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University of Mohamed Kheidher - BISKRA

Faculty of Arabic Language Arts and Foreign Languages
Department of Foreign Languages
Division of English Studies

The Impact of Developing Thinking Skills on Pupils'

Reading Comprehension

Case study: First year pupils at Omar Idriss secondary school in
El-Kantara

A Dissertation Submitted in Partial Fulfillment of the Master Degree

in Sciences of Language

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Dedication

In the Name of God, Most Gracious, Most Merciful

All the Praise is due to God alone, the Sustainer of all the Worlds

I dedicate this work to:

My dear parents, Bachir & Om Kalthoum… I love you so much

My dear parents –in-law: Nour-Eddin & Fatiha ..May Allah bless you

My dear husband, Walid, who encouraged me to pursue my interests

I am forever grateful for your patience

My sweet baby, Nour, who I am waiting impatiently to color my life,

Thank you my sweetheart for all the time being within me

My brothers: Chakib, Yousef, Mohamed, Chaker, Mousa, & Tarek

My sisters: Sara, Kanza, Hadia, Houda, Ibtissem, Saida, & Nada

My grandmother: Jamila, thanks for your prayers

My aunts: Saida, Nora & uncles

My nieces & nephews

My dear beloved teachers: Ms. Nachoua & Ms. Nadia,

Special thanks goes to my darling Ms. Rehioua,

To all those who taught me how an ideal teacher should be

To my soul mates: Asoum & Chamousa

To my friends: Amira, Nadjoua, Fatima, Sabrina, Ikram, & Amina

To the exceptional post-graduation 2013

To all who knows & loves me

Thanks a billion for your support & encouragements…

Rania

ACKNOWLEDGEMENTS

ABSTRACT

The present study aims at examining the research hypothesis that if thinking skills are to be developed then pupils are to develop better texts' reading comprehension. The research questions that this study aims to answer; does teaching thinking skills has any impact on improving pupils' comprehension of written materials? In other words, how much effective is the relationship between thinking skills and reading comprehension? This research work consists of four chapters, chapters one and two present a review of the related literature. Chapters three and four introduce the practical part of the study. For the nature of this research, a quasi-experimental quantitative design has been used. A practical experiment has been conducted to investigate first year pupils that study at Omar Idriss Secondary School in the region of El-Kantara in Biskra. Pupils of control and experimental conditions have been pre-tested and post tested using the same measurements used in the pilot study. Then progress is measured after the treatment has been completed. As for the research tools used in this study, pupils and teachers' questionnaires have been piloted to eliminate any doubtfulness in items' wording. A variety of tables and diagrams is used to show differences in the pupils' performance in the thinking skills and the reading comprehension tests. The descriptive and inferential statistics (correlation 'r') showed very significant results in the comparison made between the groups' scores. The analysis of the data collected throughout the study, as well as the interpretation of teachers' and pupils' questionnaires proved the effective impact of improving thinking skills have on enhancing pupils' texts comprehension. At the end, we mentioned some pedagogical implications that reflect outcomes of the research and recommendations to further researches.

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LIST OF ABBREVIATIONS

APA: American Psychological Association.

AV.: Average.

CALLA: The Cognitive Academic Language Learning Approach.

DfES : The Department for Education and Skills.

EFL: English as Foreign Language.

Four R's: Resilience, Resourcefulness, Reflectiveness, Reciprocity.

MCQ: Multiple Choice Questions.

MMSL: Metacognitive Model of Strategic Learning.

N.: Number of participants.

P.: Participant.

QARs: Question Answer Relationships.

R. C.: Reading comprehension.

T.: Teacher.

T. S.: Thinking skills.

X: Average of scores in each group.

Σx: Sum of scores.

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ملخــــــــــص

إن الدراسة الحالية تهدف إلى اختبار تأثير تطوير مهارات التفكير على فهم التلاميذ للقراءة . و قد أجريت تجربة تطبيقية على تلاميذ السنة الأولى بثانوية عمر إدريس بمدينة القنطرة.

يتكون هذا البحث من أربعة فصول. الفصلان الأول والثاني يعرضان الجانب النظري ، و أما الفصلان الثالث و الرابع يعرضان الجانب التطبيقي من الدراسة . لقد تم اختبار 78 تلميذا ينتمون إلى نفس العينة من أجل تقييم مهارات التفكير لديهم و فهمهم للنصوص المكتوبة. وقد أشارت نتائج التقييم أن كلى الاختبارين افتقر إلى المصداقية و عدم التوافق مع مستوى التلاميذ. و بالتالي كان تعديل بعض الأسئلة لا غنى عنه ، أما بالنسبة لأدوات البحث المستخدمة في الدراسة فقد قدم للتلاميذ و للأساتذة استبان تجريبي لإزالة أي خطأ محتمل في صياغة الأسئلة.

بعد هذه الدراسة الأولية تم اختيار عشوائي ل 50 من بين 79 تلميذا آخرين من المجموعة التجريبية و المجموعة المرجعية و إعطاؤهم نفس القياسات من الاختبار. وبعدها قدمت للمجموعة التجريبية عدة دروس تهدف إلى تطوير مهارة التفكير بمختلف الأساليب مما أدى في نهاية التجربة إلى تطور ملحوظ لمستوى التفكير و فهم التلاميذ للقراءة وقد تم قياس هذا التطور بهدف إظهار الفروق في أداء التلاميذ في اختبارات أساليب التفكير و فهم القراءة .

و لقد عرضت هذه الفروق في أنواع من الجداول و الرسوم البيانية التي أظهرت نتائج هامة في المقارنة بين تحصيل المجموعات في كلا الاختبارين.

في نهاية هذا البحث ذكرنا في بعض الآثار التربوية ذات الصلة المباشرة بالدراسة التي تعطي نتائج و توصيات هامة لتعزيز و تطوير قدرات التفكير لدى التلاميذ. و بالتالي ستكون هذه الدراسة التطبيقية مفيدة للمتخصصين في تصميم المناهج التربوية تحسينا لمستوى التلاميذ.

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Appendix 01

Pupils' Questionnaire (pilot study)

The Impact of Developing Thinking Skills on Pupils' Reading

Comprehension

A Case Study of First Year Pupils at Omar Idriss Secondary School in

El-Kantara

Dear students,

   This questionnaire serves as data collection tools for a research project. You are kindly requested to answer honestly to the questions to help reaching the aim behind the study.

Thank you, in advance, for your collaboration.
Please put a tick (√) in the appropriate answer or give full answers. Some questions will require you to arrange the different items, while you can choose more than one answer to other questions. Do not answer how you should be, or what other people do.

<u>*Section one:*</u> *Background Information:*
Gender: a- Male ☐   *b- Female* ☐
Class: 1As …..
School: Omar Idriss Secondary School.

<u>*Section two:*</u> *Pupils reading comprehension.*
<u>*Question 01:*</u>
 How long have you been studying English?
 I have been studying English for…… year (s)

<u>*Question 02:*</u>
Do you consider your level in English?
a- *Very good* ☐   ***b-*** *Good* ☐   ***c-*** *Average* ☐   ***d-*** *Poor* ☐

<u>*Question 03:*</u>
Do you like reading?
a- *A lot* ☐   ***b-*** *A little* ☐   ***c-*** *Not at all* ☐

Question 04:

How often does your teacher encourage you to read?

a. Frequently ☐

b. Sometimes ☐

c. Rarely ☐

d. Never ☐

Question 05:

How often do you read in English without being asked?

a- Frequently ☐   *b- Sometimes* ☐   *c- Rarely* ☐   *d- Never* ☐

Question 06:

Your level in reading comprehension (according to your marks) is:

a- Good ☐   *b- Moderate* ☐   *c- Weak* ☐

Question 07:

Decoding (interpreting) the exams' questions is generally:

a- Difficult ☐   *b- Not difficult* ☐   *c- Very easy* ☐

Question 08:

How do you find the following types of exercises?

- *Multiple choice*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *True/ false*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *Matching*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *Sentence order*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐

Question 09:

What make questions of an English exam difficult for you?

…………………………………………………………………………………………………

Section three:

Question 01:

Does the title of a book, a text, or an article give you an idea about its content before you start reading?

a- Yes ☐   *b- No* ☐

Question 02:

As you read, do you usually predict (or guess) what the writer is likely to say in the next word, sentence, paragraph, etc.?

a- Yes ☐   *b- No* ☐

Question 03:

If "yes", do your predictions (guesses) always get confirmed (they are always true)?

a- Yes ☐   *b- No* ☐

Question 04:

If "no", what do you do then?
a. *Stop reading* ☐
b. *Change your prediction (or guess)* ☐
c. *Reread what you have already read* ☐

Question 05:

Do you think prediction (guessing) is an important thinking skill?
a- *Yes* ☐   **b-** *No* ☐

Question 06:

If yes, what do you think the importance of prediction (or guessing) for reading comprehension is? (You can tick more than one box. In this case, please rank your choices from 1 to the most important until 3 or 4 to the least important).
a. *It warms you to the topic (makes the topic familiar to you before you start reading)* ☐
b. *It helps you become confident (not frightened) about reading a new text* ☐
c. *It saves your time* ☐

Question 07:

Do you know how to solve comprehension questions (according to your marks)?
a- *Always* ☐   **b-** *Sometimes* ☐   **c-** *never* ☐

Question 08:

Does your teacher show you how to solve comprehension questions?
a- *Yes* ☐   **b-** *No* ☐
If yes, say how:
……………………………………………………………………………………………………

Question 09:

Does your teacher show you how to choose specific answer among deferent choices?
a- *Yes* ☐   **b-** *No* ☐

Question 10:

Do you think that pupils put into practice their thinking abilities during text comprehension?
a- *Yes* ☐   **b-** *No*

Question 11:

Would you like to add any comment or suggestion?
……………………………………………………………………………………………

Thank you

Appendix 02

Pupils' Questionnaire

The Impact of Developing Thinking Skills on Pupils' Reading Comprehension

A Case Study of First Year Pupils at Omar Idriss Secondary School in

El-Kantara

Dear pupils,

This questionnaire serves as data collection tools for a research project. You are kindly requested to answer honestly to the questions to help reaching the aim behind the study. Thank you, in advance, for your collaboration.

Please put a tick (√) in the appropriate box or give full answers. Some questions will require you to arrange the different items, while you can tick more than one box to other questions. Do not answer how you should be, or what other people do.

<u>Section one:</u> *Background Information:*

<u>Question 1:</u>

1- *Gender:* ***a-*** *Male* ☐   ***b-*** *Female* ☐

2- *Class: 1As ……*

3- *School: Omar Idriss Secondary School.*

<u>Section two:</u> *Pupils reading comprehension.*

<u>Question 01:</u>

How long have you been studying English? منذ متى و أنت تدرس اللغة الانجليزية

I have been studying English for…… year (s)

<u>Question 02:</u>

Do you consider your level in English? كيف تعتبر مستواك في اللغة الانجليزية

b- *Very good* ☐   ***b-*** *Good* ☐   ***c-*** *Average* ☐   ***d-*** *Poor* ☐

<u>Question 03:</u>

Do you like reading? هل تحب القراءة

b- *A lot* ☐   ***b-*** *A little* ☐   ***c-*** *Not at all* ☐

<u>Question 04:</u>

How often does your teacher encourage you to read? كم مرة يشجعك أستاذك على القراءة

a. *Frequently* ☐   ***b.*** *Sometimes* ☐   ***c.*** *Rarely* ☐   ***d.*** *Never* ☐

Question 05:

How often do you read in English without being asked? كم مرة قرأت فيها كتب باللغة الانجليزية بدون أن يطلب منك ذلك

b- *Frequently* ☐   *b- Sometimes* ☐   *c- Rarely* ☐   *d- Never* ☐

Question 06:

Your level in reading comprehension (according to your marks) is: ما مستواك في فهم النصوص (على حسب علاماتك المتحصل عليها)

a- Good ☐   *b- Moderate* ☐   *c- Weak* ☐

Question 07:

Decoding (interpreting) the exams' questions is generally: فهم و تحليل أسئلة الامتحان هو بصفة عامة

a- Difficult ☐   *b- Not difficult* ☐   *c- Very easy* ☐

Question 08:

How do you find the following types of exercises? كيف تجد هذه الأنواع من الأسئلة خلال الامتحان

- *Multiple choice*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *True/ false*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *Matching*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐
- *Sentence order*   *a- Difficult* ☐   *b- Not difficult* ☐   *c- Very easy* ☐

Question 09:

What make questions of an English exam difficult for you? لماذا تكون أسئلة الامتحان صعبة بالنسبة لك

……

Question 10: العوامل النفسية التي تؤثر سلبا في فهمك للنص

The psychological factors which can affect your comprehension of the text are:

a- Lack of confidence in the ability to understand a text from a first reading ☐
فقدان الثقة لعدم قدرتك على فهم النص من أول قراءة

c- Losing concentration when reading. ☐ فقدان التركيز من أول قراءة

d- Exhaustion; that is the act of reading is mentally a tiresome activity. ☐
الإحساس بالتعب لان القراءة نشاط ممل

الشعور بالارتباك لأنك في جو الامتحانات *e- Feeling anxiety because you are taking the exam.* ☐

Section three:
Question 01:

Do you know how to solve comprehension questions (according to your marks)?

هل تعلم كيف تجيب على الأسئلة المتعلقة بفهم النص

b- Always ☐   *b- Sometimes* ☐   *c- never* ☐

Question 02:

Does your teacher show you how to solve comprehension questions?

هل يريك الأستاذ كيف تجيب على الأسئلة المتعلقة بفهم النص

b- *Yes* ☐   *b-* *No* ☐

If yes, say how: اذا اجابتك نعم قل لما

………………………………………………………………………………………………

Question 03:

Does your teacher show you how to choose a specific answer among deferent choices?

هل يريك الأستاذ كيف تختار جوابا معينا ضمن عدة اختيارات

b- *Yes* ☐   *b-* *No* ☐

Question 04:

Do you usually practice thinking games or activities inside the classroom?

هل عادة تمارسون بعض تمارين أو العاب التفكير و الذكاء في القسم (بعد انتهاء الدرس مثلا)

a- *Yes* ☐   *b-* *No* ☐

Question 05:

As you read, do you usually predict (or guess) what the writer is likely to say in the next word, sentence, paragraph, etc?

هل عادة تتوقع ما سيقوله كاتب النص في الكلمة أو الجملة أو الفقرة التي تأتي بعد و أنت تقرا النص

a- *Yes* ☐   *b-* *No* ☐

Question 06:

If "yes", do your predictions (guesses) always get confirmed (they are always true)?

إذا كان جوابك بنعم هل دائما تكون توقعاتك صحيحة

a- *Yes* ☐   *b-* *No* ☐

Question 07:

Do you think prediction (guessing) is an important thinking skill?

هل تظن أن توقع أو حدس ما سيقوله الكاتب أسلوب تفكير مهم

b- *Yes* ☐   *b-* *No* ☐

Say why: لماذا هو كذلك في رأيك

…………………………………………………………………………………………

Question 08:

Do you think that you put into practice your thinking abilities during text comprehension?

a- *Yes* ☐   *b-* *No* ☐

هل تظن انك تطبق قدرات التفكير لديك أثناء فهم النص و الإجابة على الأسئلة

Question 09:

Would you like to add any comment or suggestion?

هل من تعليق أو اقتراح حول الأسئلة التي أجبت عليه و حول موضوع بحثي المذكور أعلاه

Thank you

Appendix 03
Teachers' questionnaire (pilot study)

> ***The Impact of Developing Thinking Skills on Pupils' Reading Comprehension***
> *A Case Study of First Year Pupils at Omar Idriss Secondary School in El-Kantara*

Dear teachers,

    This questionnaire serves as a data collection tool for a research project. I would be very grateful if you could answer to the questions below. Your input will be of much help and importance for reaching the aim behind the study. I can assure you that all information contained will be dealt with securely and guarantee full anonymity of your contribution.

Thank you, in advance, for your time and collaboration.

Section One: *Background information questionnaire:*

Question 01: *Please complete this part of questionnaire first:*
1- *Gender:* **a-** *Male* ☐   **b-** *Female* ☐
2- *Grade:*
        a- *License* ☐   **b-** *Magister* ☐
3- *How long have you been teaching English at secondary school?*
…………………………………………………

Section Two: *Pupils reading comprehension:*

Question 01:
Do your pupils have difficulties in learning English as a foreign language?
a- *Yes* ☐   **b-** *No* ☐

Question 02:
What language skills do they suffer more from?
a- *Listening* ☐
b- *Reading* ☐
c- *Speaking* ☐
d- *Writing* ☐

Question 03:

Generally during the course or in the exams what difficulties they might encounter during texts reading comprehension?

a-   Understanding the main ideas   ☐
b-   Finding specific information and detail   ☐
c-   Recognizing the writer's attitude and opinion   ☐
d-   Identifying the tone   ☐
e-   Understanding implication   ☐
f-   Identifying the purpose for which the text was written   ☐
g-   Understanding text structure and organization   ☐
h-   Understanding cohesion and coherence   ☐
i-   Understanding the meaning of specific words in context   ☐

Question 04:

Do you follow certain strategy to deal with those difficulties?

a- Yes ☐   *b- No*   ☐
Explain

…………………………………………………………………………………………………

Section Three: *Introducing thinking skills to texts reading comprehension:*

Question 01:

Do you think that developing pupils' thinking skills (Eg: problem solving; how to solve comprehension question, decision making; how to make a decision among certain choices, predicting; how to predict what will happen next if any kind of this activity exists) contributes in fostering texts reading comprehension?

a- Yes ☐   *b- No*   ☐

Question 02:

If yes, how?

………………………………………………………………………………………………………

Question 03:

Do you think that pupils put into practice their thinking abilities during text comprehension?

a- Yes ☐   *b- No*   ☐

Question 04:

If yes, is the extent of such application?

a- Effective   ☐   *b- Less effective* ☐   *c- Not at all*   ☐

Question 05:

Do you think that teaching thinking skills through the curriculum is a good idea?

a- Yes ☐   *b- No*   ☐

Question 06:

What, in your opinion, are the techniques that can be used to teach and develop the aforementioned thinking skills through the curriculum?

…………………………………………………………………………………………

Question 07:

Would you like to add any comment or suggestion?

…………………………………………………………………………………………

Evaluating the questionnaires:

The questions below attempt to evaluate the questionnaire. Would you answer them please?

1- *Were the instructions clear?*

....

2- *Were there any questions which were not clear, or ambiguous?*

....

3- *Did you object to answering any question?*

…………………………………………………………………………………………

4- *In your opinion, have we omitted or neglected any major topic?*

…………………………………………………………………………………………

5- *Was the layout of the questionnaire clear/ attractive?*

…………………………………………………………………………………………

6- *Any comments?*

…………………………………………………………………………………………

Thank you

Mrs. Souri Rania
Departement of letters and languages
English Section
Faculty of Arts and Foreign Languages
University of Biskra

Appendix 04

Teachers' Questionnaire

> ***The Impact of Developing Thinking Skills on Pupils' Reading Comprehension***
> *A Case Study of First Year Pupils at Omar Idriss Secondary School in El-Kantara*

Dear teachers,

    This questionnaire serves as a data collection tool for a research project. I would be very grateful if you could answer to the questions below. Your input will be of much help and importance for reaching the aim behind the study. I can assure you that all information contained will be dealt with securely and guarantee full anonymity of your contribution.

Thank you, in advance, for your time and collaboration.

Please put a tick (√) in the appropriate box or give full answers. You can tick more than one box to other questions.

Section One: *Background information:*

Question 01: *Please complete this part of the questionnaire first:*

a-   *Gender:*   *a- Male*   ☐   *b- Female* ☐

b-   *Grade:*

         a- License ☐   *b- Magister* ☐

c-   *How long have you been teaching English at secondary school?*

…………………………………………………………

Section Two: *Pupils reading comprehension:*

Question 01:

Do your pupils have difficulties in learning English as a foreign language?

a-Yes   ☐   *b- No*   ☐

Question 02:

What language skills do they suffer more from?

a-Listening   ☐

b- Speaking   ☐

c-Writing   ☐

Question 03:

How about reading?

………………………………………………………………………………

Question 04:

Generally, during the course or in the exams, what difficulties they might encounter during texts reading comprehension?

a-   Understanding the main ideas   ☐
b-   Finding specific information and detail   ☐
c-   Recognizing the writer's attitude and opinion   ☐
d-   Identifying the tone   ☐
e-   Understanding implication   ☐
f-   Identifying the purpose for which the text was written   ☐
g-   Understanding text structure and organization   ☐
h-   Understanding cohesion and coherence   ☐
i-   Understanding the meaning of specific words in context ☐

Question 05:

Do you follow certain strategy to deal with those difficulties?

   a- Yes ☐   *b- No* ☐

Explain,

…………………………………………………………………………………………

Section Three: *Introducing thinking skills to texts reading comprehension:*
Question 01:

Do you think that developing pupils' thinking skills (Eg: problem solving; how to solve comprehension question/ decision making; how to make a decision in multiple choice questions/ predicting; how to predict what will happen next such as predicting the end of a given story…) contributes in fostering texts reading comprehension?

a- Yes ☐   *b- No* ☐

Question 02:

If yes, how?

…………………………………………………………………………………………

Question 03:

Do you think that pupils put into practice their thinking abilities during text reading comprehension?

a- Yes ☐   *b- No* ☐

Question 04:

If yes, is the extent of such application?

a- Effective ☐   *b- Less effective* ☐   *c- Not at all* ☐

Question 5:

What, in your opinion, are the major causes behind that?

…………………………………………………………………………………………

__Question 6:__
Do you think that teaching thinking skills through the curriculum is a good idea?
__a-__ Yes ☐   *__b-__ No* ☐

__Question 7:__
What, in your opinion, are the techniques that can be used to teach and develop the aforementioned thinking skills through the curriculum?
……………………………………………………………………………………

__Question 8:__
Would you like to add any comment or suggestion?
……………………………………………………………………………………

Thank you

Mrs. Souri Rania
Departement of letters and languages
English Section
Faculty of Arts and Foreign Languages
University of Biskra

Appendix 05

Thinking Skills Proficiency Test (Pilot Study)

Omar Idriss Secondary School, El-kantara

Level: 1 A.S.   **Date:** ....
Full name: …………………………   **Number:** ………….
Date of birth: …./ ……/…........

Question 01: Read the following paragraphs and think of a good ending to the final sentences. Then look at the four possible endings below the paragraphs and choose the best one.

A/ When Christopher Columbus sailed west from Spain in 1492, he dreamed of reaching Asia. He did not know there were other continents between Europe and Asia or that land he found was America. He never realized his mistake, and when he died he still believed that the land he had found was ………………….

a- Asia

b- America

c- Spain

d- Another continent

B/ Fog is a major cause of accidents on highways in some areas. Every year many thousands of people lose their lives because fog can dangerously reduce visibility. Then drivers cannot see very far ahead, so they………………

a- Do not have time to avoid accidents.

b- Go faster to avoid accidents.

c- Have more time to read the signs.

d- Do not have time to have accidents.

Question 02: Read the following sentences then choose what answer that better explains it.

A/ Because of the lack of rain, the grass in the city's parks is not as green as last year.

According to the sentence, there ……………………………

a- There was a lot of rain this year

b- The grass was greener last year

c- There was less rain last year

d- There was not much rain last year

B/ Whenever he was home, John never missed the opportunity to help the children with their homework. According to the sentence, ……..

a- John missed the children when he wasn't home

b- The children didn't have homework when John was home

c- Sometimes John helped the children

d- John helped the children when he didn't miss them

Question 03: Look at these expressions with numbers. Can you work out what they mean?

Example: 7 D in a W = 7 days in a week

a- 12 M in a Y = ……………………………………………………………

b- 52 W in a Y = ……………………………………………………………

c- 60 S in a M = ……………………………………………………………

d- 24 H in a D = ……………………………………………………………

Question 04: How many feet do nine chickens, two dogs and three cats have?

a- 14   **b-** 38   **c-** 56   **d-** 46

Question 05: A group of women met one afternoon in a cafeteria to drink tea. They brought their cats along with them. All in all, there were 22 heads and 72 feet. How many women and cats were there in the room? There were ………………………….

a- 6 women and 16 cats

b- 7 women and 15 cats

c- 8 women and 14 cats

d- 9 women and 13 cats

Question 06: Put "**+**" for the good actions and "-" for the bad actions. A justification in one sentence for each answer is required.

1- I work in groups to help my friends for a better understanding of the lessons…………

-…………………………………………………………………………………………

2- I am in the classroom and I have remarked that I have forgotten my dictionary. I take the dictionary of my friend without asking for his permission: He's my gentle friend……

-……………………………………………………………………………………….

3- My cousins invited me in for dinner. All of sudden, I needed an urgent phone call. Asking for their permission is not obligatory…………

-………………………………………………………………………………………

4- I revise my lessons just before taking the examination: I want to remember everything……….

-………………………………………………………………………………………

5- Sitting an examination in mathematics, my friend asks for my help to solve some problems. I did not hesitate, of course, because he is my best friend, and it is good to help others…………

-………………………………………………………………………………………

Appendix 06

Reading Comprehension Proficiency Test (Pilot Study)

<u>**Question 01:**</u> **What do you think is the rest of the story ??**

This short text is only a fragment of a story. Read through the questions then try to guess

what the answer could be.

Note: remember that there is no one "correct answer", there are only many different

answers.

<u>**Text:**</u>

The woman was well-dressed and in her late twenties. She was sitting at one of the

corner tables with an older man. He was talking to her intensely (بشكل مكثف), but in a very

low voice(بصوت منخفض) .

'No', she suddenly (فجأة) said.

She threw (رمت) a glass of wine in his face. Then she jumped up (قفزت), and ran out of the

restaurant. The older man runs after her (لاحقها) .

'Jennifer. For God's sake, stop. Try to understand', he shouted (صاح) .

It was raining and the street was badly lit (سيء الإضاءة) . A car has just turned the corner

and was coming towards her very fast. The driver probably didn't see her. And she didn't

seem to notice the car as she run out into the middle of the street.

1/ What do you think they were talking about? تخيل ما الذي تحدثوا عنه أثناء الحوار

………………………………………………………………………………………

2/ What do think happened after she run out into the street? ماذا تضن قد حدث بعد خروج المرأة من

المطعم إلى الطريق

....

3/ Imagine you happened to pass the restaurant only a few minutes later. Describe what

you will do if the woman were crashed by the car.

إذا كنت مارا أمام المطعم دقائق بعد خروج المرأة . صف ما كنت ستفعل إذا صدمت السيارة المرأة

....

Question 02: Read the following text very carefully and interpret the facts below:

People eat different foods in different places. Let's take the example of Nepal. Nepal has no sea. Most people in Nepal are farmers. They grow grains, fruits and other crops in the lowlands. The temperatures are very warm there. Rice and corn grow in terraced fields in the cooler hill regions. Potatoes and barley are the staple or chief crops at higher elevations. Temperatures are coolest there.

The Nepalese raise goats, cattle and yaks for dairy produce. They eat meat only on special occasions. Religious rules affect which meats people in Nepal eat: Hindus, who make up almost 90 percent of the population do not eat beef, and Muslims do not eat pork.

Comprehension Questions:

1- The title of this text is……………..…

a- The Nepalese People.

b- The Nepalese Different Foods.

c- The Nepalese Country.

2- Some crops like potatoes need……………..…

a- warm temperatures.

b- cool temperatures.

c- low temperatures.

3-The type of meat Nepalese eat is affected by…………….

a- the region.

b- some special occasions.

b- the religion.

إذا كنت مارا أمام المطعم دقائق بعد خروج المرأة . صف ما كنت ستفعل إذا صدمت السيارة المرأة

Appendix 07

Thinking Skills Proficiency Pre-test

A/ Prediction:

Question 01: Read the following paragraphs and think of a good ending to the final sentences. Then look at the four possible endings below the paragraphs and choose the best one. **(Circle)**

When Christopher Columbus sailed (أبحر) west from Spain in 1492, he dreamed of reaching Asia. He did not know there were other continents (قارات) between Europe and Asia or that land he found was America. He never realized his mistake (لم يدرك خطأه) , and when he died he still believed (مازال يعتقد) that the land he had found was …

a-Asia   **b-** America   **c-** Spain   **d-** Another continent

Question 02: Read the following paragraphs and think of a good ending to the final sentences. Then look at the four possible endings below the paragraphs and choose the best one. **(Circle)**

Fog (الضباب) is a major cause of accidents on highways in some areas. Every year many thousands of people lose (يفقد) their lives because fog can dangerously reduce visibility (يقلل الرؤية). Then drivers (السائقين) cannot see very far ahead (عن بعد), so they …

c- Do not have time to avoid (تجنب) accidents.

d- Go faster (أسرع) to avoid accidents.

e- Have more time to read the signs (اشارات المرور) .

f- Do not have time to have accidents.

Question 03: Read the following sentences then choose what answer that best explains it. **(Circle)**

Because of the lack of (نقص) rain, the grass(العشب) in the city's parks is not as green as last year. According to the sentence (بالنسبة للجملة),

a- There was a lot of rain this year

b- The grass was greener last year

c- There was less rain last year

d- There was not much rain last year

Question 04: Read the following sentences then choose what answer that best explains it. **(Circle)**

Whenever he was home, John never missed the opportunity (يضيع الفرصة) to help the children with their homework. According to the sentence,

a- John missed (يفتقد) the children when he wasn't home

b- The children didn't have homework when John was home

c- Sometimes John helped the children

d- John helped the children when he didn't miss them

B/ Problem solving:

Question 05: Look at these expressions with numbers. Can you work out what they mean?

Example: 7 D in a W = 7 days in a week

a- 12 M in a Y = ……………………………………………………………

b- 52 W in a Y = ……………………………………………………………

c- 60 S in a M = ……………………………………………………………

d- 24 H in a D = ……………………………………………………………

Question 06: How many feet do nine chickens, two dogs and three cats have? **(Circle)**

 a- 14   **b-** 38   **c-** 56   **d-** 46

Question 07: A group of women met one afternoon in a cafeteria to drink tea. They brought their cats along with them. All in all, there were 22 heads and 72 feet. How many women and cats were there in the room? **(Circle)**

a- 6 women and 16 cats   **c-** 8 women and 14 cats

7 women and 15 cats   **d-** 9 women and 13 cats

Question 08: What would be the next number in this series? **(Circle)**

2- 3 - 5- 8- 12- 17- ??

a- 2   **b-** 23   **c-** 24   **d-** 25   **e-** 26

Question 09: France is to Europe as Algeria is to… **(Circle)**

a - America   **b-** Asia   **c-** Africa   **d-** Australia

C/ Decision making:

Question 10: Put "**+**" for the good actions and "**-**" for the bad actions. A justification (تعليل) in one sentence for each answer is required.

1- I work in groups to help my friends for a better understanding of the lessons (   )

2- I am in the classroom and I have remarked that I have forgotten my dictionary. I take the dictionary of my friend without asking for his permission (أخذ الإذن): he's my gentle friend

3- My cousins invited me in for dinner. All of sudden, I needed an urgent phone call (مكالمة مستعجلة). Asking for their permission is not obligatory (ليس ضروري) . (   )

4- Sitting an examination in mathematics, my friend asks for my help to solve some problems. I did not hesitate (لم أتردد) of course, because he is my best friend, and it is good to help others(   )

5- I revise my lessons just before taking the examination: I want to remember everything ()

Appendix 08

Reading Comprehension proficiency Pre-test

Question 01: Read the following paragraph and think of a good ending for the final sentence. Then look at the four possible endings below the paragraph and choose the best one.

In the past, if you want to eat Japanese food (الأكل الياباني), you had to go to Japan. Now, you can find Japanese restaurants all around the world, from New York to Rome or Sydney. In the same way, Italian food used to be found only in Italy. Now, Italian restaurants can be found everywhere, from Moscow to Tokyo or São Paulo. People everywhere are learning to enjoy (يستمتع ب) the foods of other countries. Someday, It may be possible to eat ……….

a. Italian food in Tokyo.

b. Only traditional food (أكل تقليدي) in each country.

c. Every kind of food in every country.

d. Only Japanese food.

Question 02: Read the following paragraph and try to guess the meaning of the word "*zip*".

Zip was stopped during the war (أثناء الحرب) and only after the war did it become popular. What a difference it has made to our lives. It keeps people at home much more. It has made the remote parts (المناطق المنعزلة) of the world more real to us. Photographs show a country, but only *zip* makes us feel that a foreign country is real. Also, we can see scenes (مشاهد) in the street, big occasions (مناسبات كبيرة) are *zipped*, such as the Coronation (تتويج) in 1953 and the opening of Parliament (افتتاح البرلمان). Politicians not only have to speak well, they now have to have what is called a "*zip* personality".

Zip means: …….

 a- Cinema

 b- Photography

 c- Television

 d- Telephone

Question 03: Read the following paragraph. Then, on the lines below, write the problem, the solution, and the main idea.

In many places in the United States, factories, farms and military bases (قواعد عسكرية) have produced dangerous levels of pollution in the ground. The usual method (المنهج) for clearing up ground pollution (التلوث الأرضي) is very expensive and complicated (المعتاد) (غالي و معقد). Big machines dig out (تنتشل) all of the polluted earth and transfer it (تنقله) to large trucks, which then carry it to an official dumping place. This dumping place (مكان رمي) (النفايات) then has to be carefully closed off so that the pollution cannot escape into water supplies. Scientists now believe that there may be a better and less expensive way to clean up ground (تنضيف) pollution by using trees and plants. They have identified hundreds of species of trees and plants that can eliminate (إزاحة) certain polluting substances (مواد ملوثة) . This new method of removing ground pollution has been tried out successfully in Detroit (مدينة في أمريكا)on a plot of land (قطعة ارض) with ground pollution. Scientist removed four feet of the polluted soil to another area and planted (زرعوا) sunflowers and Indian mustard in it.

Problem: …………………………………………………………………………

Solution: …………………………………………………………………………

Question 04: Read the following text very carefully and answer the questions below:

People eat different foods in different places. Let's take the example of Nepal (مدينة في

جنوب آسيا). Nepal has no sea. Most people in Nepal are farmers (أناسها مزارعون). They grow

grains, fruits and other crops(محاصيل) in the lowlands (أراضي منخفضة). The temperatures

(درجات الحرارة) are very warm there. Rice (الأرز) and corn (الذرة) grow in terraced fields

(حقول متدرجة) in the cooler hill regions. Potatoes and barley (الشعير) are the staple or chief

crops at higher elevations (المناطق المرتفعة). Temperatures are coolest there.

(أماكن إنتاج مشتقات الحليب) The Nepalese raise goats, cattle and yaks for dairy produce .

They eat meat only on special occasions. Religious rules affect which meats people in

Nepal eat: Hindus (المعتقدون بالديانة الهندية) , who make up almost 90 percent of the population,

do not eat beef (لحم الأبقار). Muslims do not eat pork (لحم الخنزير).

Comprehension Questions:

1- The title of this text is………………

    a- The Nepalese People.

    b- The Nepalese Different Foods.

    c- The Nepalese Country.

2- Some crops like potatoes need……………..…

    a- Warm temperatures.

    b- Cool temperatures.

    c- Low temperatures.

3-The type of meat Nepalese eat is affected by…………….

    a- The region.

    b- Some special occasions.

    c- The religion.

Question 05: Arrange the following sentences to get a coherent paragraph (:

a/ however, there are few (قلة من الناس) 'average' people in the world.

b/ the average person (متوسط الأشخاص) in the world now uses approximately (حوالي) 43,000 calories (سعرات الحرارية) per day.

c/ such vast differences are hard to comprehend. (هذه الاختلافات الشاسعة يصعب فهمها).

d/ an average citizen of the so-called 'developed' countries (الدول المتقدمة) uses 136,000 calories each day.

e/ some people uses far more energy (الطاقة) than that, while most use far less.

1	2	3	4	5
....	……….	……….	....	………...

Appendix 09

Thinking Skills Proficiency/ Achievement Post test

<u>**A/ Problem solving:**</u> Circle the best answer:

<u>**Question   01:**</u> What would be the next number in this series:

32 ... 36 ... 9 ... 12 ... 4 ... 6 ... ?

a- 2   **b-** 3   **c-** 4   **d-** 5

<u>**Question 02:**</u> Which letter comes next? A…. C….. F….. J…… O…..?

a- q   **b-** p   **c-** u   **d-** s

<u>**Question 03:**</u> They are excited to get away from home and to be with a lot of other

children <u>their age</u>.

The best meaning for their age in that paragraph is:

a- Older then they are   c- During the day

b- At the same time   **d-** The same age as they are

<u>**B/ Predicting:**</u>

<u>**Question 04:**</u> When Europeans came to North America in 1620, the forests were full of

bears. There were more than a half a million of these wild animals. Then the Europeans

began to cut down the forests and hunt the bears. By 1900, there were very few bears left.

In recent years, however, the bear population has begun to multiply again. There are now

at least 200,000 bears, thanks to batter ……

a- Hunting methods.

b- Roads and communication.

c- Died while playing the piano.

d- Laws to protect Europeans.

Question 05: In many countries, textbooks for children in elementary school give a false picture of woman's lives. They often show women only as mothers and housewives. The women are seen caring for their families or doing simple tasks around the home. In reality, in many countries, the majority of women work outside the home. They may also have children and do housework, but at the same time, they have jobs. Their lives can be quite complicated as they try to balance their responsibilities at home and at work. Their situation is nothing like the situations shown in the school books. Some educators believe that these books …..

a- Do not help girls prepare for their future.

b- Give girls a good idea of their future.

c- Show women in many complex situations.

d- Do not show enough pictures of women.

Question 06: Read the following sentences then choose what answer that best explains it.

Sleeping underneath the tree, the old man didn't feel enough of the rain to wake up until he was thoroughly wet. According to the sentence,

a- The old man woke up as soon as it begun to rain.

b- The old man sat under the tree to watch the rain.

c- The old man got wet before he woke up.

d- The tree protected the old man from the rain.

Question 07: Having just arrived from overseas, the student thought that the campus at his new university compared favorably with that of his university back home.

According to the sentence,

a- After he arrived, the student wanted to visit several campuses.

b- After he arrived, the student didn't like the new campus as much as his old one.

c- After he arrived, the student wanted to return home.

d- After he arrived, the student realized that he liked his new campus as much as his old one.

C/ Decision making: Match the sentences in column A with the ones in column B so as to produce snippets of conversation. Speculate who the participants might be and think of how to continue the conversation.

A	B
1. I don't know why I let you convince me to come here. I hate parties.	**a)** Don't tempt me. I have to cram for my exam. I take it on Friday.
2. Any plans for the weekend? Maybe we can check a movie or play tennis?	**b)** Come on! This is going to be a blast! You'll love it.
3. Susan told me what you said about my pronunciation.	**c)** Not really. I don't watch much TV, and when I do, I usually turn on MTV or The Discovery Channel.
4. Do you like "Star Trek?"	**d)** I don't know what she told you, but I never talked behind your back.
5. Could you help me on Saturday when I move out of the dorm to my new apartment?	**e)** Sure. When would you like me to be there?
6. Does your mother criticize you a lot?	**h)** Yes, she always gets on my case, she hates the way I dress and make up.
7. I don't know how I happened to get a D in algebra. Things just don't come easy for me.	**i)** I am not sure but we'd better not let Jack watch it.
8. Is this movie rated PG (parental guidance)?	**j)** Perhaps a little less time spent on television and a little more on books might prevent this kind of a thing in the future.

1	2	3	4	5	6	7	8
……….	………...	……….	…….	……….	……..	……….	……….

Appendix 10

Reading Comprehension Proficiency/ Achievement Post Test

<u>**Text:**</u>

United States scientists from many fields are using their knowledge to advance rocket development for peaceful uses. Their aim is to speed the day when man travels in space. Many engineering problems must be solved because space has no atmosphere, man must carry his environment with him. Experiments are now under way to determine how best to provide him with air, water, food and relief from boredom, plus protection from extreme heat, cold and radioactivity.

The lack of gravity presents many problems for man in space. He will be weightless and will float; it has to be squeezed into his mouth from tubes. The lack of pressure outside a spacecraft will cause his body to burst without a special suit. A practical means of directing a spaceship and re-entering the earth's atmosphere also are prime concerns to scientists.

Many experts believe that space platforms outside the earth's atmosphere are the best place for man to lunch his interplanetary flights. Among other benefits, the space platforms, without atmosphere or gravity, could save the enormous energies required for a spaceship to take off from earth.

Despite the preparations for man to travel in space, electronic robots might be the first to explore other planets because they could be controlled by radio and would not be affected by temperature, radiation, atmosphere, etc.

(Adapted from mission to the Moon, 1969)

A/ Comprehension interpretation:

1/ Are the following sentences true or false according to the text?

a- The goal of the scientists is to speed the day when man travels in space. ………

b- Man could travel in space without any problem. ………………………

c- Man will float in space because of the excess of gravity…………………

d- Space platforms have many benefits.………………………

e- Man is not prepared to explore other planets so he might be replaced by robot………

2/ Answer the following questions according to the text:

a- What are the U.S. scientists working on?

……………………………………………………………………………

b- What kind of difficulties must be solved before man can travel in space?

……………………………………………………………………………

c- What does the word "environment" refer to in the text?

………………………………………………………………………………

d- Mention two problems related to the lack of gravity.

………………………………………………………………………………

e- What are the advantages of space platforms?

…………………………………………………………………….……………

f- Give a title to the passage.

……………………………………………………………………………

B/ Text exploration:

1/ Find in the text words that are synonyms to:

- Find out how = ……………………………………………

- To explore = ……………………………

2/ Find out in the text words that are opposites of:

- Ordinary ≠ ……………………

- To land ≠ ………………………

<u>**C/Discourse:**</u>

1/ Reorder the following sentences to make coherent paragraph. One sentence is

irrelevant and must be left out:

a- Weather expectation will not be concerned.

b- Not only for spaceship launching.

c- It will probably be used for communication rely and astronomical study as well.

d- But also for forecasting the earth's weather.

e- Many scientists believe that the moon could serve as a base.

1	2	3	4
………	………	………	………

Appendix 11

Typical Lesson One: Problem Solving (Part 1)

> Thinking is the hardest work there is, which is probably the reason why so few engage in it
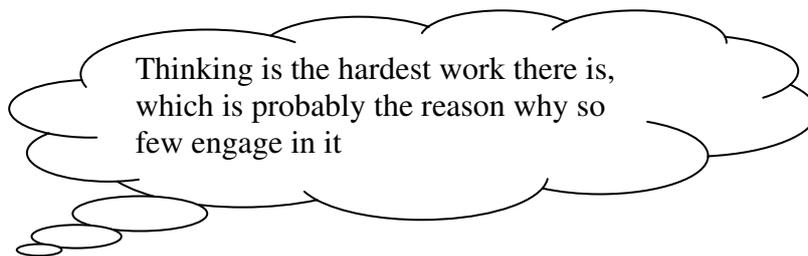
Henry Ford
Founder of the Ford Motor Co.,
1863–1947

Thinking skills: Thinking skills are cognitive processes that enable us to make meaning from and create with information. A human mind is talented with an exceptional property. Thinking is specific to human beings, and that makes him different from other species. Thinking differs according to the situation we are put within. We apply different thinking skills wherever and whenever we need to. The human mind consists of different mental capacities that are of a crucial importance in getting the correct answer, making the right decision or even solving certain problems in different life situations. So as to the educational settings where learners are confronted with multi-disciplinary fields of study and where they should apply those skills in an organized manner and logical connection to the situations they are put in.

Metacognition: "thinking about one's thinking" it is important for students to develop a range of thinking or learning skills, but it is more equally important for them to select and use appropriate strategies where necessary. Students need to know how, where and when to use these strategies.

Lesson Structure (THINK!)

T: Tune in! (5/10 min): Warm-up activities and games to get your brain working.

Problem 1: The Nine Dots.

Connect the dots using four straight lines without lifting the pencil from the paper.
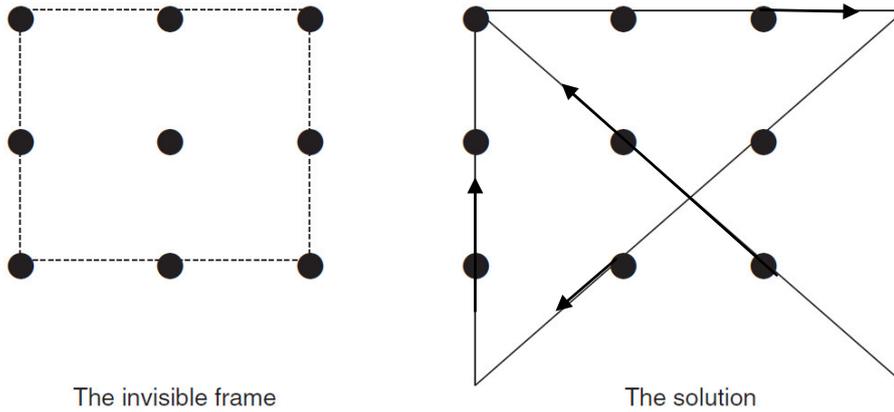
The invisible frame

The solution

The reason why many people cannot do it is that they put an unconscious or invisible framework around the dots, and try to solve the problem within it. That is impossible. But if you break out of that self-imposed limitation, the solution to the problem is easily reached.

Example: If you decide to climb Mount Everest, for example, you may find that all goes well until – a day before your final ascent – a heavy storm suddenly develops on the South Col, the ridge leading to the summit. You have a problem! Notice that you would not have that particular problem – or any problems – on Everest unless you had made a decision to climb to the summit. It is not a problem for anyone else. And it would cease to be a problem for you if you changed your mind and decided to go off and climb some other mountain in the Himalayas. Did you have a contingency plan for your route up the mountain if the weather deteriorated or avalanches (unexpected at this time of year) occurred? If you stick with your decision, then, in consultation with your team, you have to find a way of overcoming the problem.

It's not that I'm so smart, it's just that I stay with problems longer

Albert Einstein

Theoretical, physicist and Nobel

Laureate, 1879–1955

H: Heads together: (20/25 min): Philosophical discussion: What do you think? Stories, poems and interesting topics to discuss and debate.

1/ 'Heads together' Introductory Session (5min)

- listen to the person who is speaking

- only one person speaks at a time

- raise your hand to be recognized if you want to say something

- no interruption when someone is speaking

- when you disagree with someone, make sure that you make a difference between criticizing someone's idea and the person themselves

- no laughing when a person is saying something (unless they are making a joke)

- encourage everyone to participate.

2/ Generating the Question Session: (10 min)

Big accassions are 'zipped' !! (Document distributed to pupils)

Problem solving 1: Read the following paragraph and try to guess the meaning of the word "*zip*".

Zip was stopped during the war (أثناء الحرب) and only after the war did it become popular. What a difference it has made to our lives. It keeps people at home much more. It has made the remote parts (المناطق المنعزلة) of the world more real to us. Photographs show a country, but only *zip* makes us feel that a foreign country is real. Also, we can see scenes (مشاهد) in the street, big occasions (مناسبات كبيرة) are *zipped*, such as the Coronation (تتويج) in 1953 and the opening of Parliament (افتتاح البرلمان). Politicians not only have to speak well, they now have to have what is called a "*zip* personality".

Zip means: ....

e- Cinema

f- Photography

g- Television

h- Telephone

3/ Discussion Session (20/25 min)
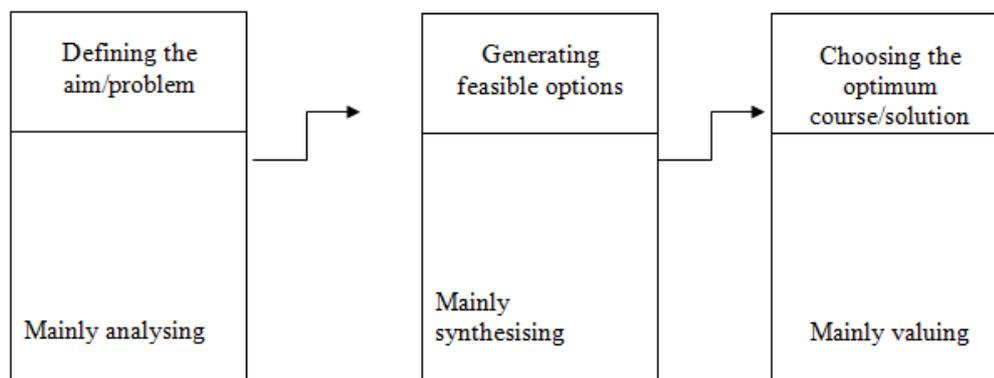
Figure 1.1. The bridge model

I: Investigate: (30/40 min): Learn how to improve your own thinking and learning: Focus on a particular thinking or learning skill.

Problem solving 2:

Can you define: **laugh** without mentioning the following words: **happy, smile, funny?**

Solution: to express amusement, happiness, careless disrespect, etc by breathing out forcefully so that one makes sounds with the voice.

N: Now reflect! (10 min): Think about what you have done?

Questions to consider could include:

• What have we learnt about good thinkers?

• In what ways are you a good thinker? (Your pupils could take it in turns to say something positive about themselves, completing the sentence: 'I am a good thinker because I …)

• How could you be a better thinker? What are you going to try to do?

• How did you find this activity?

• What have you learnt about your thinking?

K: Keep thinking! : Task for pupils to do in class, at home or in spare time.

Problem solving 3: (**Document distributed to pupils**)

Read the following information and clues to solve the problem. Use the grid below.

Put ticks (√) in the correct boxes to show the names and heights of the girls. Then complete the sentences.

The information and the problem:

Alison, Anne, Angela and Abbie all have different surnames. One of them has the surname Bell, one has the surname Carter, one has the surname Davis and one has the surname Edwards. One of them is 160 centimeters tall, one is 170 centimeters tall, one is 175 centimeters tall and the other is 180 centimeters tall.

The problem: Which girl has which surname and how tall is each of the four girls?

The clues:

1/ Alison is the shortest person.

2/ None of other girls is taller than Anne.

3/ Abbie is not as tall as Angela.

4/ Abbie's surname is Davis.

5/ The tallest girl is called Edwards.

6/ Mr Bell is not 175 centimeters tall.

	Bell	Carter	Davis	Edwards	160 cms	170 cms	175 cms	180 cms
Alison								
Anne								
Angela								
Abbie								

Complete the sentences:

- Mr Alison………………………….is ……………………centimeters tall.
- Mr Anne ……………………………is …………………….. centimeters tall.
- Mr Angela …………………………is …………………….... centimeters tall.
- Mr Abbie …………………………..is …………………….centimeters tall.

Appendix 12

Typical Lesson Two: Problem Solving (Part 2)

T : Tune in:

Game one: move 2 matchstick to make only four identical squares.
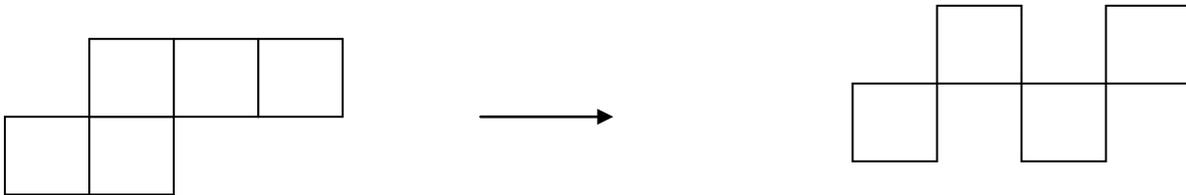
Only 2 matchsticks were moved.

H: heads together: discussion;

introductory session:

1/ 'Heads together' Introductory Session (5min)

- listen to the person who is speaking
- only one person speaks at a time
- raise your hand to be recognized if you want to say something
- no interruption when someone is speaking
- when you disagree with someone, make sure that you make a difference between criticizing someone's idea and the person themselves
- no laughing when a person is saying something (unless they are making a joke)
- encourage everyone to participate

2/ Generating the question sessions.

Item 1: read the following sentence then choose what answer that best explains it

Whenever he was home, john never missed the opportunity to help the children with their homework. According to the sentence,

   a. John missed the children when he wasn't home.
   b. The children didn't have homework when john was home.
   c. Sometimes john helped the children.
   d. John helped the children when he didn't miss them.

3/ Discussion session:
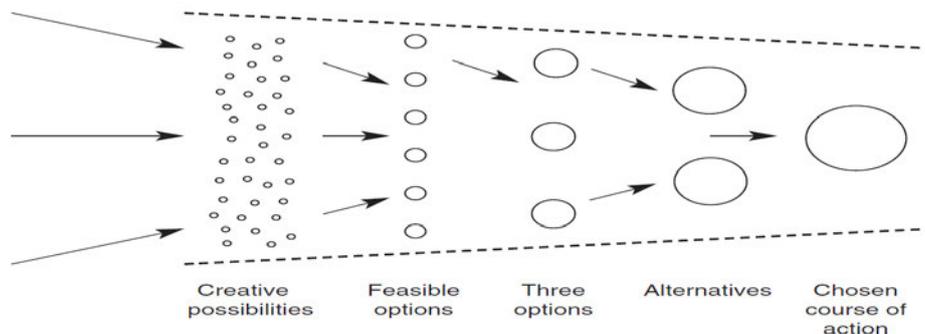
Figure 2.4   The lobster pot model

I: Investigate:

Item 2: Bob and Harry rushed to the airport for nothing, not realizing that the flight they thought was booked for today, left Thursday. According to the sentence:

    a.   The airline changed the schedule.

    b.   They confused the day of flight.

    c.   They had not made a reservation.

    d.   The flight was confused.

N: now reflect!

• What have we learnt about good thinkers?

• In what ways are you a good thinker? (Your pupils could take it in turns to say something positive about themselves, completing the sentence: 'I am a good thinker because I …)

• How could you be a better thinker? What are you going to try to do?

• How did you find this activity?

• What have you learnt about your thinking?

K: Keep thinking:

Puzzle 1: Move 2 matchsticks to change 3 into 6 (without cutting or breaking matchsticks)

(We make a Roman VI)
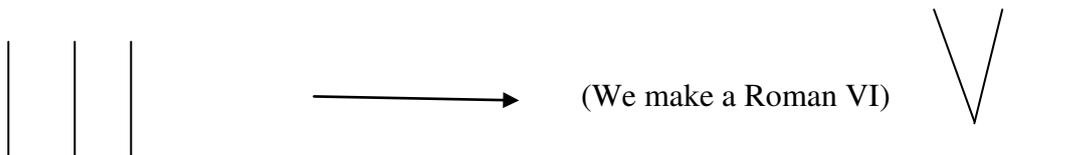
Puzzle 2 : to these six matchsticks, add five more, to make nine.
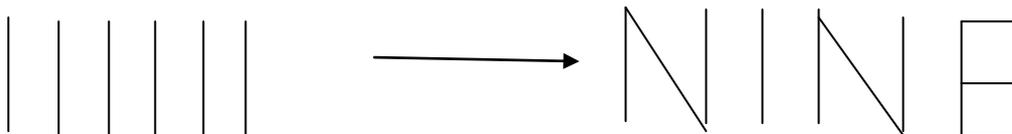
Appendix 13

Typical Lesson Three: Decision making (Part 1)

T : Tune in : (All activities were distributed to pupils)

Example:

If you decide to climb Mount Everest, for example, you may find that all goes well until a day before your final ascent; a heavy storm suddenly develops on the south Col, the ridge leading to the summit. You have a problem! Notice that you would not have that particular – or any problems – on Everest unless you had made a decision to climb to the summit. It is not a problem for anyone else. And it would cease to be a problem for you if you changed your mind and decided to go off and climb some other mountain in the Himalayas. Did you have a contingency plan for your route up the mountain if the weather deteriorated or avalanches (unexpected at this time of year) occurred? If you stick with your decision, then, in consultation with your team, you have to find a way of overcoming the problem.

Note:

A decision now needs to be made. Children should be taught how to take this step with confidence in their reasoning. Options need to be listed, pros and cons weighed up, possible outcomes and consequences evaluated, different opinions and points of view taken into consideration. Decisions may not always be right, but if they are properly considered, at least the chances of success are improved.

H: Heads together:

1/ Introductory session

- Being brave with ideas. Encourage your class to speak up, to have confidence and to share their thoughts without fearing others' response.
- How to agree and disagree:

I agree…/ I don't agree…/ I disagree…/ I'm afraid I don't agree…/ I don't think that…/ should we consider…? / But what about …? / The problem with your point of view is that …

- How to state opinions and preferences:

I think …/ I feel…/ in my opinion…/ I suspect that…/ I am convinced that …/ I strongly believe that …/ without a doubt…

- How to offer explanations:

The reason is…/ for this reason…/ many people thinks that…/ without a doubt…

- How to ask for opinions:

How do you feel about…? / What do you think about..?/ What's your opinion…?/ what's your view…?

- How to make suggestions:

I think we should…/ how about…/ why don't we…/ maybe, but …/ perhaps we could…/

2/ Generating the question session. (Document distributed to pupils)

Item 1: Arrange the following sentences to get a coherent paragraph:
a/ however, there are few 'average' people in the world.

b/ the average person in the world now uses approximately 43,000 calories per day.

c/ such vast differences are hard to comprehend.

d/ an average citizen of the so-called 'developed' countries uses 136,000 calories each day.

e/ some people uses far more energy than that, while most use far less.

1	2	3	4	5
....B.....	…A…….	……E….	....D........	……C…...

3/ Discussion session: The Bridge Model.

I: Investigate: (Document distributed to pupils)

Item 2: Put the following sentences into the correct order to tell the story.
1. It was just after midnight on July 17th last year.
2. The police officers weren't surprised when James told them the story.
3. The road was clear and he was driving carefully.
4. He was still looking under the car when the police car pulled up.
5. She was wearing a dark coat and a blue scarf.
6. He got out and looked under the car but, to his surprise, there was nothing there.
7. "Since then several people have seen her ghost there".
8. James tried to stop but it was too late.
9. While he was looking under the car, he felt a cold wind on his face and he shivered.
Everything felt strange.
10. "A girl was killed in a car crash on this road in July 1971".
11. James was driving home from work.

12. Suddenly a young girl stepped out into the road in front of him.

1	2	3	4	5	6	7	8	9	10	11	12
1	11	3	12	5	8	6	9	4	2	10	7

N: Now reflect!

- What have we learnt about good thinkers?

- Do you think you are in making decisions? In what ways are you a good decision maker? Have you ever been put in a difficult situation where you should make a definite decision between two things? (dilemma)

- How could you be a better decision maker? What are you going to try to do?

- How did you find this activity?

- What have you learnt about your thinking in making decisions?

K: Keep thinking:

Item 3: Put "**+**" for the good actions and "**-**" for the bad actions. A justification in one sentence for each answer is required.

1- I work in groups to help my friends for a better understanding of the lessons (   )

2- I am in the classroom and I have remarked that I have forgotten my dictionary. I take the dictionary of my friend without asking for his permission: he's my gentle friend (   )

3- My cousins invited me in for dinner. All of sudden, I needed an urgent phone call. Asking for their permission is not obligatory .(   )

4- Sitting an examination in mathematics, my friend asks for my help to solve some problems. I did not hesitate of course, because he is my best friend, and it is good to help others (   )

5- I revise my lessons just before taking the examination: I want to remember everything ()

Appendix 14

Typical Lesson Four: Decision Making (Part 2)

All activities were distributed to puplis

<u>**Item 1:**</u> **Put "+" for the good actions and "-" for the bad actions. A justification in one sentence for each answer is required:**

1- I work in groups to help my friends for a better understanding of the lessons (   )

2- I am in the classroom and I have remarked that I have forgotten my dictionary. I take the dictionary of my friend without asking for his permission: he's my gentle friend (   )

3- My cousins invited me in for dinner. All of sudden, I needed an urgent phone call. Asking for their permission is not obligatory .(   )

4- Sitting an examination in mathematics, my friend asks for my help to solve some problems. I did not hesitate of course, because he is my best friend, and it is good to help others (   )

4- I revise my lessons just before taking the examination: I want to remember everything ()

<u>**Item 2**</u>: **Read the following text very carefully and answer the questions below:**

   People eat different foods in different places. Let's take the example of Nepal. Nepal has no sea. Most people in Nepal are farmers. They grow grains, fruits and other crops in the lowlands. The temperatures are very warm there. Rice and corn grow in terraced fields in the cooler hill regions. Potatoes and barley are the staple or chief crops at higher elevations. Temperatures are coolest there.

   The Nepalese raise goats, cattle and yaks for dairy produce. They eat meat only on special occasions. Religious rules affect which meats people in Nepal eat: Hindus، who make up almost 90 percent of the population, do not eat beef. Muslims do not eat pork.

Comprehension Questions:

1- The title of this text is

   a.   The Nepalese People.

   b.   The Nepalese Different Foods.

   c.   The Nepalese Country.

2- Some crops like potatoes need

    a. Warm temperatures.

    b. Cool temperatures.

    c. Low temperatures.

3-The type of meat Nepalese eat is affected by

    a- The region.

    b- Some special occasions.

    c- The religion.

<u>Item 3:</u> Put the following sentences in correct order to make a meaningful dialogue:

1. I'm the opposite. I love watching documentaries, and some foreign films seem very violent to me.

2. Yes, every day. They're funny.

3. You like watching documentaries, don't you, Minh?

4. Yes. I do. I hardly miss a football match on TV.

5. But you watch cartoons, don't you?

6. Not really. Some documentaries are so boring, and I don't like watching them. I prefer films, especially foreign ones.

7. I enjoy them too. You don't like sports, do you?

1	2	3	4	5	6	7
……..	………	……..	…………..	……….	………	………..

<u>Item 4:</u> put the following words in the correct order to make complete questions:

1/ a man/ will/ do/ who/ think/ Cup/ you/ win/ the/ World/ ?

……………………………………………………………………………………………

2/ tonight/ you/ come/ do/ guests/ how/ will/ many/ know/ ?

……………………………………………………………………………………………

Appendix 15

Typical Lesson Five: Prediction (Part 1)

T: Tune in! (All activities distributed to pupils)

Definition of prediction: to predict: what do I think will happen?

Predicting involves the kinds of words, phrases and information that you can expect to encounter based on your background knowledge and/ or information you encounter during the task.

Eg: forecasting tomorrow's temperatures.

Prediction: one must predict the next element of an unknown sequence given some knowledge about the past elements and possibly other available information.

Example: predict what would be the next figure in this series?
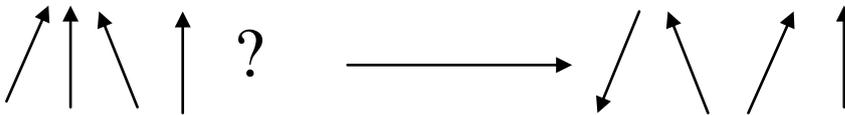
Item 1: What would be the next number in this series? **(Circle)**

2- 3 - 5- 8- 12- 17- ??

   a- 21   **b-** 23   **c-** 24   **d-** 25   **e-** 26

Item 2: What would be the next number in this series?

3- 5 - 10- 12- 24- 26- ??

   a- 48   **b-** 50   **c-** 52   **d-** 54   **e-** 56

Item 3: What would be the next number in this series?

100- 200 - 50- 100- 25- ??

b- 400   **b-** 100   **c-** 200   **d-** 50

Item 4: What would be the next number in this series?

15- 12 - 13- 10- 10- 11- 8- ??

   a- 5   **b-** 6   **c-** 7   **d-** 8   **e-** 9

H: Heads together:

Item 5: Read the following paragraphs and think of a good ending to the final sentences. Then look at the four possible endings below the paragraphs and choose the best one. **(Circle)**

   When Christopher Columbus sailed west from Spain in 1492, he dreamed of reaching Asia. He did not know there were other continents between Europe and Asia or that land he found was America. He never realized his mistake, and when he died he still believed that the land he had found was ……..

a-Asia   b- America   c- Spain   d- Another continent

Item 6: Fog is a major cause of accidents on highways in some areas. Every year many thousands of people lose their lives because fog can dangerously reduce visibility .Then drivers cannot see very far ahead, so they...

   a- Do not have time to avoid accidents.
   b- Go faster to avoid accidents.
   c- Have more time to read the signs.
   d- Do not have time to have accidents.

I: Investigate:

Item 7: In the past, if you want to eat Japanese food, you had to go to Japan. Now, you can find Japanese restaurants all around the world, from New York to Rome or Sydney. In the same way, Italian food used to be found only in Italy. Now, Italian restaurants can be found everywhere, from Moscow to Tokyo or São Paulo. People everywhere are learning to enjoy the foods of other countries. Someday, it may be possible to eat …

   a- Italian food in Tokyo.
   b- Only traditional food in each country.
   c- Every kind of food in every country.
   d- Only Japanese food.

N: Now reflect!

1/ What have you learned about good prediction?

2/ In what ways you are a have a good prediction?

3/ How could you have a better prediction?

4/ How did you find these activities?

K: Keep thinking:

Item 8: Find out the meaning of the underlined words according to the context in which they occur.

1-You're **looking for** your mobile. Perhaps Karim has seen it. Ask him.

    a-Buying   **b-**Making   **c-**Searching   **d-**Giving

2-It is **illegal** to steal. You can go to prison.

    a-Obligatory **b-**Against law **c-**Possible   **d-**Beneficial

3-It is impolite to **interrupt** people that talk to each other. Next time wait for your turn to speak.

    a-See   **b-**Speak   **c-**Listen   **d-**Talk

4-This mathematical equation is difficult. I am **incapable** of doing it.

    a-Able   **b-**Unhappy   **c-**Unable   **d-**Possible

Appendix 16

Typical Lesson Six: Prediction (Part 2)

Predicting with storytelling:

Language objectives: recall and retell a story

Strategy objectives: use the strategy prediction to focus and recall the events in a story.

Strategy rationale: Anticipating what might happen next helps readers focus on the important events in a story to see if their predictions were correct. Revising prediction based on what actually happens in a story keeps readers engaged in thoughtful reading.

Procedure:

1/ preparation: when you listen to or read a story. What things do you do to help yourself understand a story?

Present typical story summaries to students and ask them to predict what will happen.

In preparation: teachers focus on finding out what prior knowledge students have about the content topic to be taught, their level of proficiency and their current learning strategies for this type of task.

2/ presentation: teachers use a variety of techniques to make new information and skills accessible and comprehensible the students. These techniques include demonstration, modeling and visual support.

- What are you doing when you answer my questions? You predict based on what you know about the story or other stories like it.

Prediction is an effective strategy you can use before and during reading to help you look for and remember information you are expecting.

Preparation: we are going to tell a story about two men, a banker and a banker. The banker is someone who works in a bank and the pauper is a person who is poor.

- Is one of your family members who works in a bank, may be your father or even mother?
- What do you think the difference between rich people and poor people?

3/ Practice: students use the new information and skills in activities that involve collaboration, problem solving, inquiry and hand son experiences.

Practice1: conduct the story telling session having students practice the strategy of prediction. Tell students that they will practice retelling the story when you are finished.

"We are going to listen to and retell a story called "the Banker and the Pauper". Before and during the story, I am going to remind you to make predictions and check your predictions. I am also going to ask you tp tell me why you made the predictions and what information in the story helped you make the predictions"

(During the story, give students time to predict when there are predictable actions or language. Encourage prediction by providing long pauses using proper intonation and acknowledging predictions).

Practice2: have the students retell the story in groups. Encourage them to focus on their predictions to help them remember the events in the story.

4/ Evaluation: have students self-evaluate their understanding and proficiency with the content, language and learning strategies they have been practicing. Lead students in a discussion about how they used the strategy during storytelling and how they used the strategy during storytelling and how they could use the same strategy during reading.

"While listening to the story, did you make predictions? When did you make predictions? Why did you make predictions? Many of naturally made predictions based on what you know or what you heard. The story had a pattern and when you used the pattern to help you understand the story. What are some of the patterns? (For example: language: old and worn, cut and sew. Actions: went back to his shop and come out with something smaller.)

Did the strategy help you to understand to understand and retell the story?

5/ Expansion: students engage in activities to apply what they have learned to their own lives including other classes at school, their families and community and their cultural and linguistic backgrounds.

Next time I will give you another story you apply what you have earned today "predictions" and then report on their experiences.

"Do you ever predict when you read your own?"

When you read a story tonight, predict what you think will happen. Use what has happened in the story, but also use your knowledge of other stories. Write down what you predicted and why so that we can discuss it tomorrow. Think about how this helped you to understand the story"

Contributed by: Jennifer Delett.

Storytelling activity (Distributed to pupils)
The Banker and The Pauper

Once upon a time there lived a pauper and a banker. The first was as poor as the second was rich. So it was inevitable that the rich man will be happier than the pauper. But their natures were opposite, …………………………The banker was annoyed of the fact that while he tossed and turned in his bed at night, the pauper slept peacefully and always awoke   rested   and   full   of   energy.

One day the banker could stand it no longer. He decided to find out why the pauper was a happy man in spite of his poverty. So ………………and ….…………..because he believed   that………
"I don't count too well, nor do I really care. I live each day as it comes and never worry about   the   next."
"Well, then, just tell me…………………………...," insisted the rich man.
"I earn what I need. And even that would be too much were it not for all the Sundays and holidays   when   I   must   close   my   shop."
The banker liked the pauper. He wished to thank him for coming to his house, so he …………………

Now, to the pauper these coins, which meant so little to the banker, seemed a great fortune. He decided to hide the bag, so that he would have the money if ever he should need it. So, when he returned to his house, he………………………and ……………

But from that day on, the poor man's life changed, …………………….........Every night he slept a little less, and each time he heard the slightest sound, he became anxious about the   safety   of   his   coins.

Finally, he could bear his unhappiness no longer. He ……………………….…and …………………………The pauper…………………………………, and so has the banker.

Appendix 17

Typical Lesson Seven: Problem Solving (Part 3)

(Activities distributed to pupils)

Item one: Weigh your words:

1/ stop   cease   give up   ended

- The concert …………………………at 11 p. m.

- ……………………..talking and listen to me!

- The rebels …………………..fighting and asked for peace negotiations.

- The doctor advised him to ………………………….smoking.

2/ journey   trip   flight   tour

- I'd love to go to Australia, but it's such a long ……………………..

- In London, we went on a city ……………….. and saw most of the sights.

- As it's going to be a long ……………………I've made some sandwiches.

- She told us about her recent ……………………………to Rome.

3/ like   love   worship   be fond of

- She …………………….. sweets.

- The teacher was really ……………………………by his pupils.

- I'll always ………………………my children, whatever what they do.

- If you ………………………….classical music, you should go to the opera more often.

Item two: The best choice: Complete the following sentences with the following words:

1/ Also/so

- I like classical music. I ………………….. like rap.

- There was nothing interesting on TV, ……………………… I went to bed.

2/ Dead/ died

- Shakespeare …………………on his 23nd birthday, on 23rd April 1616.

- "If a man has ………………….. then he is …………" (Gogol)

3/ look/ looks

- Let me have a ………………… at your new guitar.

- Teenagers are always worried about their ………...

4/ same/ even

- He is very kind, he has ……………… given money.

- "Edwards" said the teacher angrily, "Your essay on My dog is word for word the ………….. as your brother's". "Yes, sir", said Edwards, "It's the ………….. dog".

5/ play/ game

- Would you like to play a ………………… of tennis with me?

- I've read a few of Shakespeare's ……………………… (plural).

-

Item three: Find the female:

Introduce into the grid the corresponding name for females, only the words with feminine name.

Horizontally:

1. Male	**7.** Cousin
2. Man	**8.** Boy
3. Father	**9.** wizard
4. Cook	**10.** Relative
5. Barman	**11.** King
6. Uncle	

Vertically:

1. Brother	6. Daddy
2. Friend	7. son
3. Widower	8. Teacher
4. Husband	9. Nephew
5. Guest	
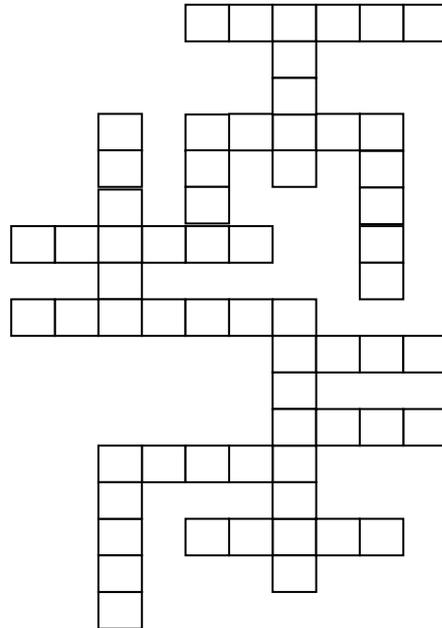
Appendix 18

Typical Lesson Eight: Decision Making (Part 3)

(Activities distributed to pupils)

Item1: Read each paragraph and think of a good ending to the final sentences.

Vitamins are very important for good health. One vitamin that you need to have regularly is vitamin C. some fruits and vegetables rich in this vitamin are oranges, lemons, and grapefruits, as well as red peppers, broccoli, and tomatoes. However, vitamin C can be destroyed by heat, so it is a good idea

a. To eat only cooked fruits and vegetables.
b. To eat only vegetables that have vitamin C.
c. To eat lots of uncooked fruits and vegetables.
d. Never to eat uncooked fruits and vegetables.

Item 2: The dog was the first domesticated animal. Very early in human history, people realized that a dog could help with hunting and could protect them against dangerous wild animals. They also realized that dogs were good company, and so they began to keep them as pets. We can say that the dog is man's best friend and his:

a. Worst enemy   c. Latest friend

b. Only friend   d. Oldest friend

Item 3: Read each sentence below very carefully and decide which column to tick (√):

✓ If the sentence is grammatically correct ad makes sense, tick column A.
✓ If the sentence is total nonsense (i.e. if the grammar is all wrong, the word order wrong, etc.), tick column B.
✓ If the sentence is grammatically correct, nd perhaps sounds strange, but might be 'philosophical', tick column C

Examples	a. Sensible	b. Nonsense	c.Philosophical
Fish may think effortlessly			
Fast people always walk			
Gently giraffes clean			
Sisters are always annoying			
Some people may fly at night			
Silently a red jet aircraft wanted			
A book is a collection of written thoughts			

The Mountain Climber Story:

Meet Sachiko. Sachiko is a very good thinker. She uses her mind to help her do all the things she wants to do.

Sachiko wants to climb Mt. Kumo. Mt. Kumo is very big. It will be a very long trip.
Sachiko will have to think hard to climb the mountain. But Sachiko is a very good thinker. She knows that she can start to climb Mt. Kumo, she has to plan for the trip.

Before her trip, Sachiko has to decide how high she wants to climb. She sets a goal: "I want to climb all the way to the top of Mt. Kumo!"

Sachiko knows a lot about Mt. Kumo. Before her trip, she asks herself, "What do I remember about Mt. Kumo?" She studied her map of trails to help her remember all the things she knows about Mt. Kumo.

Before her trip, Sachiko has to think about what she needs to pack in her backpack. She predicts what will happen on her long trip so she knows what to pack. She asks, "What might happen? I might get hungry; I'll pack some rice crackers. I might get thirsty; I'll pack some water. I might get cold; I'll pack a coat. I might get tired; I'll pack a blanket"

Sachiko decides to pay attention to hard parts of the climb. She asks, "What do I need to watch out for? I know there some streams that I have to cross. I will watch out for them. I'll pack a rope to be ready for them."

Now Sachiko is ready to start climbing. Sachiko is a very good thinker. As she climbs, she needs to check how well she is doing. She needs to help herself so she can keep climbing.

Sachiko looks at the signs t see how far she has climbed. She looks at her map to make sure she is on the right trail.

Sachiko asks herself questions to see if everything is OK. She asks, "How am I doing?" "Am I tired?" "Am I thirsty?"

When she is climbing, Sachiko remembers what she knows about this mountain. She thinks about what she does to help her climb other mountains.

Sachiko sees a picture of Mt. Kumo in her mind and thinks about what she has to do. She looks up to see how far she has to climb. "Am I almost there?"

When she gets scared, Sachiko tells herself, "I can do it"
Sometimes Sachiko meets other climbers. They share climbing stories. They help each other.

Sometimes climbing gets difficult. There are streams to cross. There are big cliffs. There are strong winds. But Sachiko is a very good thinker. She can solve her problems.

When Sachiko comes to the stream, she needs to solve her problem. What could Sachiko do?

She could use the map to find another trail. She could ask another climber to help her walk across. She could think about how she crosses other streams. Sachiko will use her rope to get across the big stream.

Because Sachiko is a very good thinker, she thinks about how well she did. After she crosses the stream, Sachiko asks herself, "Was my rope a good tool to cross the stream? Should I use a rope next time I cross the stream?"

Sachiko thinks and climbs, thinks and climbs. Finally, she reaches the top of Mt. Kumo! Sachiko is very happy.

She looks around and thinks about her climbs. She thinks about everything she did to help her climb Mt. Kumo. She asks herself, "How well did I do?"

"I packed enough water, but I would have liked more rice crackers. I will remember next time. I used good tools to cross the stream. I learned about how to climb a new mountain. And most important, I met my goal."

Sachiko is a very good thinker. She climbed all the way to the top of Mt. Kumo.

The end

Appendix 19

Typical Lesson Nine: Prediction (Part 3)

Group work: Distributed to Pupils

The Loss of the 'Titanic'

The great ship, *Titanic*, sailed for New York from Southampton on April **10**th, 1912. She was carrying 1,316 passengers and crew of 891. Even by modern standards, the 66,000 ton *Titanic* was a colossal ship. At the time, however, she was not only the largest ship that had ever been built, but was regarded as unsinkable, for she had sixteen watertight compartments. Even if two of these were flooded, she would still be able to float. The tragic sinking of this great liner will always be remembered, for she went down on her first voyage with heavy loss of life.

Four days after setting out, while the *Titanic* was sailing across the icy water of the North Atlantic, a huge iceberg was suddenly spotted by a look-out. After the alarm had been given, the great ship turned sharply to avoid a direct collision. The *Titanic* turned just in time, narrowly missing the immense wall of ice which rose over 100 feet out of the water beside her. Suddenly, there was a slight trembling sound from below, and the captain went down to see what had happened. The noise had been so faint that no one thought that the ship had been damaged. Below, the captain realized to his horror that the *Titanic* was sinking rapidly, for five of her sixteen water-tight compartments had already been flooded! The order to abandon ship was given and hundreds of people plunged into the icy water. As there were not enough life-boats for everybody, 1,500 lives were lost.

By: L. G. Alexander

Reading Comprehension: Read the following text and answer the following question:

1. Where was the *Titanic* sailing?
……………………………………………………………………………………

2. What was seen by a look-out?
 …………………………………………………………………………………

3. When did the ship turn sharply?
…………………………………………………………………………………….

4. Did it sail alongside the iceberg, or did it collide with it?
…………………………………………………………………………………..

5. What was heard from below?
………………………………………………………………………………….

6. What did the captain do?

……………………………………………………………………………………………….

7. What did he find?

…………………………………………………………………………………………..

8. When did everyone jump over board?

……………………………………………………………………………………………

9. Why were 1500 people drowned?

……………………………………………………………………………………

Can you predict?

a) Did the *Titanic* reach its destination?

………………………………………………………………………

b) Could all the passengers get into the lifeboats?

………………………………………………………………………

c) Are shapes safer nowadays?

………………………………………………………………………

d) What would have happened if only two of the sixteen water-tight compartments had been flooded?

……………………………………………………………………………………..

Match each word with its appropriate meaning:

1. Ship	**a.**	People travelling in a plane, boat, train
2. Passengers	**b.**	Take people or things from one place to another
3. Crew	**c.**	Means of transport used to travel across water
4. carry	**d.**	People working on a ship (or a plane)

1	2	3	4
....	....	….....	…..

Appendix 20: Prompt Cards For Collaborative Group Roles (Distributed to pupils)

GROUP LEADER

The group leader makes sure everyone knows what to do to complete the task.
__The Group Leader needs to:__
- *Delegate fairly*
- *Communicate clearly*
- *Ensure that everyone has a chance to participate*
- *Encourage everyone to listen and consider others views Keep the group on task*
- *Consider others views*
- *Summarize the outcome for the group*

__Useful Group Leader cues:__
"What do you think about ….?"
"That's interesting, but we need to get back to our original point."
"What's your opinion/feeling Kate" (etc)

NOTE TAKER

It is the note taker's job to make notes for the group.
__The Note Taker will need to:__
- *Listen carefully*
- *Write clearly*
- *Summarize main points*
- *Check the accuracy of notes with the group*

__Useful Note Taker Cues:__
"Could you repeat that point?"
"Is that important?"
"What is the best way to record that?"

OBSERVER

It is the observer's job to look at how the groups carry out their tasks:
__The Observer will need to:__
- *Watch closely what the groups do*
- *Be impartial/give no personal comments*
- *Comment constructively on how the has worked*

__Useful Observer Cues:__
"Group 'a' worked well together because they …."
"Group 'b' spent too much time on …"

RESEARCH RUNNER

It is the Research Runner's job to get resources and information for the group.
__The Research Runner will need to:__
- *Collect and collate information and resources*
- *Seek clarification from the teacher to help the group understand and complete the task*

__Useful Research Runner Cues:__
"What resources do we need?"
"Shall I ask the teacher to clarify this for us"

TIMEKEEPER

It is the timekeeper's job to keep the group on task:
The Timekeeper will need to:
- regular time checks
- Encourage the group to keep to time
- Indicate when a task is about to end (2 minute warning)

__Useful Timekeeper Cues__:
"We need to finish this task and move on to the next."
"We have 2 minutes to get our main points together."

PRESENTER/ REPORTER

It is the presenter's job to report on the groups ideas.
The Presenter will need to:
- Record information clearly and accurately
- Summarize the main ideas
- Structure feedback clearly
- Report back to class/teacher

__Useful Presenter cues:__
"Does this sound OK?"
"In our group the key points were..."
"Our conclusion was that …"

	PROGRESS	
We agree	No different	We have kept to the agreement
To take turns to speak		
To listen to the views of others		
To let people finish what they are saying		
To be quiet when others are speaking		
To look at the person who is talking		
To take part and make suggestions		
To take on a role		
To collaborate to complete the task		
Not to do or say anything rude		
Not to make fun of anyone		

Appendix 21

The Pearson Product-Moment Correlation Coefficient "r"

Table A9 The Pearson product–moment correlation coefficient

The table gives the critical values of the Pearson product–moment correlation coefficient, r, for different numbers of pairs of observations, N. For significance, the calculated value of r must be *greater than or equal to* the critical value.

	Significance level: two-tailed/non-directional			
	0.20	0.10	0.05	0.01
	Significance level: one-tailed/directional			
N	0.10	0.05	0.025	0.005
3	0.951	0.988	0.997	1.000
4	0.800	0.900	0.950	0.990
5	0.687	0.805	0.878	0.959
6	0.608	0.729	0.811	0.917
7	0.551	0.669	0.754	0.875
8	0.507	0.621	0.707	0.834
9	0.472	0.582	0.666	0.798
10	0.443	0.549	0.632	0.765
11	0.419	0.521	0.602	0.735
12	0.398	0.497	0.576	0.708
13	0.380	0.476	0.553	0.684
14	0.365	0.458	0.532	0.661
15	0.351	0.441	0.514	0.641
16	0.338	0.426	0.497	0.623
17	0.327	0.412	0.482	0.606
18	0.317	0.400	0.468	0.590
19	0.308	0.389	0.456	0.575
20	0.299	0.378	0.444	0.561
21	0.291	0.369	0.433	0.549
22	0.284	0.360	0.423	0.537
23	0.277	0.352	0.413	0.526
24	0.271	0.344	0.404	0.515
25	0.265	0.337	0.396	0.505
26	0.260	0.330	0.388	0.496
27	0.255	0.323	0.381	0.487
28	0.250	0.317	0.374	0.479
29	0.245	0.311	0.367	0.471
30	0.241	0.306	0.361	0.463
40	0.207	0.264	0.312	0.403
50	0.184	0.235	0.279	0.361

GENERAL INTRODUCTION

Most educational systems aim at developing pupils language learning skills. Rather it being the case, it is claimed that most pupils still face problems in directing those skills in parallel with their learning objectives.

Owing to this, many attempts have been made just to discover where the problem exactly lies in. It seems that interlocutors in their teaching careers give more attention to achieving the learning objectives without any indication how they can be reached out by learners. They, for example, show pupils what learning skill to use in a reading classroom rather than how to use it. This becomes clearer when it comes to interpreting pupils statements in exams; although being knowledgeable about the information they have received in the classroom but, for certain reasons, they are unable to function their knowledge in the right way. Based on that, this study aims at investigating the impact of developing pupils thinking skills on their texts' comprehension.

Statement of the Problem

Comprehension is considered to be the ultimate objective behind reading. Regardless of their knowledge of vocabulary and English language structure, pupils' lack of skillful use of thinking skills leads to misunderstanding and confusion on the part of the learner when coming to real practice in every reading.

As an attempt to solve that crucial issue in language teaching and learning, we will examine the importance of integrating some of the thinking skills into the language reading skills in order to achieve comprehension of the written materials.

Objectives of the Study

The aim of this study is to investigate the impact of developing thinking abilities of our learners on their reading comprehension and to draw their attention to the necessity of developing these skills in their learning processes. The inability to grasp some reading

notions leads to this study of incorporating thinking skills in education such as evaluating problem solving, decision making, and predicting skills through a theoretical and practical investigations. The study conclusions will help interlocutors in the educational field to build up an idea about the relationship between developing thinking skills and reading comprehension.

Research Questions

The purpose of this study is to answer the following questions:

1/ Does teaching thinking skills have any impact on enhancing pupils' comprehension of written material?

2/ How might thinking skills foster pupils' texts reading comprehension?

3/ How much effective is the relationship between thinking skills and reading comprehension?

Hypothesis

Pupils might be able to read fluently but they may have problems understanding the core meaning of what they read. This might be the result of applying lower level of thinking rather than being encouraged to think deeper in the material. That clarifies the reasons why most pupils do get lower achievements in reading tests and misunderstanding the instructions asked about it. If these are really the reasons behind our research problem, then we hypothesize that pupils are to enhance their reading comprehension if effective thinking skills are to be developed.

Significance of the Study

The significance of the study will be:

1/ To prove the effectiveness of improving our learners' thinking skills and how they should be applied for different learning objectives.

2/ To emphasize the relationship that exists between our study variable; thinking skills and reading comprehension and insisting on their use and application in the classroom for different language skills.

3/ To draw teachers' attention to the importance of incorporating those skills in their teaching processes.

Instruments

In order to assess pupils' thinking skills and reading comprehension, and then to test the hypothesis stated previously, two tests (researcher-developed) have been administered. The first measurement is a thinking skills proficiency pre-test composed of 10 items sub-divided under three headings that intend to establish a thinking skills level rating by measuring a subject's ability to solve problems, decide on the right answer among many options, and predict that is to come next.

The second measurement used in this work is a reading comprehension proficiency pre-test, which focuses on the pupils' approaching of a written text and aims at assessing their ability to extract meaning from print. This test includes five items. Three of these are multiple choice questions MCQ. The second item includes a text followed by two general comprehension questions about it. The last item is a sentence order exercise for arrangement to get meaningful paragraph.

We have made our best to design tests that are appropriate to the participants' age, cultural and educational environment. It is important to mention that we use Arabic language to make clear some of key words to avoid pupils' possible misunderstanding of the tests' instructions.

The same tests measurements were again used at the end of the treatment period to check any progress in the tests results.

Research Methodology

Research Design

For the non-random assignment of participants who took part in this study into experimental and control groups, i.e. intact class groups or already existing groups have been used. Due to that, the method that best should be used in our research is the quasi-experimental method. It involves experiments to explore the casual relationship between our variables and to check the positive correlation that relates them. In other words, we try to describe and analyze what will occur under carefully controlled conditions for the treatment condition comparing them to those who underwent normal courses.

Population

Our population consists of 157 subjects from both sexes. They are first year pupils who study at Omar Idriss secondary school following scientific stream studies. Their age ranges between 15 to 20 years. All the population studies English three sessions per week. A systematic random sample of 50 pupils was drawn from the target population to be tested for their thinking skills and reading comprehension proficiencies.

It has been decided to work particularly with first year pupils specifically because pupils at this level are expected to possess a good command of general English language proficiency; since they have studied English at least for four years and are used to deal mostly with reading comprehension tests at the BEM level. Furthermore, it is very supposed that those pupils are more motivated for their entrance into a high developed level of study career after having passing a brevet exam BEM than those who study at the second or third levels.

Sampling

Dörnyei (2007) stated that scholars agreed on rough estimates of sample sizes for types of quantitative methods, for the specific comparative and experimental procedures, at least

15 participants in each group.

From our population (N=157), two groups were non-randomly assigned to control and experimental. Then, because of time constraints, number of subjects in each group is (n=25) selected in   a systematic random sampling.

Then they were pre-tested to check their thinking abilities and their comprehension of written materials. After the treatment, a thinking skills achievement and a reading comprehension post tests were administered to determine any probable improvement in the experimental group.

Data Collection

Our data were collected through using questionnaires, and several activities. Wallace (2000) stated that we use questionnaires when we want to tap into the knowledge, opinions, ideas and experiences of our learners, follow teachers, parents or whatever.

Data Collection Instruments

In the current study, the questionnaires were designed to be administered for two samples (teachers/ pupils) to obtain different perspectives, opinions, and viewpoints about the items under investigation.

The two questionnaires' items were set in a systematic way. Participants were expected to answer by reading the questions, then ticking responses or writing in short answers. The items varied to present the necessary issues to be investigated, they were presented through different formats; multiple choice, yes/ no and open-ended questions.

When designing the questionnaires, meticulous attention was paid to ensure that they are relevant, appropriate, precise and unbiased.

Pupils' questionnaire has been piloted because it would represent data about the participants that have been latterly used to explain the obtained results. The instructions were again explained directly to them.

Teachers' questionnaire was distributed before being piloted to give us their opinions and comments concerning the questionnaire, we left a free space for them if they would have any suggestions.

Data Analysis

The responses to the structured close-ended questions were rated in percentages. The percentage of respondents for each alternative were given and analyzed on the basis of the related figures that have been provided.

Structure of the Study

This paper consists of four chapters: two chapters represent the related literature of the research paper and two other chapters represent its practical part. Chapter one is the first theoretical part of this research paper. It discusses the notion of thinking skills. Then, it presents some recent researches on the area. In addition to that, this chapter tackles the implementations of some thinking skills in language teaching and learning (problem solving, decision making, and predicting) plus referring to the metacognitive skills used during thinking operations. After discussing some of the programs designed to developing thinking skills, the chapter demonstrates the effectiveness of thinking skills on developing pupils' awareness of teaching materials.

The second theoretical chapter of this work consists of two parts. Part one deals with reading, it firstly defines the term. Then, it discusses the strategies, types, and models of reading. It concludes with a brief overview on the relation that exists between reading and thinking skills. The second part deals with reading comprehension and the role thinking skills do to help pupils extract meaning from print effectively. Also, it explains the use of metacognitive skills in reading.

Chapter three represents the first practical part of this study. In this chapter, we have discussed the statistical study conducted. This part displays the analysis and interpretation

of the data gathered by means of the pupils' thinking skills and reading comprehension pre-tests and post tests in a try to answer research questions and to find out whether the research hypothesis stated in the introductory part is confirmed. The results are then used to make the correlation between our variables and to check whether there is a positive relationship between the pupils' thinking abilities and their reading comprehension.

Chapter four is the second practical part where the results obtained from the data gathering instruments "questionnaires" have been analyzed according to the different researchers' theories and viewpoints about the investigated issue.

Some implications have been suggested for teachers and curriculum developers that, we hope, will manage the classroom achievements into higher levels. Teaching pupils skills and strategies of thinking has become the focus of many schools in the world; their studies developed specific programs for different purposes, among which, is the development and fostering of their comprehension abilities in reading. We hope that, in the future, the application of such programs will be transformed into the Algerian educational context.

Introduction

A human mind is talented with an exceptional property. Thinking is specific to human beings, and that makes him different from other species. Thinking differs according to the different situation we are put in. We apply different thinking skills wherever and whenever we need to. The human mind consists of different mental capacities that are of crucial importance in getting the correct answer, making the right decision or even solving certain problems in different life situations. So as to the educational settings, where learners are confronted with multi-displianary fields of study where they should apply those skills in an organized manner and logical connection to the situations they are put in. It is claimed that academic and thinking skills can be part of the language classroom as the content classroom then teachers should develop these skills as a natural part of language learning, it is as essential as any step in the running of the classroom lesson (Hughes & Moate, 2007).

The aim of this chapter is to shed the light on some thinking skills, tackle some background knowledge of the topic and to introduce some approaches that focus on developing the cognitive abilities that take place in mind and to raise our learners curiosity about knowing and using those skills and what strategy should be used with what kind of activity.

Definition of Thinking Skills

Giving a right definition for thinking as a skill is still a debatable issue among psychology scholars and researchers. Thinking skills are difficult to define due to their abstract nature. Thinking is a high developed mental process that processes different cognitive capacities depending on the activity in hand. In addition to that, it can take other forms other than abstraction such as verbal or visual representations. One can think about something while speaking where he expresses what he thinks of using words. Also, he can

visualize what he thinks of using mental images. On the other hand, big abstract number of operations may occur inside someone's mind. Long, Wood, Littleton, Passenger, and Sheely stated "Thinking can act on different types of representations such as verbal categories …or imagery…Other forms of thought can involve more abstract features" (2011, p. 95). The mind processes diverse thinking operations such as problem solving, decision making, evaluating, synthesizing, analyzing… and predicting classified under different sub-skills. Eysenck and Keane mentioned that the essential operations involve reasoning, logical processes to reach a conclusion or to construct wholes, inference which is connection between entities and decision-making; a final decision of what choice is suitable among possible solutions (*ibid.*).

Recent Research on Thinking Skills

These processes, starting with questioning and resulting in communicating a decision or solution, represent a cycle of thinking and learning. Each decision that is made, each problem that is solved, is likely to throw up more questions and further issues to explore and investigate. More recently, in order to investigate whether thinking skills can be taught, different studies have attempted to seek for appropriate teaching techniques. Those studies emphasize the need for deeper focus on adjusting schools programs to the necessary needs of our learners through activating their mental abilities in dealing with deep thinking activities. Those studies insist on much practice on such kind of activities. Cooper and Patton (2007) claimed that people have to know how to think. Long *et al.* (2011) stated that teaching thinking skills has been developed to enhance both pupils' appetite and capacity to learn. Ausubel's advance organizer is one of the teaching techniques that seeks to develop pupils' general thinking processes. Mayer defines an "advance organizer" as information that is presented and that can be manipulated by learners to interpret new incoming information (*ibid.*). Analogies are also good ways to

develop pupils' mental abilities where they compare what is previously known to whatever is being studied. Long *et al*. (2011) stated that Chenn investigated the way in which analogies can be used by studying eight-year-old children's ability to solve riddles.

Many studies proved the impact of developing thinking skills on reading comprehension. Facione (1992) stated some of the mental skills employed in reading comprehension such as interpretation, analysis, evaluation, inference, explanation, and self- regulation. Other research studies emphasize the positive relationship that exists between different mental abilities such as intelligence and reading comprehension. These studies paved the way for other research studies to put more emphasis on developing methods of teaching and lessons planning through integrating activities that may foster different thinking skills.

Types of Thinking Skills

Thinking is a high developed mental process that contains other developed abilities. These skills can be used in different life situations. One may apply certain skill to deal with an activity or a problem as he may use more natural way of thinking to solve simpler problems. Degree of concentration also may differ according to the situation a person is in front of. In other words, a person may think deeper in a given problem other than another; this is because of the difficulty or easiness of that problem. It may be very effective to use a simple rehearsal technique with information that has little intrinsic meaning (Long *et al*., 2011). He added that while other material which is more fundamental might require deeper and higher developed thinking techniques.

Simister (2007) claimed that the phrases 'thinking skills' is used to mean a variety of things. For instance, the Department for Education and Skills (DfES) classifies thinking skills as enquiry, information processing, creative thinking, reasoning, and evaluation. Whereas, as he added, the professor Guy Claxton, author of Building Learning Power,

defines its 'four Rs' as: Resilience – being ready, willing and able to lock on to learning. Resourcefulness – being ready, willing and able to learn in different ways. Reflectiveness – being ready, willing and able to become more strategic about learning. Reciprocity – being ready, willing and able to learn alone or with other people.

Implementing Some of Thinking Skills in Language Teaching and Learning

Integrating developing thinking skills in the teaching process is what recent studies appeal for nowadays. It is noticed that students' school book or even teachers' book include different instructions that develop a variety of skills; they are required to solve a mathematical, a physical activity or written expression activity where they might be shown steps for doing so. Yet, it is not the case for thinking skills instructions. Instructions such as discuss the following points or the choice among different but similar answers might be confusing to learners. Thus, it is of a crucial importance to foster and develop their mental capabilities through practicing certain activities that provoke their thinking skills. Ficher complained "we teach children many skills, physical skills, social skills, expressive skills, linguistic and mathematical skills, why not thinking skills?" (1990, p.7). Many support the idea that if students are to be become better thinkers, and to manage mental performance tasks, then they must explicitly be taught how to do it. Thinking is a skill that can be improved by practice (De Bono, 1978).

The problem that might be encountered by teachers is to find better approaches that better enhance those skills. Hughes & Moat (2007) claimed that group work, discussion and debate over a current issue provide such meaningful context for students to practice thinking skills. According to them, students can be shown how to assess the accuracy and balance of the information they read. For instance, they can be able to choose among different possible answers to a given question. They also argued that they can learn to respect and consider other viewpoints, and how to value that is true out of that is wrong.

They can get used to weighing up all the evidence before reaching a conclusion; they cannot determine the worth of a conclusion until they discuss together the reasons that lead to a reasonable conclusion.

Problem Solving

A problem is a difficult situation where we cannot add one more step in reaching the final result. It is an unexpected event that we may spend short or long time solving it. Adair stated that "a problem is literally something thrown in front of you" (2010, p. 45). Student may come to face a variety of tasks of certain difficulty. They may come over the problem as they can fail to solve it. Problem-solving is a serious problem that demands careful study about the reasons that lead to that given problem and looking for suitable solutions. Brown (2000) defined problem solving as a kind of learning that requires the internal events usually referred to as "thinking". It consists in using generic or ad hoc methods, in an orderly manner, for finding solutions to specific problems. Some of the problem-solving techniques are developed and used in artificial intelligence, computer science, engineering, mathematics, medicine, etc. are related to mental problem-solving techniques studied in psychology.

When solving a problem, one needs to follow certain steps to reach a better solution. First, learners have to define the problem, think about what might have caused that problem, think about how much big is that problem, think whether they are solvable or not, then guessing what suitable solutions might be there for the problem. Wallas' classic description of creative problem-solving includes preparation; the defining of the problem, incubation; laying the issue aside for a time, illumination; the moment when a new idea finally emerges, verification; checking it out (Long *et al.*, 2011). Other researchers classified other skills under the heading problem-solving, such as reasoning; the application of possible ideas and testing them, and decision making; the evaluation of the

outcomes. Then, students should be encouraged to determine exactly where they want to end up and reach the solution. Long *et al*. pointed out "pupils should be clear about what they initially know, or need to know, and then should set up intermediate goals that will bring them closer to the final goal" (2011, p. 97). One special thing that should be made clear about problems such as puzzles or other games is that every problem is solvable, one just need to look around and make connections between the existing problem and possible solutions. Adair (2010) pointed out that all the elements of the solution are already there and that you have to do is to arrange or rearrange what has been given, concluding that a problem is a solution in disguise. It is assumed that there is nothing that humans enjoy more than solving problems. This explains the invention of different kinds of games. As a problem solver, one has to be clever, with analytical skills well-honed on many other problems in that particular field. Moving away from puzzles and games, the problems we encounter in real life are mostly obstacles placed in front of us. Whatever the results of a problem solving are to be, they are always secondary to the results of decision making.

Decision Making

Decision making is another skill that needs learners to give much focus; learners are required to make a choice among different choices. Adair stated that decision making is about deciding what action to take; it usually involves choices among certain options (*ibid*.). One can benefit from owns or others' previous experience or wide knowledge in order to get over the problem and thinking deeply about what best choice is available. Long *et al*. (2011) tackled this point saying that most of the time people arrive at a decision by simply applying knowledge or behavior that worked in the past. According to him, people typically generalize previous situations to other similar ones that they already face. Decision is about changing someone else's life partly or completely. Therefore, making a right decision is a clear cut. As Adair (2010) again stated that decision making opens the

way to changes that can be planned, wanted, expected or at least foreseen, whereas others are not. Taking into consideration the previous mentioned theories, it seems that decision making is more than solving a problem, yet, it requires really deeper thinking. Decision-maker needs a much wider range of skills and characteristics. One way to solve problems created by decisions is to change one's mind or plan you have prepared at the beginning of the way. Adair stated the mental framework one must use is so similar to the decision-making process.

A unified model for problem solving and decision making. Problem solving and decision making can be considered as similar two processes where similar thinking skills can be applied. Adair explained this similarity:

> If you are trying to cross a mountain stream you will jump from rock to rock, zigzagging your way to the far bank. Like thinking inside your head, this is an untidy but purposeful activity. But when you have to get a team across a metaphorical river you need to be able to construct a simple bridge, so that everyone knows where they are in the decision-making/ problem-solving discussion (2010, p. 47).
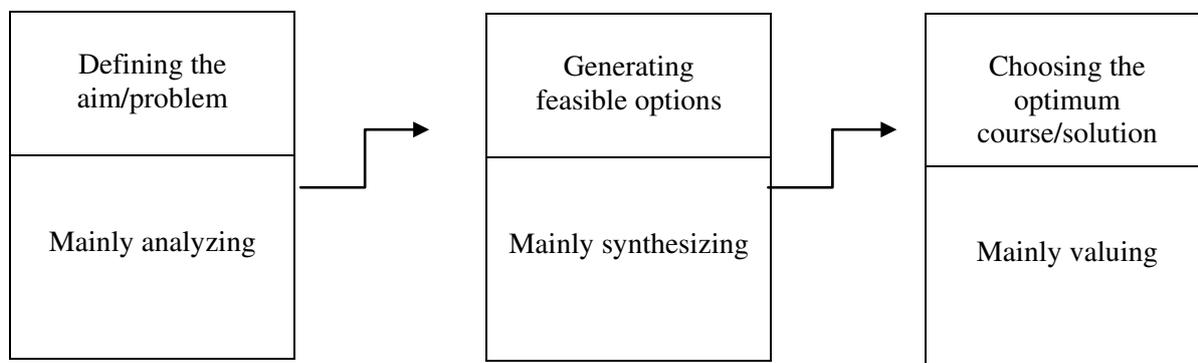

Figure 01: The Bridge Model. (Adapted from Adiar, 2010, p. 47)

We can notice that the skills required change as one phase merges into the next. A new function with its family of more specific skills comes into play. One has first to define the problem as well as the aim through analyzing it, when a problem is properly defined is half-solved, this can help problem solver or decision maker have an overview or a general idea about the difficult problem that he is facing. Then, depending on that, he can suggest

or even generate new possible solutions that seem appropriate by collecting sub part into wholes. Finally, choosing the best solution ever, this can help him value his choice. This confirms the assumption that problem solving is a concept learning, because such cases add to one's experience that a certain problem requires a one certain solution.

Asking the right questions. A key skill that can paves you the way toward overcoming the problem is to ask the right questions. Adair (2010) stated that questions are the spanners that unlock the mind. Here is the kind of questions suggested by him and that one should ask himself or others in a work team.

Understanding the problem. It includes defining the problem, its objectives after being aware of it and put it in its simplest terms. This can help you suggest general solutions. One has to be clear about his position and what he wants to achieve. Determining what factors caused the problem. Decide about the time needed and whether is sufficient.

Towards solving the problem. This can happens through checking all its main assumptions, shortening the list of possible solutions as much as possible. The ability to synthesize carefully in two or more solutions into an effective way of dealing with the problem is possible. If nothing changes, one can imagine himself in the end-state where he wants to be. Then, he can work backwards from there to where he is now. Thinking of other faced the same problem and the solution he based on might be helpful.

Evaluating the decision and implementing it. It includes being aware of all the available information. Checking the solutions from all angles. Being clear about the manifest consequences. Designing a plan with dates or times for completion. Thinking of any contingency plan when things do not work as expected.

He summarized the above steps into three levels of competences:

• Awareness of problems or the need for decisions, either actual or potential. Have your feelers out, so that you are not taken by surprise.

• Understanding of where you and the team are in relation to the problem or decision. In what phase of the bridge model are you? Does more work need to be done on analyzing information and defining the problem or decision? Or are you in the business of generating feasible options?

• Skill in asking the right questions of the right people at the right time, and being able to test the answers for their truth content. Action based on truth is much more likely to be effective than action based on a faulty perception of reality.

One final point to mention is that there is nothing more satisfying than being faced with a mental challenge and overcoming it. The more one enjoys something, the more of it he will want to do and the better at it he will get (Adair, 2010).

Predicting

Understanding the words and the grammar of a given text is not enough; one needs to be able to make logical connections between the ideas and information in his reading. This means using the information he already knows to reach a conclusion (Mikulecky & Jeffries, 2004).

Reading is an activity involving constant guesses that are later rejected or confirmed. This means that one does not read all the sentences in the same way, but one relies on a number of words or cues to get an idea of what kind of sentence is likely to follow (Grellet, 1981).

Prediction refers to the students' ability to foresee what is to be read ahead. It is a mental activity and an important reading strategy which involves the prior making of hypotheses about what comes next in the reading material on the basis of what is already known.

Recent research has indicated that a proficient reader does not simply move from one sentence to another in the process of reading. Rather, he or she is constantly making

predictions concerning what is to come in the passage based upon what he or she has already read. As the reader progresses through the piece, their predictions are either confirmed or denied. If the predictions are correct, the reader moves on quickly. If not, it becomes necessary to re-read the portion and re-assess the expectations. This ability to predict is closely tied to the schemata which the reader is able to bring to a reading selection. Previous knowledge of a given topic, even though general in nature, will allow a reader to begin making predictions as soon as he or she begins to read a text. Also, comprehension of the text depends upon whether or not the reader's schemata or knowledge coincides with that of the author (Murphy, 1997).

The use of prediction in reading in a foreign language is affected by many factors which facilitate or complicate the reading task. It has been suggested that there are two main factors which determine the expectations the reader makes while reading in the foreign language: his knowledge of the foreign language and his general knowledge of the world.

Prediction is said to be one of the thinking skills that can be developed in order to foster pupils reading comprehension of the reading material. Good readers use predicting as a way to connect their existing knowledge to new information from a text to get meaning from what they read (Gillet & Temple, 1994).

Chamot, Barnhardt, El-Dinary and Robbins (1999) defined predicting as the kinds of words and information that you can expect based on your background knowledge and/ or information you encounter during the task.

As it is defined by them, prediction is to guess the coming step or event depending on our previous knowledge. Implementing prediction as a thinking skill in the teaching process through a variety of activities might develop pupils' intuition and ability to comprehend written materials. One must predict the next element of an unknown sequence given some knowledge about the past elements and possibly other available information.

Cesa-Bianchi and Lugosi (2006) stated that prediction has become a main topic in the field of learning. Simister (2007) claimed that children should be taught how to take this step with confidence in their reasoning. Options need to be listed, pros and cons weighed up, possible outcomes and consequences evaluated, different opinions and points of view taken into consideration.

This strategy involves the ability of readers to get meaning from a text by making predictions. Before reading, they may use what they know about an author to predict what a text will be about. The title of a text may trigger memories of texts with similar content, allowing them to predict the content of the new text. During reading, good readers may make predictions about what is going to happen next, or what ideas or evidence the author will present to support an argument. They tend to evaluate these predictions continuously, and revise any prediction that is not confirmed by the reading.

Metacognitive Skills

Since comprehension is the ultimate goal of reading, then pupils should be shown how to achieve that through exposing them to a variety of strategies that fosters comprehension. In this concern, Coyn, Kame'enui, and Carine pointed out "a primary purpose of reading instruction should be to help students develop the skills and strategies needed to successfully construct meaning from text" (2007, p.102).

Besides introducing pupils to the different strategies and skills that they might use to approach comprehension, they also must be shown what strategies are most likely to be successful in different situations. Coyn *et al.* claimed that processing a set of cognitive strategies does not ensure comprehension. Students also need to know how, when, and where to apply these strategies (*ibid.*).

Metacognition is to know which skill to use at what situation; Simister (2007) defined it as thinking about one's thinking. Developing pupils' metacognition towards those skills

and their suitable use, is definitely helpful in increasing their understanding and facilitating

the task of comprehension. Teachers should take into consideration the importance of those

skills so that pupils manage their comprehension of the reading material, Simister stated:

> It is vital that students are encouraged to recognize and reflect upon the different thinking and learning skills that they're using, to learn which represent areas of strength for them and which need greater focus, to identify situations where these skills and methods are going to be valuable and situations where they won't.
> (2007, p. 13).

Many scholars focused on showing the effectiveness of such skills in developing

pupils' awareness and intelligibility by using them where necessary and accurately.

Long *et al.* (2011) indicated that it is important for students to develop a range of thinking

or learning skills, but equally important for them to select and use appropriate strategies

when necessary. Metacognitive knowledge might help pupils to choose among the

different skills that are available. Bigges (1985) found that students who were capable of

such metacognitive thought had high general abilities which presumably enabled them to

develop and use these skills. Teachers and textbook writers can promote the use of

metacognitive strategies through a range of activity types (Hedge, 2000).

The Metacognitive Model of Strategic Learning

Research on the learning or thinking strategies has revealed a wealth of information on

the types of strategies students use to learn due to many strategies that have been identified

by different researchers. The Metacognitive Model of Strategic Learning organizes

learning strategies in a way that they become manageable and helpful to students and

teachers. It outlines the processes effective pupils use to work through any challenging

language learning task. It is not only helpful in guiding them throughout their studies but

also in their real-life situations.

Programs Designed to Developing Pupils' Thinking Abilities

Developing thinking skills has become recently an important issue of study. For instance, many approaches have been developed to contribute cognitive abilities in both processes of teaching and learning the language. Researchers in the field of education recently give much focus on this issue and went through experiments to prove the positive correlation between thinking skills and learners' proficiency and effectiveness of developing those skills to comprehension skills specifically.

Scholars also attempted to see whether it is possible to teach those skills in accordance with the learner's level and to seek what suitable methods are appropriate to achieving that. The issue of incorporating thinking skills in education has raised many contradictory ideas about whether critical thinking can be taught or not. A variety of approaches and models to teaching, measuring and assessing critical thinking skills and abilities have been developed. (Mansoor & Sa'eepour, 2011).

There is much debate about whether thinking and learning skills should be taught separately or integrated into the curriculum. It is outlined that it is better to create a program that develop both the skills given the fact that traditional methods do not represent everything there is to think about. It also remains at the heart of our education system and contains much that is of very great value. For these reasons, Simister (2007) argued that the program he outlined in his book "How to teach thinking skills" for the sake of improving the quality of your pupils' thinking and learning, those skills should be taught initially as a separate subject rooted in unthreatening topics of immediate interest to pupils, thereafter, gradually be embedded in the curriculum and in the everyday contexts of life.

The THINK! Program 'Starter Kit'

Throughout this designed program, teachers can select an idea or technique from virtually any of the lesson plans. However, for schools wishing to develop a more

continuous and comprehensive program, it offers a 'starter kit' for each year group (from year 1 to year 6), which includes:

• One lesson plan that focuses on developing pupils' metacognition, with suggestions for follow-up activities:

(a) To help pupils identify and develop the dispositions that frequently underpin successful thinking and learning.

(b) To increase their awareness of themselves as thinkers and learners.

(c) To increase familiarity with the language needed to evaluate their thinking and learning.

• Six further lessons plans, one for each of the main thinking and learning areas of the program overview: Questioning, information skills, critical thinking, creative thinking, decision making, memory skills.

Simister (2007) stated that each of the six lesson plans develops a specific thinking or learning skill by introducing two practical strategies: one as a warm-up game and the other as a more extended activity.

The structure of a typical lesson

Each year group is provided with seven lesson plans that can be used at any time during the school year. Each lesson follows the same format, using the acronym 'THINK!' as a structure:

T	Tune in!	5/10 minute warm up game or activity
H	Heads together	20 minute philosophical discussion
I	Investigate	25/30 minute focus on a particular thinking or learning skill
N	Now reflect!	5 minute opportunity for reflection
K	Keep thinking	Task for pupils to do at home or in spare time

Figure 02: The Structure of a Typical Lesson: The "THINK" Program. (Adapted from Simister, 2007, p. 17)

As Simister (2007) explained in his book, the timings given in the table above are approximate and lessons would usually take between 60 and 90 minutes to work through all the stages. However, the program is extremely flexible and teachers may prefer to carry out the 'Heads together' or the 'Investigate' section on different days if the time available is shorter. They may find that activities take longer than expected, in which case lessons can be spread across several sessions, or teachers can pick out those parts that they wish to focus on and leave out other elements. Although the lessons are designed with whole-class teaching in mind, sometimes teachers may prefer to adapt the activities and work with one group at a time.

The Cognitive Academic Language Learning Approach (CALLA)

Chamot, *et al.* (1999) stated that CALLA is an instructional model that integrates current educational trends in content-based language instruction and learning strategies. It helps pupils achieve curriculum goals, such as becoming independent learners who can evaluate their own learning. This model emphasizes the role of pupils' prior knowledge, the importance of collaborative learning, and the development of metacognitive awareness and self-reflection.

CALLA Procedure

Preparation. Teachers focus on finding out what prior knowledge students have about the content topic to be taught, their level of proficiency and their current learning strategies for this type of task.

Presentation. Teachers use a variety of techniques to make new information and skills accessible and comprehensible the students. These techniques include demonstration, modeling and visual support.

Practice. Students use the new information and skills in activities that involve collaboration, problem solving, inquiry and hands on experiences.

Evaluation. Students self-evaluate their understanding and proficiency with the content, language and learning strategies they have been practicing.

Expansion. Students engage in activities to apply what they have learned to their own lives including other classes at school, their families and community and their cultural and linguistic backgrounds.

Other programs have been developed by other scholars. For instance, Long *et al*. (2011) stated that Feurstein developed a program of assessment and teaching techniques based on instrumental enrichment, as a way of improving general thinking abilities. This approach was evaluated by Blagg (1991) who found that teachers' attitudes towards the approach were generally positive, and pupils appeared to be more active in their learning and more aware of different strategies they could use. After that, Blagg and his colleagues (1993) developed the Somerset Thinking Skills Course for 10 to 16 year-old children in school. These courses teach a range of general skills including problem-solving techniques, analysis and synthesis. Blagg (1994) and his team indicated that a number of evaluations of these courses by them appear to result in significant improvements in abilities related to school learning and early vocational development.

Effectiveness of Thinking Skills on Developing Pupils' Awareness of Teaching Materials

Johnson, S. and Siegel (2010) stated that many supporters of thinking skills believe that if students are to become better thinkers then they must be taught explicitly how to do it. This would improve their levels and achievements. For example decisions may not always be right, but if they are properly considered, at least the chances of success are improved.

Professor Fisher suggests:

> There is evidence that traditional teaching methods are efficient in teaching what the Greeks called "tekne", the 'technical' side of knowing how to do and make things, the basic skills and techniques which need to be introduced and practiced by beginners in any area of learning. But traditional methods are less successful in developing what the Greeks called phronesis that is practical wisdom or intelligence, the higher order thinking which enhances skill to the level of expertise (2007, p. 18).

Developing pupils' thinking skills plays a crucial role in enhancing their understanding and comprehension of the reading material. Facione (1992) also suggests there is a significant correlation between critical thinking and reading comprehension. His quotation follows "Improvements in one are paralleled by improvements in other." (p.18)

Simister (2007) suggested some arguments for teaching thinking and learning, it can raise their curiosity and creativity in reading comprehension. It also can help them depend on themselves to express their own ideas, suggestions and personal opinions and not be put off by a fear of 'getting it wrong' or even to regurgitate other people's words and solutions.. So, as it has also been stated by Price and Maier (2007) that becoming an expert reader draw upon a range of skills to ensure that they are efficient. One of those skills is to make a conscious effort to prompt the brain to interact with texts.

Developing pupils' thinking skills can also make dynamic the behavior of pupils in every reading comprehension task. In other words, thinking skills are a quality that can be developed by everyone with practice. It encourages pupils to be more dependent to reason, to solve problems, and to reach balanced decisions and opinions as well.

Conclusion

Thinking, just like any other topic in psychology, has been a controversial subject matter among scholars and researchers. This faculty embedded in the human minds can be seen from different perspectives. A learner should know how to employ those skills in correspondence with his needs. Being it language learning tasks or even real life situations. Reading is one of the language skills that acquire our learners to utilize a variety of thinking skills according to his needs. A number of researchers stress the connection between thinking skills and reading comprehension.

In the next chapter, we are going to analyze the relationship between developing pupils' thinking skills and reading comprehension, especially for students with reading comprehension difficulties, in order to determine the underlying thinking skills related to reading comprehension.

Introduction

Reading is one of the four language skills: reading, writing, listening and speaking. It is a receptive skill, like listening. Murphy (1997) defined reading as a process of extracting a message from a text which has been constructed by a writer using orthographic symbols. A writer encodes a message; a reader decodes it.

Reading is considered to be one of the main language skills that should be taken into consideration due to the different difficulties our pupils might encounter while reading process is taking place. This usually includes extracting information from a text, it will reflect your understanding of the author' messages. In this second chapter, we are going to have a general overview about reading as a skill, the different strategies that learners might apply during reading and shedding the light on the relationship that exists between thinking skills and reading comprehension.

Part One: Reading

Definition of Reading

Reading is one of the main skills language involved in language learning. Johnson, K. (2001) clarified the second division of the language skills into receptive skills of listening and reading and productive skills of speaking and writing. Pupils' role during reading is trying to understand the already constructed passages. This means responding to text rather than producing it (Spratt, Pulverness, & Williams, 2005).

Reading includes analyzing and understanding information that are to be stated within a text. This is the role the mind plays during a reading process. Smith (1978) emphasized that reading is a crucial cognitive process, through which readers use to bring meaning to print rather than receive something from it. In the process of reading, pupils are to try to analyze and interpret what the author is trying to say. It is the reader's role to bring meaning to the text being read.

Reading Strategies

There is more than one way to read. Pupils might use a variety of reading processes that are suitable to the task in hand. Grabe stated "when we read for different purposes, we engage in many types of reading, particularly in academic settings" (2009, p.7). For example, pupils might read slowly if what they are reading is new and they want to understand and remember it as much as possible. But when they are only looking for small pieces of information, they do not have to read everything carefully. Thus, an essential step to begin with is to choose a style of reading which is appropriate to the task in hand.

Robertson and Smith (1987) defined four main reading styles, such as passive reading, scanning, skimming, and critical reading.

Previewing

To preview is to have a general idea about what we will be reading before we actually read it, this is for the sake of making easier our understanding. Pupils when they preview, their brains can begin to make connections to make comprehension faster and better (Mikulecky & Jeffries, 2004).

Scanning

Scanning is very high-speed reading to look for a specific piece of information. Pupils here do not read every word, only the key words that will answer the question they have in mind. Krahnke (1998) defined scanning as only searching for small pieces of information. Pupils can look over the reading very quickly for the word or words that have the information they want.

Skimming

Skimming differs from scanning in that reading here is to have a general idea about a text and not looking for specific information. It means moving their eyes quickly through

the reading for clues about the topic. It focuses on getting the "big picture" not specific details (Blanchard & Root, 2007).

Cole (2009) mentioned some steps to follow in Skimming. First, pupils need to move their eyes quickly through the whole reading. Read the titles, headings, and the first line of every paragraph to know what the text is talking about. And look briefly at the illustrations or pictures.
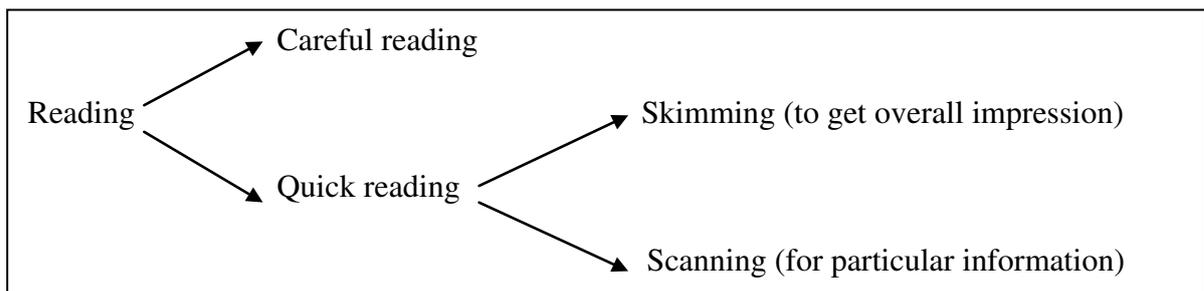

Figure 03: Reading Strategies. (Adapted from Wallace, 2004, p11)

Passive Reading

It is a reading where pupils just do read the text and accept everything being stated. It is sometimes referred to as 'receptive' or 'light' reading. This mean there is no real intention or need to learn what has been read or to be critical of the ideas found in the text (Robertson & Smith, 1987).

Making Inferences

Sometimes pupils are asked to state what the reference of certain words in the text is. The process they are to be engaged in is called 'making inferences'. Here, pupils use hints in the text to guess the meaning of the words, and about the writers' ideas. According to Grellet (1981), it means making use of syntactic, logical and cultural clues to discover the meaning of unknown elements.

SQ3R

It stands for:

Survey (S). The pupil starts with surveying the book or chapter he intends to read. Its purpose is to enable pupils to pick out the theme of the section and its overall organization (Robertson & Smith, 1987).

Question (Q). After the survey phase, pupils ask questions about the text, and then try to find answers to the formulated questions. El-Khuli (2006) stated the pupil after surveying, sets some major questions the reading material aims at giving answers to.

Read (R). The pupils are to read the first section in an attempt to answer their proposed question. If their first question is not answered, they formulate a new one and answer it. Price and Maier (2007) reported that pupils in this phase read carefully, breaking up their reading into small sections, looking for main ideas.

Recite (R). It involves making notes or reciting aloud to ones' self in order to provide a proof for covering the main points of the text. Through this process the pupil will be able to check whether he can recall what he has read or not (El-Khuli, 2006).

Review (R). After the four previous steps, pupils test whether they can recall what being read. Robertson and Smith (1987) stated that pupils in the review stage, they usually refer to checking what have been learned from the reading.

Critical Reading

Pupils during reading should not just focus on what is being read but rather question the text. Wallace (2004) claimed that the reading process should not be a one-way process, where the reader is passive; rather it should be an active and critical process. A number of suggestions for the kind of critical questions which can be built into reading materials include:

> For what purpose and for what audience is this intended?' 'What knowledge and attitudes does the author presume of the audience?' 'Are you convinced by the evidence presented

by the author to support the claims made?' 'Does your own experience support the conclusions reached by the author?' and 'Do you share the author's point of views? (Hedge, 2000, p.213).

While analyzing the writer's ideas, readers must break the arguments he uses to explain his points of view into points and see if they are logically connected and convincing. Glandinning and Holmstrom (2004) stated that a first step in critical reading is to break down the arguments into points.

Types of Reading

Extensive Reading

From the term itself, we can refer to the meaning as reading extended texts. Extensive reading as being defined by Spratt, Pulverness, and Williams (2005) involves reading long pieces of text.

Pupils' purposes of reading include reading to get a general idea about a text, or for enjoyment and pleasure. It is an approach to language teaching in which learners read a lot of easy material in the new language. They read for general, overall meaning, and they read for information and enjoyment (Bamford & Day, 2004).

Intensive Reading

In contrast to extensive reading, intensive one is reading shorter text to look for specific information, details, and to learn new words and new patterns. Harmer (2007) defined intensive reading as the detailed focus on the construction of reading texts which takes place usually in classrooms.

Models of Reading

Reading models have been developed to describe the way readers use language information to construct meaning from print. It consists of three models of reading: bottom-up, top-down and interactive. For Hedge (2000) these models imply different uses of styles.

Bottom-up Model

It assumes that the process of translating print to meaning begins with the print. It includes realizing first the written graphs to form letters, this later to construct combinations, then words to at the end format of paragraphs or texts constructions to reach the intended meaning. Vacca, J., Vacca, R., Gove, Burkey, Lenhart, and Mckeon defined bottom up model as "The reader first identifies features of letters; links these features together to recognize letters; combines letters to recognize spelling patterns; links spelling patterns to recognize words; and then proceeds to sentence-, paragraph-, and text-level processing" (2006, p.25).

Top-down Model

It assumes that the process of translating print to meaning begins with the reader's prior knowledge. In this process, on the contrary, pupils seek to find how the text is constructed starting from the general meaning. Johnson, K. (2001) stated the term "top-down" captures the idea that the starting point is within the mind of the reader.

The process is initiated by making predictions or "educated guesses" about the meaning of some unit of print. Readers decode graphic symbols into sounds to "check out" hypotheses about meaning (Vacca, J. *et al.,* 2006).

Meaning   Meaning

| Semantic information |
| Syntactic information |
| Graph phonemic information |

Print   Print
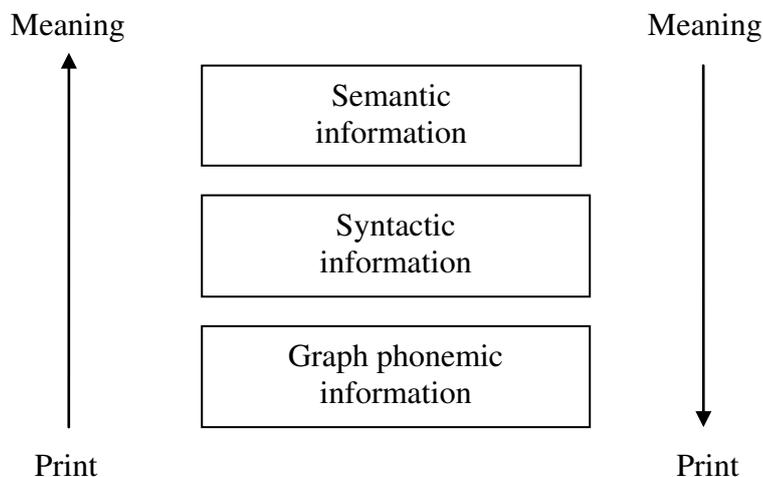
Figure 04: Bottom-up and Top-down Models. **(**Adapted from Vacca, J. *et al.,* 2006, p. 26).

Interactive Models

It is the process of translating print into meaning and meaning to print, it involves making use of both prior knowledge and print. The process is initiated by making predictions about meaning and/or decoding graphic symbols. The reader formulates hypotheses based on the interaction of information from semantic, syntactic, and graph phonemic sources of information. (Vacca, J., *et al*., 2006, p. 25).

Meaning   Print

| Semantic and syntactic information | Information flow → | Decision center | ← Information flow | Graph phonemic informaion |

Meaning   Print
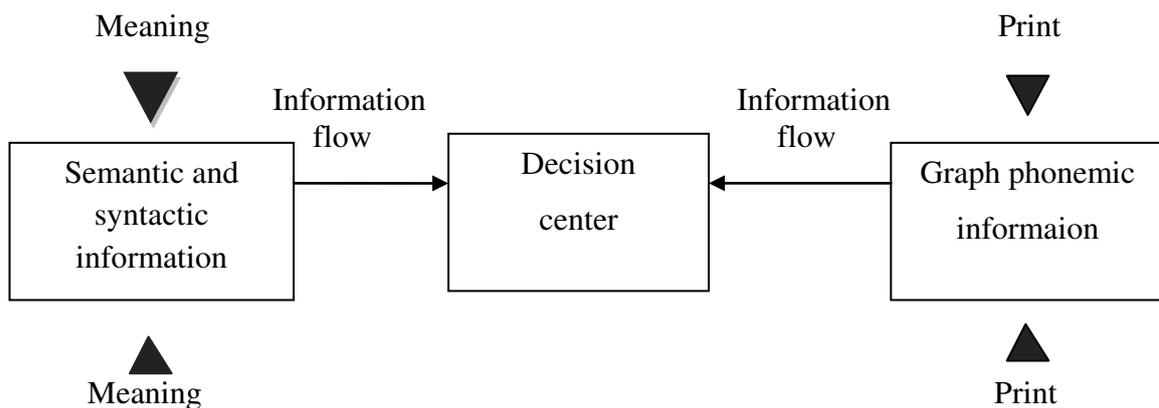
Figure 05: Information Processing in Interactive Models of Reading. (Adapted from

Vacca, J. *et al*, 2006, p. 26).

Thinking Skills and Reading Comprehension

Reading does not only mean to understand the way a text is organized, what is more is that we need to understand its content. This can be attained through the use of different types of questions testing that can check our pupils' comprehension because they need to think and reason in order to give an answer or make a choice. It is therefore important not to devise exercises to which answers are clear and obvious, but which force the pupils to examine the text and the different possibilities carefully in order to make up their minds.

Howard & Strevens (1981) claimed that the exercises that are suggested are inspired by the aim to make the pupils active in the reading process by presenting them with decision-making, problem solving activities where they have to relate the information in the passage to find a solution, make a decision or solve a problem.

Some pupils might find the task of reading comprehension difficult. This was explained by Mikulecky who stated that "for many students, reading comprehension is a problem when they read in English… in fact the problem; usually lies in their approach to a text" (2004, p. 259). For many pupils, reading comprehension is a difficult process, because they cannot relate the ideas in the text with the proposed questions that need the contribution of the mind's thinking operations. Huey (1968) asserted that if one is to improve reading comprehension, an increasing knowledge in thinking skills and its assessment is of utmost importance.

Then, comprehension doesn't occur automatically, pupils must intentionally and purposefully work to extract and construct meaning from text by actively applying a variety of cognitive strategies.

Part Two: Reading Comprehension

Definition of Reading Comprehension

Pupils' understanding of written texts can be reflected in their ability to interpret comprehension questions and to provide necessary information. Grellet (1981) stated understanding a written text means extracting the required information from it as efficiently as possible.

Reading comprehension is further specified by Ma and Med (2005). According to this view, to understand a written material a reader engages his 'intentional', 'problem solving' and thinking processes. This is because when we read, we have an intention in mind that is to look for a specific piece of information. Through the interaction process that exist between the pupil and the text with the application of certain thinking skills that are appropriate to the task, pupils can then manage to achieve better comprehension. In this regard, they defined reading comprehension as an intentional thinking during which meaning is constructed through interactions between text and reader (*ibid.*).

Applying Thinking Skills for Reading Comprehension

In order for pupils to reach good comprehension of written texts, they need to put into practice their thinking abilities to make valid their interpretation of texts. Davies (2000) stated that it is now generally agreed that effective listening and reading require as much attention and mental activity as speaking and writing.

Teachers need to prepare pupils for reading tests. First, they should develop their task awareness concerning the length of the reading test or exam, the parts that are included with the time devoted for each part and the kinds of tasks that are to be included, in addition to that the way those tasks should be answered and general overview of the texts provided. Burgess and Head (2005) stated that candidates need to know how many parts there are in the reading exam and what kinds of tasks occur in each part.

Secondly, teachers should develop pupils' exam skills and strategies. Exam reading preparation can be graded in three ways: 1) By simplifying the tasks such as including fewer questions, 2) By simplifying the texts like shortening the length of the text and making clearer the structure of the text, and 3) By gradually introducing pupils to exam conditions, for instance no guidance will be there to approach the tasks given (*ibid.*).

So, teacher need to prepare their pupils to different instructions about the exam conditions and proposed content of the exam questions. In addition to that, a number of cognitive abilities can be taught to improve comprehension, such as identifying important information, inferring, monitoring, generating and asking questions, visualizing, summarizing, synthesizing, and evaluating (Coyn, Kame' ennui, & Carine, 2007). Thus, summarizing the main ideas, relating new ideas to previous knowledge, intention to understand what the author is getting at by asking questions, examining the logic of the argument and relate evidence to conclusions can be taught to pupils are some of the characteristics of a deeper approach to reading.

Pupils should take into consideration the different types of questions asked on a specific text. Some question can be textually explicit because they promote recall or recognition of information actually stated in the text. Other questions are textually implicit because they provoke thinking. For that reason, Raphael proposed the Question-Answer Relationships (QARs):

> It helps learners know what information sources are available for seeking answers to different types of text questions. Through this strategy, readers become more sensitive to the different mental operations and text demands required by different questions. QARs enhance children's ability to answer comprehension questions by teaching them how to find information they need to answer questions (Vacca, J., *et al*., 2006, pp. 93-94).

The following is a model of the reading comprehension process and how it happens. For example, in a prediction making activity, pupils try to connect information existed either directly or indirectly in the text (text-structure, meanings and related ideas) to the information they already know so far. Besides, on the basis of all this together can help them in a prediction task to guess what the coming events would be.

Memory of what has
been read so far

Expectations and   Reading comprehension   Prediction of what is
relevant ideas   to come next

Recognition of meaningful
segments of text and text structure
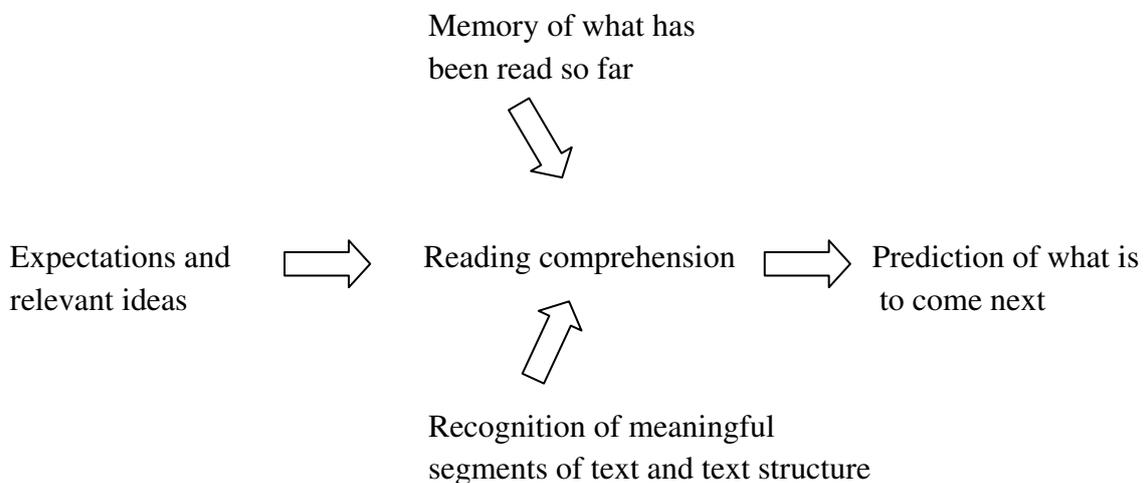
Figure 06: A Model of Reading Comprehension. (Adapted from Davies, 2000, p. 91).

According to the figure, pupils activate the ideas they have stored in their minds related to the topic, and on the basis of their expectations, their previous ideas about the topic, and

their knowledge of the language and of texts written in the language, to some extent they predict what will come next (Davies, 2000).

Metacognition in Reading

Metacognition is defined as the knowledge and control that we have over our cognitive processes. It is applied for different purposes, among of these is reading. Grabe stated "with respect to reading, it is common to talk about metacognitive awareness that is what we know, and metacognitive regulation or control that is knowing when, where, and how to use strategies, that is, what we can do" (2009, pp. 222-223).

Metacognition is considered to be a key element in reading and reading comprehension. It helps readers grasp the meanings stated either explicitly or implicitly in the text. It also ensures comprehension. Coyn, Kame'enui, and Carine stated that "metacognition influences comprehension before, during, and after reading" (2007, p. 86). This is because a greater awareness of the cognitive processes involved in reading will certainly improve comprehension.

Teaching metacognition in conjunction with thinking skills for fostering comprehension becomes very important for reading instruction. Randi, *et al.,* (2005, p. 22) state that reading metacognition is "thinking about the cognitive processes involved in reading".

Metacognition plays a key role in fostering comprehension during reading. Besides being acquainted with the different strategies used in the reading process, it helps pupils to choose among those strategies the suitable one for the task in hand. Different scholars clarified metacognition by relating it to reading comprehension. On the one hand, Alderson (2000) explained the relationship between metacognition and reading performance arguing that poor readers do not possess knowledge of strategies, and are unaware of how or when to apply the knowledge they do have.

On the other hand, Vacca, J., *et al*. (2006) stated that metacognition in reading refers to (1) self-knowledge; the knowledge pupils have about themselves as readers and learners. In other words, pupils as readers and learners should be aware to the fact that they reading for a certain purpose where they need to apply a variety of reading activities. And (2) task knowledge; the knowledge of reading tasks and the strategies that are appropriate given a task at hand, because strategies differ according to different types of reading purposes.

Conclusion

Reading, by then, is one of the main skills in language. Pupils' strategies for reading might differ according to different aims. Difference does not only concern the styles used during reading, the texts being read also differ in terms of length to be named either extensive or intensive type of reading. The styles used by readers in a reading task belong to three different models of reading in terms of direction of the model itself. Being it from the general meaning to reach the spelling or from the spelling to reach the general meaning or a model that connect them together.

Comprehension is considered to be the ultimate goal of reading. For this to happen, pupils need to apply their cognitive abilities acquainted with the metacognition knowledge of skills and ways of using them. It is not only the role of the learner to deepen comprehension; teachers also have to help facilitate the task for their pupils as well.

In the next chapter, the investigation study, we tried to realize our hypothesis and held an experimental study for the sake of proving the positive effects that thinking skills might have on pupil's comprehension of written texts.

Introduction

This chapter deals with the field work as it presents the investigation process. It consists of three parts; it starts by describing the population of the study. Then, it explains also the pilot study starting with its design and implementation. Finally, it displays the results.

To prove the effectiveness of developing pupils' thinking skills on texts reading comprehension, it requires a real study of engagement and participation. This chapter provides the reader with information about the situation and the circumstances under which this study took place. The present study was conducted on first year pupils in Omar Idriss secondary school in the region of El-Kantara in Biskra. We hope throughout the course of this study to realize some of the predictions we supposed to be proved at the end of this held study. One of the predictions made is that the experimental group would score higher in the administrated reading proficiency and thinking skills post tests than the control group. In other words, the pupils who develop or have been taught about thinking skills (problem solving, decision making, and predicting), are more capable than others to better comprehend written texts.

Rational

It was a necessity to experience exposing our pupils to a sequence of lessons where they are taught about three main skills that are the focus of our study. The three skills that we based on in our investigation were chosen among many for the following reasons:

Pupils will be able to go through those types of thinking activities for their easy acquaintance, accessibility and suitability with their age and level. Also, they might be used to face nearly the same real life situations where nearly the same use of thinking skills is needed and careful. In addition to its effectiveness in developing and raising their thinking abilities into better levels, it is enjoying to go through activities where they share, discuss and practice together different types of games and reading activities that are

suitable for the task. What is more, those thinking activities help in increasing our pupils' motivation and engagement that facilitates our job of teaching.

The investigated study was, therefore, designed to examine the hypothesis whether teaching and developing pupils' thinking skills would lead to better results in texts reading comprehension.

Design of the Experiment

To test the hypothesis and achieve the aimed objectives which is proving the impact of enhancing our pupils' texts comprehension in relation to developing their mental abilities; an experimental study has been established. Our population has been selected from 1st year pupils in the secondary school. Fifty participants are randomly selected and assigned to experimental group who received the treatment, or to control group who did not. The two groups were exposed to a carefully designed experimental program through a well prepared and careful chosen tasks and activities to fit the participants' level, interests, and needs till we compared the results and improvement within the two groups.

The first step in this experiment was the pre-test. All the participants of both groups were pre-tested. After the pre-test, the treatment period begun. During four weeks, and within nine sessions, the experimental group has been exposed to sequence of lessons charged of instructions, games, and reading activities that develop pupils' thinking skills and foster comprehension. The control group, however, did not follow the same instructions and underwent ordinary courses. At the end of the treatment period, the participants were post tested through the same tool of measurement as in the pre-test.

Findings have been taken as data to provide evidence required to testing our hypothesis. Then, worksheets were used to keep participants' scores for analysis and interpretations. We have analyzed the differences between the scores of the experimental group and the scores of the control group. Our analysis has been divided into two parts, first we have

compared the means, and second we have used a correlation coefficient r. The correlation coefficient, however, would confirm the positive correlation between thinking skills and reading comprehension.

Participants

In the current study and since the groups already exist, a quasi -experimental design was carried out on a sample of population (N=157) selected from 1st year pupils. 79 pupils have been non-randomly selected to participate in this study. Of the 79 pupils, fifty are randomly selected and assigned to the experimental group (N=25) and to the control group (N=25).

The participants' age is between fifteen (14) and eighteen (18) years old. All the participants have studied English for five (05) years, others for six (06) or seven years (07): four (04) years at the Middle school, one (01) year at the Secondary school. The sample of the population was restricted to 50 participants because of the time constrains since we have been performing multiple tasks (teaching and examining) at the same time. This sample corresponds to the pupils who have taken the pre-test, they have underwent the treatment period, and finally have been post tested.

Material Selection

The main guidelines for the material selection were first year pupils' level, interests and motivation. In the present study, the following materials have been used:

1/ A sequence of nine typical lessons following the same format (using the acronym 'THINK' as a structure), every three lessons are centered on one of the thinking skills that we focus on in the theoretical part of our study (problem solving, decision making, and predicting).

2/ Pupils have been receiving a variety of activities in terms of type, difficulty, length, and objectives (Games, stories, discussions, and different comprehension activities), the running of those activities was either individually or as a group work.

 The activities used vary to include:

- General comprehension questions/ Discussions.

- Multiple choice questions.

- Filling-in sentences.

- Word/ Sentence order activities.

- Inferring meanings of words from the context.

- Matching.

- Group work activities (group roles).

- Individual work activities.

- Sentence completion.

- Problem solving activities like providing definitions to certain vocabulary. Relating numbers to their corresponding elements.

- Decision making activities like putting (+) for good actions and (-) for bad actions.

- Predicting with storytelling activities; anticipating what might happen next or the end of a story, and stories with missing events.

- Games of different types (moving matchsticks, series completion, filling in grids, crosswords, puzzles) and objectives (problem solving, decision making, making predictions).

Tasks 'Implementation

The activities' main purposes were to develop our pupils' thinking skills. Also, our aim was to select tasks that meet pupils' needs, interests and level as well as to create motivation rather than boring learning environment.

Each lesson designed for the experimental group took about 1 hour. Due to the limited duration of one hour, we tried not to incorporate topics or activities that are complex in order to avoid respondents' tiredness. The overall number of session was nine, thus, each two separated sessions in midweek were given to the pupils. This choice was based on the fact that pupils then would not be distracted by either the beginning of the week, end of the week or end of the school day.

In lessons' preparation, the first lesson was almost theoretical while the other two are almost practical, this is because in the theoretical part, pupils were given some definitions and hints on the use of a one given skill, whereas in the practical part, pupils were given as much activities as the time available is enough to practice the being taught skills.

❖ **The theoretical part: 'THINK' structure**

This lesson structure was proposed by Simister (2007) in his book "How to teach thinking and learning skills".

Phase One

T: Tune in. Introducing the thinking skill and warm-up activities to get the brain working (E.g.: the nine dots, matchsticks games, and storytelling activities). Before starting the lesson, pupils were provided with copies of the same passage, or worksheets containing the activities designed for the study.

Phase Two

H: Heads together. This phase contains philosophical discussion. It is divided into three main steps: 'Heads together' Introductory session: general hints on discussion

etiquettes. The second step: Generating the questions session: asking questions about a given topic or picture. The third step: Discussion session: discussing about the generated questions in 2nd step.

I: Investigate. Pupils here learn how to improve their own thinking and learning by focusing on a particular thinking skill.

Phase Three

N: Now reflect. Pupils think about what they have done, and what they have learned so far.

K: Keep thinking. Giving pupils tasks to do in class, at home or in spare time to practice the skills.

Throughout those steps, we tried to maintain our pupils' interest, attain their engagement, and to increase their motivation during the treatment period.

❖ **CALLA approach in storytelling activity**

This approach was suggested by Chamot, *et al.* in a book entitled "The learning strategies handbook".

Phase One

Preparation. The teacher focuses on finding out what prior knowledge pupils have about the content topic to be taught (storytelling; The pauper and the banker), and their current learning strategies (predicting).

Phase Two

Presentation. Pupils discuss with their teacher the strategy of prediction.

Phase Three

Practice. The teacher conducts the storytelling session having the pupils practice the strategy of prediction and then they practice retelling the story when they are finished.

Phase Four

   Evaluation. Pupils evaluate their use of the strategy. They discuss the way they used it during storytelling and how they could use it in reading.

Phase Five

   Expansion. Have pupils apply prediction to a reading text and then report on their experiences.

<div align="center">Pilot Study</div>

   The pilot study helps us to see the weaknesses of the thinking skills and reading proficiency pre-tests. In the design of thinking skills and reading comprehension pre-tests, we took into consideration the three skills that we focused on in the theoretical part, and the time limits. We tried as much as possible to correlate pupils' tests with their level and abilities.

   Thinking skills pre-test that has been used in the pilot study contained 10 items. This test has been administered to first year pupils at secondary school that share the same background with pupils of experimental and control groups chosen in the study in order to measure both their thinking skills proficiency and abilities and to check the suitability of the designed test. It consisted of activities that check their ability to solve problems in texts' comprehension and other simple mathematical activities. Also, it tested their ability to decide on the right answer among many other options. Besides that, it checked their ability to predict hidden events depending on the information that they have encountered during the task. This test was not translated into Arabic that is why pupils found some difficulties understanding and solving the questions. Then, it has been taken into consideration translating some of the key words into Arabic in the next design of the tests.

   In addition, we try to design good tests that are to be valid and reliable, bearing in mind scoring, representativeness, and discrimination, and the time allotted. The exercises chosen

have been taken from different sources that measure the thinking skills mentioned above as well as their comprehension of written texts.

Thinking Skills Pilot Study Test

✓ Item 1: (a) and (b) have been taken from "More reading power, 2nd Ed." (Mikulecky & Jeffereis, 2004, pp. 162-163).

✓ Item 2: (a) and (b) have been taken from "From practice to performance, Vol. 2" (Murphy, 1997, p.9-10).

✓ Item 3 has been taken from "Top class activities" (Williams, 1997, p.11).

✓ Items 4, 5, and 6 have been taken from "A study of the correlation between intelligence and reading comprehension" (Bader, 2007, p.143-144).

Reading Comprehension Pilot Study Test

As for the reading comprehension proficiency pre-test used in the pilot study, it included two exercises and measured pupils' texts reading comprehension through the some thinking and reading activities.

✓ Item 1: Pupils were given a short narrative text to read through, and were asked to guess about the given questions, it has been taken from "Top class activities" (O"Neill, 1997, p.63).

✓ Item 2: They have been queried three multiple choice questions about an expository text. It has been taken from "On the Move" (Arab, 2006: 37-38), the fourth year English pupils' schoolbook with no modifications.

We have administered both tests to a range of 78 pupils (49.70%) selected non-randomly including both sexes, from the same study sample that consisted of 157 first year secondary school pupils. The participants in the pilot study belonged to other groups other than the control and experimental groups.

We have administered the thinking skills proficiency pilot study to 39 pupils on the first day of the week since they would be prepared for a new week of study after a rest that lasted for two days. Whereas, other 39 pupils were tested the reading comprehension pilot study test three days later in the same week, on Tuesday, in order not to be tired because of their work during the whole week. So, they have taken both tests in their English classroom sessions starting at 10 am with the 1st group (39 pupils), on Sunday and 14.30 pm with the 2nd group (other 39 pupils) on Tuesday.

 In addition to that, we have decided for both tests that the administration time would not exceed one hour. I have been, as a test-administrator, assisted by a teacher of English. He has mainly supervised the pupils in order to avoid having them cheating. This way, we would make sure that the answers are individual and would reflect, to some extent, individual thinking and reading comprehension abilities.

The analyses of thinking skills and reading comprehension pilot study tests helped us to reach the following conclusions. Many items have been found to be too easy and others too difficult for the participants (as shown in table 01). Thus, we have decided to keep easy and average level items, and to discard difficult ones.

In the thinking skills proficiency pre-test, the items that have been judged to be appropriate to the pupils' level and that have been kept to be used in the main study are item 1: (a) and (b), item 2: (a) and (b), items 3, 4, 5 and 6.

N° of item	Item category	Degree of difficulty	Item's status
1-a	Prediction	Average	Kept to be used in the main study test.
1-b	Prediction	Average	
2-a	Prediction	Average	
2-b	Prediction	Average	
3	Problem-solving	Easy	
4	Problem-solving	Easy	
5	Problem-solving	average	
6	Decision-making	Average	

Table 01: The First Results of the Thinking Skills Proficiency Test of the Pilot Study.

As for the reading comprehension proficiency test, item (1) has been discarded because pupils claimed not to be able to express their ideas in English and not being able to relate their ideas to the task being given, this is reflected in the wrong answers they have provided. Item (2), an expository text followed with three comprehension questions, proved to be adjusted to the level of the majority of the pupils and has been kept to be used in the next test as shown in table 02.

N° of item	Item category	Degree of difficulty	Item's status
Question 1 Item 1	Prediction question	Too difficult	Discarded
Question 2 Item 1	Prediction question	Too difficult	
Question 3 Item 1	Prediction question	Too difficult	
Question 1 Item 2	Multiple choice question	Average	Kept to be used in the study main test
Question 2 Item 2	Multiple choice question	Average	
Question 3 Item 2	Multiple choice question	Average	

Table 02: The First Results of the Reading Comprehension Proficiency Test of the Pilot Study.

The items we have kept to be used in the main study test are not enough to be used in testing thinking and reading comprehension abilities. Thus, we have designed new items, taking into consideration the results of the first test, to get, at the end, a 10-items-test in the thinking skills and a 5-items-test in the reading comprehension proficiency pre-tests.

After the pilot study of both tests, the rest of the population (N=157), i.e. pupils of control and experimental groups (N= 79) were pre-tested in the same types of measures with the new modifications made on the previous ones.

Telling pupils that the test scores will not be included in their academic marks would lead to a decrease in the pupils' anxiety and stress when taking the two tests. It is expected, however, that this would lead to a lack of seriousness in dealing with the tests' questions. So, we have seen that a reward to motivate them was needed. Thus, pupils have been told that three gifts would be offered to the top three pupils, i.e. the three pupils who will get the highest scores but in the post tests phase.

Instruments

Two test instruments were used in this study to assess the pupils' thinking skills and reading comprehension abilities.

Thinking Skills Proficiency Pre-test

It was entitled so because proficiency tests are tests of what level has been reached in the language, and they stand independent of any course. Their results are statements to the world about what a learner can do. Thus, this test evaluated pupils' thinking abilities and how far they manage to apply them effectively. It aimed at testing the three skills that are the focus of our research study; problem solving, decision making, and prediction activities. This test included 10 items, in addition to the eight items used in the pilot study, 2 other items were added to the main test (Adapted from Bader, 2007, p.143- 144).

Reading Comprehension Proficiency Pre-test

With the reading comprehension test that is administered to pupils in this study, we aim at providing an evaluation of pupils' written language understanding. The goal of the reading comprehension tasks was to find answers to a set of questions from different texts of different lengths. One of the items was used in the pilot study followed by multiple-choice questions. In addition to other added four items, two of them test pupils' prediction skills, another one to check their decision making skills in a sentence order activity, and the other to check their problem solving skill. Items 1 and 3 have been taken from "More reading power" (Mikulecky & Jeffries, 2004, p. 160,132). Item 2 and 6 were taken from "Developing reading skills" (Grellet, 1981, p. 32, 56). This test was neither too easy nor too difficult but appropriate to the pupils' level.

Pupils of both groups were again post tested at the end of the treatment period that the experimental group has undergone through.

Thinking Skills Post Test

The thinking skills post test administered to pupils aiming at testing their thinking abilities contained 8 items presented as follows:

A/ Problem solving activities that contained 3 items:

- Item 1: It has been taken from "A study of the correlation between intelligence and reading comprehension" (Bader, 2007, p.143-144).

- Item 2: It was designed just like the first one.

- Item 3: It was taken from (Reading together, Krahnek, p. 16).

B/ Predicting activities: it contained 4 items

- Item 4 and 5: They have been taken from "More reading power, 2nd Ed." (Mikulecky & Jeffereis, 2004, pp.163, 175).

- Item 6 and 7: They have been taken from "From practice to performance, Vol. 2" (Murphy, 1997, p.9-10).

C/ Decision making:

- Item 8: It has been taken from http:/ iteslj.Org/ Lessons /Orlova-Activities.html.

Reading Comprehension Post Test

It contained a scientific text of average difficulty, and the activities concluded are: true/ false questions, general comprehension questions about the text, synonyms and opposites, sentence order activity where we try to implement all the three thinking skills of our study. The text have been taken from "El-Motamayiz fi English BAC"

Tests Results

The following table shows the differences between the experimental group and the control group in the pre-tests and post tests.

	Experimental group					Control group			
	AV. Pre-test		AV. Post test			AV. Pre-test		AV. Post test	
N.	T. S.	R. C.	T. S.	R. C.	N.	T. S.	R. C.	T. S.	R. C.
1	11.5	08	06	10.5	1	7.5	12	7.5	09
2	12	06	11	12	2	14.5	14.5	17	09
3	07	04	07	05	3	13.5	07	14	08
4	17.5	16.5	18.5	16	4	05	16.5	17.5	16
5	6.5	11.5	13	11	5	09	12	08	05
6	6.5	8.5	06	09	6	11.5	9.5	11.5	10
7	08	06	17	13	7	9.5	12	6.5	09
8	11.5	11.5	12	09	8	15.5	13.5	8.5	15
9	12	7.5	13.5	13	9	14	13	11	12.5
10	5.5	8.5	08	07	10	14.5	07	14.5	11
11	17.5	12.5	11	12	11	18.5	16.5	20	15.5
12	18.5	09	14	12	12	09	18	4.5	09
13	5.5	07	16.5	10.5	13	13	9.5	16	12
14	17	10	14	13.5	14	06	10.5	06	08
15	17	11	15.5	13.5	15	18	12	17	14
16	07	14	7.5	10	16	10	11.5	3.5	9.5
17	08	12.5	16.5	09	17	17	16.5	17	14
18	11.5	09	5.5	11.5	18	14.5	10.5	11.5	12
19	14	11.5	15.5	13.5	19	8.5	16	08	09
20	13	12.5	11	13	20	10	08	15	05
21	04	09	04	07	21	08	10.5	12	07
22	14	13.5	11	12.5	22	12.5	13	14.5	12
23	05	10	13	06	23	06	7.5	4.5	8.5
24	12	16	07	11.5	24	14	09	15	12
25	18.5	15.5	20	13	25	11.5	7.5	7.5	06
Σ_{X_E}	280.5	261	294	274	Σ_{X_C}	291	293.5	288	258
X_E	11.22	10.44	11.76	10.96	X_C	11.64	11.74	11.52	10.32

Table 03: Individual Scores between the Experimental and the Control Groups in the Pre-

tests and Post tests.

N.: Number of subject.

AV.: Average.

T. S.: Thinking skills.

R. C.: Reading comprehension.

Σx.: Sum of scores.

X.: Average of scores in each group.

Summary of Tests' Results

Tests		Experimental group		Control group		Differences in the sum and means	
		Σ_{X_E}	AV.$_E$	Σ_{X_C}	AV.$_C$	$\Sigma X_E - \Sigma_{X_C}$	AV.$_E$ - AV.$_C$
Pre-tests	**T. S.**	280.5	11.22	291	11.64	- 10.5	- 0.42
	R. C.	261	10.44	293.5	11.74	- 32.5	- 1.30
Post tests	**T. S.**	294	11.76	288	11.52	+ 6	+ 0.24
	R. C.	274	10.96	258	10.32	+ 16	+ 0.64

Table 04: Experimental/ Control Groups' Sum of Scores and Difference in Means during the Pre-tests and Post Tests.

According to the results shown in the table above, we deduce the following:

Pre-tests

The pre-tests contain the scores of two different tests; a thinking skills proficiency pre-test and a reading comprehension proficiency pre-test.

From the above table, we can notice that pre-tests sums of scores for the experimental group are lower than the control group's sums of scores (**T. S.** 280.5 Vs 291) and (**R. C.** 261 Vs 293.5). A little bit difference in the means are shown in the table (**T.S.** -0.42) and (**R.C.** -1.30).

The findings pave the way for many interpretations:

The experimental group has low level in thinking abilities and reading comprehension compared to the control group that scored better. Then any possible change in experimental group scorings will be due to the experimental study to confirm the research hypothesis.

Post Tests

The post tests contain the scores of two different tests; a thinking skills achievement/ proficiency post test and a reading comprehension achievement/ proficiency post test.

The Experimental group got higher scores than the control group in the thinking skills post test (294 Vs. 288), and scored more in the reading comprehension post test (274 Vs. 258), the differences in the means are then (T. S. +0.24) and (R. C. +0.64).

We notice that the difference in means increased in the thinking skills from (- 0.42) in the pre-test to (+0.24) in the post test with (+ 0.82) degrees more. Which in turn affected the results of the reading comprehension post test, the difference in means has increased from (– 1.30) in the pre-test t0 (+ 0.64) in the post test with (+ 2.34) degrees more.

On the one hand, the good results obtained by our subjects in the experimental group were expected because of the charged program of the treatment that they have undergone through, that is receiving a couple of lessons about different thinking skills enhanced with a big number of activities to foster those skills (problem solving, decision making, and predicting). Thus, the average in the thinking skills pre-test (11.22) has increased to (11.76) in the post test.

Concerning the average of the reading comprehension, it has also noticed a remarkable increase from (10.44) in the pre-test to (10.96) in the post test.

The control group, on the other hand, felt a noticeable falling-down in both the average of the thinking skills pre-test; (from 11.64 in the pre-test to 11.52 in the post test). And the

reading comprehension achievement pre-test; (from 11.74 in the pre-test to 10.32 in the post test).

The extensive program of lessons about different thinking skills that experimental group pupils were provided with played a big role in enhancing pupils' understanding and comprehension of written texts. This is reflected in their interaction during the lessons, and their performance in the post tests.

We have been providing learners with intensive lessons that raise pupils' awareness of the effectiveness of developing their thinking skills, and we made enjoyable teaching and learning processes that were enhanced with thinking games and activities that they have practiced being related to texts' comprehension. Those lessons attracted their attention, concentration, and participation too, yet, there were some problems to hinder applying our treatment study in better conditions.

For the control group, the one that just undergone normal courses and that did not receive any special treatment, or any courses on thinking skills and how to apply them in different tasks of study, felt a clear decrease in terms of the results obtained only in some of the activities that they are used to like multiple choice, matching activities which depends on their thinking abilities.

As for the reading comprehension post test, no remarkable decline has been noticed. They did not reach the same level of achievement compared with those who were implemented with an intensive program of thinking skills and many related activities. The fact that control group pupils received no planed sessions about thinking skills affects the results of the reading comprehension post test.

As a conclusion, and based on the tests results, we can say that pupils who followed ordinary and normal courses did not notice any positive progress in their tests' scores and a clear decline has been felt. However, participants in the experimental group, where

intensive thinking skills courses and other related activities have been taught and provided to pupils, remarked a clear positive progress and noticed an improvement in their gained scores.

For the sake of improving and raising our pupils' comprehension abilities, that need a certain kind of deep thought, teachers need to develop and facilitate their pupils' tasks of understanding and comprehension through providing them with activities that develop their awareness towards thinking skills and to put them in intensive practice of multi-tasks.

<p align="center">Analyses and Interpretations</p>

In a quasi-experimental research, in order to analyze the data obtained from a study with 'a pre-test − post-test control-group design', it involves first computing 'gain scores' separately in the treatment and the control groups by subtracting the pre-test scores from the post-test scores, and then correlating these gain scores by using the Pearson product-moment correlation coefficient to see whether the gain in the treatment condition was significantly bigger than in the control condition.

Thinking Skills Tests

The following table represents the frequency of scores obtained by both experimental and control groups in the thinking skills tests.

| Experimental group			Control group		
Score	Frequency "F"		Scores	Frequency "F"	
"X_E"/ 20	Pre-test	Post test	"X_C" / 20	Pre-test	Post test
[0 - 5 [	01	01	[0 - 5 [	00	03
[5 - 10[	09	07	[5 - 10[	09	07
[10 – 15[	09	10	[10 - 15[	12	07
[15 - 20]	06	07	[15 - 20]	04	08
Sum of "F"	N= 25	N= 25	Sum of "F"	N= 25	N= 25

Table 05: Frequency Distribution of the Groups' Score Values in the Thinking Skills

Tests.

Thinking skills tests	Experimental group	Control group
Pre-test	15 scores ≥ 10	16 scores ≥ 10
	10 scores < 10	9 scores < 10
Post test	17 scores ≥ 10	15 scores ≥ 10
	8 scores < 10	10 scores < 10

Table 06: Control/Experimental Groups' Score Frequencies above the Average 10.

The experimental group recorded more frequencies in the scores above the average 10 than the control group in the post test while it got lower in the pre-test, i.e. an improvement occurred.

Pre-test   Post test
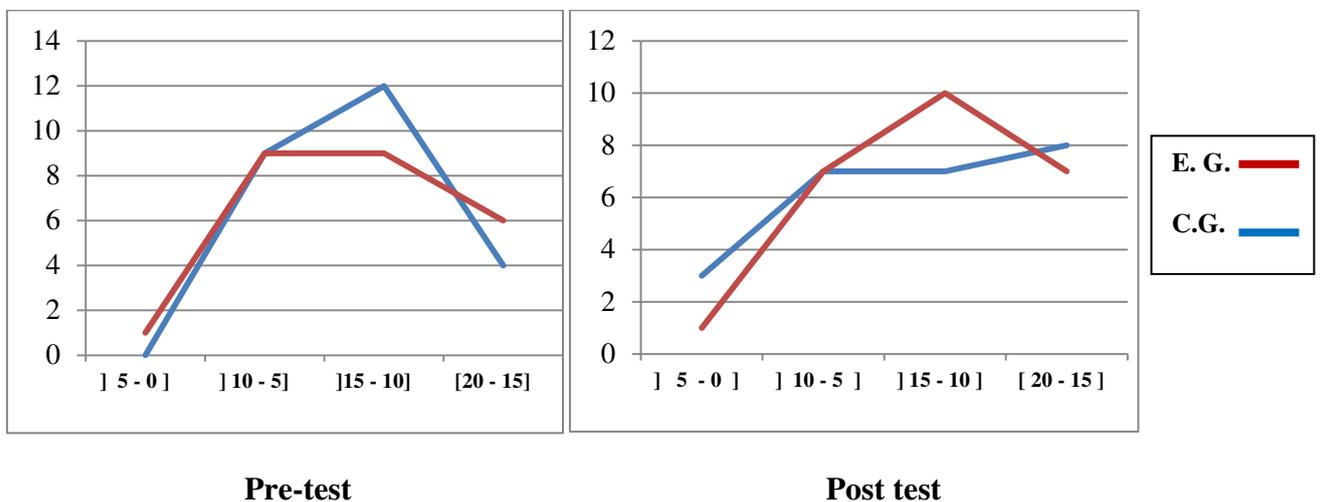
Graph 01: Frequency Polygon for the Thinking Skills Tests.

The following results revealed from the polygon:

Pre-test: The control group had better thinking abilities; it is reflected in the high scores that had more frequencies than the experimental group.

Post test: Compared to the pre-test, the experimental group showed a clear improvement in the scores gained than the control group.

Reading Comprehension Tests

The following table represents the frequency of scores obtained by both experimental and control groups in the reading comprehension tests.

Experimental group			Control group		
Score	Frequency "F"		Scores	Frequency "F"	
"X_E"/ 20	Pre-test	Post test	"X_C" / 20	Pre-test	Post test
[0 - 5 [	01	00	[0 - 5 [	00	00
[5 - 10[	10	07	[5 - 10[	08	13
[10 – 15[	11	17	[10 - 15[	12	09
[15 - 20]	03	01	[15 - 20]	05	03
Sum of "F"	N= 25	N= 25	Sum of "F"	N= 25	N= 25

Table 07: Frequency Distribution of the Groups' Score Values in the Reading Comprehension Tests.

Reading comprehension tests	Experimental group	Control group
Pre-test	14 scores ≥ 10	17 scores ≥ 10
	11 scores < 10	8 scores < 10
Post test	18 scores ≥ 10	12 scores ≥ 10
	7 scores < 10	13 scores < 10

Table 08: Control/Experimental Groups' Score Frequencies above the Average 10.

The experimental group recorded more frequencies in the scores above the average 10 than the control group in the post test while it got lower in the pre-test, i.e. an improvement occurred.


Pre-test   Post test
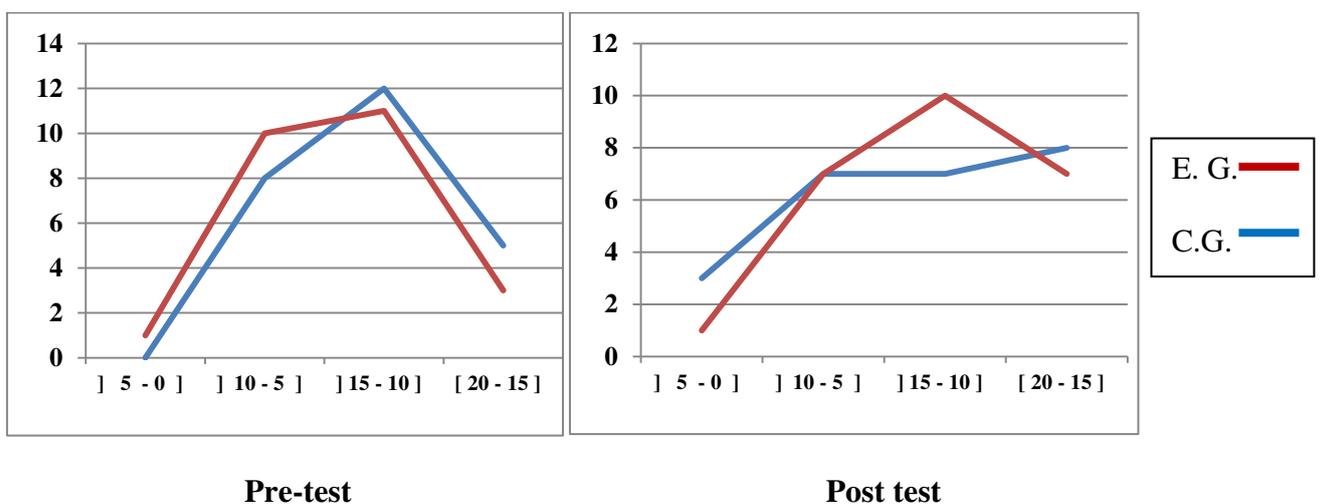
Graph 02: Frequency Polygon for the Reading Comprehension Tests.

The following results revealed from the polygon:

Pre-test: According to the scores obtained, the control group acquainted better reading comprehension abilities; it is reflected in the high scores that had more frequencies than the experimental group.

Post test: Compared to the pre-test, the experimental group showed a clear improvement in the scores gained than the control group.

The following graph shows the relative relationship between thinking skills and reading comprehension of the experimental group before and after the treatment.
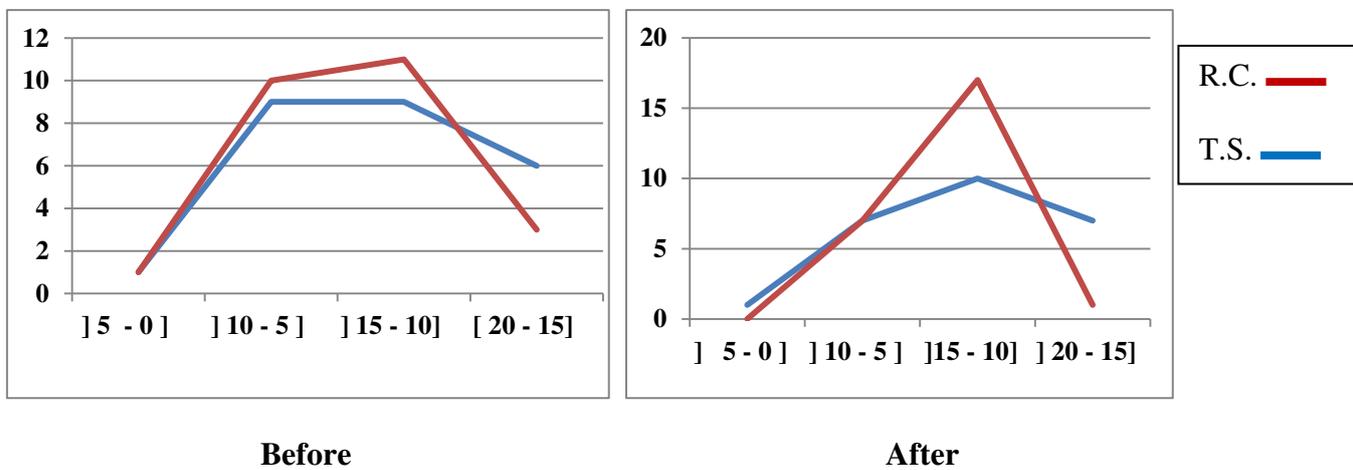
Before   **After**

Graph 03: Polygon for the Relationship between Thinking Skills and Reading Comprehension Before and After the Treatment.

From the graph, we summarize the following:

Before the treatment: Pupils before receiving any of the thinking skills lessons, nothing can be attributed to the reading comprehension scores attained by them.

After the treatment: Pupils' reading comprehension scores increase after they underwent the experimental study. The difference in results then can only be attributed to the only difference between the two groups, the treatment variable, that is to say teaching pupils about certain thinking skills and fostering those skills with a couple of activities to practice.

Correlating Thinking Skills with Reading Comprehension

Now, we need to prove that there is a positive correlation between developing thinking skills and reading comprehension.

To be able to examine the nature of the relationship between thinking skills and reading comprehension, the use of the correlation coefficient (r) is indispensable.

Definition of the Correlation Coefficient "r"

A correlation coefficient "r" expresses the degree of correspondence, or relationship, between two sets of scores. It is a relation between two or more variables that shows that increases in the magnitude of one variable is accompanied by increases or decreases in the magnitude of the other variable. Pearson's Moment-Product Correlation Coefficient is the most common correlation coefficient and it is used in this study.

The Correlation Coefficient Formula

The equation for the correlation coefficient (r) is:

$$\textbf{r (xy)} = \frac{\Sigma xy}{(N)(SDx)(SDy)}$$

Σ →the sum.

X → scores of experimental group in the thinking skills post test.

Y → scores of experimental group in the reading comprehension post test.

$x = (X - \overline{X} x) \rightarrow$ the deviation of x scores from the mean ($\overline{X}$ x is the mean of x scores: the sum of x scores divided by the number of cases N)

$y = (Y - \overline{X} y) \rightarrow$ the deviation of y scores from the mean ($\overline{X}$ y is the mean of y scores: the sum of y scores divided by the number of cases N)

$xy \rightarrow$ the cross-products (multiplication of *x* and *y* deviations).

N → the number of cases.

$$SDx = \sqrt{\frac{\Sigma x^2}{N}} \rightarrow \text{Standard deviation of X scores.}$$

$$SDy = \sqrt{\frac{\Sigma y^2}{N}} \rightarrow \text{Standard deviation of Y scores.}$$

Interpretation of "r" Values

The value of r (xy) ranges from "-1" to "+1". A perfect positive correlation has a value of "+1", and a very strong positive correlation approaches "+1" (e.g. 0.90). Obviously, a perfect negative correlation has a value of "-1", and a strong negative correlation approaches "-1". Having (r) that equals "o" would be explained by the absence of any relation between X and Y.

Global Correlation between Intelligence and Reading Comprehension

In order to get the global correlation between thinking skills and reading comprehension, we need to refer back to the formula of the correlation coefficient. In this study, X represents the pupils' scores obtained in the thinking skills post test, and Y represents their scores in the reading comprehension post test. Thus, to calculate the correlation between thinking skills and reading comprehension, we replaced *x*, *y*, N, SD*x* and SD*y* by their values in the previously mentioned formula.

Pupil	X	Y	x	y	x^2	y^2	xy
1	06	10.5	-5.76	-0.46	33.1776	0.2116	2.6496
2	11	12	-0.76	1.04	0.5776	1.0816	-0.7904
3	07	05	-4.76	-5.96	22.6576	35.5216	28.3696
4	18.5	16	6.74	5.04	45.4276	25.4016	33.9696
5	13	11	1.24	0.04	1.5376	0.0016	0.0496
6	06	09	-5.76	-1.96	33.1776	3.8416	11.2896
7	17	13	5.24	2.04	27.4576	4.1616	10.6896
8	12	09	0.24	-1.96	0.0576	3.8416	-0.4704
9	13.5	13	1.74	2.04	3.0276	4.1616	3.5496
10	08	07	-3.76	-3.96	14.1376	15.6816	14.8896
11	11	12	-0.76	1.04	0.5776	1.0816	-0.7904
12	14	12	2.24	1.04	5.0176	1.0816	2.3296
13	16.5	10.5	4.74	-0.46	22.4676	0.2116	-2.1804
14	14	13.5	2.24	2.54	5.0176	6.4516	5.6896
15	15.5	13.5	3.74	2.54	13.9876	6.4516	9.4996
16	7.5	10	-4.26	-0.96	18.1476	0.9216	4.0896
17	16.5	09	4.74	-1.96	22.4676	3.8416	-9.2904
18	5.5	11.5	-6.26	0.54	39.1876	0.2916	-3.3804
19	15.5	13.5	3.74	2.54	13.9876	6.4516	9.4996
20	11	13	-0.76	2.04	0.5776	4.1616	-1.5504
21	04	07	-7.76	-3.96	60.2176	15.6816	30.7296
22	11	12.5	-0.76	1.54	0.5776	2.3716	-1.1704
23	13	06	1.24	-4.96	1.5376	24.6016	-6.1504
24	07	11.5	-4.76	0.54	22.6576	0.2916	-2.5704
25	20	13	8.24	2.04	67.8976	4.1616	16.8096
Σ	294	274	0	0	475.56	171.96	155.76
$\overline{X}$	11.76	10.96	/	/	19.0224	6.8784	/

Table 09: Computation of Pearson Product-Moment Correlation Coefficient "r" between

Thinking Skills and Reading Comprehension.

$$SD_x = \sqrt{\frac{\Sigma x^2}{N}} = \sqrt{\frac{475.56}{25}} = \sqrt{19.0224} = 4.36$$

$$SD_y = \sqrt{\frac{\Sigma y^2}{N}} = \sqrt{\frac{171.96}{25}} = \sqrt{6.8784} = 2.62$$

$$r\ (xy) = \frac{\Sigma xy}{(N)(SDx)(SDy)} = \frac{155.76}{25 \times 4.36 \times 2.62} = \frac{155.76}{285.58} = 0.54$$

r (xy) = 0.54

From the above table, we notice that next each pupil's number are his or her scores in the thinking skills post test (X) and the reading comprehension post test (Y). The sums and the means of the 25 scores are given under the respective columns. The third column shows the deviation (*x*) of every thinking skill post test score from thinking skills mean; and the fourth column, the deviation (*y*) of each reading comprehension post test score from the reading comprehension mean.

These deviations are squared in the next two columns, and sums of the squares are used in computing the standard deviations of the thinking skills and reading comprehension scores by the method described in this chapter. Rather than dividing each *x* and *y* by its corresponding SD to find standard scores, we perform this division only once at the end, as shown in the correlation formula under the table. The cross-products in the last column (*xy*) have been found by multiplying the corresponding deviations in the *x* and *y* columns. The computation of the correlation coefficient "r", the sum of these cross-products is divided by the number of cases (N) and by the product of the two standard deviations (SD*x* SD*y*).

Degree of freedom: is a statistical figure that roughly reflects the sample size (Dornyei, 2007).

df = n – 2

    = 25 – 2 = 23

df = 23

Since, with our one-tailed test (i.e. directional test), we predicted a positive correlation between thinking skills and reading comprehension, at 0.05 level of significance, with 23

degree of freedom, the critical value of r is 0.353 (Appendix 20). Since the value of "r"
obtained is 0.54 (as shown in table), we can say that the results of the coefficient of the
correlation between thinking skills and reading comprehension is very significant, and the
variables have a moderate positive correlation.

The following scatter graph represents the results clearly:
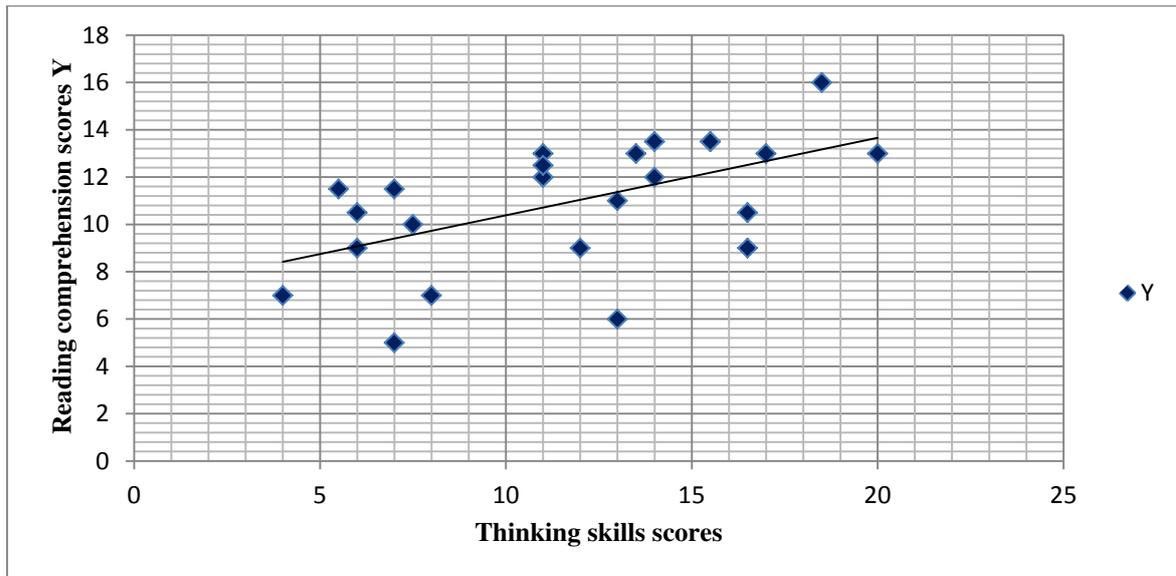
Graph 04: Global Correlation between Thinking Skills and Reading Comprehension.

Each point of this diagram indicates the score of each pupil in both thinking skills
(horizontal axis) and reading comprehension (vertical axis). It is noted that the 25 cases in
the group are distributed along a diagonal running from the lower left- to the upper right-
hand corner of the diagram. This distribution indicates the strong positive correlation
between thinking skills and reading comprehension, since it shows that almost each pupil
occupies the same relative position in both variables (high thinking skills abilities → high
reading comprehension, low thinking skills abilities → low reading comprehension).
However, there are some exceptions; there are some pupils who did not correlate as
expected. In other words, there are some respondents who get good results in the thinking
skills post test and scored less in the reading comprehension post test. However, these
special cases do not affect the significance of the results.

With our significant results, it is possible to predict a pupil's relative scoring in reading comprehension from the knowledge of his or her score in thinking skills. In other words, our hypothesis is confirmed. Yet, our sample has limited generalization.

Conclusion

During the experimental treatment that has lasted for nearly two months, our pupils received a plenty of activities and instructions that aimed at fostering their thinking abilities to increase and facilitate their comprehension of written texts.

The results obtained from the experimental group and which have been developed to better achievements after the treatment proved the important effect that thinking skills have on improving pupils' comprehension abilities. This is reflected in the both comparison between the means of scores obtained by the two groups and which was statistically significant and the correlation between our variables in the experimental group.

Introduction

After the completion of our study investigation, we saw that it was necessary to include teachers' points of views and first year secondary school pupils' opinions towards developing thinking skills as a key element in enhancing pupils' general comprehension and approaching of written texts during courses generally and exams specifically. This chapter provides an analysis of the obtained data which are presented and discussed quantitatively and qualitatively.

Design and Description of the Two Questionnaires

Questionnaires are the most commonly used instrument for collecting data in any research, they are extremely flexible and can be used to gather information on almost any topic from a larger or smaller group of subjects and most importantly with fewer efforts and in precise times as they are easy to construct. Such characteristics of questionnaires are what made us decide to adopt this instrument to collect data for the present investigation about developing thinking skills and abilities. The type of questionnaires that we intended to use is self-administered pencil-and-paper questionnaires. When planning the overall structure of the questionnaire, questions were arranged from general to specific. This is because we want to gradually familiarize pupils with the topic of the research and slowly refine their ideas thus the questionnaires were implicitly divided into three sections.

We would have involved more teachers, pupils, and more questions but by fear of not assigning our work in time, the number was restricted.

Aims of Questionnaires

In our study, we preferred to use two types of questionnaires. One administered to first year pupils at Omar Idriss secondary school in El-Kantara, and the second one administered to the same secondary school's teachers of English. The two questionnaires aim at depicting their opinions about the investigated subject.

Both questionnaires are divided into three sections and those latter state nearly the same issues described in the theoretical part of our study.

Pilot Study of the Questionnaires

Piloting is more important in quantitative studies than in qualitative ones, because quantitative studies rely on the psychometric properties of the research instruments. Thus as Dornyei stated "piloting is an essential part of quantitative research and any attempt to shortcut the piloting stage will seriously jeopardize the psychometric quality of the study" (2007, p.75). Piloting according to him can avoid a great deal of frustration and possible extra work later on. Through the pilot study, we can check the layout and everything that might be missed will be taken into consideration in the next administration.

In order to check that all the questions and instructions are clear, the questionnaire was handed in to fifteen pupils (they belong to the control group) who have the same profile as the study population i.e.; they are all first year pupils studying at the same academic school. Also, teachers' questionnaire was piloted beforehand, and distributed to three teachers of English working in the same institution.

Dornyei (2007) asserted the importance of piloting research tools and procedures claiming that the results achieved from the questionnaire depends mainly on the actual wording of the items. It includes 'field testing', that is, piloting the questionnaire at various stages of its development on a sample of people who are similar to the target sample for which the instrument has been designed.

Pupils' Questionnaire

Concerning pupils' questionnaire and when discussing with the respondents, it seemed that the lack of clarity of the some questions was caused by their unfamiliarity with the vocabulary used in those questions or wrong interpretation made by some. So the

explanation or rather the translation into Arabic of difficult words, like 'decoding', 'predict', and 'thinking skills' were considered during the preparation of the next questionnaire.

Some modifications after the pilot study were made in terms of adding some needed questions that add more information for the analysis and deleting others. Those questions are the following:

Question 10 was added to the previous 9 questions in section two of the questionnaire.

Question 10: The psychological factors which can affect your comprehension of the text are:

a- Lack of confidence in the ability to understand a text from a first reading. ☐

b- Losing concentration when reading. ☐

c- Exhaustion; that is the act of reading is mentally a tiresome activity. ☐

d- Feeling anxiety because you are taking the exam. ☐

This item about the psychological factors was added to add more clarifications about the reasons hindering to reach comprehension of a given text. This is because psychological factors might have negative effects on pupils' texts comprehension like lack of confidence in the ability to understand a text from a first reading.

Also, other 3 questions were omitted from section three because they are just additional ones besides the necessary ones. These questions are the following:

Question 01: Does the title of a book, a text, or an article give you an idea about its content before you start reading?

a- Yes ☐   **b-** No ☐

Question 04: If "no", what do you do then?

a. Stop reading ☐

b. Change your prediction (or guess) ☐

c. Reread what you have already read ☐

Question 06: If yes, what do you think the importance of prediction (or guessing) for reading comprehension is? (You can tick more than one box. In this case, please rank your choices from 1 to the most important until 3 or 4 to the least important).

a. It warms you to the topic (makes the topic familiar to you before you start reading) ☐

b. It helps you become confident (not frightened) about reading a new text ☐

c. It saves your time ☐

   Besides making some additions and deletions of items, other changes concerns reordering the flow of questions were made to make them correlated with each other.

 Teachers' Questionnaire

   As for teachers' questionnaire, it has also been revised after the pilot study where we came to just add two other questions. Teachers were given a free space to express their evaluation of the questionnaire. They stated that the questionnaire's instructions were clear and that they did not object to answering any question as one teacher who stated that he is democratic. Also, we asked them if any major topic have been neglected or omitted, one teacher claimed saying "no", the second teacher wrote "maybe", of course since it is something that concerns our own research subject and we are more aware about our aims and objectives. The third teacher stated that since the three skills that we focused on in our study are explained so nothing is ambiguous. Another question was about the layout of the questionnaire, all the participants claimed it was very attractive and clear. As for any comments, the teachers thanked us for the work which they argued that it was interesting. These questions on which changes were made are the following:

Question 03: How about reading?

   This item in section one was added to make specific teachers' comments about the reading skill difficulties.

Question 05: What, in your opinion, are the major causes behind that?

This item was also added into the teacher's questionnaire in section three to make clearer teachers' responses concerning their attitudes towards pupils' application of their thinking abilities during texts' reading comprehension.

Description of the Two Questionnaires

Both the questionnaires were administered to our target samples after they had undergone the experimental treatment.

Pupils' Questionnaire

After piloting the questionnaire to only 15 pupils from the control group, three aspects of the response patterns as being defined by Dornyei;(a) missing responses and possible signs that the instructions were not understood correctly; (b) the range of the responses elicited by each item since statistical procedures require a certain amount of variation in the scores; and (c) the internal consistency of multi-item scales that should measure the same target area. After making the revision and some items were refined, the second administration of pupils' questionnaire was handed in to 30 pupils from both groups control (N= 15) and experimental (N=15) from the same school. The 30 pupils have been chosen randomly from each group. The procedure took about half an hour for each group during normal courses. Afterwards, pupils' responses were collected to be analyzed.

Pupils' questionnaire is a twenty items divided into three sections. Each one represents a different but a related purpose. All copies include four open-ended questions, the rest are close-ended questions. These sections aim in one side to provide pupils with the opportunity to express their viewpoints about their level in English, it also contains questions concerning their teacher' contribution as a motivator for encouraging his pupils to improve reading comprehension. Besides that, it seeks the practical difficulties that they use to encounter during text reading comprehension and surveys their attitudes towards

developing thinking skills. On the one side, the information collected from these sections is going to elicit information about the respondents and to be taken into account as a basis data to consider when analyzing the experimental treatment.

The results of the questionnaire are analyzed below with precise comments of the emerged remarks.

Section one. It includes factual questions to find out certain facts about the respondents, it is entitled "Background Information". It contains three questions; it attempts to give a general overview about pupils' gender, their class and the school they belong to.

Section two. This section is entitled "Pupils' Reading Comprehension". It includes behavioral questions since it is used to find out what the respondents are doing or having done in the past, focusing on actions, and habits, in addition to attitudinal questions, which surveys pupils' attitudes, opinions, beliefs, interests, and values. It contains ten questions that seek pupils' general level in studying English, their attitudes towards reading, and their approaching on written texts as either being easy or difficult and reasons behind that.

Section three. It is entitled "Introducing thinking skills to text reading comprehension". It includes both types of behavioral and attitudinal questions. It contains nine questions. The final section allows students to evaluate their application of some thinking skills. It also surveys their opinions towards the application of the thinking skills and whether they would be helpful in improving their reading comprehension.

Teachers' Questionnaire

Teachers' questionnaire was distributed to three teachers of English in Omar Idriss secondary school after it was piloted and revised afterwards. Similar to pupils' questionnaire, teachers' questionnaire includes both types of questions (open-ended and close ended). It contains fourteen questions divided into three sections. Its main concern is to survey teachers' viewpoints about their pupils' difficulties in learning English as a

foreign language, their opinions towards implementing some of the thinking skills that we focus on throughout our study and how it can be contributed within the curriculum.

Section one. This section is entitled "Background knowledge". Like in pupils' questionnaire, this section represents teachers' background information which clarifies their qualification, sex and their experience period in teaching English in the secondary school level.

Section two. It is entitled "Pupils' reading comprehension". It seeks their opinions about the difficulties their pupils encounter with the English language skills in general, and texts reading comprehension in particular and how they deal with certain difficulties.

Section three. The questions contained in this section examine teachers' attitudes concerning whether developing pupils' thinking skills might improve their comprehension of written texts and what might affects it. It also seeks their opinions towards contributing teaching thinking skills through the curriculum and the techniques available for achieving that. The last question provides a free space for their personal evaluation about the study subject.

Administration of the Questionnaires

The questionnaires have been administered to pupils and teachers at the end of the second term of the academic year.

In a usually held class meeting, one of history and the other of physics, the researcher has administered pupils' questionnaire items to the sample population following certain steps.

After distributing and mentioning the purpose of the questionnaire, the researcher explained to pupils what they have to do paying their attention that there are not right or wrong answers; they are just required to answer them freely and honestly and if they have no answer to a given question, they can simply say I do not know. Then, pupils were asked

first to fill in the identifying information spaces (name). Next, as the teacher is explaining the 20 questions one by one, pupils are ticking in the right boxes. Pupils were encouraged to ask any question, request, or any clarification helping them to respond to the questionnaire truthfully either during the teacher's reading or after its completion in case there was any problem understanding the questions, or if they were confused about how to answer. Finally, she collects the subjects' sheets for study and analysis, after allowing them all the time necessary (30 minutes) for answering the questions in a physics session after the teacher finished giving the lesson rather we have been limited by the session's duration.

Teachers' questionnaire was distributed to three teachers and given back one day after.

Results and Analysis of Pupils' Questionnaire

Many conclusions relevant to the present study can be drawn from the learners' responses to the questionnaire.

The procedure for analyzing data from the questionnaire is as follows:

• Statement of the items as they appear in the questionnaire.

• Aim of the items.

• Answers to the items in the form of tables and graphs.

Section One: Background Information

Question 01. Sex distribution: the questionnaire resulted in the following sex distribution:

Response	Male	Female
Participants	14	16
Percentage	46,67%	53.33%

Table 10: Pupils' Sex Distribution.
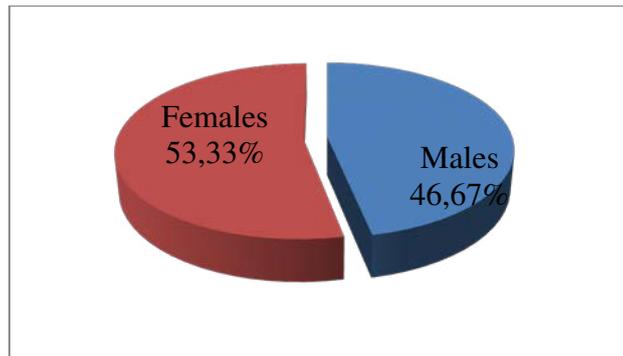
Graph 05: Informants Sex Distribution.

The table reveals that out of 30 participants, 14 are males (46,67%) and 16 are females (53.33%). They were chosen randomly from two groups as they belong to the same level; first year pupils in the secondary school.

Section Two: Pupils' Reading Comprehension

Question 01. How long have you been studying English?

This item was intended to know the period pupils have spent studying English, not only at the secondary school but also at the middle school. The results are presented in the following table:

Response	5 years	6 years	7 years
Participants	28	01	01
Percentages	93.34%	3.33%	3.33%

Table 11: Pupils' Years of Studying English.
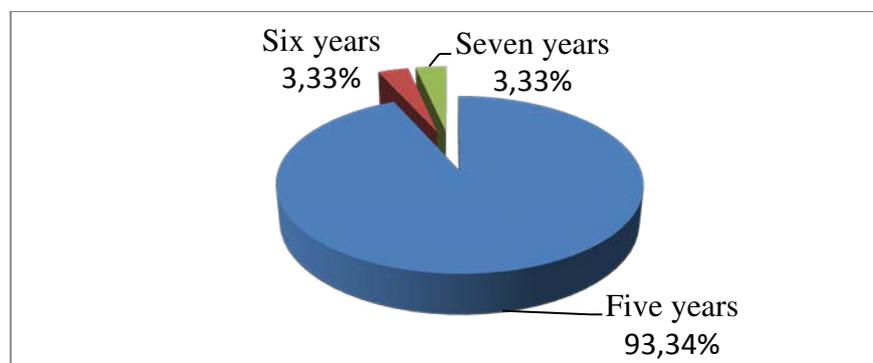
**Graph 06:** Pupils' Years of Studying English.

Table 11 shows that 93.34% of the total population of the study (N=30) have been studying English for 5 years (4 years at the middle school, 1 year in the secondary school). Besides, 3.33% have been studying English for more than five years (6 years). Also only 3.33% have been studying English for 7 years. It means that nearly all the participants have passed the essential or first steps in language development (the basics) at the middle school and they are expected to be familiar with reading texts and are used to different types of comprehension questions such multiple choice questions, inferring meaning from texts, and guessing the writer's points of views.

Question 02. Do you consider your level in English?

a. Very good ☐   **b.** Good ☐   **c.** Average ☐   **d.** Poor ☐

Through this item we come to know the level of proficiency of students in the language they are studying – English. The findings are summarized in the subsequent table:

Response	Very good	Good	Average	Poor
Participants	00	15	14	01
Percentage	00%	50%	46.67%	3.33%

Table 12: Pupils' Level in English.
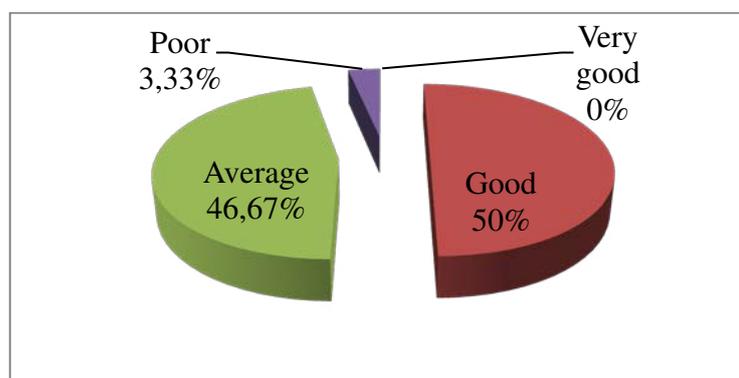
Graph 07: Pupils' Level in English.

Table 12 indicates that 50% of the total population (N= 30) considers their level in English as 'good', 46.67% claim to have an average level, and there is no pupil who claims

to have a 'very good' level in English. Only one, who claims to have a 'poor' level in English. Generally, good level suggests a basic competence that pupils achieve in English and ability to comprehend reading to a certain extent. Average level, on the other hand, indicates that students still have some deficiencies in English language (mainly in vocabulary).

Question 03. Do you like reading?

    a. A lot ☐   **b.** A little ☐   **c.** Not at all ☐

This item was intended to measure how much students like reading. The results are illustrated in the following table:

Response	A lot	A little	Not at all
Participants	8	17	5
Percentage	26.67%	56.67%	16.66%

Table 13: Pupils' Love of Reading.
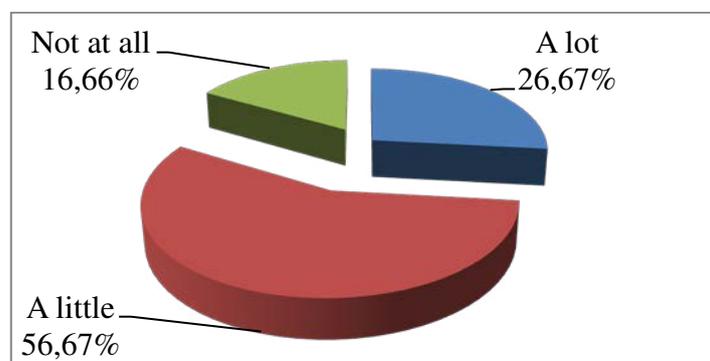
Graph 08: Pupils' Love of Reading.

Table 13 shows that 56,67% of the total population (N=30) do not like reading so much (only a little), 26.67% claim they like reading a lot. Only five pupils (16.66%) claim that they do not like reading. For those who do like reading a little, this may be because pupils may not have time to practice reading and devoted it just to the more important subjects like mathematics but not foreign languages. Also, pupils may consider reading as irrelevant

to learning English unlike vocabulary knowledge, or they may have other hobbies and interests of much importance to them than English since they followed the scientific stream. They also may feel that studying English is imposed on them. For those who like reading, this indicates that reading is an important task to be fulfilled since they undergone through reading lessons in the classroom.

Question 04. How often does your teacher encourage you to read?

a. Frequently ▢   **b.** Sometimes ▢   **c.** Rarely ▢   **d.** Never ▢

Through this item, we wished to check whether the teacher motivates and encourages his pupils to read. The table below represents their answers:

Response	Frequently	Sometimes	Rarely	Never
Participants	6	10	6	8
Percentage	20%	33.33%	20%	26.67%

Table 14: Teacher Encouragement of Pupils.
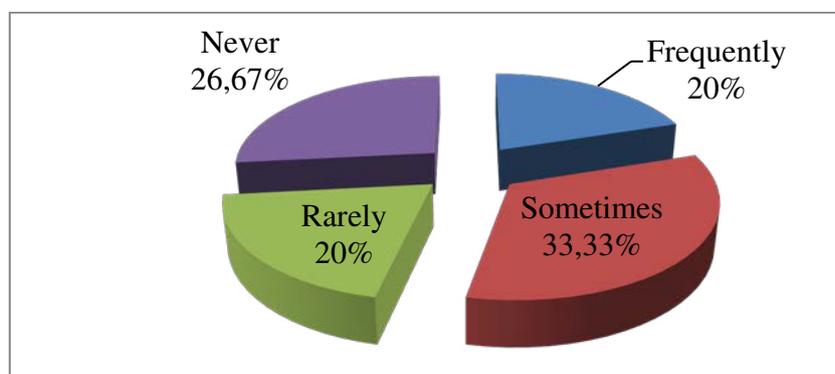
Graph 09: Teacher Encouragement of Pupils.

Table 14 determines that 33.33% of the whole population (N=30) claimed that the teacher does sometimes encourage them to read. 26.67% claimed that the teacher never encourage them to read in English. Only 20% of the participants claimed that the teacher does frequently encourage them to read. The same percentage of pupils (20%) claimed that the teacher rarely encourages them to read. According to the results, we can deduce that

pupils are not used to reading, hence little good interpretation of comprehension questions but still the teacher plays a crucial role in pushing and encouraging his pupils to read.

Question 05. How often do you read in English without being asked?

      a. Frequently ☐   **b.** Sometimes☐   **c.** Rarely ☐   **d.** Never ☐

The aim behind this item is to check the pupils' will to read without being asked by someone else. The following table highlights their responses:

Response	Frequently	Sometimes	Rarely	Never	No answer
Participants	2	6	15	6	1
Percentages	6.67%	20%	50%	20%	3.33%

Table 15: Pupils' Self-motivation to Reading.
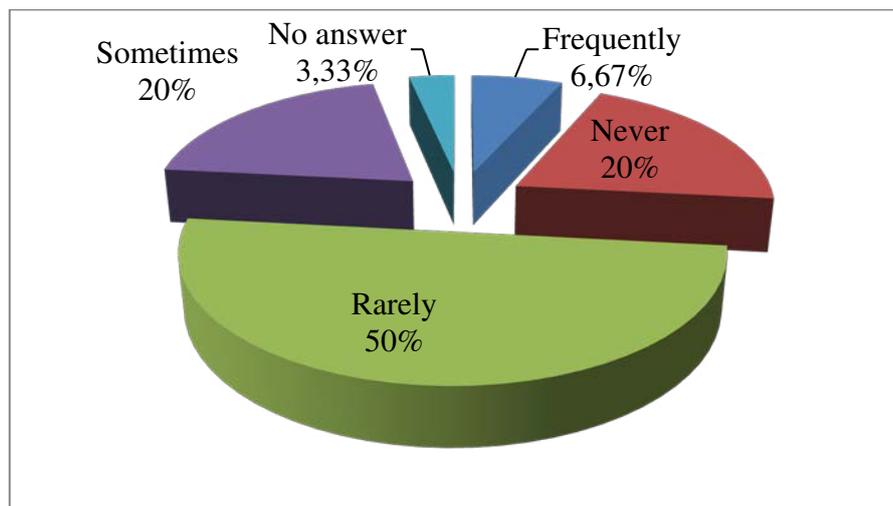
Graph 10: Pupils' Self-motivation to Reading.

Table 15 reveals that 50% of pupils rarely do read by themselves without being asked to. 20% of the population answered that they sometimes read without being asked. The same percentage of pupils (20%) reported that they never do without being asked. The rest of the participants (6.67%) said to frequently read without being asked. Only one pupil

(3.33%) gave no reply to this question. The results show that these pupils have an inner desire to read, they do not see reading as an obligatory task.

Question 06. Your level in reading comprehension (according to your marks) is:

a. Good ☐   **b.** Moderate ☐   **c.** Weak ☐

The aim behind this question is to check pupils' comprehension abilities of reading materials depending on their achievements and scores they use to get during examinations. The coming table summarizes the findings:

Response	Good	Moderate	Weak
Participants	8	19	3
percentage	26.67%	63.33%	10%

Table 16: Pupils' Level in Reading Comprehension.
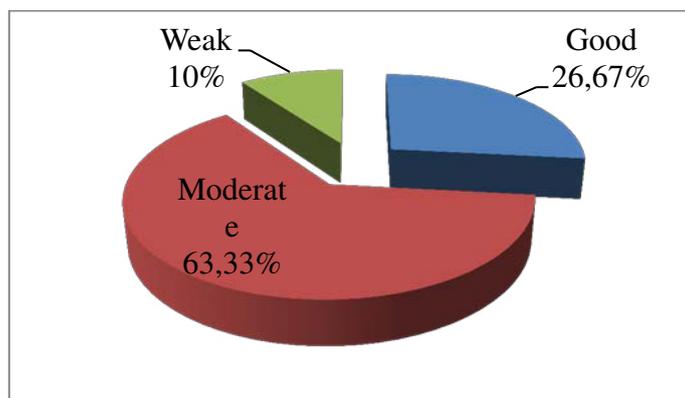
Graph 11: Pupils' Level in Reading Comprehension.

According to the above table, 63.33% of the total population (N=30) claimed that they are moderate in texts' reading comprehension depending on their results. While 26.67% of the population, they replied to be 'good' in reading comprehension. As for the rest (10%), they reported to have a weak level in reading comprehension. We can notice that nearly more than half the population have little or even less problems in reading comprehension activities, this might be due to difficulties in extracting the right interpretations from the text, or difficulties even in understanding what is meant by the questions or how the

questions should be answered. Besides that, little practice of dealing with comprehension questions that needs deep thinking may affect the process of approaching through the writers' ideas and what he means. For the rest percentage of the population, it seems that this small portion of pupils represents the same ones who stated that they like reading a lot (question 03, table 13), and a good comprehension of written texts indicates good thinking and analyzing of written texts.

Question 07. Decoding the exam's questions is generally:

    a. Difficult ☐   **b.** Not difficult ☐   **c.** Very easy ☐

The present question seeks to investigate pupils' general interpreting and understanding of exams' comprehension questions. The responses are shown in the following table.

Response	Difficult	Not difficult	Very easy
Participants	6	23	1
percentage	20%	76.67%	3.33%

Table 17: Pupils' Estimates of Degree of Difficulty in Interpreting the Exams' Questions.
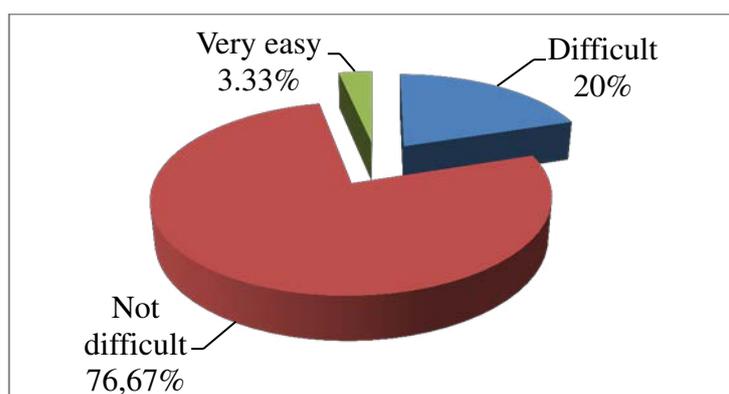
Graph 12: Pupils' Estimates of Degree of Difficulty in Interpreting the Exams' Questions.

Among the pupils who filled in the questionnaire, 76.67% said it was not difficult for them to decode the exams' questions, 20% said it was difficult, and only 3.33% claimed that it was very easy.

It seems that teachers simplify the questions to make them clearer to pupils to make the interpretation of questions easy. In other words, the majority of them handle the simplest levels of comprehension. Moreover, the proportion 20% reveals that many pupils are lacking such kind of skills or do not effectively put it into practice. Furthermore, very few of them are effective in interpreting exams' questions (3.33%).

**Question 08.** How do you find the following types of exercises?

- Multiple choice   **a-** Difficult ☐   **b-** Not difficult ☐   **c-** Very easy ☐

- True/ false   **a-** Difficult ☐   **b-** Not difficult ☐   **c-** Very easy ☐

- Matching   **a-** Difficult ☐   **b-** Not difficult ☐   **c-** Very easy ☐

- Sentence order   **a-** Difficult ☐   **b-** Not difficult ☐   **c-** Very easy ☐

Through asking this question, we aim at getting deeper in our subject matter and discover pupils' attitudes towards a variety of reading comprehension activities. The findings are illustrated in the following tables:

Response		Difficult	Not difficult	Very easy
Participants	**Multiple choice**	3	9	18
Percentages		10%	30%	60%
Participants	**True/ false**	2	14	14
Percentages		6.66%	46.67%	46.67%
Participants	**Matching**	3	19	8
Percentages		10%	63.33%	26.67%
Participants	**Sentence order**	16	13	1
Percentages		53.34%	43.33%	3.33%

Table 18: Pupils' Attitudes towards: "Multiple Choice", "True/false", "Matching", and "Sentence order" Activities.

Multiple choice   True/false

Matching   Sentence order
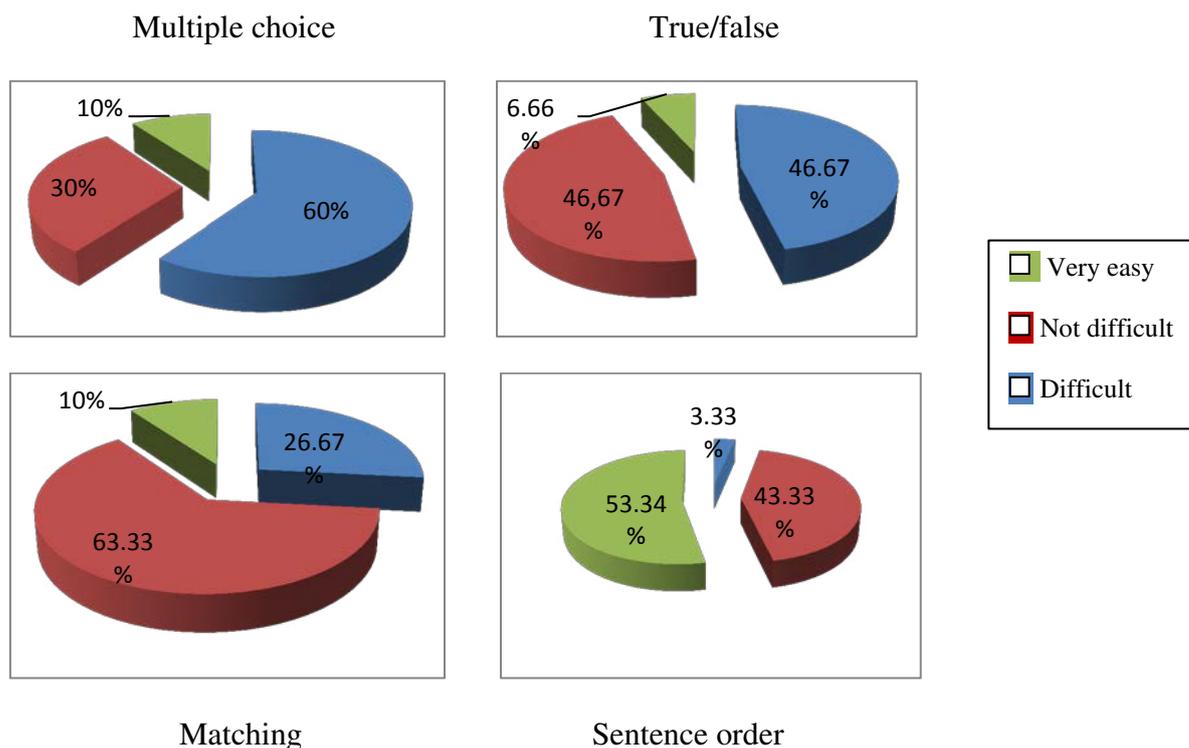
Graph 13: Pupils' Attitudes towards: "Multiple Choice", "True/false", "Matching", and

"Sentence Order" Activities.

What could be resulted from the above table concerning multiple choice questions is

that 60% of the total population considers this type of question as being very easy. 30% of

the population stated that multiple choice activities are not difficult. Only 10% who

claimed the difficulty of this type of activities for them. As for true/ false questions,

46.67% reported the easiness and simplicity of this question. The same percent of pupils

stated that this type of activities is not difficult. While the rest of participants (6.66%), they

claimed the difficulty of the question. Concerning matching questions, 63.33% of the

population reported that this kind of activities is not difficult. 26.67% of the participants

claimed that it is very easy. Only 10%, who considered it to be a difficult task for them.

Finally, 53.34% of the whole population stated that sentence order question are difficult for

them to handle, nearly the same population (43.33%) answered with "not difficult" as their

attitudes towards sentence order activities. As for the rest participants, only 3.33% who

said that this kind of activities is very easy.

We can justify the difficulty of these activities rather the different percentages representing them by referring to each type, what kind of answers do they require, and how it is should be answered by respondents. To be taken as an example, multiple choice questions is a kind of the activities where pupils are asked to decide on among different choices in connection to the instruction given. This becomes more confusing especially if somehow similar answers are provided. Concerning true/ false, and matching can be similar just like solving a mathematical problem but to do so, pupils should first proceed with certain steps as shown in the theoretical part of this research before coming to choose the supposed correct answer. Sentence order activities need to be dealt with in a careful way where pupils apply predicting skills so as to construct or guess the end of a sentence or a story according to the activity given.

Question 09. What makes questions of an English exam difficult for you?

In this item, we preferred to give our pupils an open ended question, in which they are provided with a free space to explain the reasons behind considering some questions as being difficult. The following table represents their answers.

	Response	Participants	Percentage
Difficult exam questions	**a/** Level in English	24	80%
	b/ Time constrains.	2	6.67%
	c/ Bad preparation.	7	23.33%
	d/ Psychological factors.	7	23.33%
	e/ Teacher' role as a motivator and a problem solver.	1	3.33%
Simple exam questions	**f/** Deep thinking to simplify things to me and complicated question are then easier for me.	1	3.33%

Table 19: Pupils' Justifications for the Difficulty of Exam's Questions.
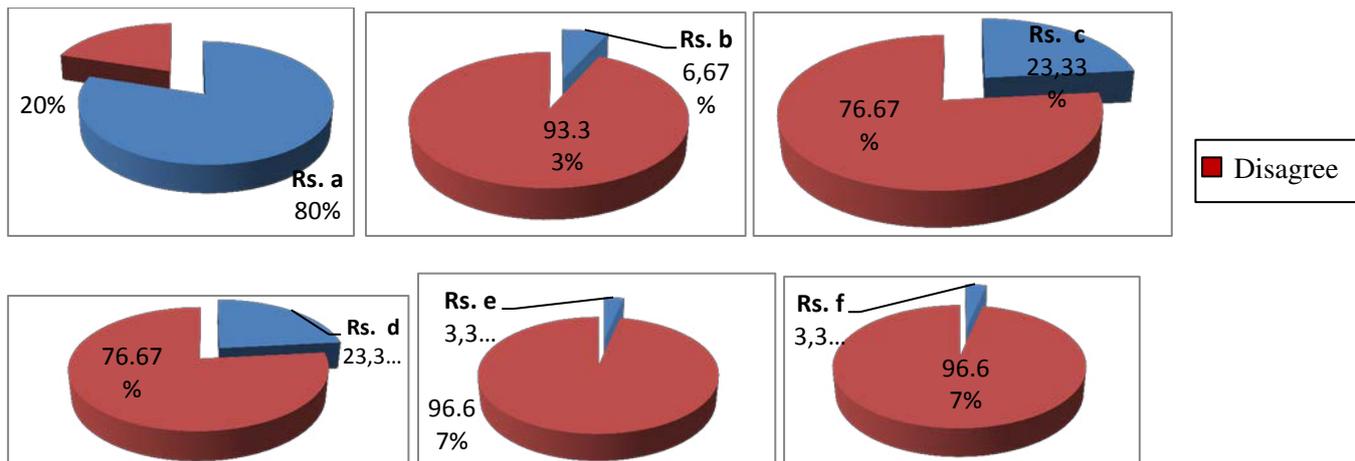
Graph 14: Pupils' Justifications for the Difficulty of Exam's Questions.

The analysis of the answers we got from the above question help us to come up with some interpretations. We try to categorize their claims into some factors. From the above table, concerning the first factor "level in English", 80% of the whole population (N=30) explained the difficulty of the questions exam by referring to their low or weak level in English which hampers both their understanding of the text or the ambiguity of the indirect questions. The text might be difficult in terms of its type which is of higher level, vocabulary, and its implied ideas, less background knowledge of the topic. Some pupils reported that for him English is considered as a foreign language in our society which reflects its little importance for the pupils' interests being careless about studying it. Others claimed that it is due to the diversity of the English rules and not just one that they can base on. Adding to that, 6.67% of the population justified that because of the time constrains which imposes on them to read the text for just one time or to finish with all the questions rapidly rather than thinking carefully about the asked questions, according to them, the time allotted to answer is relatively short. Others (23.33%) of the participants explained the difficulty of the exam instructions because of the bad preparation claiming that they forget a lot about their revision while others argued that they do not even specify some time for English courses to revise. Other respondents said they lacked organization, and that they usually get confused. Also, the same percentage of population (23.33%)

considered psychological factors as a key reason behind misunderstanding exam questions, for instance, feeling anxiety, doubtfulness, little concentration, feeling unconfident. Some respondents explain that the overall exams conditions and settings usually make them stressed and afraid or that they are not sure whether they are well prepared or not, and that respondents think they would have a bad mark because they are weak in reading or that it is difficult as a skill. Only one pupil (3.33%) claimed the role of the teacher as a facilitator being careless about pupils' difficulties. Other respondents think that their fear and stress results from the fact that the teacher is severe and that s/he would ask difficult questions, or that they cannot expect how the questions would be. Passing on to the second opinion, only one pupil (3.33%) objected the difficulty of the exam questions, he said that exam questions are very easy because, according to what he said, he does his best to simplify the instructions, and to think deeply about them to get the exact meaning, so feeling afraid and stressed is something quite normal in exams. He also stated that easy questions are more difficult for him than difficult ones. We can, besides that, justify his reply because that he finds no difficulty with the exercises since most of them consists of choosing the right answer among different propositions.

Question 10. The psychological factors which can affect your comprehension of the text are:

  a. Lack of confidence in the ability to understand a text from the first reading ☐

  b. Losing concentration when reading. ☐

  c. Exhaustion; that is the act of reading is mentally a tiresome activity. ☐

  d. Feeling anxiety because you are taking the exam. ☐

We asked our pupils the above question to investigate the psychological factors that might have an effect on their reading skills whether to be successful which in turn affects their responses.

Response	Participants	Percentage
a. Lack of confidence in the ability to understand a text from a first reading.	16	53.33%
b. Losing concentration when reading.	16	53.33%
c. Exhaustion; that is the act of reading is mentally a tiresome activity.	6	20%
d. Feeling anxiety because you are taking the exam.	19	63.33%

Table 20: Pupils' Psychological Factors that Affect their Comprehension.
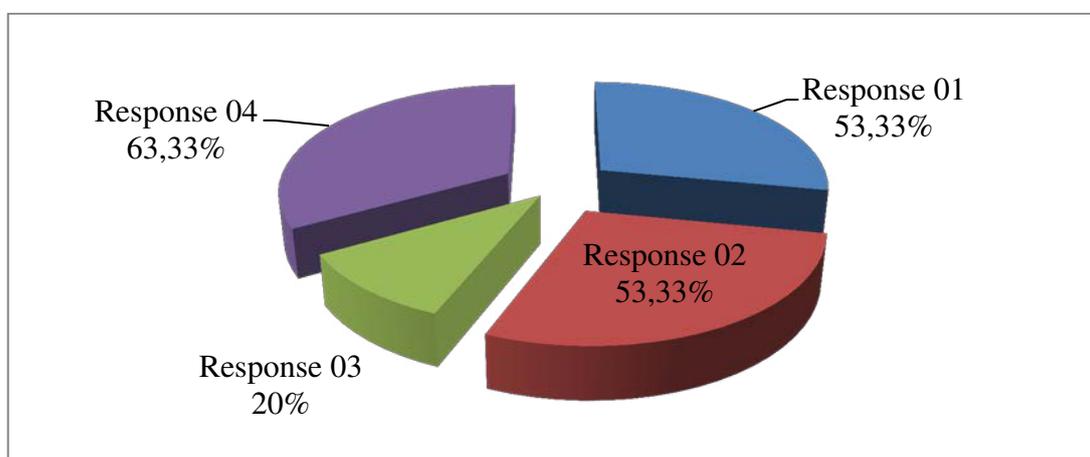
Graph 15: Pupils' Psychological Factors that Affect their Comprehension.

According to the results shown in the above table, we can assert that psychological factors can also interfere in the reading process. On the whole, 63.33% of the participants reported to feel anxiety because of taking the exam, reasons behind that were clarified in question 9, table 10. Also, 53.33% of the respondents are affected by psychological factors such as 'lack of confidence'. This might be caused by their weak level in English or bad preparation or revision. In addition, comprehension difficulties facing our subjects seem to be caused by loosing concentration when reading (53.33%), like losing the flow of the author's ideas or misunderstanding his points of view. Finally, 20% of the total population (N=30) claimed that exhaustion is one of the psychological factors that might affect their

understanding, feeling tiresome may affect badly pupils' concentration during reading because they will be not put much emphasis on their answers and waiting just for the exam to finish.

Section Three: Introducing Thinking Skills to Texts Reading Comprehension:

In this section, we attempt to depict the source of the reading difficulties that the pupils face.

Question 01. Do you know how to solve comprehension questions (according to your marks)?

          a- Always ☐   **b-** Sometimes ☐   **c-** Never ☐

This item was intended to ask the pupils direct questions and to start introducing some of the thinking skills that we focus on in our study. Table 12 shows the results.

Response	Always	Sometimes	Never
Participants	6	22	2
Percentage	20%	73.33%	6.67%

Table 21: Pupils' Knowledge to Answering Comprehension Questions.
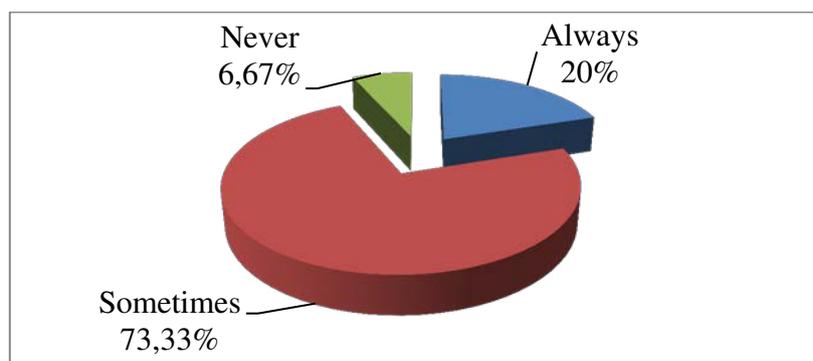
Graph 16: Pupils' knowledge to Answering Comprehension Questions.

From the previous table, 73.33% of the whole population (N=30) claimed to have little understanding and knowledge of the exam questions, we can notice that nearly over half of the population has problems dealing with comprehension questions. This might due to complexity of the instructions, or unfamiliarity with such kind of questions, or even being

unaware of the way to dealing with such kind of items. Only 20% of the respondents said to be able to solve comprehension questions, having a good level in English can help grasping what is meant by a given question and what the author aims behind asking it. While 6.67% of subjects reported to face difficulties answering those questions. For instance, pupils do not know how to choose the right answer among different or nearly similar answers, or decide what answer is suitable, like is choosing a one right title between other suggestions. They also do not know how to predict an end to a given story or predict what question should be asked according to the given answer.

Question 02. Does your teacher show you how to solve comprehension questions?

a- Yes ☐   **b-** No ☐

If yes, say how…

The reason behind asking our pupils the above question is to check whether teachers of English do their roles as facilitators and problem solvers to simplify things to pupils and help them understand better and facilitate tasks for them. Table 13 provides the following answers.

| Response	Yes	No
Participants	18	12
Percentage	60%	40%

Table 22: Teachers' Roles as Facilitators and Problem Solvers.
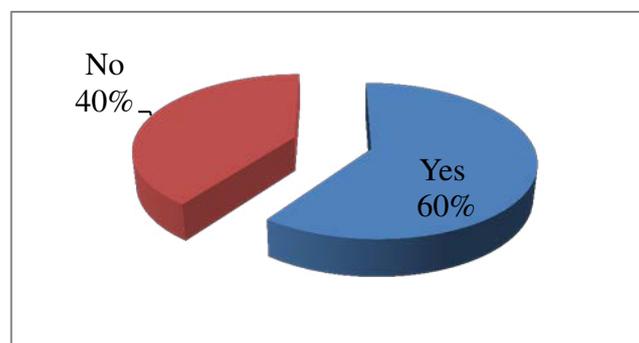
Graph 17: Teachers' Roles as Facilitators and Problem Solvers.

According to the represented results, it is clear that there is no agreement among pupils towards the role of the teacher in the classroom. On the one hand, 60% of the total number of pupils agreed on 'yes' and that the teacher shows them and explains for them how a given question should be answered and based on what. On the other hand, the rest of population (40%) denied totally the role of their teacher inside the classroom, specifically, they claimed that the teacher does not give or show them hints on how to solve comprehension questions.

Pupils were asked to justify their answers if their choice is 'yes'. Then, according to the above table, 60% of the pupils reported that the teacher explains the answers by referring to the text provided and the questions suggested. Also, he clarifies their mistakes and convinces them about the right answer through the key words used found in the text. Besides that, he emphasizes the importance of reading the text more than once, and decoding the exam question using clear terms because understanding the question is half the answer. Other pieces of advice include the necessity of organizing the data in clear terms to lead them directly to the right answer.

Question 03. Does your teacher show you how to choose a specific answer among different choices?

a- Yes   □   **b-** No   □

Going deeper into the problem leaded us to ask the above question in order to make clearer and focus on some of the thinking skills that we based on in our study. The results are provided in the following table.

Response	Yes	No
Participants	17	13
Percentage	56.67%	43.33%

Table 23: Teacher's Contribution in Multiple Choice Questions.
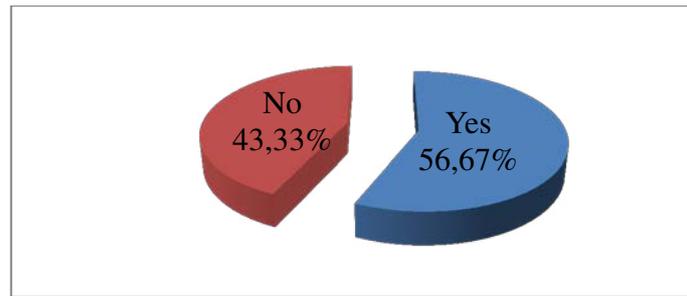
Graph 18: Teacher's Contribution in Multiple Choice Questions.

Table 23 shows us that 56.67% of the total population (N=30) chose 'yes' as an answer to that given question, it means that the teacher is doing his job and explains for pupils questions of that kind 'multiple choice questions', in which they are provided with certain propositions to choose among, this also goes hand in hand with their response in question 08, where 60% of the population agreed on the easiness of multiple choice question. As for the rest (43.33%), they seemed to deny that their teacher explains to them how to choose among different answers (decision making activities), this denotes whether pupils' level is either not good or that they do not concentrate with the teacher while he is explaining the answer. As it may denote that the teacher is not fulfilling his profession's duties as a facilitator of tasks and activities that are somehow difficult for pupils to tackle.

Question 04. Do you usually practice thinking games or activities inside the classroom?

a- Yes ☐   **b-** No   ☐

This item was intended to check the use and application of thinking activities or even games that might provoke their mental operations by teachers from time to time in the classroom, which will supposedly develop their thinking, and comprehensions of written texts as well as questions asked about it. The next table represents their answers.

Response	**Yes**	**No**
Participants	14	16
Percentage	46.67%	53.33%

Table 24: Pupils Practice of Games that Develop their Thinking Skills.
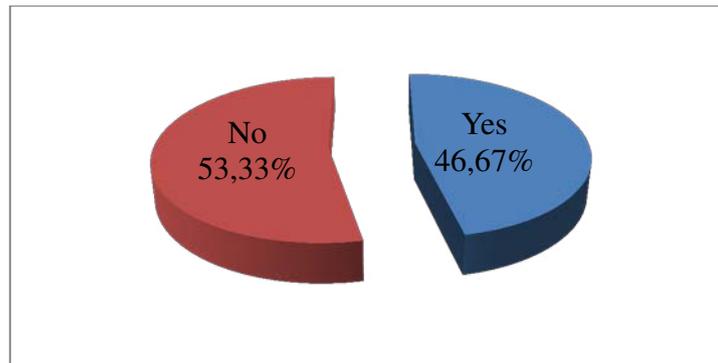
Graph 19: Pupils Practice of Games that Develop their Thinking Skills.

From the above table, we can notice that 46.67% of the participants (N=30) stated that they practice thinking activities as games inside the classroom with their teacher in left time of the session. For this question that should be agreed on by the pupils since they are taught by the same teacher but according to the table, over half of the population (53.33%) chose 'No' answer to the question. Due to that, we can say that pupils did not use to practice thinking games or activities inside the classroom which in turn may justify the difficulties that they face with exam questions. Then teachers are not aware of the importance of teaching thinking skills on pupils' reading comprehension.

Question 05. As you read, do you usually predict (or guess) what the writer is likely to say in the next word, sentence, paragraph, etc?

a- Yes ☐   **b-** No ☐

This item aims at investigating the students' use of prediction during the process of reading. The results are summarized in the coming table:

Response	Yes	No	No answer
Participants	15	14	1
Percentage	50%	46.67%	33.33%

Table 25: Pupils' Predictions about what Comes Next.
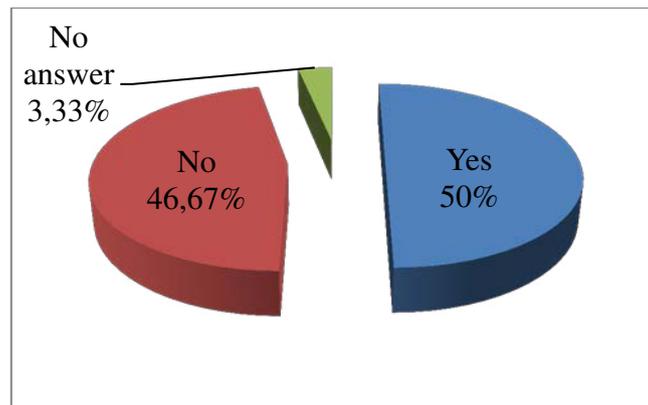
Graph 20: Pupils' Predictions about what Comes Next.

Table 25 shows that out of the total population (N=30), 50% usually make predictions about what to come next in the text. Only 46.67% do not make predictions about what comes next. There is only one pupil (3.33%) who gave no reply.

Question 06. If "yes", do your predictions (guesses) always get confirmed (they are always true)?

a- Yes ☐   **b-** No   ☐

This item aims at identifying whether pupils' predictions always get confirmed or not. The results are summarized in the following table:

Response	Yes	No
Participants	1	14
Percentage	6.66%	93.34%

Table 26: Confirmation o Pupils' Predictions.
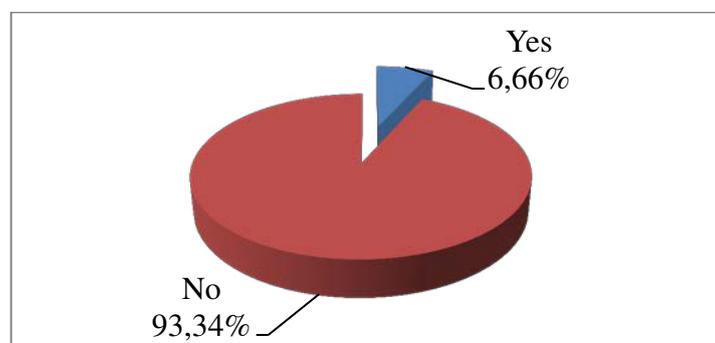
Graph 21: Confirmation of Pupils' Predictions.

Except for 46.67% who claimed to make no predictions, table 26 above indicates that 46.67% of the total population (N=15) their predictions do not always get confirmed. Only 3.33% of the total population their predictions always get confirmed. 33.34% of the population gave us no answer. It seems that those pupils do not know what to base on their predictions or how to connect what is to come next depending on previous events.

**Question 07.** Do you think prediction (guessing) is an important thinking skill?

    a. Yes ☐   **b-** No ☐

If yes, say why…

This item aims at giving an idea about the pupils' opinion of prediction as a thinking skill. Pupils' opinions are illustrated in the following table:

Response	Yes	No
Participants	29	1
Percentage	96.67%	3.33%

Table 27: Pupils' Appreciation of Prediction as a Thinking Skill.
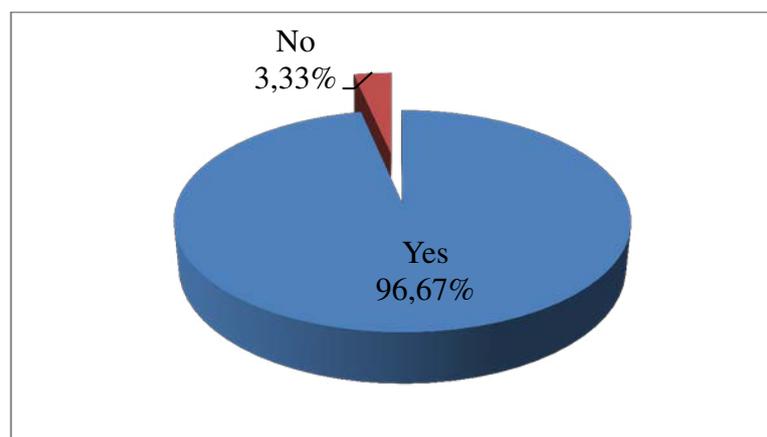
**Graph 22:** Pupils' Appreciation of Prediction as a Thinking Skill.

Table 27 indicates that 96.67% of the total population (N=30) has a positive opinion on the use of prediction. Only one participant (3.33%) of the total population develops a negative view about prediction. It seems that all pupils agree on the effectiveness of using

and applying that skill on their reading comprehension, and they are really aware of its value as a thinking and mental skill. For the one who gave a negative view, we can justify his choice that his predictions are, if ever being applied, never true, or that he has no idea of how to use it as a skill.

The second part of the question aims at seeking the participants' justifications for their choice that prediction is an important thinking skill.

Response	Participants	Percentage
a. It warms to the topic.	20	66.67%
b. It helps become self confident.	6	20%
c. It makes pupils' minds think and work	8	26.67%

Table 28: Pupils' Views on the Importance of Prediction.
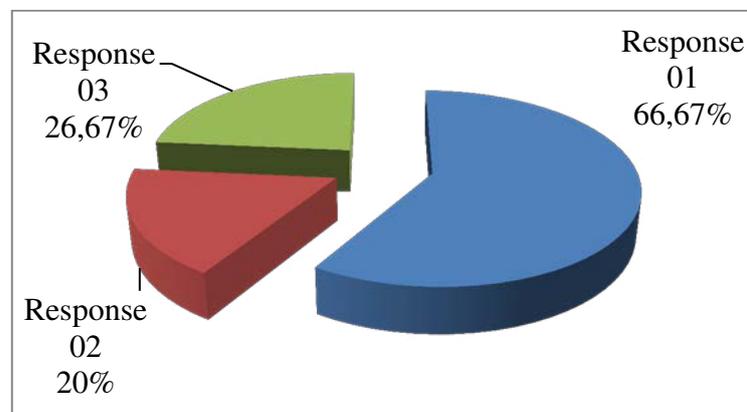
Graph 23: Pupils' views on the importance of prediction.

Table 28 indicates that except for the one who claims that prediction is not important, 66.67% of the total population (N=30) suggest that prediction is important because it warms the topic for them before reading it, it gives them an idea about the content of the test, it makes easier understanding it and specifies their expectations. Also, 26.67% have claim that prediction engage them in thinking operations such as enriching their

imagination, helps them analyze and think about what they are reading, 20% have said that prediction helps them become self confident because they might comprehend the questions, and find the answers in a quick and an intelligent manner, besides to that, it makes them become sure about their understanding and their answers. However, one pupil (3.33%) provided no justification for his 'yes' choice or importance of prediction.

Question 08. Do you think that you put into practice your thinking abilities during text comprehension?

a- Yes ☐   **b-** No   ☐

This direct question seeks to know whether pupils put into practice their thinking abilities after paying their attention to some of them in the previous question (problem solving, decision making, and predicting). The coming table provides their answers.

Response	Yes	No	No answer
Participants	22	7	1
Percentage	73.33%	23.33%	3.34%

Table 29: Pupils' Application of their Thinking Abilities.
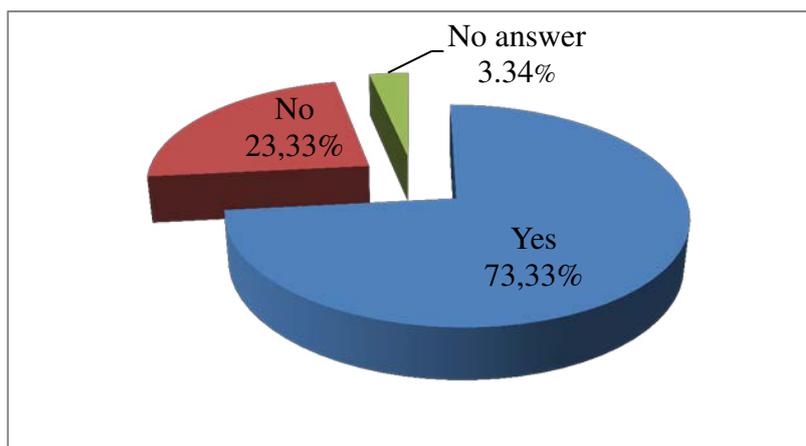
Graph 24: Pupils' Application of their Thinking Abilities.

What could be interpreted from the above table is that the majority of pupils (73.33%) do employ their thinking abilities during text reading comprehension, but it seems that the

application of those skills is not effective. Whereas the rest of pupils (23.33%) said that they do not put into practice their thinking abilities whether those abilities are lacking in their minds, or they don't know how to profit from them and employ them effectively during the reading process. This might result from lack of practice and being unaware of the term itself whether in the classroom or any place where thinking is needed and used. One pupil (3.33%) gave us no reply.

Question 9. Would you like to add any comment or suggestion?

This question for further suggestions is an opportunity for pupils to make any comments or suggestions they would like about the topic in general. Their suggestions were categorized and are summarized in the following table.

Response	Participants	Percentage
a. Practicing thinking activities inside the classroom with the teacher and with other modules.	3	10%
b. It is an interesting, enjoyable, useful and important topic	19	63.33%
c. It makes them and the teacher more conscious and fully aware about his pupils' lacks and problems. Also, it provokes their thinking abilities and increases their awareness concentration during reading and thus develops their level in study.	17	56.67%

Table 30: Pupils' Suggestions and Comments.
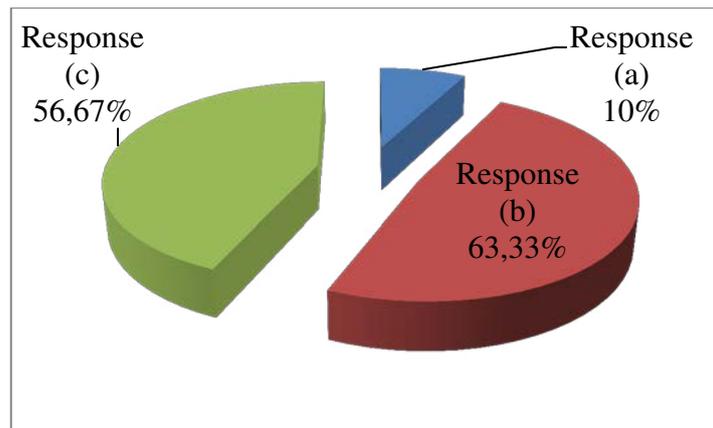
Graph 25: Pupils' Suggestions and Comments.

According to the table, we can deduce pupils' general points of views about the topic and as we see, 63.33% of the total population (N=30) agreed on the importance of developing thinking skills in order to enhance their comprehension of the reading material, besides it being joyful and interesting. Other pupils clarify that it arises their curiosity towards the positive effects of the mental abilities that happens in the mind. In addition to that, some pupils (10%) suggested that this topic will be included in the courses that they receive inside the classroom with other subjects too like mathematics as they suggested.

Results and Analysis of Teachers' Questionnaire

Section One: Background Information

Question 1. Please complete this part of the questionnaire first:

a- Gender: **a-** Male ☐   **b-** Female ☐

b- Grade:

**c-** License ☐   **b-** Magister ☐

How long have you been teaching English at secondary school?

To identify the teachers' profile, some background information about their degree, their status and the number of years of teaching English have been asked (tables 32, 33, 34).

Question 01. Sex distribution: the questionnaire resulted in the following sex' distribution:

Response	Male	Female
Participants	2	1
Percentage	66.67%	33.33%

**Table 31:** Teachers' Sex Distribution.
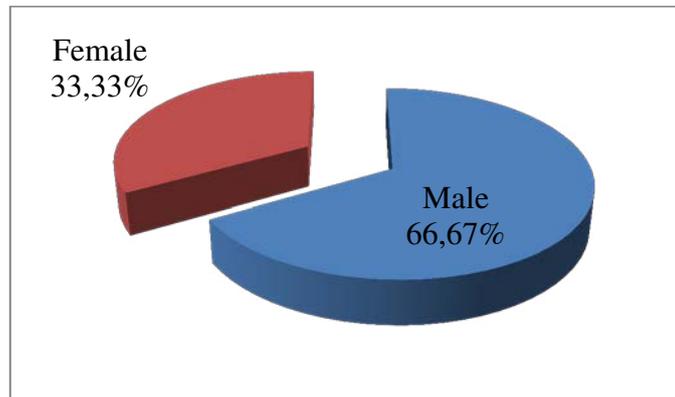
Graph 26: Teachers' Sex Distribution.

Out of 3, 2 teachers are males, and only one teacher is a female. We have investigated all the teachers of English in Omar- Idriss secondary school where the total number is just 3 teachers. All have been teaching first year level during their teaching experience.

Question 02. Teachers' qualifications: this questionnaire seeks out teachers' qualification and diplomas:

Response	License	Magister
Participants	3	0
Percentage	100%	0%

Table 32: Teachers' Qualifications.
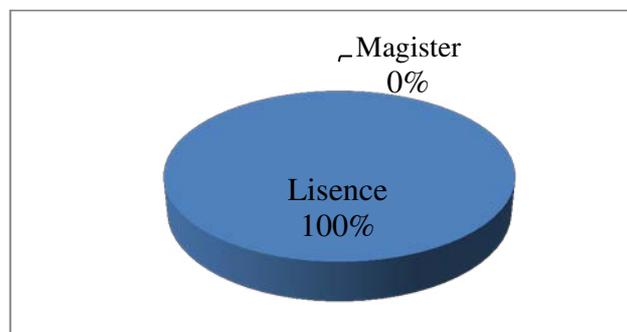
**Graph 27:** Teachers' Qualifications.

The teachers who kindly accepted to fill in our questionnaire hold a license degree (100%). No teacher holds a magister degree. These educational backgrounds will provide us with different opinions and attitudes towards the issues under investigation.

Question 03. Participants' Teaching Experience.

By asking this question, we wished to investigate our teachers' teaching experiences in terms of number of teaching years at the secondary school level.

Teaching experience	More than 20 years	Less than 20 years	
Participants	Teacher (T_1)	T_2	T_3
Response	22	12	3
Percentage	33.33%	66.67%	

Table 33: Participants' Teaching Experience.
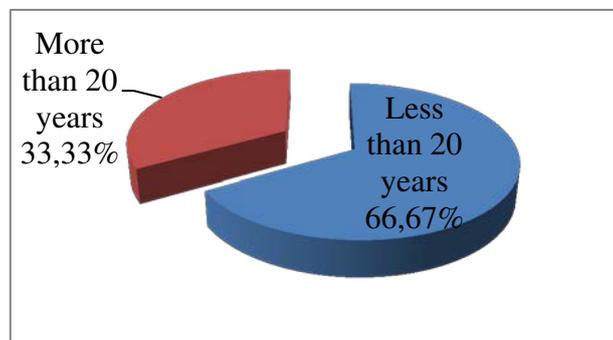
Graph 28: Participants' Teaching Experience.

Among the three teachers questioned, two teachers (66.67%) have been teaching English for less than 20 years, while only one teacher (33.33%) has been teaching for more than 20 years. It ranges from 3 years to 22 years. Their experiences in teaching will contribute to reaching the aim behind our research.

Section Two: Pupils Reading Comprehension

Question 01. Do your pupils have difficulties in learning English as a foreign language?

a- Yes ☐   **b-** No ☐

In trying to get deeper into the problem, the first question was a direct one and we asked our teachers whether their pupils have difficulties in learning EFL.

Response	Yes	No
Participants	3	0
Percentage	100%	0%

Table 34: Teachers' Opinions Concerning Pupils' Difficulties in Learning EFL.
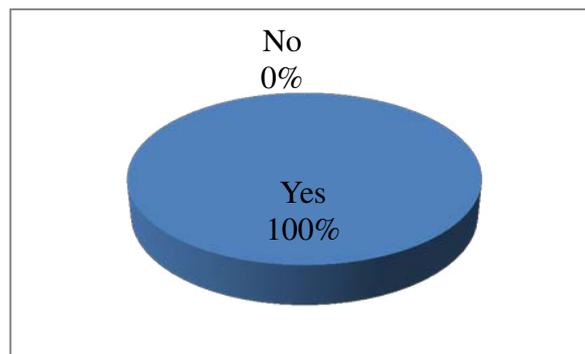
Graph 29: Teachers' Opinions Concerning Pupils' Difficulties in Learning EFL.

Table 34 indicates that all teachers (100%) stated that their pupils have difficulties in learning English as foreign language. It seems that pupils are facing problems with learning English. In order to gain more information about those problems, we asked teachers the following question.

Question 02. What language skills do they suffer more from?

a. Listening ☐   **b-** Speaking ☐   **c-** Writing ☐

In this question we try to find out what specific areas of the language that they suffer more from. The table below summarizes those difficulties.

Response	Listening	Speaking	Writing
T_1	/	x	x
T_2	/	x	x
T_3	/	x	x
Percentage	0%	50%	50%

Table 35: Teachers' Opinions Concerning Pupils' Difficulties in Learning EFL.
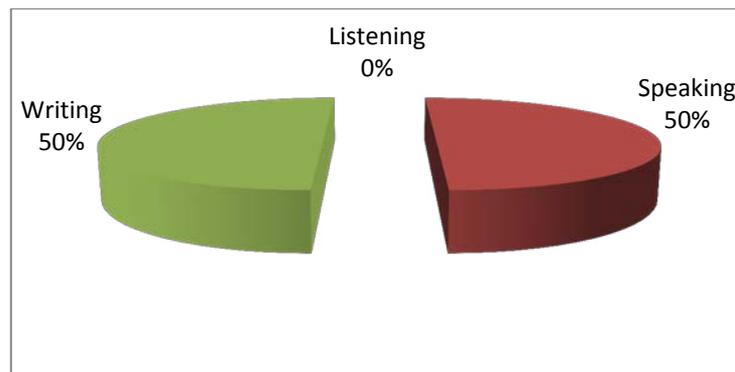
Graph 30: Teachers' Opinions Concerning Pupils' Difficulties in Learning EFL.

The table above represents learners' difficulties in learning English as a foreign language. We can notice that all the pupils have problems in speaking (50%) and writing (50%) but no teacher mentioned listening as a problem. This denotes that pupils are good in understanding spoken English since it is simplified by their teachers, but they face problems communicating with English or expressing their ideas in written forms. Since English language skills interact and affect each other, if learners have problems in writing, then the skill which leads to that is reading. If pupils are to grasp the written texts and understand them, this will surely improve their writing in a way that is convincing and acceptable.

Question 03. How about reading?

Through this question, we try to make specific teachers' opinions towards the issue under investigation and to check pupils' most problems faced during the reading process in general. The table below shows their viewpoints:

P.	Teachers' views
T$_1$	Somehow.
T$_2$	Students sometimes find certain difficulties in reading.
T$_3$	They have some difficulties especially in pronunciation because they use to pronounce the beginning of the word in French and the rest in English.

Table 36: Teachers' Viewpoints Concerning pupils' Difficulties in Reading.

These answers indicate that pupils do face problem in reading without being specified by our teachers, except one who claims that his pupils are facing pronunciation problems. We asked the next question in order to specify those difficulties.

Question 04. Generally, during the course or in the exams, what difficulties they might encounter during texts reading comprehension?

a. Understanding the main ideas   ☐

b. Finding specific information and details   ☐

c. Recognizing the writer's attitude and opinion   ☐

d. Identifying the tone   ☐

e. Understanding implication   ☐

f. Identifying the purpose for which the text was written   ☐

g. Understanding text structure and organization   ☐

h. Understanding cohesion and coherence   ☐

i. Understanding the meaning of specific words in context   ☐

In this question, we try to find out what problems do exactly our pupils suffer more from. The following table summarizes these difficulties.

Response	a	b	c	d	e	f	g	h	i
Participants	/	3	2	3	2	/	1	2	3
Percentage	00%	100%	66.67%	100%	66.67%	00%	33.33%	66.67%	100%

Table 37: Teachers' Estimates of Pupils' Difficulties in Texts' Reading Comprehension.
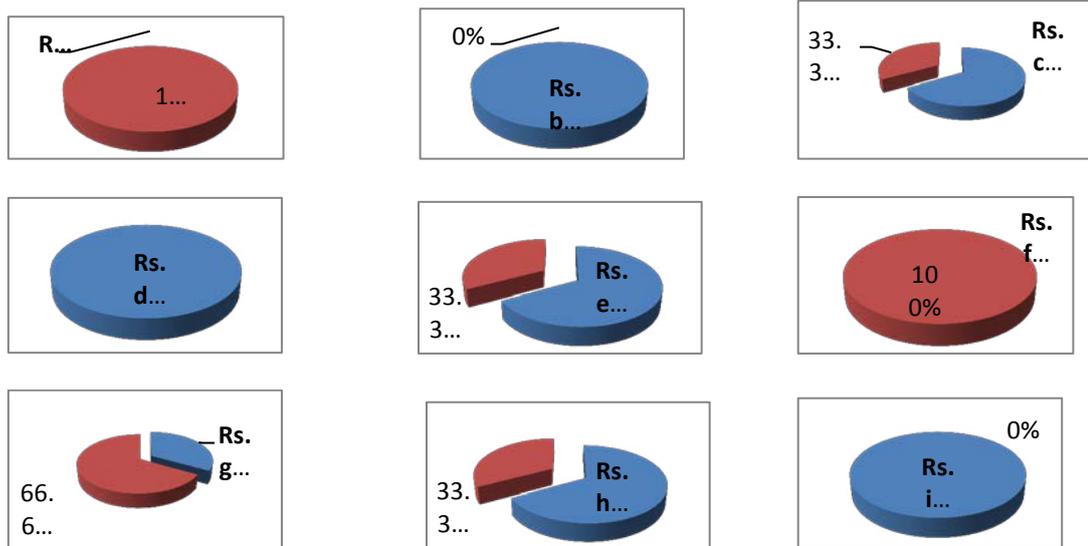
Graph 31: Teachers' Estimates of Pupils' Difficulties in Texts' Reading Comprehension.

From the above table, we can see that pupils face a variety of difficulties in reading comprehension. The difficulties that pupils suffer more from are those which took 100% of the other problems, those are: finding specific information and details, identifying the tone, and understanding the meaning of specific words in context, this might be caused by lack of vocabulary knowledge then inability to understand the whole text, misunderstanding and getting out of the questions. The other problems ranged between 30% and 70%, for recognizing the writers' attitudes and opinions, understanding implication, and understanding cohesion and coherence, all have the same percentage (66.67%), this is because of the inability to grasp and analyze the writers' ideas and interpreting them, or because of less concentration and surface level of thinking to choose the right answer. While 33.33% represents pupils' difficulties in understanding text structure and organization, this is not a big problem for pupils because understanding the way a text is

structured is somehow easy to grasp by pupils since the usual structure of any text is made of three main parts, introduction, body, and a conclusion. Whereas, pupils face no problems (0%) in understanding the main ideas and identifying the purpose for which the text was written because the general idea of the text might be grasped just when reading the title of the text which helps in turn to clarify supposedly the main ideas of the text.

Question 05. Do you follow certain strategy to deal with those difficulties?

**a-** Yes ☐   **b-** No ☐

Explain...

Our aim behind asking the above question is to know what strategies are followed by our teachers to deal with the aforementioned difficulties that are encountered by their pupils. Table 38 shows their answers.

Response	Yes	No
Participants	3	0
Percentage	100%	00%

Table 38: Teachers' Strategies to Deal with Pupils' Difficulties in Reading Comprehension.
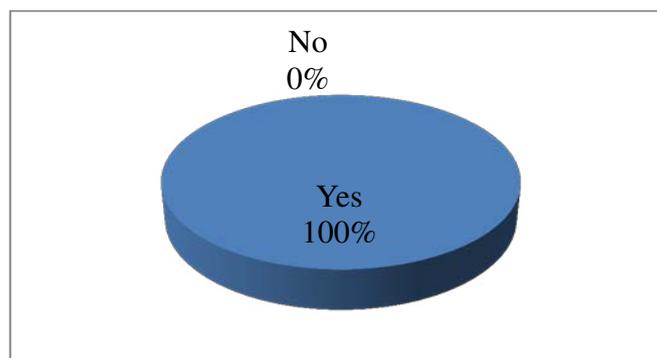
Graph 32: Teachers' Strategies to Deal with Pupils' Difficulties in Reading Comprehension.

From the above table, as it was expected, all our teachers (100%) gave a positive answer to the question; they do apply certain strategies to deal with in solving their comprehension disabilities. This actually shows their awareness towards the seriousness of the problem that faces their pupils to achieve better results and to improve their levels in reading comprehension. In order to discover those strategies, they have been asked to explain more. Their responses are illustrated in the table 39.

P.	Response
T_1	By teaching them some techniques to deduce the meaning of difficult words. The problem now is that most of our learners and their parents do not give importance to foreign languages.
T_2	We try to facilitate each task through explaining and giving instructions to students to use their background knowledge. Also, practice has a major role to play in making students familiar in dealing with texts and reading passages.
T_3	By asking the students to read the text once, twice and thrice to get specific information, think deeply about the content of the text so that they get the hidden ideas or reach the writers' ideas. Encourage the students to deduce the meaning of words from context without checking their dictionaries, and enrich their background knowledge.

Table 39: Teachers' Strategies to Solve Pupils' Difficulties in Reading Comprehension.

The above table indicates that teachers are really aware of their pupils' problems and apply different strategies to help them overcome those problems. The strategy that seems to be used mostly by teachers is to deduce the meaning of unknown words and the main ideas through activating their background knowledge without referring to dictionaries, reading the text more than once. One of the teachers emphasized the role of practice in improving the pupils' level of understanding. Rather the fact that our teachers have

mentioned different strategies, it is still necessary to incorporate the teaching of some thinking skills that make easier solving the tasks in reading courses or exams.

Section Three: Introducing Thinking Skills to Texts Reading Comprehension

   Question 01. Do you think that developing pupils' thinking skills (Eg: problem solving; how to solve comprehension question/ decision making; how to make a decision in multiple choice questions/ predicting; how to predict what will happen next such as predicting the end of a given story…) contributes in fostering texts reading comprehension?

a- Yes ☐   **b-** No   ☐

   Question 01 seeks to know teachers' points of views towards fostering and developing pupils' thinking skills. We concentrated on some skills that are the focus of our study; problem solving, decision making, and predicting. They provided the following responses.

| Response	Yes	No
Participants	3	0
Percentage	100%	00%

Table 40: Teachers' Estimates of Developing Pupils Thinking Skills.
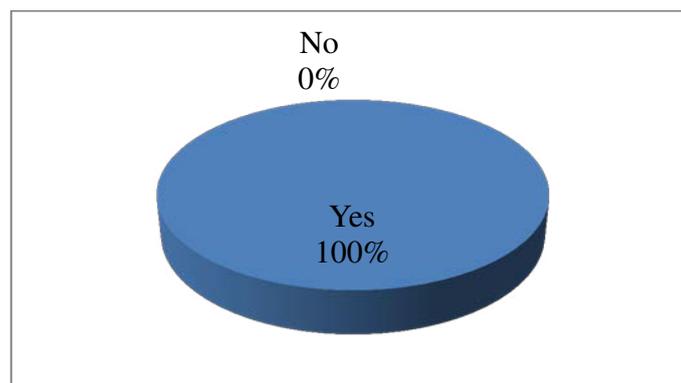
Graph 33: Teachers' Estimates of Developing Pupils Thinking Skills.

   According to the above table, we notice that our teachers (100%) answer positively for the importance of developing pupils' thinking skills in fostering their reading

comprehension practices since the aforementioned skills represents nearly the same activities that pupils use to encounter in a reading course or even in exams situations like multiple choice questions, true/false question, sentence order, etc...

Question 02. If yes, how?

Teachers were asked to clarify their response "yes" in the previous question so that we seek their attitudes towards developing pupils' thinking skills in connection to increasing their understanding of the written materials. Their responses are represented in the following table.

P.	Response
T_1	By exposing them to different situations, i.e. by developing this capacity and eagerness to deal with difficult situations.
T_2	This may give students a wide atmosphere to surf in and break the chains of the classical way in dealing with reading comprehension texts. This also enables students to rely on their capacities and background knowledge and put them in practice.
T_3	The more the learner thinks about a given problem, the more he concentrates on key words and the more the students try to make decisions, the more they are going to build a strong relationship between what they have learned in the text and the questions, then they predict what will be the right answer.

Table 41: Teachers' Clarifications for the Importance of Developing Pupils' Thinking Skills.

From table 41, we notice that our teachers proposed different reasons for their choice 'yes' in the previous question. They stated that this will put both teachers and pupils in a new method of teaching and learning situations; it will to a certain extent change the old atmosphere of study and add new modifications to enjoy more the classroom environment

especially in a reading course. They also argued that thinking skills might help pupils rely more on their abilities that they have but for given purpose do not apply them when needed. Developing pupils' thinking abilities will inevitably enlarge those capacities so as to use them each time needed, and which in turn make them aware as well as sure about their responses.

Question 03. Do you think that pupils put into practice their thinking abilities during text reading comprehension?

a- Yes ☐   **b-** No ☐

By asking our teachers the above question, we wished to know our teachers opinions whether pupils are putting into practice their thinking abilities. Table 34 shows their answers.

Response	Yes	No
Participants	2	1
Percentage	66.67%	33.33%

Table 42: Informants' Views on Pupils' Application of their Thinking Abilities.
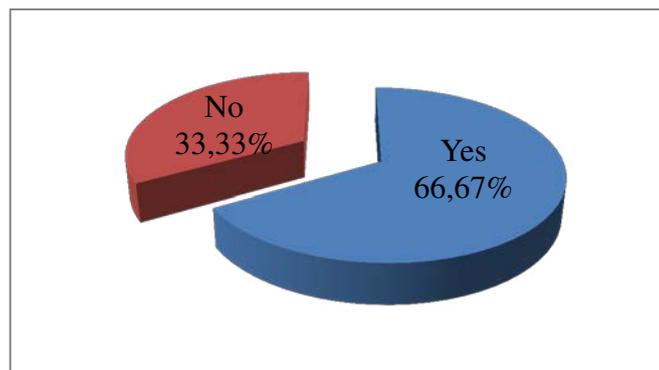
Graph 34: Informants' Views on Pupils' Application of their Thinking Abilities.

Tow teachers (66.66%) answered by "yes" and 33.33% selected "no". This means that the majority of pupils do not really employ their thinking abilities during text reading comprehension, i.e. whether this ability is lacking in the pupils' minds, or they don't know

how to profit from it and employ it effectively during normal courses or in exam situations. This might result from lack of practice whether in the classroom or at home.

Question 04. If yes, is the extent of such application?

a- Effective ☐   **b-** Less effective ☐   **c-** Not at all ☐

This question completes the previous one. it intends to seek teachers' opinions towards their pupils whether the application of their thinking abilities is effective, less effective, or not effective at all. Table 43 provides the following results.

Response	Effective	Less effective	Not at all	No answer
Participants	0	2	0	1
Percentage	00%	66.67%	00%	33.33%

Table 43: Informants' Estimates of the Extent to which Pupils use their Thinking Abilities.
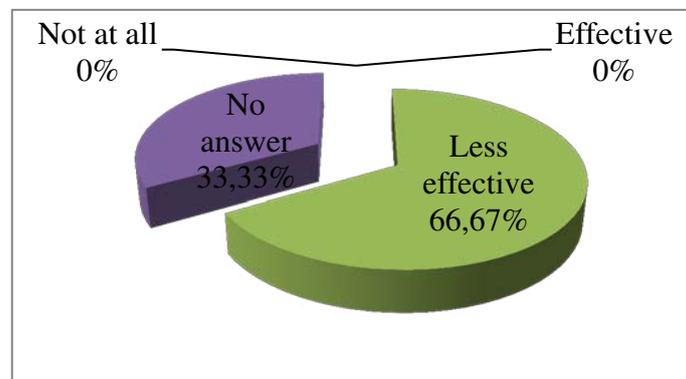
Graph 35: Informants' Estimates of the Extent to which Pupils use their Thinking

Abilities.

From the above table, 66.67% of the respondents (N=3) asserted that the pupils' employment of their thinking abilities during reading is less effective, and none said that it is effective or not effective at all. It means that pupils are less users of their mental abilities since this is clearly noticed by their teachers through their achievements. Only one teacher provided no answer for the question for unknown reasons.

Question 05. What, in your opinion, are the major causes behind that?

Question 05 aims to discover the main reasons that hinder pupils from applying their thinking skills. Their responses are represented in table 44.

P.	Response
T_1	The excessive use of technology.
T_2	Maybe they have problems with the language itself. They do not know how to use them or could not make the relationship between what is presented in the text and their thinking abilities.
T_3	Maybe it is because of that surface reading of the text, their views towards English as a third foreign language, and lack of reading techniques.

Table 44: Teachers' Points of Views of the Reasons Hampering the use of Thinking Skills Effectively.

This item is also a completion to the previous one. One of the teachers claimed that because of the unlimited use of technological developments that, to some extent, lessen their dependence on their thinking abilities. Another teacher claimed that pupils' level in English can affect negatively their comprehension since everything understood is expressed in oral or written forms. Also, he reported that pupils might not know what thinking skill is suitable for which task then inability to build a clear relationship between the two variables. The third teacher explained that because of the surface level in reading and so that pupils do not concentrate as needed when reading a text in order to understand the main ideas. He also stated that because of the fact that English is considered as a foreign language in Algeria that pupils are not really giving it much importance which in turn affects its use and acquaintance by pupils. In addition, pupils have no idea about the multi techniques that can be used while reading is taking place.

Question 06. Do you think that teaching thinking skills through the curriculum is a good idea?

a- Yes ☐   **b-** No   ☐

This question seeks to know teachers' attitudes towards teaching thinking skills through the curriculum whether it is a good idea. The answers are represented in table 45.

| Response	Yes	No	No answer
Participants	2	0	1
Percentage	66.67%	00%	33.33%

Table 45: Informants' Views about the Usefulness of Teaching Thinking Skills.
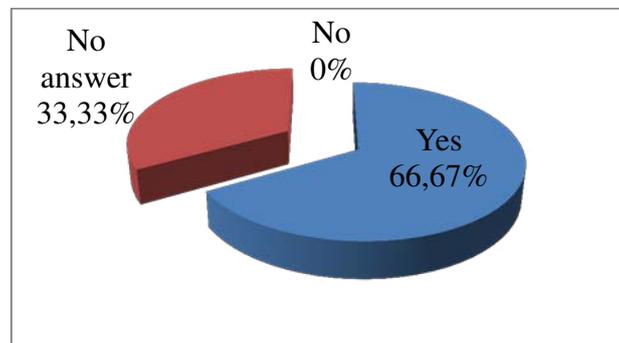
Graph 36: Informants' Views about the Usefulness of Teaching Thinking Skills.

Unexpectedly, just two teachers (66.67%) saw that the idea of teaching thinking skills through the curriculum is a good one. One teacher gave no opinion. Teachers' agreement confirms the idea that applying thinking skills is useful in learning. One teacher gave no reply (33.33%) to the question which means neither agrees nor disagrees with the opinion.

Question 07. What, in your opinion, are the techniques that can be used to teach and develop the aforementioned thinking skills through the curriculum?

We asked this question to get some ideas from our teachers as experienced in the field of education on order to discover what suitable techniques are useful for teaching thinking skills and implementing it in the curriculum. Their answers are shown in the following table.

P.	Response
T$_1$	Introduce some mathematical problems/ calculations and language drills in English because there are learners who are so intelligent, but they do not know English.
T$_2$	I think we have to teach reading comprehension for the purpose of promoting and understanding texts not for other purposes such as teaching grammar or writing. For reading, I consider dealing with literary texts, stories, novels, historical texts,…etc of such importance for students and their abilities to improve their language and that also may add something beneficial to the curriculum.
T$_3$	The use of disordered pictures, videos, stories with missing events.

Table 46: Teachers' Suggested Techniques to Teach Thinking Skills.

The first teacher claims that in order to get pupils develop those skills, we need to teach them thinking skills through some mathematical equations or exercises that need deep thinking and provoking of mental skills to be activated. The second teacher perceived the question from another angle. He claimed that teachers used to teach reading for grammar or writing purposes then that purpose should be switched to developing their reading comprehension of written materials. She also reported that incorporating different types of readings like stories, novels, literary texts, and historical texts in the curriculum will promote their language which will facilitate their readings comprehension. The third teacher suggested the use of disordered pictures, videos which help pupils to challenge their thinking till they reach the solution, besides that the use of stories with missing events to develop prediction skills.

Question 08. Would you like to add any comment or suggestion?

This question was intended to get our teachers' points of views and evaluations concerning the subject at hands. Two teachers gave no suggestions or comments, only one teacher who supported the idea of teaching thinking skills through the curriculum stating that it should be taken into consideration because, for her, it adds such a help not only for the pupils but for the teachers as well.

Conclusion

The analysis of teachers' questionnaire allowed us to draw up the following points. The questionnaire revealed that our teachers possess different educational backgrounds, teaching experiences and instructional careers. Theses diversities resulted in different teaching perceptions in terms of attitudes, viewpoints and evaluation of teaching thinking skills.

All the teachers reported that their pupils have difficulties in studying English and the language skills, like reading. Our teachers admitted that they are using certain strategies to dealing with those difficulties which concern specifically comprehension of written texts.

Although teachers have realized how much important is developing and applying our pupils' thinking skills and rather the fact they think that pupils are applying them to a certain context, yet they are still facing comprehension difficulties, as pupils themselves argued, this can be resulted from the ineffective use of their mental abilities.

In addition to that, our teachers asserted that teaching thinking skills through the curriculum is a good idea and can be implemented in different ways that help improve their thinking levels.

PEDAGOGICAL IMPLICATIONS

As it is strongly believed in the previously published and results of other studies, developing pupils' comprehension of written materials needs careful and intensive thoughtful insights into the factors underlying the task. I conducted this research to seek for the positive relationship existing between our variables and it provides further support that fostering pupils' thinking skills can be useful in enhancing their reading comprehension capacities. Besides, the analyses of the data collected throughout the present study led me to the following implications for practice and that can be a creative inspiration to syllabus and material designers, teachers, pupils and test developers.

On the one hand, the results of the study can inspire syllabus and material designers to incorporate a variety of thinking skills into the curriculum, pupils' schoolbooks, and teachers' training books, as well. This implies providing and designing those sources with instructions and different types of activities that provoke pupils' thinking and increase their motivation which in turn would facilitate instructors' processes of teaching. Thus, pupils can learn to think better if schools concentrate on teaching them how to do so.

Teachers, on the other hand, need to take into consideration their crucial roles inside the classroom towards their pupils and to be flexible in their teaching practices to manage their classrooms like teams work, discussions, and competitions. Teachers should train their pupils how to put into practice their thinking capacities in order to reach better achievements in general language practices and reading comprehension in particular. A multi of specialized programs have been designed for the sake of improving pupils' cognitive and metacognitive abilities.

Incorporating teaching some of the thinking skills into the program has brought a new atmosphere and environment of memory-freshen, participations, discussions and collaborations for pupils and for teachers as well. Putting pupils in a competitive

environment led to the presentation of brilliant ideas, pose clever questions, and show great ability in analyzing and arguing one's points of view.

The third side addressed in this study is the pupils belonging to experimental group who surprisingly enjoyed the lessons that were full of modified types of activities that activate thinking processes. Whereas, pupils of the control group were exposed to normal classes, and were more dependence on teacher's philosophy and beliefs.

The other advantage the pupils gained from the few yet extensive planned courses was their participation in speaking during the sessions, so that even the reticent pupils were trying to express their own ideas. And finally, reviewing key points after the sessions encourages them to expressing their ideas about the skill being taught, what they have acquired as a new concepts which in turn denotes their comprehension. Also, placing them in the right picture makes them realize their lacks and needs.

Test developers are also addressed in this study. Considering the backwash phenomenon in testing, and since our teachers are to be course-directed exam to design exam subjects having in mind that the purpose of testing is to evaluate the teaching program and the improvement of the learners, this would results in expected less good achievements. Then, it would be useful to teach thinking skills in EFL contexts. This study inspires the test developers to bring about changes in testing, developing tests to affect the quality of teaching afterwards as well as improving the pupils ability to be creative in their performance on tests. Including items that check comprehension as well as efficient thinking skills would be of a crucial importance for both pupils to discover their lacks as well as for teachers to evaluate their teaching policies.

LIMITATIONS OF THE STUDY

Due to many reasons, the study inevitably contains some constraints and limitations that restrict the implications of the research findings. Thus, the results of this investigation must be considered within the limits of its design, sample, and methods.

The most significant limitation is that of time. Because of time constraints and the administrative control of the academic institution, it was impossible to account for longer time for the treatment period (9 sessions per 2 months + 4 sessions of assessment). Then having sixteen sessions for nearly two months since the treatment period begun, was somehow difficult to get the agreement of different subjects' instructors. This factor inhibited us to post test our participants twice after the treatment period is finished. However, some more time would help extend the study and to make more valid the results behind this implication.

Another limitation consists in the number of participants to the study. Though the respondents who participated in the main study represent 50.31% of the whole population of first year pupils, conclusions about the success of the intervention can only be made within these specific groups. A better setting would have included a large sample of pupils where results can be generalized to larger groups.

In addition to that, pupils' absences during the treatment period, especially of those belonging to the experimental group, were a concern in this study. The collected data cannot be generalized because some pupils have missed the key points of content and class discussions. Then, approaching a t-test for the sake of generalizing the data was to some extent invalid.

Another limitation in this study consists in some sessions that I have given to pupils without the presence of their teacher of English language; participation seems to be higher with the presence of their teacher whom they are familiar more with. Whereas, having

sessions with teachers of other subjects affects negatively pupils' motivation, participation (girls only) during the lessons.

An additional limitation would be the effect of psychological factors as stress and anxiety that the test-taker may feel during taking the test. Also, the last period in the investigated study came in parallel with the testing period of the academic year that consequently will affect his/her performance and the results would not reflect clearly his abilities.

RECOMMENDATIONS

This study examined the treatment conditions on a small group of pupils. Hence, further experimental studies would need to be conducted to generalize data to a large group of individuals.

Due to the unavailability of longer periods of time, it was not possible to conduct a large-sample evaluation of thinking skills and reading comprehension. Consequently, though the results are encouraging, more extended experiments would lead to more valid results on the impact of developing pupils' thinking skills on reading comprehension skills in a foreign language.

Other researches would focus only on one of the thinking skills in order to make specialized the would-be obtained results. In addition, other research projects would focus on a specific method or program of teaching thinking skills, for example, the use of some programs like CALLA, or THINK structure explained in the theoretical part.

Other recommendations include providing testing classroom environments where pupils can feel at ease being assessed, preferably, in periods where they have no other academic assessments to be taken. During the treatment period, it is better recommended to be assisted with the pupils' teacher of English in order to avoid any hesitation or less participation on the part of the pupils.

GENERAL CONCLUSION

Throughout our study that we carried in two months period of time, we aimed at confirming our hypothesis that if pupils' thinking skills are to be developed, it would make better their comprehension of written texts. In other words, we tried to investigate the relationship between the implementation of some thinking skills (problem solving, decision making, and predicting) and reading comprehension abilities.

The review of the literature helped us to prepare for the many steps followed in our investigation based on experiences in the field of education. Besides, it presented us with crucial insights as solutions to the problem.

The analysis of the data gathering tools, questionnaires, provided us with positive attitudes towards the issue. It emphasized the impact of introducing thinking skills in teaching. In addition to that, our conducted experimentation provided extra support for the work through the remarkable progress shown by the investigated sample.

This study helped pupils understand better their lacks and reasons for some failure. It attracted their attention to the valuable processes operating in the mind and that they require more time to be well utilized to meet the needs of our pupils. This can be fulfilled through a variety of tasks of different aims that will, in turn, fresh the classroom classic atmosphere and make exciting the learning and the teaching environment, as well.

These research procedures allowed us to confirm our research project hypothesis that the progress of the experimental group compared to the control group came as a natural result of exposing our pupils to a variety of tasks and activities that enhance and provoke their thinking skills to operate in higher levels.

Still, one of the ultimate aims behind the study is that specialists in the field would design specific programs for enhancing the relationship existing between our variables and improving the pupils' abilities and achievements.

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