and give answers about newly encountered materials.

**Main Skill:** Reading.

**Sub-skills:** Listening, speaking, writing, critical thinking (questioning and answering), and creative thinking.

**Text:**

**THE LION AND THE MOUSE**

One day a lion was disturbed by a mouse who tickled his nose. The lion grabbed the mouse and was ready to eat him when the mouse cried out :" Please, Sir Lion, if you let me go, perhaps someday I can help you." The lion laughed and laughed at the thought of a mouse helping him, but he let the mouse go.

Shortly thereafter the lion was caught in a hunter's net. The mouse heard the lion's loud roar and went to see what the matter was. Seeing that his big friend was caught, the mouse began to gnaw on the ropes and chewed a hole big enough for the lion to escape.

**(Adapted from an Aesop's Fable)**

| Time | Lesson Phase | Interaction Pattern | Teacher's Tasks | Pupils Tasks |
|---|---|---|---|---|
| **3'** | **Warm up** | **T- PPs** | T. introduces the characters of the story above through pictures. | PPs look at the pictures and take notes. |
| **5'** | **Pre-reading** | **T- PPs** | T. pre-teaches new and difficult words. | PPs listen and take notes. |
| **12'** | **While reading** | **Individual work** | T. invites the PPs to read the story and answer the following questions:<br>1-What did the mouse do?<br>2-What was the lion's reaction?<br>3-Why did the lion laugh?<br>4- What happened to the lion?<br>5- Who saved him? How? | The pupils read the story and answer the questions |
| | **Points for Discussion** | **Open Class** | T. opens the discussion<br>1-In your opinion, why did the lion let the mouse go?<br>2-Imagine that you were the lion, would you do the same? Why? Why not?<br>3-If you were the mouse, would you help the lion escape? Why? Why not? | PPs express their views. |
| **12'** | **Post-reading** | **Individual work** | **Activity One:**<br>T. asks the PPs:<br>have you ever been in a situation where you found yourself facing a dangerous animal? What was the animal? What did you do to escape?<br>-Write down what happened. | PPs try to write their experiences |
| **7'** | | **Pair work** | **Activity Two:**<br>T. provides a list of pictures of both familiar and unfamiliar animals and asks PPs to match each animal with its name, food, habitat, and sleeping habits. | PPs work in pairs. |
| **10'** | | **Group work** | **Activity Three:**<br>T. asks PPS to choose two animals from the given list and play the roles of a journalist and the animal keepers. Ask questions and give answers about the chosen animals. | PPs work in groups of 3 members. |
| **6'** | **Oral Presentation** | | T. asks 2 groups to act out. | Two groups present their work |

## Appendix 2: Sample Test

**Activity 1:** classify the following words in the right column.

Very – to work – a job – to – big – to listen – a watch – for – strange – an e-mail – a computer – of course – to write – beautiful – to read – a house – to repeat.

| Verbs | Nouns | Adjectives | Others |
|---|---|---|---|
| | | | |

**Activity 2:** put the following sentences in the right order to get a meaningful conversation.

- Hi, Phil. How are you?
- See you, bye.
- The Black Giants and the Tigers.
- Hello Tony. This is Phil.
- Hey, that sounds like a terrific game, I won't miss it. What time does it start?
- Well, I don't know. Who is playing?
- 3 o'clock. Let's go in my car. I'll pick you up at 1:15.
- Great. Thanks a lot, Phil. See you tomorrow.
- Fine, thanks. Listen, I have an extra ticket for the baseball game tomorrow. Do you to go with me?

**Activity 3:** match a word from column **A** to a word from column **B** to form new words.

| **A** | **B** |
|---|---|
| Letter | bike |
| Motor | cover |
| Hand | bag |
| Bed | box |

**Activity 4:** choose the best answer to fill in the gap in each of the following sentences: circle the correct letter: **A, B,** or **C**

1- My grandmother.....in London 10 years ago.

**A**. lives **B.** is living **C.** lived

2- Tom is a good driver because he drives his bus.....

**A.** carefully **B.** careful **C.** be careful

3- Peter is ill, he must..... to hospital.

**A.** going **B.** to go **C.** go

4- Eva.....chocolate.

**A.** doesn't like **B.** is not like **C.** not like

5- .....time do you usually get up?

**A.** why **B.** what **C.** who

**Activity 5:** you are lost. A stranger gives you directions to the book shop. Read the directions and draw the journey that you take on the map below.

- Go straight ahead until the traffic lights...turn right...then take the next left and it's about 100 meters further on your left opposite the underground station

Résumé

البحث عبارة عن محاولة لدراسة إمكانية تدريس مهارات التفكير لمتعلمي اللغة الانجليزية في طور التعليم المتوسط بجنوب شرق الجزائر؛ وعلى وجه التحديد مدينة بسكرة. كما ترمي هذه الدراسة إلى اعتماد الأدوات المناسبة و طرق التدريس التي تتماشى و خصوصيات المنطقة. كذلك تهدف الدراسة إلى رفع حس المتعلمين لأهمية اللغة الانجليزية و ذلك عن طريق تلقين مهارات التفكير و التي من شانها مساعدة التلاميذ علي إيجاد الصلة بين ما يتلقونه في المدرسة و ما يصادفهم في الحياة اليومية. إلا أن إهمال تدريس مهارات التفكير قد يسبب عائقا لمتعلمي اللغة الانجليزية الذين قد يتجاوبون بصفة جيدة تجاه الاختبارات الصفية و لكن يفشلون في التعاطي مع العقبات اللغوية التي قد تصادفهم في المعاملات اليومية خارج المدرسة .

L'étude est une tentative d'examiner la possibilité d'enseigner les compétences de réflexion dans l'école moyenne aux apprenants d'Anglais, au niveau du sud-est algérien, précisément, dans la région de Biskra. Elle favorise des objectifs dans l'adoption des bons outils, le matériel et la pédagogie qui conviendraient plus au contexte de l'enseignement et de l'apprentissage de l'Anglais dans la région susmentionnée, et élèveraient la conscience des apprenants de l'importance et de la pratique de la matière. Cette recherche a été stimulée par le fait que l'enseignement des compétences de réflexion est la clé qui aide les élèves à établir un lien entre les leçons de la classe et ce qu'ils rencontrent dans la vie réelle. Toutefois, la négligence de la compétence de réflexion pourrait engendrer un handicape majeur pour les apprenants de l'Anglais qui pourraient avoir une bonne performance dans le cadre de la classe mais échouent d'apporter ce qui a été appris concernant le vrai mot quand c'est nécessaire.

The study is an attempt to examine the possibility of teaching thinking skills to middle school EFL learners in the south east of Algeria, precisely, the city of Biskra. It further aims at adopting the right tools, materials, and pedagogy that would most suit the context of EFL learning and teaching in the aforementioned region and raise the learners' awareness of the importance and the practicality of the subject matter. This research is stimulated by the fact that teaching thinking skills is the key to help pupils make a link between classroom lessons and what they encounter in real life. However, neglecting thinking skills might cause a major handicap for EFL learners who might perform well in classroom settings but fail to bring what is learnt about in the real world when needed.